EFFECT OF GOVERNMENT REGULATIONS ON THE RELATIONSHIP BETWEEN RESIDENTIAL MORTGAGE FINANCING PRACTICES AND PERFORMANCE OF REAL ESTATE FIRMS IN KENYA

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DECLARATION

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

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This thesis has been submitted for examination with our approval as university supervisors.

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DEDICATION

To my parents Charles Muturi and Joyce Wairimu and my beloved wife Eunice and our children; Timothy and Calvin Karanja for their moral support, sacrifices and prayers throughout my study period.

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ACRONYMS AND ABBREVIATIONS

ARM Adjustable Rate Mortgage

BC Borrower's Characteristics

CBK Central Bank of Kenya

CFA Confirmatory Factor Analysis

CR Composite Reliability

EFA Exploratory Factor Analysis

FRM Fixed Rate Mortgage

GDP Gross Domestic Product

GR Government Regulations

KMO Kaiser-Meyer-Olkin

KPDA Kenya Property Developers Association

LTV Loan to Value

MCT Mortgage Contract Terms

MDC Mortgage Distribution Channels

MMP Mortgage Marketing Practices

MMR Moderated Multiple Regression

PCA Principal Component Analysis

PRE Performance of Real Estate Firms

ROA Return on Assets

ROC Return on Capital

ROE Return on Equity

ROI Return on Investment

S&L Savings and Loans

SEM Structural Equation Modeling

SPSS Statistical Package for Social Sciences

UC Underwriting Criteria

UK United Kingdom

USA United States America

DEFINITION OF TERMS

Borrower Characteristics: Borrower's characteristics could be regarded as internal resources within a firm that become a body of strength against competitions. These internal resources are not homogeneous in all organizations implying that they are inimitable and can lead to superior performance (Chae *et al*., 2014).

Competitive advantage: A set of resources or capabilities that enables an organization to differentiate its services or products from those of its competitors in order to increase its market segment (Porter, 2006).

Fixed Rate Mortgage : A mortgage loan whose interest rate remains constant over the whole repayment period despite market fluctuations (Foa, Gambacorta & Guiso, 2015).

Mortgage distribution channels: These are conduits of supplying mortgage finance to real estate firms which include depository system, specialized mortgage lending and secondary market (Odi, 2014).

Mortgage Marketing Practices: These are market driven practices that should be adopted by firms in order to improve their profitability as they allow them to connect with the needs of customers (Sacuia & Dumitru, 2014).

Mortgage Contract Terms: These are loan terms which are broadly categorized into adjustable rate mortgage (ARM) and fixed rate mortgage (FRM) (Sven & Eric, 2015).

Mortgage Financing Practices: These are mortgage undertaking procedures by an individual/firm. It may also be a legal arrangement by which

one borrow money from a bank or mortgage lending organization in order to buy a house, renovate or build a residential house (CBK, 2014).

Performance of Real Estate Firms: There is no standard measure of firm performance but Okeyo, Gathungu and K'Obonyo (2014) argued that performance refers to the value that customers and other stakeholders get from a firm implying that a firm's superior performance requires an organization to achieve its set goals in an effective and efficient manner.

Regulation: The term refers to a rare set of incentives established either by legislature, government or public administration that mandates or prohibits actions by citizens and enterprises (Fakhrul & Wan, 2009).

Real Estate firms: This refers to combination of development, building construction, and sales of homes/houses as a business circle (Babatunde & Low, 2013).

Underwriting Criteria: This refers to the rationale used to approve loans, loan pricing, repayment terms, sources of repayment, collateral requirements, loan portfolio management and administration written lending policies, and adherence to polices (Campbell & Cocco, 2015).

Variable Rate Mortgage: A mortgage loan whose interest rises and falls based on the movement on an underlying index. The term variable rate mortgage is used interchangeably with adjustable rate mortgage (Elliehausen & Hwang, 2010).

ABSTRACT

The purpose of this study was to examine the effect of government regulations on the relationship between residential mortgage financing practices and the performance of real estate firms in Kenya. Housing is a basic human right as enshrined under the Social pillar in Kenya's Vision 2030 yet the realization of this fundamental right is an uphill task due to the heavy capital outlay required. Mortgage financing remain one of the most appropriate options for providing funds for housing globally. However, the uptake of residential mortgage financing has been low in Kenya leading to a housing deficit that has attracted proliferation of informal dwellings which call upon the intervention of the government in the real estate industry to help in addressing this challenge. This study tested the null hypotheses that borrower characteristics, mortgage distribution channels, mortgage contract terms, mortgage marketing practices and underwriting criteria have no relationship with performance of the real estate firms in Kenya and the null hypothesis that government regulations does not moderate the relationship between residential mortgage financing practices and performance of real estate firms in Kenya. The study was mainly anchored on resource based view (RBV), configuration, contract and regulation theories. The target population of the study comprised of real estate firms registered with Kenya Property Developers Association (KPDA) while the respondents were 138 real estate managers and finance managers of these firms. The study adopted a census approach. Primary data was collected using a self-administered, semi-structured questionnaire while secondary data was obtained from published sources such as library, Internet and research done by other scholars. The questionnaire was tested for validity and reliability. Questionnaires were administered through drop and pick method for ease of administration and convenience. Analyses were undertaken using a two-phase process that comprised of confirmatory measurement model and confirmatory structural model. Additionally, moderated multiple regression (MMR) analysis was used in comparing ordinary least- squares (OLS) regression model and MMR model. The study found out that borrower characteristics, mortgage distribution channels, mortgage contract terms, mortgage marketing practices were individually significant predictors of performance of real estate firms with mortgage contract terms emerging as the most significant. The results further revealed that government regulations moderated the relationship between residential mortgage financing practices and the performance of real estate firms in Kenya. The study established that by aligning the operations of real estate firms with government regulations helps in creating a strategic fit that position them above their rivals. Overall, the study demonstrated a positive relationship between government regulations and performance of real estate firms in Kenya. The study recommends that real estate firms seeking superior performance should adhere to government regulations which control their operating environment.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Housing is a basic need for man, hence described as *sine qua non* of human living (Babatunge, 2016). Consequently, the priority given to the issue of housing by most governments is immense as it contributes substantially to socio-economic development of a country (Ubom & Ubom, 2014). This assertion is in line with Okumo (2017) that a well-functioning real estate market plays an important role in creating employment opportunities, providing decent shelter to households, which contributes substantially to the Gross Domestic Product (GDP) of a country. Despite its importance, many developing countries do not have favorable government regulations that would ensure effective and sufficient housing supply. The situation in Africa for example, indicates that countries such as Kenya have a critical need for housing due to the limited number of housing units produced, overcrowding, and the proliferation of informal settlements (Kipkirui & Rotich, 2015). This makes the issue of housing a major priority in both developed and developing countries.

Most Governments have enacted regulations for a wide range of reasons that directly and indirectly affect the supply and cost of housing. In most cases, these regulations are deemed necessary to promote health and the well-being of either the residents or the community at large. Kibati (2015) noted that Governments of Chile, Colombia and South Africa, regulate the activities of real estate firms through legislation measures such as provision of guarantees and subsidies. This is done to increase affordability of housing for the majority of the residents. On the other hand, Babatunge (2016) argues that some government regulations, *inter*

alia, zoning laws, building codes and environmental laws may increase the cost of housing and hence reduce the number of housing units delivered in the market every year. Kanjumba (2015) highlighted that these regulations serve an important public purpose explaining why their negative impact on housing supply remains a secondary by-product of government action. From the foregoing, it is clear that distinguishing between government regulations that promote real estate development and those that may generate unacceptable affordability problems is difficult for both households and real estate firms.

Majority of the real estate firms seek funding from mortgage lending institutions that operate in a market characterized by asymmetric information, unfair pricing and externalities (Mati & Moronge, 2014). Additionally, some players in the mortgage market may offer loans which are often considered predatory because they include pre-payment penalties, negative amortization, balloon payments, piggy-back loans and low documentation loans (Neuenschwander & Proffitt, 2014). For real estate firms to thrive, enactment and enforcement of favorable government regulations is important in order to correct inequitable mortgage financing practices that could lead to default and foreclosure consequences (Sorenson, 2015).

The huge capital outlay required to purchase a residential home is out of reach for many prospective home buyers (Mwathi, 2016). In order to acquire the required funds borrowing from commercial banks and mortgage lending institutions become one of the most appropriate option real estate firms (Kalui & Kenyanya, 2015). A mortgage loan enables prospective home owners buy houses without necessarily saving money for many years because the loan is charged against a security/collateral. Mortgage finance plays an important role in the growth of real estate industry as it confer advantages ranging from living in a dream house in the

early years of one's life to offering the potential for profit-making when house prices rise (Mogaka, Mboya & Kamau, 2015). Therefore, a developed mortgage market would enable cheaper access to housing finance which is essential in promoting home ownership (Dell'Ariccia, Dagher & Cerutti, 2015).

In a mortgage contract, the mortgagee of property should hold lien, and not title, to the property until the mortgage is paid in full while the mortgagor retains legal and equitable title to the real estate property, but conveys an interest that the mortgagee can only foreclose to fulfill the obligation of the mortgagor (Piskorski & Tchistyi, 2017). Having lien is equivalent to a future interest in the real estate property which allows the mortgagee to use it in the process of foreclosure should default occur. Gyourko and Tracy (2014) noted that mortgage default is a function of both inability to pay and negative equity. Gyourko and Tracy further pointed out that most defaults occur because the ability to pay is weak due to episodes such as unemployment, long term sickness and expenditure shocks. On the other hand, negative equity is considered strategic default because the home owners have the financial ability to pay but choose not to pay because they have high negative equity. Therefore, majority of the mortgage defaults emanate from borrowers with limited ability to pay other than negative equity, implying that loss mitigation strategies should primarily focus on increasing ability to pay and supply of low-cost housing.

A critical part of the decision making process in financing a residential house is choosing the appropriate mortgage contract term. Foa, Gambarcorta and Guiso (2015) classified mortgage contract terms into two broad categories: adjustable-rate mortgages (ARM) and fixed-rate mortgages (FRM). They further highlighted that the type of mortgage contract term selected by a borrower depends on borrower characteristics and market conditions. Mortgage contract terms

comprise both price and non-price features. The main price features considered include initial interest rates on FRM and ARM. On the other hand, key non-price loan terms include amortization period, loan-to-value (LTV) ratios, purpose of the loan prepayment penalties. Market conditions refer to shape of the yield curve, interest rate, interest rate volatility, house price appreciation and volatility of house price appreciation (Furlong, Takhtamanova & Lang, 2014). They further elaborated that borrower characteristics entail variables such as level of income, attitude towards risk, credit ratings, variability of income and expected cost of default. To prevent default and foreclosure, households and real estate firms should choose the most appropriate type of mortgage loan in the market.

In developed countries, the most common approach to owning a house is through a mortgage arrangement (Kutlukaya, 2015). In fact, in most cases, outright payment of cash to purchase a property raises suspicions. Today, developed nations have advanced housing finance systems in which funds flow from people with surplus funds to those that are in need of them through the mortgage markets (Foa *et al*., 2015). Availability of widespread residential mortgages has a positive impact on poverty alleviation, infrastructure, quality housing and urbanization (Ezimuo, Onyejiaka & Emoh, 2014). Indeed, residential mortgages allow qualified households and real estate firms to secure properties that can be repaid in terms that are within the ability of the recipient of the loan to pay off in a timely manner as well as generating revenue for the mortgage lending institutions.

Providing decent housing to the people has been a fundamental goal for most Governments over the years. In developing countries, it is a challenging task for the government to independently supply adequate housing to majority of the people. Therefore, in order to increase affordability for housing in the light of dwindling budgetary capacity most governments have formed Public Private

Partnerships (PPPs) to share this responsibility with real estate firms (Ibem, Adeboye, Oluwole & Alagbe, 2014). For example, the Bangladesh Government's Public Private Partnership policy has been a success in the supply of affordable housing in the whole country. As the influential partner in implementing the policy, the Government has managed to revise regulations pertaining to land supply, target groups, affordability, making by-laws and regulatory framework when necessary (Kamal & Roy, 2016). Additionally, Kamal and Roy outlined that its considerable success was attributed to the joint approach between real estate firms which brought in their managerial and technical expertise to the public sector in order to boost delivery of decent housing to most households.

Mortgage financing remain under-utilized in developing countries due to inflation, high interest rates and cost of mortgages (Njiriri & Wanyoike, 2014**)**. Under-utilization of the mortgage finance system calls for government involvement through efficient legal systems, creation of credit information sharing systems, mortgage fund guarantee, and provision of an enabling macro-economic environment (Kanjumba, 2015). For example, the Government of Morroco partnered with commercial banks to make mortgage financing affordable through the Fogarim program which is a mortgage guarantee fund for households with little and irregular income. In this program the Government guarantees 70% of a mortgage loan to households with informal income leading to lower interest rates in the long run (Kibati, 2015). Real estate firms equally benefit from the program as it boosts their ability to construct many low-cost housing units and sell them at discounted prices to the needy households.

Kolo, Rahimian and Goulding (2014) noted that the failure to strategize was a major setback towards affordability of housing in most developing countries. They further highlighted that the unwillingness to come up with new business

practices and shortage of skilled manpower in the real estate industry was a major hindrance on firm performance. Real estate managers have a duty of ensuring that their organizations remain profitable despite clients' demand for high quality services. Irani and Kamal (2014) opined that the demand for quality products or services by clients has increased the level of competition in the real estate industry. They further posited that real estate firms that adopt appropriate marketing practices would improve efficiency and determine the profitability of every real estate firm in the industry. To achieve this goal real estate firms should provide resources and the needed technical expertise in order to cope with clients demand.

On the other hand, for real estate firms to be profitable and manage to supply affordable housing there is need for governments including that of Kenya, to develop a supportive regulatory framework that would ensure extension of roads, water and power (UN-Habitat, 2014). The link between development of infrastructure, housing and economic growth has clearly been demonstrated in countries such as Thailand where the real estate firms contributed more than 10% to the GDP in 2014 due to availability of basic infrastructure such as electricity, roads water and sewerage to more than 95% of the households (Kanjumba, 2015).

1.1.1 Global Perspective of Residential Mortgage Financing Practices

In developed countries, the main approach to owning real estate property is through a mortgage arrangement with residential mortgages comprising a major fraction of the bank assets (Campbell & Cocco, 2015). In the United States of America, over 75% of mortgages are originated through the hands of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). These institutions are Government-

Sponsored Enterprises (GSEs) aimed at promoting liquidity, affordability, and stability in the U.S. mortgage market. To achieve this goal, GSEs purchase mortgage loans from the secondary market which they package into securities or hold in portfolio. To intensify mortgage origination and distribution to real estate firms and households the US government chartered Federal Home Loan Mortgage Corporation (Freddie Mac) as a private company. This yielded an increase in the average level of home ownership in the last decade to over 69% compared to European countries such as Germany's that records 43 percent (Bernanke, 2015).

Earlier international studies pertaining to the driving forces behind residential mortgage financing practices in various countries have elucidated the importance of both mortgage contract terms and borrowers' characteristics (e.g. Sven & Eric, 2015; Elliehause & Min, 2010; Coulibaly and Li, 2009). In their 2015 study, Sven and Eric reported that contract terms such as ARMs seemed to dominate the Belgium mortgage market to a slightly greater degree explaining why the level of home ownership in the country stands at over 72.2%. In southern European countries such as United Kingdom, Sweden and Australia ARMs is the dominant mortgage contract term explaining why the levels of home ownership could be equally high (Badev, Beck, Vado & Walley, 2014).

The effects of mortgage distribution channels on the affordability of real estate in Australia has been recognized by Chaplain, Kitson and Thomson (2012) who argued that the Australian mortgage market is dominated by stiff competition, a low level of loans in arrears, contracting lending margins and high rate of refinancing. Depository mortgage distribution channel is prevalent in the UK mortgage system while Germany uses both depository and securitization. In Korea, most of the mortgages are normally entirely funded through private depository institutions that have slowly evolved to replace government entities.

This is one of the most popular evolving practices in both Europe and Asia of relying on depositories, other than the securities market for mortgage financing (Wachter & Green, 2000).

In Switzerland, real estate firms and households enjoy a variety of mortgage contract terms which include: ARM, FRM, Flex roll over mortgage (Libor mortgage) and special mortgage. Despite the availability of various contract terms, the level of home ownership stands at 43.4% which is low compared to other European countries (Tahiri, Glass & Six, 2016). This could be due to strict government regulations that capped interest rates in the mortgage market over the years and enactment of new regulations such as tighter guidelines for offering new mortgages and compulsory amortization to curb credit-driven house price inflation that had affected the economy negatively (Tahiri et al. 2016). In spite of the macro-economic benefit of the new government regulations in the economy, majority of households seeking to buy homes find them a major barrier towards fulfilling their home ownership dream explaining why the level of home ownership remains relatively low. This has equally constrained performance of real estate firms.

In India, rapid growth in population and high level of migration to large urban centers are strong drivers of demand in housing that compel 25% of urban residents live in informal settlements (Bera, Shah, Valsan, Fong & Limaye, 2015). The demand for housing outstrips supply creating a deficit of over 19 million units (Gopalam & Venkataraman, 2015). Gopalam further pointed out that the mortgage market in India is undeveloped probably due to the small proportion of middle-class working in the formal sector. Most of the people in India work in the informal sector which poses a great challenge in extending mortgages to them due to incidences of high credit risk. To bring them on board, the Indian government has

encouraged housing microfinance as a mortgage distribution channel that would ensure availability and affordability of housing finance (Bera et al. 2015).

1.1.2 Regional Perspective of Residential Mortgage Financing Practices

The mortgage industry remains nascent in Nigeria, Africa's most populous nation and largest economy (Babatunge, 2016). Being an emerging economy of approximately 170 million people, Nigeria is currently estimated to have about 20,000 mortgages with the real estate industry contributing less than three percent to the country's GDP (Gordon, 2016). To boost performance the new National Mortgage Refinancing Company (NMRC) is hoped to become a key operator in the secondary mortgage markets aimed at ensuring access to sufficient funding for real estate firms Nigeria. Again, the development of uniform underwriting criteria for the industry that is being facilitated by World Bank Group is anticipated to jumpstart the secondary mortgage market which could be a good source of real estate finance. Under the NMRC underwriting criteria, a mortgage loan may be used to finance the purchase of an existing home or refinance existing mortgage loans which in turn promote real estate performance. The underwriting criteria demands that real estate firms use collateralized security which according to Ezimuo *et al*. (2014) could also help in mobilizing both offshore and domestic funds.

Uganda's real estate sector has undergone transformational growth over the last fifteen years making housing to become one of the key drivers of the economy. Between june 2009 to june 2014 the contribution of real estate to GDP averaged 5.8% while the real estate activities grew at an annual average rate of 6.0% (Kalema & Kayiira, 2008)). Again, real estate sector dominated bank lending activities with the government owned Housing Finance Company of Uganda

(HFCU) being the leading provider of long-term mortgage finance (Kalema & Kayiira, 2008). As of june 2014, the largest share of bank lending stood at 23.2 percent of total bank loans (Bank of Uganda (2014b). Like most of the developing countries, Uganda mortgage underwriting criteria system requires that the mortgagee deposit the title of land ownership with the mortgagor until the debt is repaid in full. The title acts as security/collateral for the mortgage loan (Nakayiza, 2013). Nakayiza further pointed out that failure to re-pay the mortgage loan together with interest in full grants the mortgagor the legal right to sell the property upon approval by the borrower to recover the outstanding debt.

1.1.3 Kenyan Perspective of Residential Mortgage Financing Practices

In Kenya, the Central Bank of Kenya (CBK) has licensed commercial banks and mortgage companies to deal in the business of offering mortgages (CBK, 2010). The dominant players in the mortgage industry include the Housing Finance Company of Kenya (HFCK), which still has a small government investment (7 percent) and Kenya Commercial Bank (KCB). The two types of institutions compete on a level playing field with KCB emerging as the largest lender in Kenya following its acquisition of Savings & Loans, which remains as a mortgage subsidiary of KCB. In overall, lending by commercial banks for real estate purposes represents the major type of lending at present (CBK, 2010). The real estate lending is more to purchase land for speculative purposes and for engaging in construction of new houses.

The standard mortgage contract term in Kenya is variable rate fixed maturity amortizing loan which is also practiced in the United Kingdom and has been replicated in many countries influenced by the UK system (WB, 2011). However, this type of contract term is not necessarily an ideal product particularly during

stress conditions of high inflation (Omengo, 2012). By having a fully variable rate, the real estate firms are subjected to high level of interest rate risk which could jeopardize their ability to repay the loan. Introduction of a longer term fixed rate product would allow for a lower level of risk to be passed onto the borrowing firms (Elliehausen & Min, 2010). The problem with such products is that unless the mortgage lending institution is willing to absorb the risk, a matching source of funding has to be found which can be difficult in emerging markets like Kenya thus creating the need for a secondary mortgage market which is in its nascent stage (WB, 2011).

According to Mwathi (2016) mortgage financing refers to an instrument that pledges real estate as security for an obligation or the process of pledging real estate as security. The ability to use land and property as security is the foundation for a strong collateral lending system especially in emerging markets where access to mortgage loans may be more difficult. In Kenya, the underwriting criteria require that the mortgage loan to be acquired should be secured by collateral of some specified real estate property. Most of the residential properties in Kenya are often leaseholds, meaning that they are frequently leased from the State on 99-year leases. When obtaining a mortgage loan it is customary for the lease to be renewed for a new 99-year term (WB, 2017). This is a common practice that confers the exact same rights as absolute freehold ownership. In Kenya, the process of registration and land allocation is currently slow, expensive and unreliable yet the development of a successful collateral lending system is hinged on it. Besides providing collateral to the mortgage lending institution, the real estate firms should demonstrate capacity to pay the loan by making the compulsory payment of 20% down payment of the value of the loan to be advanced. The lender advances 80% which is to be repaid together with interest

on a pre-determined set of monthly installments for an agreed period of time ranging from 10 to 30 years.

1.1.4 Real Estate Firms in Kenya

In Kenya, the real estate industry has experienced an upsurge over the past few years to become one of the major contributors to the country's economy (KNBS, 2016). This sector contributed approximately 8.8 % to the GDP in the year 2016 a rise from 7.8% in 2015 while the value of building works completed in Nairobi County increased by 7.5% to 76.2 billion shillings in 2016 from 70.9 billion shillings in 2015 due to increased demand for residential houses in the city (ESR, 2016). Additionally, the survey revealed that the building plans approved increased by 43.3% to 308.4 billion shillings in 2016 from 215.2 billion shillings in 2015. The robust growth in the real estate industry in the last few years may possibly be greater than other traditional sectors such as agriculture, wholesale and financial services (EO, 2015). This growth was attributed to increased foreign investment and the Government's effort to provide both financial and non-financial incentives that were geared towards reducing the housing shortage.

Performance of real estate firms is determined by demand for housing, inflation, interest rates and transaction costs. However, other intervening factors such as disposable personal income, government regulations and demographic information of the households greatly influence performance of real estate firms (Ombongi, 2014). Demand for housing emanate from increased growth in population coupled with a high rate of migration to the urban centers which has created an accumulated deficit of over 2 million units (WB, 2017). Therefore, the real estate firms operate with a goal of reducing the huge housing shortfall. The real estate market has demonstrated its importance in the last few years by

contributing significantly to the GDP, creation of employment opportunities and its overall positive effect on the economy (Wanyonyi & Nasieku, 2016). Despite its importance, real estate firms in Kenya continue to perform below their targets.

1.2 Statement of the Problem

In Kenya, real estate firms contribute approximately Ksh. 259.6 billion ($2.86b) or 8.8 percent to the country's GDP making the sector one of the major drivers of the economy (KNBS, 2016). However, real estate firms still face serious challenges such as inadequate financing, high cost of land for construction, and the long bureaucratic processes involved in the purchase of property (WB, 2016). Real estate firms have the capacity to contribute more positively to the Kenyan economy than is currently the case. But to survive in a turbulent and dynamic business environment, a supportive regulatory framework is necessary.

Despite availability of consultancy services and multiple publications on strategic and tactical advice pertaining property investment, planning and development, many real estate firms continue to perform below their targets (GMO, 2016). That is why real estate firms have been unable to bridge the current housing gap in Kenya that exceeds 200,000 units annually (WB, 2017). This is likely to lead to proliferation of informal settlements in urban areas where people live under conditions of inadequate provision of basic infrastructure and public services necessary to sustain healthy living conditions (UN Habitat, 2014). This would affect productivity of human capital in the long-run, thereby lowering the countrys' GDP. Increasing negative GDP stirs worry of economic recession for investors.

One of the main sources of capital for real estate firms is mortgage finance which is dispensed by commercial banks and mortgage lending institutions (Odhiambo, 2015). Real estate firms borrow from the mortgage market which is characterized

by asymmetric information, unfair pricing and externalities (Mati & Moronge, 2014). Therefore, it is hoped that by having favorable government regulations the relationship between residential mortgage financing practices and performance of real estate firms may be enhanced.

Several studies have been done in this thematic area. For example, Wanyonyi and Nasieku (2016) carried out a study on the relationship between mortgage financing and real estate growth in Kenya while Kanjumba (2015) conducted a study on factors that influence funding of the supply side of housing in Kenya. Kalui and Kenyanya (2015) studied selected factors hindering access to mortgage finance in Kenya. Further studies were done by Mogaka *et al*. (2015) on the influence of macro-economic factors on mortgage market growth in Kenya, while Kipkirui and Rotich (2015) explored the factors that affect growth of housing units in Kenya. Based on these studies, it is clear that little attention has been paid to the effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya. It is against this background that this study filled in on this existing knowledge gap.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study was to establish the effect of government regulations on the relationship between residential mortgage financing practices and the performance of real estate firms in Kenya.

1.3.2 Specific Objectives

The study was guided by the following specific objectives

1 To explore the effect of borrower characteristics on the performance of real estate firms in Kenya.

2 To examine the effect of mortgage distribution channels on the performance of real estate firms in Kenya.

3 To establish the effect of mortgage marketing practices on the performance of real estate firms in Kenya.

4 To explore the effect of mortgage contract terms on the performance of real estate firms in Kenya.

5 To establish the effect of mortgage underwriting criteria on the performance of real estate firms in Kenya.

6 To determine the moderating effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya.

1.4 Research Hypotheses

The study tested the following hypotheses

H_{01}: There is no significant relationship between borrower characteristics and performance of real estate firms in Kenya.

H_{02}: There is no significant relationship between mortgage distribution channels and performance of real estate firms in Kenya.

H_{03}: There is no significant relationship between mortgage marketing practices and performance of real estate firms in Kenya.

H_{04}: There is no significant relationship between mortgage contract terms and performance of real estate firms in Kenya.

H_{05}: There is no significant relationship between mortgage underwriting criteria and performance of real estate firms in Kenya.

H_{06}: Government regulations do not moderate the relationship between residential mortgage financing practices and performance of real estate firms in Kenya.

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1.5 Justification of the Study

This study would benefit real estate firms by understanding the effect of government regulations on their performance which would enable them develop appropriate strategies for long term growth. The government would also benefit by getting insights on how to develop regulations that may support residential mortgage practices and boost the supply of housing which is a major challenge today. To the mortgage lending institutions, the study would provide a deeper insight on how vital the mortgage loans they provide to real estate firms and households determine affordability of housing in Kenya. This would enable them to provide innovative products for both prospective households and real estate firms that would go a long way towards narrowing the current housing gap. Finally the study would be significant to scholars and academicians who would get a platform for further research.

1.6 Scope of the Study

This study involved 69 real estate firms registered with Kenya Property Developers Association by 31st December, 2013. These firms contribute substantially to the Kenyan economy (KNBS, 2016). The study used mixed methods where both quantitative and qualitative techniques were employed. Again, to determine the moderating effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms, moderated multiple regression (MMR) model was used. The sub-variables of government regulations are the commonly studied ones (Kanjumba, 2015; Appiah, 2007; Kibati, 2015; Babatunge, 2016; Mati & Moroge, 2014). However, they have not been tested in this kind of relationship. The sub-variables of real estate performance were chosen because traditional accounting indicators are easy to use when measuring the performance (Odhiambo, 2015).

The study was done in Nairobi County since it's the head quarter for majority of the real estate firms. The period of study was 3 months in the year 2017.

1.7 Limitations of the Study

At the beginning, the study experienced slow response from the respondents who complained about the length of the questionnaire amidst their busy daily schedules and official engagements. This challenge was mitigated by constantly calling the respondents and going to their offices many times and extending period of data collection. This was a major source of non-response bias which occurs when some selected persons in the sample fail to respond to the survey early enough (Mugenda, 2008). However, a non-response bias test was done by comparing the means of the characteristics of early and late responses. The results of the student (*t*-test) revealed that there was no significant difference between early and late responses providing evidence of a representative and unbiased sample.

Lastly, because the questionnaire was the main data collection tool for predictor and dependent variables, common method variance could introduce a systematic error variance common to variables measured with the same method (Richardson, Simmering & Sturman, 2009). However, a common method variance test conducted resulted in a value that was within the acceptable thresholds, thus militating against the limitation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers theoretical and empirical literature that is relevant to the area of study. A conceptual framework is also developed. This is followed by critique of the existing literature; summary of the literature reviewed, and research gaps.

2.2 Theoretical Framework

A theory is a set of systematic interrelated concepts, definitions and propositions that are advanced to explain and predict phenomena (Cooper & Schindler, 2011). The theoretical framework is group of theories that serves as a basis for conducting research and it helps the researcher to see clearly the variables of the study as well as the general framework for data analysis and research design (Trochim, 2006).

2.2.1 Resource Based View (RBV)

The RBV theory was developed in 1959 by Edith Penrose who argued that the internal resources of a firm are its core strength for developing environmental opportunities. The internal resources refer to the owned assets of an organization that include management capabilities, knowledge, skills, and information abilities, which assist in neutralizing any internal and external threats to competition and resource management respectively (Hassan et al. 2014). Hasnelly and Sari (2012) further suggested that product quality, employees' skills, customer quality, and efficiency in production costs are part of the RBV assets of organizations. Naor, Jones, Bernades, and Goldstein (2014) defined internal resources as the internal culture, which an organization develops. The internal resources are not homogeneous for all organizations because of management and how their internal cultures grow (Chae, Yang, Olson, Sheusuch, 2014). This explains why differences exist in performance of organizations in the same industry.

The resource base view (RBV) postulates that the organizational success is greatly based on the organizational internal properties. Naor et al. (2014) holds the view that the theory provides for analysis and interpretation of internal resources in formulating strategy to achieve sustainable competitive advantages. According to RBV, not all the internal resources form a basis for competitive advantage but those which are valuable, rare, imperfectly imitable and imperfectly substitutable (Barney, 1991). Firms must also allocate these resources for strategic activities, deploy them effectively to obtain a sustainable competitive advantage and accomplish strategic (Chae et al. 2014).

Proponents of the resource-based view of the firm (Penrose, 1959; Wernerfelt, 1984; Amit and Shoemaker, 1993) argue that it is the extent and manipulation of an organization's resources, including workers, which give a firm its uniqueness and source of sustainable advantage. Workers may possess financial literacy skills and knowledge that could give economic value to firms. Competitive advantage is achieved if a firm can improve employee skills and knowledge more effectively than its rivals. Sustained competitive advantage originates from the acquisition and effective use of bundles of unique resources that rivals cannot imitate (Barney, 1991). The aim of a resource-based view is to improve resource capability by achieving strategic fit between resources and opportunities and obtaining added value from effective development of resources (Peteraf & Bergen, 2003). The value that an organization has regarding equipping workers with skills constitutes a vital non-imitable resource that could create a competitive edge for real estate firms.

However, despite the increased literature devoted to the application of RBV theory, scholars such as Lillis and Sweeney (2013) stated the limitation of RBV is

the reliance on the advance imaginative capabilities of managers. They further argued that the inability of the RBV to explain the strategy to transform resources to withstand competition is a drawback. Lastly, this theory neglects the external environment which could affect performance of organizations in a big way.

2.2.2 Porter's Five Forces Model

To understand mortgage finance from an industry-based view, Porter's model of competition was the most appropriate for this study. Porter analyzed five forces which are important in determining the effect of the industry structure on actors. The intense competitive forces in an industry determine the level of profitability. Intensive competition leads to lower profitability, while mild competitive forces lead to more profit (Porter, 2008). Providing a framework for expected competition in an industry implies that organizations should understand the level of profitability using competitive forces (Porter, 2008).

The Porter's five forces of competition provide a platform to study industry structure and he delineates the five forces as (a) threats of new entrants, (b) bargaining power of buyers, (c) bargaining power of suppliers, (d) threats of substitutes and (e) competitive rivalry. The threats of new entrants when high mean the new organization can compete with the existing organizations. Similarly, when the threats of new entrants are low, the new entrants have no ability to affect the profit of the current organizations. Existence of barriers limits new organizations from joining the industry but may increase the rivalry among existing organizations. Porter (2008) posited that existing organizations should strategize to deter the new organizations through price reduction when the threat of entrance is high. Alternatively, the existing organization (incumbent) may increase investments in the industry to retain the market share. The potentials of

the new entrants to the industry determine the threat levels and profitability of the existing organizations.

Bargaining power of buyers is another threat to the Porter's model of competition. Porter (2008) opined that buyers influence the profitability in an industry when the buyers possess high bargaining power. Such buyers are few and have the ability to purchase in large volumes. In instances where industry products have standards, the buyers', may want to force down prices by the threats of switching. Porter (2008) stated that organizations should work out strategies to reach consumers directly, which reduces the influences of buyers. Buyers in the industry influence the growth and profitability or otherwise of the organizations.

The bargaining power of suppliers is the opposite side of the bargaining power of buyers in the Porter's model of competition. When the suppliers are more powerful than the industry, the suppliers affect profit in the industry. Suppliers dictate the profitability in the industry when the suppliers have a monopoly of the products in the industry. Size and number of the suppliers determine their influences in the industry and the organizations. Industries with concentrated, organized and few suppliers are likely to have high bargaining power of suppliers. Suppliers in such industry determine prices of their raw materials without industrial and organizational consideration. Organizations in such industries may need to reduce the influence of the suppliers in order to be profitable by forming a cartel to agree on the prices of raw materials from their suppliers.

The threats of substitutes of the products in an industry determine the levels of profitability. Porter (2008) posited that when product substitutes perform similar functions the profit level drops in the industry. Industries that have close substitutes of their products or supplies may not be as profitable like the industry

without close or easy substitutes of their products or supplies. When the price of switching to close substitutes is low then the threats of substitutes are high, thereby affecting profitability of the organizations. Organization should develop strategies to monitor changes within and outside industries to become attractive alternatives (Porter, 2008).

Competitive rivalry covers areas like price, discounting, product innovation, and advertisements (Porter, 2008). Competitive rivalry drives the profitability of an industry and when the competition is intense, the profitability drops. On the other hand, the competition is positive when there is market segmentation by rivals within the same industry. Porter (2008) posited that market segmentation could increase profitability and drives expansion within the industry. Industry with high competitive rivalry influences the profitability of the industry. Likewise, when competition in prices in an industry is high among organizations with equal capacities and size, consumers will benefit but organizations will be less profitable.

This theory supports the mortgage distribution channel variable. The fact that various mortgage distribution channels exists channels is a clear indication that barriers to entry are low making it possible for other lenders to enter the market. This could be attributed to capital requirements, economies of scale and government policies that open doors for new entrants (Porter, 2008). In light of this, real estate firms should exploit the available channels for distributing mortgage finance by opting for channels that are competitive. Creating a mix of channels has become an important strategic variable in the competitive mortgage distribution landscape and real estate firms should take advantage of it.

2.2.4 Market Orientation Theory

This challenge of the need to anticipate the future in dealing with innovation is really encompassed in the market orientation theory. Kohli and Jaworski (1990) acknowledge that, intelligence generation involves anticipating customers' future needs, but do not develop this thought. Indeed in a later paper, Kohli and Jaworski (1996) argue that, innovation is an outcome of market orientation. The relationship between market orientation and innovation is not clear. On the one hand, there is an argument that a market-oriented focus could be detrimental to innovation, based on the idea that market orientation seduces the business to being narrowly interested in short-term customer needs (Hayes & Abernathy, 1980). On the other hand it is proposed that models of market orientation should focus more on innovation (Hurley & Hult, 1998). They suggest that, if market orientation requires the adoption of new behaviors, then innovation should be included in the existing models of market orientation.

Slater and Narver (1990) study on market orientation took the position that the existence competition creates value for customers which become sufficient to give a business a competitive edge in all circumstances. Later, Slater and Narver (1998) modified this view by adding that a market-oriented organization develops long-term thinking and tries to satisfy latent customer needs. This is done by tailoring their products and services to match the customer driven demands thus enabling an organization to gain a stronghold on its target market and strengthen its brand identity.

However, the mechanics of market sensing in this way still seem to be very vague and it is not clear how it fits into the original market orientation models. Slater and Narver (1998) admit that, the understanding of market orientation continues to evolve and much is still unknown. The risk of underestimating the customer

remains a big challenge especially in this technological era when online shopping by savvy customers is a reality implying that firms that have established an approach to market orientation but fail to update it as needed fail to run the risk of alienating their customers.

This theory is important in this study as it demonstrates that by critically analyzing customer product needs and servicing them profitably, firms are able to gain a competitive advantage in the market. This is derived through competition in the market which enable customers get value for their money. However, this theory fails to consider the dynamic nature of the market which demands creativity and innovation in production and marketing of goods that is enhanced by adopting modern technology.

2.2.5 Contract Theory

Contract theory was postulated by Kenneth Arrow in the 1960's. The theory analyzes how different parties make decisions to create a contract with particular terms where there is uncertainty. It draws upon principles of financial and economic behavior as borrowers and lenders have different incentives to perform or not perform certain actions. It also covers behavior of how individuals and businesses make contracts with asymmetric information.

The level of risk faced by those who opt for adjustable rate mortgages is higher in times of high interest rates and shrinking incomes. The borrowers who choose FRM loans are exposed to wealth risks, while borrowers with ARM loans are exposed to income risks. Therefore, the borrower has to make a more accurate assessment of the risk profile to prevent the moral hazard problem of default. The adverse selection problem portrays a principal who is not informed about

particular characteristics of the other party during the time the contract was constructed.

This theory is important in this study as it expounds on the concept of information asymmetry in the real estate market. However, the theory does not provide the mechanisms that should be put in place to amend the information asymmetry problem such as private mechanisms, warranties, brand names, mandated information provision, legal liability and regulation. Theories that would expound on appropriate mechanisms to manage this problem would encourage majority of real estate firms and their customers to invest heavily in a variety of mechanisms including quality measurement, third party certification, and signaling to limit the negative effects of such adverse selection.

One of the most prominent applications of this theory is its ability to find the optimal decision of the borrower. In this case therefore, this theory is applicable in this study since it creates the impression that some mortgage borrowers do not fully understand the terms and conditions of their mortgages due to information asymmetry making a large number of borrowers choose adjustable rate mortgages instead of the fixed rate mortgages.

2.2.6 Configuration Theory

The configuration school in the 1960s and 1970s came up with a perception that strategy formulation is a transformation process. This theory was put across by Chandler (1962), Mintzberg and Miller (late 1970s) and Miles and Snow (1978). The proponents of this theory argued that the performance of an organization depends on how its organizational design fit in external environment. The main assumption of this theory is that the best performance can be attained when organization structure fits external contingency factor. Only those firms that align their business operation

with the current environment attain maximum output. The general model in configuration theory assumes that for firms to be effective there must be a proper fit between structure, strategy and environmental context (Fincham & Rhodes, 2005).

Organizations face operational challenges when there is a lack of alignment between the organizations' internal resources and the external environments (Camison & Fores, 2015). Balancing the influence of the external environment on the profitability of organizations has become integral as the performance of most organizations highly depends on how well their overall objectives are aligned to the external environment (Akbar, Nemeth, & Niemeier, 2014). In most cases the external factors are difficult to control implying that strategic fit for real estate firms may only be achieved by matching their activities and resources with the environment in which they operate. Therefore, aligning the operations of real estate firms with the demands of the external business environment may enhance their competitiveness in the housing industry.

In the context of this study, configuration theory brings out the linkage between mortgage financing practices and government regulations as an aspect of external environmental which may influence performance of real estate firms in Kenya. However, some real estate firms in Kenya seem to operate without due consideration to the environmental factor (government regulations) that could affect their performance.

2.2.7 Regulation Theory

The theory of regulation is an economic theory that was originally developed by Arthur Cecil Pigou in 1932. The theory postulates that the need for regulation is called for by the public to correct inequitable market practices. Regulation is assumed to benefit the whole society instead of particular vested interests. The

regulatory authority is considered to represent the general interest of the society in which it operates instead of the private interests of the regulators (Goodwin, 2001). The case for economic regulation is based on the existence of significant market failure arising from economies of scale and scope in production. It also emanates from information imperfections in market transactions, existence of incomplete markets and externalities, and from resulting income and wealth distribution effects. It has been suggested that market imperfections may be more pronounced, and therefore the case for public regulation is stronger, in developing countries (Stiglitz, 1998).

In the context of making housing affordable, this theory adds value to the study because government regulations are necessary to correct the existing market imperfections and externalities emanating from income, wealth distribution effects and flow of information. However, some government regulations may fail to promote the desired positive development in the society. For example, government regulations on land use accounted for the slow growth in the real estate industry in Nigeria (Appiah, 2007). This theory fails to expound on the regulations that may affect development of real estate industry negatively.

2.3 Conceptual Framework

A conceptual framework is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation (Kombo & Tromp, 2009). The conceptual frame work helps the researcher to understand the phenomena under study and communicate it. When clearly articulated, it aids the researcher in making meaning of subsequent findings. It forms part of the agenda for negotiation to be scrutinized, tested, reviewed and reformed as a result of investigation and it explains the possible connections between the variables

(Mugenda & Mugenda, 2008). The proposed conceptual frame work for this study is intended to show the effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms. The variables in the conceptual framework were derived from the theories and the models discussed in the theoretical framework.

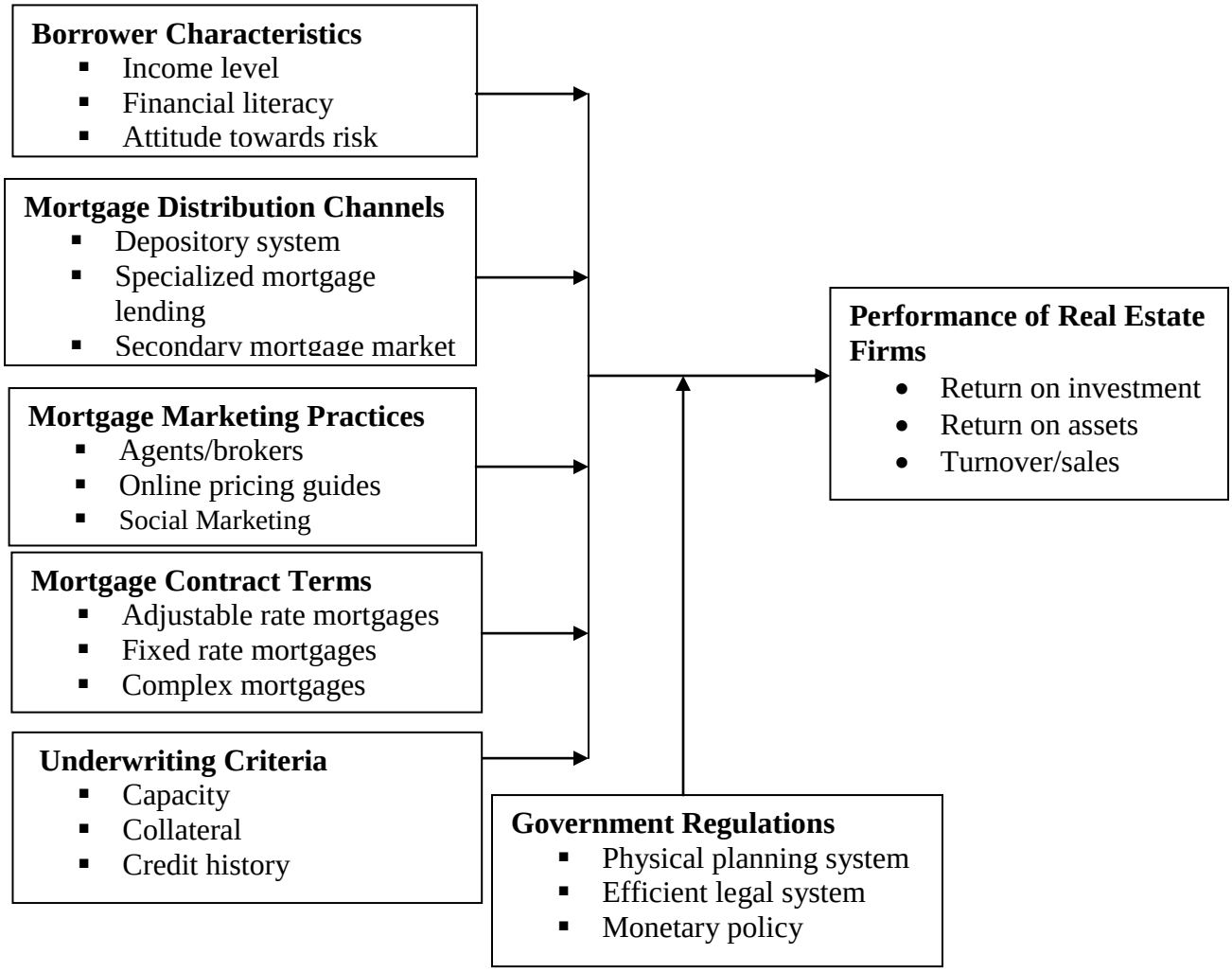

Figure 2.1 Conceptual Framework

2.3.1 Borrower Characteristics

Real estate firms require huge capital outlay to finance construction or purchase of houses. To raise the required finances, borrowing from commercial banks and mortgage lending institutions remain to be one of the main appropriate options (Mati & Moronge, 2014). Indeed, mortgages enable real estate firms secure properties that can be repaid in terms that are within the ability of the recipient of the loan to pay off in a timely manner. To obtain a mortgage loan real estate firms must possess certain characteristics or factors that are found to be important predictors of mortgage loan performance. This study considers borrower characteristics as capabilities within a real estate firm that could be utilized when seeking finances for housing investment. For example, real estate cash flow determines the ability of a firm to repay mortgage loan as demonstrated by Zhou, Yang and Zhang (2012) in their study on the Relationship between cash flow and financial performance of listed Real Estate Companies in China.

Other studies point out that if firms were to invest on financial literacy amongst its employees, their general performance could improve since success, sustainability, and profitability of a firm goes beyond acquisition of resources. For example, Hassan, Yaacob and Abdullatiff (2014) noted that firms that fail to utilize their resources for improving financial literacy among its employees could be lacking strategic leadership which is a key driver towards profitability. The attitude towards risk is also a major determinant of mortgage choice among real estate firms (Campbell & Cocco, 2015). Khumpaisal et al. (2012) argued that attitude towards risk is simply the perception that an investor will not get the expected return while Wahyudi (2013) noted that risk is the impact of the external environment to the firm in the perspective of cash flow, value and profitability. Therefore, borrowers' characteristics are attributes that real estate firms should

have if they are to benefit from mortgage lending institutions. For instance, real estate firms which own assets and have good cash flow are likely to access mortgages easily since it reduces the risk of the mortgage lending institution losing its funds.

2.3.2 Mortgage Distribution Channels

Investing in real estate require a huge initial capital outlay which can only be obtained from a variety of sources because it is difficult to finance large scale investment solely from personal savings (Mwathi, 2016). This creates the need for other sources of finance such as depository system, securitization, commercial banks, secondary markets, insurance companies, mortgage institutions among others (Emoh et al., 2014). Kibati et al. (2015) argues that presence of a variety of mortgage distribution channels is indispensable for effectively addressing the quantitative and qualitative housing challenges in both the developed and developing countries. They further argued that there is no universal model of providing mortgage finance among different Nations because it depends on macro-economic conditions, government regulations, the size of the banking system, taxation, subsidy programs and the structure of the housing market. For example, in the United Kingdom depository system of mortgage distribution is widely used by real estate firms leading to a home ownership rate of 68 percent while Germany uses both depository and specialized lending which account for only 43 percent home ownership rate (Badev et al., 2014). The secondary mortgage market brings together the originators of mortgage loans with the ultimate investors by developing new instruments that can lower the risks of mortgage lending for originators and provide them with new funding outlets (Giller, 2015).

2.2.3 Mortgage Marketing Practices

In an efficient market buyers and sellers are simply price-takers, but in the real estate market, participants are able to influence the ultimate prices of housing through brokers/agents and social networks sites (Cheng, Lin, Liu & Seiler, 2015). Brastow, Springer and Waller (2012) study on compensation scheme on seller agent effort with regard to selling time, probability of sale, and selling price posited that agents/brokers contribute substantially to the real estate industry. To gain strategic advantage in the market, real estate firms provide online pricing guides to enable prospective home owners search for competitive deals (Richardson & Zumpano, 2012). In support, Kendall (2014) argued that real estate firms which make advertisements on social media are able to attract the attention of many prospective home owners which translate into future house sales and profitability.

2.3.4 Mortgage Contract Terms

One of the most crucial decisions that real estate firms can make when seeking mortgage finance is choosing the type of mortgage loan (Sven & Erik, 2015). From the broadest perspective, loans can be categorized into fixed-rate mortgages (FRMs) and adjustable-rate mortgages (ARMs), with the latter comprising of hybrid adjustable-rate- option and non-hybrid (Foa et al., 2015). ARM exposes the mortgage borrower to interest rate risk while FRM has known nominal payments over the whole loan repayment period. However, there is a consistent preference for ARMs as opposed to FRMs because majority of real estate firms expect the rate of interest to drop in the future which might reduce their loan repayment burden unlike FRM which is not possible (Furlong et al., 2014). Previous studies suggest that the type of mortgage loan chosen by real estate firms and other borrowers is mainly affected by loan terms, market

conditions and borrower characteristics. Loan terms comprise both price and non-price features. The main pricing components popularly considered in the literature are own initial interest rates on FRMs and ARMs.

Key non-price loan terms include loan-to-value (LTV) ratios, prepayment penalties, amortization period, and use of the loan (purchase vs. refinance). Market conditions considered in previous studies include estimates of interest rate term premiums, interest rate volatility, house price appreciation, volatility of house price appreciation, and depth of securitization markets. Terms of mortgage contract that the borrower opts for are key determinants to future loan repayment, amortization period, transaction cost and total cost of the mortgage. While the choice between fixed rate mortgages (FRM) and adjustable rate mortgages (ARM) has been most commonly investigated in the existing literature, Amromin (2011) introduced a new category of complex mortgages (CM) to denote the increasing array of mortgage products ranging between ARM and FRM products.

2.3.5 Underwriting Criteria

Real estate finance is the capital required for building houses or the resources needed to buy a house or the credit supplied by mortgage lending institutions against some collateral (Odhiambo, 2015). Unlike unsecured loans, real estate financing is a type of a secured loan whereby the mortgaged property acts as the collateral for the loan advanced by the lender (Kipkurui & Rotich, 2015). Real estate firms normally seek funding from mortgage lending institutions in order to finance their projects due to limitations of self-equity financing. However, for funds to be released the real estate firms must undergo thorough underwriting criteria must be undertaken to verify their ability to pay (capacity) and credit

history (Kalui & Kenyanya, 2015). Unless the real estate firms meet the threshold set by the lender, the mortgage loan may not be advanced due to moral and adverse hazards that may lead to delinquency, default or foreclosure of the mortgaged property (Campbell & Cocco, 2015). For example, the US subprime crisis in the year 2008 occurred due to lax lending standards that allowed borrowers with no capacity to access mortgage loans. The subsequent collapse of the housing market resulted into majority losses to both subprime borrowers who even lost their homes due to foreclosure and mortgage lenders (Waeyenberge, 2015).

2.3.6 Government Regulations

Literature emphasizes the importance of an enabling macroeconomic, legal and regulatory environment for the development of real estate. The case for economic regulation is based on the existence of significant market failure arising from economies of scale and scope in production. It also emanates from information imperfections in market transactions, existence of incomplete markets and externalities, and from resulting income and wealth distribution effects. Kelkar and Rao (2013) argues that government regulates all the business activities in a country by prescribing the rules and using its powers to induce equity and fairness in business operations while Warnock and Warnock (2008) alludes that government regulations affect the provision of housing finance across a sample of countries. Ijaiya et al. (2012) opines that funds channeled from major finance institutions for house construction is huge thus demanding an efficient physical planning system to reduce the risk involved during construction and purchase of land. They further argue that an efficient legal system safeguards registration of property rights and have a positive effect on residential real estate with varying

effects across countries. Tomlinson (2007) further corroborates that adverse macroeconomic, legal, institutional and regulatory environment have an effect on the provision of long-term finance for housing in Sub-Saharan Africa.

2.3.7 Performance of Real Estate Firms

The concept of firm performance is core to organizations because it determines how a firm achieves its overall objectives. There is no standard measure of firm performance but Okeyo, Gathungu and K'Obonyo (2014) presented an argument that performance refers to the value that customers and other stakeholders get from a firm. They implied that firm's superior performance requires an organization to achieve its set goals in an effective and efficient manner. In support, Kombo, K'Obonyo and Ogutu (2015) pointed out that efficiency and effectiveness have become the most popular measures of performance in many sectors. Kombo *et al.* (2015) suggested that performance should be broadly measured using both financial and non-financial parameters which comprise of reliability, product price and flexibility to determine performance. This assertion is consistent with Odhiambo (2015) who averred that firms adopting financial approach should consider using a combination of traditional accounting indicators such as earnings per share or return on assets, sales revenue or growth and profitability because maximizing shareholder's wealth is the main objective of an organization. This study measured performance of real estate from a financial perspective using indicators such as return on investments (ROI), return on assets (ROA) and turnover/sales.

2.3.8 Moderating Role of Government Regulations on the Relationship between Residential Mortgage Financing Practices and Performance of Real Estate Firms

Residential mortgage financing practices greatly affect performance of real estate firms (Wanyonyi & Nasieku, 2016), and government regulations might improve this relationship. Specifically, the impact of mortgage financing practices on performance of real estate depends on the regulatory environment created by the government. In the literature, there are only a few studies that paid attention to residential mortgage financing practices and government regulations. Most of the studies investigated the context of government agencies with public-private partnerships (Ibem, 2010); government regulations with real estate performance (Appiah, 2007); government financial incentives with firm performance (Guan & Yam, 2015); government policy with fixed rate mortgage (Lea & Sanders, 2011) and land use regulations with sustainable urban housing (Yakob, Yusof & Hamdan, 2012).

Mortgage distribution channels are conduits of supplying mortgage finance to real estate firms. Performance of real estate firms is hinged on distribution of mortgage finance which is greatly influenced by the prevailing monetary policy, taxation and subsidy programs of the government in the housing market (Kibati *et al*., 2014). The Government may also be involved in mortgage intermediation through specially regulated institutions that have been given special tax and regulatory concessions on condition that they restrict themselves to mortgage lending (Chiquier & Lea, 2009). Tomlison (2007) agree with this and state that distribution of mortgage finance depends on the macro-economic, legal, institutional and regulatory environment prevailing in the housing market. This illustrate that availability of mortgage finance depends on government regulations to a great extent.

With the context of mortgage contract terms with government regulations, Kanjumba (2015) demonstrated that there is a positive relationship between legal

and regulatory factors and funding of real estate firms. Kanjumba further pointed out that regulatory factors dictate the risk enforceability of mortgage contracts. Loans being a form of contract, the strength of efficient legal system would ensure minimal delinquency and default. Government regulations allow mortgage lending institutions enter into contractual agreement with real estate firms establishing the right to place a lien on collateral. These regulations also establish safety and soundness of mortgage lending standards by offering borrowers assurance of protection through transparency of mortgage contract terms (Lea & Sanders, 2011). In this context, it is assumed that government regulations may moderate the relationship between residential mortgage financing practices and performance of real estate firms.

2.4 Empirical Review

Empirical literature review is a directed search of published works, including periodicals and books, that discusses theory and presents empirical results that are relevant to the topic at hand (Zikmund et al., 2010). Zikmund et al. further points out that through the use of a systematic approach to previous scholarship, empirical review enables a researcher to place his or her research into an intellectual and historical context declaring why the research matters.

2.4.1 Borrower Characteristics and Performance of Real Estate Firms

In their study on Borrowers' characteristics, credit terms and loan repayment performance among clients of microfinance institutions (MFIs): Evidence from rural Uganda, used self administered questionnaire to collect data from 51 MFI managers. A cross sectional survey and correlation research design was used. The study established that accessibility to credit by the borrowers normally depend on the value that lenders attach to borrowers' characteristics prior to extending credit to borrowers. This indicates that firms that have the ability to repay loans are

likely to borrow mortgages for building residential houses thus improving their performance. On the other hand, households with ability to repay mortgage loans are able to buy the residential houses built by real estate firms leading to better performance. Lastly, the study revealed that credit terms significantly contribute to loan repayment performance of MFIs in Uganda than borrowers' characteristics.

A study by Dungey, Wells and Yanotti (2012) on the effect of borrower's characteristics on mortgage choices used uniquely detailed data on over 600,000 mortgage applications from major Australian banks for the period 2003-2009. The study used cross- sectional questionnaire survey. The major findings of the survey were that borrower's characteristics play a very significant role when choosing a mortgage product in the market. This imply that the Australian banks offered mortgages to real estate firms and households depending on the borrower's characteristics such as the income/future cash flow level which are the major determinants of the ability to pay. A low level of cash flow is a major contributor to default and delinquency in making the regular monthly repayments. Real estate firms with the ability to pay are likely to attract more mortgage loans which in turn lead to superior performance as revealed by the survey.

The study by Sorenson (2015) on Loan Characteristics, Borrower Traits, and Home Mortgage Foreclosures: The Case of Sioux Falls, South Dakota used a sample size of 205 to collect data from minority Hispanic borrowers during 2004 to 2007. By using the limited dependent variable models, the study found out that key loan characteristics such as loan-to-value ratio and inability to pay were major determinants of foreclosure. Borrower characteristics such as general credit worthiness, income stability and property value were found to be useful tools for determining ability to repay mortgage loans, and changes in borrower

characteristics mortgage loan compelled banks to change the terms of the mortgage to reduce default risk.

2.4.2 Mortgage Distribution Channels and Performance of Real Estate Firms

The study by Odi (2014) on the implications of Mortgage Financing on Housing for all in Nigeria by the Year 2020 used linear regression model to analyze quantitative data that was collected from Supply of Housing and Housing Activities (SH), Mortgage Credit (MC), Commercial Bank Credit (CBC) and Private Sector Investment in Nigeria (PSI). It was revealed that mortgage credit, commercial bank credit and private sector investment has a significant and positive effect on financing housing in the country, and that mortgage financing has significant positive effect on supply of housing for all in Nigeria by year 2020. The implication of this is that mortgage financing has not played the critical role necessary for the successful implementation of the policy of mass housing for Nigerians.

In their study on role of mortgage distribution channels on housing affordability among the low income earners in Kenya Kibati *et al.* (2014) used analytical research design with a sample size of 249 respondents drawn from Nairobi. The study revealed that mortgage distribution channels influence affordability of housing by low income earners in Kenya, and increased level of competition among the mortgage lending channels would make it possible to lower the cost of mortgages. This in turn lowers the cost of housing.

The study by Mwathi (2016) on the effect of financing sources on real estate development in Kenya employed descriptive survey design in his study. The target population comprised 69 real estate firms registered with Kenya Property Developers Association (KPDA). The findings indicated that there is a significant positive relationship between mortgage financing and real estate development.

Additionally, mortgage financing emerged to be the most used source of financing real estate, with equity and venture capital being the least source of financing used. The study found out that venture capital from year 2009 to 2011 decreased gradually which may be as a result of investment firm owners who do not want to relinquish control over their business in exchange of money for units development. Equity and venture capital financing could be a good source of financing when combined with other sources of financing.

The study by Wanyonyi and Nasieku (2016) on the relationship between mortgage financing and real estate growth in Kenya used panel data regression model to analyze data collected from the year 2005-2014. The sample size comprised 20 real estate firms registered with Association of Real Estate Agents (AREA) in Nairobi. The study found out that growth in real estate industry depend on other factors beyond mortgage interest rates, and the rate of mortgage default is negatively related to the level of real estate growth over the 10 year period of the study.

2.4.3 Mortgage Marketing Practices and Performance of Real Estate Firms

A study by Kendall (2014) on the impact of social media on real estate marketing used e-mail to collect data from the respondents where only 20 percent of the questionnaires administered were returned. The study found out that social media platform is dominated by people below the age of 35 years with majority of them being college students and others are in early years of their career. The study concluded that real estate marketers must be strategic when using social media marketing in order to attract the right target group.

A study by Chukwuemeka (2016) on Marketing Strategies and Performance of Indigenous Construction Firms (ICFs) in Nigeria purposively issued

questionnaires to 87 chief executive officers (CEOs) and managers of ICFs in the 6 states of Nigeria. The questionnaires were distributed in the state capitals targeting firms with on-going construction projects in the year 2015. It was revealed that construction firms lag behind in terms of adopting appropriate marketing strategies, and that they have low regard for marketing their products compared to manufacturing and product-based industries. Additionally, a significant difference existed in the levels of adopting marketing strategies among the low, average and high performing firms.

In their study on Examination of Estate Marketing Practices in Ikeja, Lagos, Nigeria Oyedeji and Akindele (2017) examined estate marketing practice among estate surveyors and valuers in Ikeja, Lagos Nigeria. The sample size for the study was the 64 registered Estate Surveying and Valuation firms in the study location. The data collected was analyzed using descriptive statistics and 5-point Likert ordinal scale. Findings from the study established that the use of brochure or bulletin is the most common real estate marketing method in the study area. It was revealed from the survey that the use of press is the most cost effective method of estate marketing in the study area. Lastly, the study revealed that marketing practices and performance of real estate firms have a positive relationship that is embedded on appropriate customer driven marketing practices.

2.4.4 Mortgage Contract Terms and Performance of Real Estate Firms

In their study on the Myopic Choice between Fixed and Adjustable Rate Mortgages in Flanders (Belgium) Sven and Erik (2015) collected data from the Professional Association of Credit Providers during Flemish housing survey of (2005-2013). Logit regression model was used to analyze longitudinal data drawn from the National Register, which resulted in a sample of 5,216 and 10,013 valid

interviews for respectively the 2005 and 2013 survey. The results indicate that households base their decision on initial mortgage payments, and that borrowers who expect to move in the near future are more likely to choose the FRM as all mortgages are portable by law.

In their study on Mortgage Contract Choice in Subprime Mortgage Markets Elliehausen and Hwang (2010) revealed that a non-linear relationship between choice of mortgage rate type and loan size. A fixed rate mortgage contract was found to be more popular when loan size, measured by LTV ratio, is small. As LTV ratio rises, borrowers become more likely to opt for adjustable rate mortgage contracts. However, when LTV gets to a certain level, borrowers begin to switch back to fixed rate contracts. For these high LTV loans, fixed rate mortgages dominate borrowers' choices. The study further established that when the size of the loan is small, the term structure effect dominates: rising LTV ratios making ARM loans less costly, and more attractive. However, when the loan size is big, the interest volatility effect dominates: rising LTV ratios making FRM loans less costly and preferable.

2.4.5 Underwriting Criteria and Performance of Real Estate Firms

A study by Basdeo (2017) on Ranking of Mortgage Underwriting Criteria for Multifamily Rental Property employed quantitative research method to identify the average ranking of borrower's profile and property appraisal based on the different types of lenders underwriting criteria. Simple random sampling was used to select 159 participants from a target population of 1025 designated Accredited Mortgage Professional (AMPs) that operates in Ontario, Canada. SurveyMonkey tools were used to develop and deliver surveys electronically to mortgage agents and brokers. The study found out that by understanding the ranking of mortgage

underwriting criteria, real estate firms could be able to determine the importance of each mortgage underwriting criterion.

In their study on selected factors hindering access to mortgage finance in Kenya, Kalui and Kenyanya (2015) used self-administered questionnaires to collect data from 44 credit analysts of commercial banks in Nairobi. The study results revealed that, one of the most important factor influencing access to mortgage finance was credit risk which make commercial banks be cautious when lending. With regard to the level of income level the study found borrowers with low income have higher chances of default. Again, the study noted that accessing a mortgage without a title deed as collateral is difficult hence the need for the government to facilitate an efficient property registration system.

A study by Quercia (2012) on underwriting standards for qualified residential mortgages (QRM) on access to credit using a large sample of single family mortgages originated between the year 2000 and 2008 revealed that restricting the origination of risky loan features and underwriting a loan with a consideration of a borrower's ability to pay has the largest benefit in terms of reducing default risk without limiting access to credit. The study also established that loans with low down payment requirements have been originated for many decades to low-income groups and low default cases have been reported. This indicates that executing proper underwriting practices during origination impacts positively on the reduction in foreclosures and hence increases the performance of real estate firms.

2.5 Critique of the Literature Reviewed

By conducting a correlational analysis, Ssekiziyivu *et al*. (2018) study could not establish cause and effect an indication that even when there is a strong correlation between variables, it is difficult to establish how one variable cause changes in the other variable (Mugenda, 2008). Again, correlational analysis can only be used when two variables are measurable on a scale which was not the case in this study. This could affect the generalizability of the study results. Lastly, the study mainly used a self-administered questionnaire to collect primary data where problems associated with inability to probe responses and differences in understanding and interpreting questions could arise. If data collection was repeated while including other instruments like personalized interviews, the findings could be more generalizable.

The study by Dungey et al. (2012) was based on a limited range of borrower characteristics without controlling other variables like credit rating or history, attitude towards risk gender, geographical location, age and security value. The study sample size was drawn from the major Australian banks only disregarding the medium and small banks which had the fastest mortgage uptake rate and therefore the findings of this study are not generalizable. The study was done using a cross-sectional questionnaire survey implying that causality between borrower characteristics and mortgage choices was not established.

The target population used by Sorenson (2015) study was drawn from minority Hispanic borrowers of Sioux Falls in South Dakota only implying that the results may not be generalized to borrowers from other races. Again, the sample size of 205 could be adequate, but in longitudinal studies like this one a large number of cooperating subjects are required for greater generalizability of the findings.

Additionally, in longitudinal studies data is collected at multiple points implying that the researcher cannot pre-determine what happens between these points. Apart from this, respondents would unknowingly change their qualitative responses over time to better suit what they see as the objective of the observer. Generally, the process involved in longitudinal studies could change how subjects respond to the questions making the study results subjective. Lastly, by using limited dependent variables (LDV), the counterproductive focus on structural parameters such as latent index coefficients or censored regression coefficients, could pose a major difficulty in interpreting causal effects. The study should convert structural parameters into causal effects if they are to be used in determining whether loan characteristics and borrower traits determine home mortgage foreclosures.

The study by Odi (2014) used linear regression model to analyze quantitative data collected. By its nature, linear regression only looks at linear relationships between dependent and independent variables. That is, it assumes there is a straight-line relationship between them which is not always true thereby limiting the ability of the model to make good predictions. To avoid linearity problem, the study should apply a non-parametric regression method. Secondly, by using quantitative data, extensive statistical analyses become difficult to undertake which requires extra time investment and resources to refine the results. Again, improper representation of the target population could hinder the researcher from achieving the desired aims and objectives. Lastly, quantitative research fails to control the environment where the respondents provide answers to the questions in the survey yet responses often depend on particular time which again is dependent on the conditions occurring during that particular time frame (Baxter 2008).

One of the main limitations of the analytical research design used by Kibati *et al*. (2014) study is that the design is costly and time consuming and only analyzes those factors measured at the beginning of the study implying that manipulation of variables is limited yet critical towards drawing proper and reasonable conclusions. Secondly, the sample size of 249 was adequate but in analytical research design a larger sample size could be more ideal for the findings to be generalized. Lastly, the study was carried out in Nairobi, Kenya. This in itself limit generalizability of the study results to other parts of the Country.

Like all other descriptive survey designs, Mwathi (2016) study could have suffered from the fact that participants or subjects may not be truthful or may not behave naturally when they know they are being observed. Again, the researcher may also make subjective choice about which information to record and emphasize in the findings thus presenting possibility for error. Such results are not repeatable and typically the study cannot be replicated (Cresswell, 2013). Although the study concluded that there is a positive relationship between mortgage financing and real estate development, a descriptive study can only describe a set of observations or the data collected implying that it cannot draw conclusions from the data about which direction the relationship goes. Lastly, the target population of the study comprised 69 real estate firms which are registered members of KPDA implying that non-members were excluded. By including non-members of KPDA, the results may be worth generalizing to the real estate industry as a whole.

The study by Wanyonyi and Nasieku (2016) used panel data regression model. The study results could have exhibited bias due to sample selection problems arising from gradual erosion of responses by subjects (panel attrition). This is because in panel studies the same subjects are followed during the entire study

period and chances of non-response increase over time. While this non-response can also occur in cross-section data sets, it is more serious with panels because subsequent waves of the panel are still subject to non-response. Additionally, the study was drawn from members of AREA which limit generalization of findings as non members were excluded. If the study was repeated with a larger sample drawn from a mix of both members and non-members of AREA, the findings would be worth generalizing. The sample size of 20 real estate firms was too small for the study results to be generalized. The study should instead have involved a larger sample for the findings to be replicated. Lastly, the study was conducted in Nairobi County implying that the results could not be generalized.

The study by Kendall (2014) on the impact of social media on real estate marketing used an on-line tool for data collection. Using on-line questionnaire to collect data may present the element of bias emanating from the fact that some respondents may not have access to the internet while others may not have valid e-mail addresses, thus affecting generalizability of the results. Still, some participants may not want to complete online survey because of online security or privacy concerns. Lastly, the study found out that social media platform is dominated by people below the age of 35 years who are not necessarily the target group for real estate marketers, and that the information posted by real estate agents on social media does not attract the interest of younger users as majority of them are college students and others are in early years of their career. The study should have opted for a sample that is more evenly distributed for the findings of the study to be generalized.

The study by Chukwuemeka (2016) used purposive sampling to distribute 87 questionnaires to CEOs and managers of real estate firms in the 6 States of the South-South geopolitical zone of Nigeria. This study could have been

characterized by potential source of bias emanating from the nature of work of the respondents. The study primarily polled CEOs and managers and there may be a chance the results could have partially influenced by non-response bias arising from the busy schedule of top management that could delay filling in the questionnaires on time. Thus, the targeted sample should have exemplified a reasonable mix of real estate agents and sales team who could have more time to fill the questionnaire in order to realize greater generalizability of the results. Again, if the questionnaires were distributed using random sampling, all respondents in the target population would get an equal chance of participating in the study making the findings more generalizable. The study was done in only 6 States out of the 36 States of Nigeria. This in itself limits generalizability of the results to other States. The study also assumed that marketing strategies are the only predictors of firm performance. In practice, there could be non-marketing strategy factors that could have a significant influence firm performance.

By using a sample size of only 64 registered Estate Surveying and Valuation firms, Oyedeji (2017) study findings could not be generalized since it was too small. Again the study focused on registered Estate Surveying and Valuation firms in Ikeja, Lagos Nigeria. This in itself limits the generalization of the results to other countries. Lastly, by analyzing data using descriptive statistics, variables could not be manipulated implying that results of the study cannot be replicated since they are open to interpretation (Kothari, 2009).

The study by Sven and Erik (2015) was based on the Flemish Hosing Survey of (2005-2013) that was conducted to assess the needs and preferences for housing in Flanders. (Flanders is the Dutch-speaking northern part of Belgium). This in itself limits the generalization of the study findings to other parts of Belgium.

Time is definitely a huge limitation to any longitudinal study, as it typically takes a substantial amount of time to collect all the data that is required. Also, it takes equally long periods to gather results before the patterns can even start to be made. Their study could have suffered from panel attrition which arises when researchers are only relying upon the same group of subjects for a research that takes place at certain points in time in years. This create the possibility that some of the subjects would no longer be able to participate because of various reasons, such as changes in contact details, refusal, incapacity and even death, which cuts down the usable data to be drawn to formulate the conclusion.

Lastly, the study used Logit regression model which attempts to predict outcomes based on a set of independent variables making it vulnerable to overconfidence. That is, the model can appear to have more predictive power than it actually do as a result of sampling bias. This would limit the generalization of the study results. Again, logit regression model require that each data point be independent of all other data points. If observations are related to one another, then the model would tend to overweight the significance of those observations. This is a major disadvantage because a lot of scientific research relies on research techniques involving multiple observations of the same units of analysis.

The study by Basdeo (2017) could have experienced difficulty in data analysis which is the case in most quantitative studies. Again, the data collected may not be robust enough to explain complex issues such as the impact of lender type on the average rankings of mortgage underwriting outcome measures. To select participants of the study, the simple random sampling approach used could not ensure information of the target population was current and easily accessible (Singh & Solanki, 2013). Additionally, simple random sampling could be time consuming and expensive if more sampling is needed to ensure that adequate

proportion of the sample population participates in the study (McLeod, 2014). Still, use of SurveyMonkey which is an online survey development and delivery Website may be inappropriate to participants who may not be technologically advanced. Computer glitches or compatibility issues may also hinder survey delivery or completion on time. Lastly, some participants may fear that completing online survey would expose their computer to virus.

The study by Kalui and Kenyanya (2015) may be characterized by a potential source of bias resulting from the composition of the respondents. The primary data was collected from 44 credit analysts only and there may be a chance the results could have been partially influenced by their inherently technical perspective. Thus, the units of analysis should have exemplified a reasonable mix of mortgage finance professionals such as strategic finance managers and senior loan officers including top management in order to realize greater generalizability of the study results. Additionally, the sample size of 44 respondents was too small for the findings to be generalized. The study was done in Nairobi County. This in itself limits the generalization of the study results to other counties.

The study by Quercia (2012) failed to consider other factors that affect default risk such as market conditions, mortgage contract terms and government regulations. Choice of single family mortgages may not be representative in the real estate industry.

2.6 Research Gaps

Several studies have been done in the area of mortgage finance. For example, Mwathi (2016) study on effect of financing sources on real estate development in

Kenya; Kalui and Kenyanya (2015) studied selected factors hindering access to mortgage finance in Kenya; Kibati *et al.* (2014) paid attention to the influence of mortgage distribution channels on housing affordability among low income earners in Kenya while Wanyonyi and Nasieku (2016) researched on the relationship between mortgage financing and real estate growth in Kenya. However, none of these studies reviewed have so far tested the effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms.

Moreover, the few studies that have been done on the area of mortgage financing mostly in Asia, Europe, United States of America and some African countries fail to relate mortgage financing on performance of real estate firms. Sven and Erik (2015) studied the Myopic Choice between Fixed and Adjustable Rate Mortgages in Flanders (Belgium); Sorenson (2015) studied Loan Characteristics, Borrower Traits, and Home Mortgage Foreclosures: The Case of Sioux Falls, South Dakota; Dungey, Wells & Yanotti (2012) focused on borrower's characteristics on mortgage choices from major Australian banks for the period 2003-2009.

Others are Oyedeji and Akindele (2017) who explored examination of estate marketing practices in Ikeja, Lagos, Nigeria; Chukwuemeka (2016) studied Marketing Strategies and Performance of Indigenous Construction Firms in Nigeria; Odi (2014) studied the implications of Mortgage Financing on Housing for all in Nigeria by the Year 2020 while Ssekiziyivu, Bananuka, Nabeta & Tumwebaze (2018) researched on Borrowers' characteristics, credit terms and loan repayment performance among clients of microfinance institutions (MFIs) in Uganda.

From the literature reviewed, it is evident that research in the area of residential mortgage financing practices has been done but not comprehensively. All the

relevant literature reviewed indicates that previous studies only concentrated on a few variables of residential mortgage financing while this study covers extra important variables that were not paid attention to by previous studies such borrowers characteristics, underwriting criteria and mortgage contract terms. This makes the study more comprehensive. Again, from the literature reviewed it has been found that scanty studies specific to Kenya on the relationship between residential mortgage financing practices and performance of real estate firms with government regulations moderating the relationship exist. This study therefore fills pertinent gaps in literature by linking residential mortgage financing practices and performance of real estate firms with government regulations being the moderating variable.

Table 2.1: Empirical Evidence and Research Gaps Matrix

Study	Content & Focus	Major Findings	Research Gaps	Focus of this study
Ssekiziyivu, Bananuka, Nabeta & Tumwebaze (2018)	Uganda Focused on Borrowers' characteristics, credit terms and loan repayment performance among clients of microfinance institutions (MFIs)	Accessibility to credit depends on borrowers' characteristics. Credit terms contribute more to loan repayment than borrowers' characteristics.	Study focused on individuals not real estate firms. Study ignored cash flow, financial literacy of employees and attitude towards risk of the borrower	Study dealt with residential real estate firms and considered cash flow, financial literacy of employees and attitude towards risk as sub-variables for borrower's characteristics
Dungey, Wells & Yanotti (2012)	Australia Focused on borrower's	Borrower's characteristics determine choice	Only concentrated on mortgage applications	Paid attention to all commercial banks and primary

	characteristics on mortgage choices from major Australian banks for the period 2003-2009.	mortgage product in the market. A low level of cash flow leads to default due to inability to make regular payments.	done in big banks Failed to consider other mortgage lenders beside the commercial banks	mortgage lending institutions in Kenya.
Sorenson (2015)	The Case of Sioux Falls, South Dakota. Focused on Loan Characteristics, Borrower Traits, and Home Mortgage Foreclosures	Loan-to-value ratio and inability to pay were main causes of foreclosure. General credit worthiness, income stability and property value determine ability to repay mortgages.	Only considered effect of borrower characteristics on foreclosure and default. It was a longitudinal study where respondents could unknowingly be subjective to suit the objective of the observer	Focused on effect of borrower characteristics on performance of real estate firms. The study used mixed method guided by cross-sectional survey where responses were captured at one point in time thus reducing subjectivity

Kibati *et al.* (2014)	Kenya, Nairobi County Focused on mortgage distribution channels on housing affordability among the low income earners in Kenya	Mortgage distribution channels determine affordability of housing by low income earners in Kenya. High level of competition among the mortgage lending channels lower cost of mortgages.	Dealt with low income earners only. Study used commercial banks, microfinance institutions, housing co-operatives and National housing corporation as the only mortgage distribution channels	Focused on real estate firms as the main suppliers of housing to all households. Dealt with depository system, specialized mortgage lending and secondary markets which represents broader diversity in mortgage lending.
Mwathi (2016)	Kenya Focused on financing sources of real estate development in Kenya	Mortgage financing determine real estate development. Savings make little contribution to real estate finance development.	Study did not specify the type of real estate whether residential or commercial. Role of monetary policy in creating a conducive lending environment was not investigated.	Study focused on residential houses. Paid attention to the role of monetary policy in creating an affordable mortgage lending environment
Wanyonyi & Nasieku (2016)	Kenya, Nairobi Focused on	The cost of finance, interest rates and mortgage	The study did not have a moderating variable	Used government regulations as a moderator on the relationship

	mortgage financing and real estate growth in Kenya	default risk were the major obstacles to real estate development	Sample size of only 20 firms limits generalizatio n of results.	between mortgage financing and performance of real estate firms. The sample size was 69 real estate firms an indication that the findings could be more generalizable.
Kendall (2014)	Lynchburg, Virginia, united states. Focused on impact of social media on real estate marketing	People below the age of 35 years dominate social media platform yet their capacity to buy/build houses is low.	Study polled college students and people in their early careers. The study should have used a more evenly distributed sample	Majority of the study respondents sampled were real estate managers with working experience of more than 10 years.
Chukwuemek a (2016)	Six States in Nigeria Focused on effect of Marketing Strategies on Performance of Indigenous Construction Firms (ICFs)	Construction firms lag behind in adopting marketing strategies. Have low regard for marketing their products.	Study did not investigate the effect of mode technology in marketing houses. Again, it did not specify the nature of construction done by the indigenous firms	Study ascertained that use of online pricing guides and social media are customer driven marketing methods that would boost real estate performance. This study concentrated on those firms that construct

				residential housing units.
Oyedeji & Akindele (2017)	Ikeja, Lagos, Nigeria. Focused on Examination of Estate Marketing Practices.	Use of brochure or bulletin is the most common real estate marketing method. Use of press is the most cost effective method of estate marketing.	The study used non-personal marketing methods only and failed to consider personal marketing methods such as brokers and social marketing	Study focused on both personal and non-personal marketing methods which include online pricing guides, brokers/agents and social marketing/referrals
Sven & Erik (2015)	Flanders (Belgium) Focused on Myopic Choice between Fixed and Adjustable Rate Mortgages	Household's decision depends on initial mortgage payments. Borrowers who expect to move in the near future are more likely to choose the FRM as all mortgages are portable by law.	Concentrated on households that buy houses for consumption purposes only	Focused on real estate firms that build houses for sale to the households and other investors in the secondary market
Elliehausen	Washington	A non-linear	Only	Focused mainly

& Hwang (2010)	DC, USA. Focused on Mortgage Contract Choice in Subprime Mortgage Markets	relationship exist between choice of mortgage rate type and loan size. FRM dominate borrowers' choices when LTV ratio is high	considered ARM and FRM	on complex mortgages that denote the increasing array between ARM and FRM
Basdeo (2017)	Ontario, Canada Focused on Ranking of Mortgage Underwriting Criteria for Multifamily Rental Property	Ranking of mortgage underwriting criteria enable real estate firms to determine the importance of each mortgage underwriting criterion.	Only considered ranking of underwriting criteria	Focused on capacity, collateral and credit history to determine effect of underwriting criteria on real estate firms performance in general.
Quercia (2012)	Carolina, USA Focused on underwriting standards for qualified residential mortgages (QRM) on access to credit.	Strict loan underwriting practices during origination reduces default risk. Loans with low down payment requirements have low	Didn't pay attention to other factors that affect default risk such as monetary policy, mortgage contract terms and government regulations.	Study ascertained that favorable monetary policy and contract terms determine performance of real estate firms since default rates reduce. Study focused on all types of residential houses

	default risk	that are built or sold in Kenya.

Source: Literature reviewed by researcher, 2018

2.7 Summary

This chapter has provided extensive coverage of the theories, schematic presentation of the variables, empirical review and a critique of relevant literature. The theoretical framework has discussed the theories underpinning the phenomenon under study. The effect of government regulations on the relationship residential mortgage financing practices and performance of real estate firms was introduced. The next chapter (3) discusses the research methodology used in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study used mixed methods research guided by cross-sectional survey design. Under mixed methods research, qualitative data analysis is carried out separately followed by quantitative data analysis. Mixed method was used due to its ability to blend elements of both qualitative and quantitative research approaches (Johnson, Onwuegbuzie & Turner, 2007). It also enables the researcher to leverage the weaknesses of one approach with the strengths of the other to obtain best results (Creswell & Clark, 2011). Bryman and Bell (2011) also posited that mixed method gives the researcher freedom to make use of both descriptive and inferential techniques while analyzing statistical data. Cross-sectional survey design, on the other hand, assists in hypothesis formulation and testing the analysis of the relationship between study variables (Kothari, 2004). Therefore, this design was found appropriate for this study which extensively tested the associations among the variables. Mati and Moronge (2014) study on effect of economic factors on performance of real estate in Kenya used cross-sectional survey design.

3.1.1 Research Philosophy

The philosophical standpoint of the researcher brings great influence on the methodology used. Methodology should reflect or be guided by research paradigms, which are also referred to as philosophies (Saunders, Lewis & Thornhill, 2007). The research paradigms aid a researcher's thinking and world view that helps in forming the basis for research design. Bryman (2012) posited that in order to choose a research paradigm, the researcher should be guided by

the ontological, axiological, epistemological and methodological orientations. This study was guided by an epistemological research philosophy. Saunders *et al.* (2009) argued that there are three epistemological positions: realism, interpretivism and positivism. This study adopted a positivist research paradigm which is characterized by a belief in theory before research and statistical justification of conclusions from empirically testable hypothesis is done (Cooper & Schindler, 2011). Hypotheses and theories were tested in this study making positivism research paradigm the most appropriate.

3.2 Target Population

Target population refers to the subjects or elements which will provide the relevant information for the study (Sekaran, 2008). Kombo and Tromp (2006) posit that population is a well-defined set of people, services, elements, events, group of things or households that are being investigated to generalize the results or findings. Zikmund *et al.* (2010) and Kothari (2004), defines target population as items in any field of inquiry whereas Lavrakas (2008) argues that it is any finite or infinite collection of individual elements. It is also described as a universal set of study of all members of real or hypothetical set of people, events or objects to which an investigator wishes to generalize the results (Borg & Crall, 2009). The target population for the study comprised 69 real estate firms registered with Kenya Property Developers Association (KPDA) in Kenya. The fact that KPDA works in partnership with the government and the public to ensure that real estate development is done in an efficient, organized, economical and ethical manner made it the most appropriate population for the study (Mwathi, 2016).

3.3 Sampling Frame

The sampling frame for this study comprised of all the real estate firms registered with Kenya Property Developers Association (KPDA) as at 31st December, 2013. KPDA is representative body of the residential, commercial and industrial property development sector that proactively works in partnership with the government and the public to ensure that property development is done in an efficient, organized, economical and ethical manner. Lavrakas (2008) defines a sampling frame as a list of the target population from which the sample is selected and that for descriptive survey designs a sampling frame usually consists of a finite population. Kothari (2004) define the term sampling frame as a list that contains the names of all the elements in a universe.

3.4 Sample and Sampling Technique

This study employed census in the selection of the sample since target population was less than 200 (Israel, 2012). Census is also appropriate since it's free from sampling error. Lavrakas (2008) describes a sample in a survey research context as a subset of subjects drawn from a larger population while Mugenda (2010) describes it as a part of the total population. Kothari (2008) further describes a sample as a collection of units chosen from the universe to represent it. Therefore, a sample is a representative of the population and suitable for research in terms of cost, convenience and time.

Mwathi (2016) used census survey in his study on the effect of financing sources on real estate development in Kenya. Real estate firms form the target population. The units of analysis will comprise 69 real estate managers and 69 finance managers of the real estate firms registered with the KPDA (see appendix iv). The concentration of this study is the management cadre since it plays a crucial role in making strategic decisions (Hutzschenreuter, Kleindienst, & Greger, 2012).

The assumption is that each real estate firm registered with KPDA has one real estate manager and a finance manager making a total of 138 respondents.

Therefore, the summary of respondents is indicated in Table 3.1.

Table 3.1 Summary of Respondents

Unit of Analysis	Real Estate Firms	Percentage (%)
Real Estate managers	69	50
Finance managers	69	50
Total	**138**	**100**

3.5 Data Collection Instruments

This study used both primary and secondary data. Data collection instruments are the means by which primary data is collected from the respondents in social research (Kothari, 2009). There are various methods of data collection that are used which vary in terms of money costs, time and other resources at the disposal of the researcher (Orodho, 2008). These include questionnaires, mailed questionnaires, focus groups, observations, personal interviews and telephone interviews. To obtain comprehensive information from the respondents, the study used a self-administered semi-structured questionnaire due to ease of administration and privacy (Sekaran & Bougie, 2014). Kalui and Kenyanya (2015) used self-administered semi-structured questionnaires in their study on Selected Factors Hindering access to Mortgage Finance in Kenya.

The items that were used in the questionnaire comprised both close and open-ended questions. Bryman (2012) argues that the number of closed-ended questions in most surveys exceed the number of open-ended questions. Cooper and Schindler (2011) explain that the questions in a study are directly related to

the research questions. The questionnaire was sub-divided into two sections. Section A had general demographic information whereas sections B addressed the research objectives. The questions were extracted from the constructs of the dependent, independent and moderating variables under study.

Secondary data was also collected in this study. Secondary data refers to data that is collected and analyzed by somebody else that can be used in another study (Cooper & Schindler, 2011). Secondary data was collected from published sources such as Central Bank of Kenya Survey Annex data (2013), Hass Consult and the Mortgage Company reports of (2015) and Kenya National Bureau of Statistics (2016) among others. Wanyonyi and Nasieku (2016) collected secondary data in their study on the relationship between mortgage financing and real estate growth in Kenya.

3.6 Data Collection Procedure

Data collection is gathering of information to serve or prove some facts (Kombo & Tromp, 2009). Primary data was collected using semi-structured questionnaire which comprised closed-ended questions and few open-ended questions to encourage higher response rate. Open-ended questions gave the respondents a chance to express their own personal opinions beyond the researcher's span of knowledge. These questions also helped in enriching the qualitative methodology effectively and further provided anonymity as most respondents wanted their privacy upheld. Prior to embarking on the field study, three trained research assistants were trained and recruited to carry out quality data collection. Since the primary data were collected from top level managers booking appointments was done and questionnaires administered at agreed times. This approach helped in making clarifications on any item that respondents required explanation. Secondary data was collected from published sources such as library, internet and research done by other scholars. Wanyonyi and Nasieku (2016)

used a self-administered, semi-structured questionnaire in their study on the relationship between mortgage financing and real estate growth in Kenya.

3.7 Pilot Test

Pilot study is carried out to determine the reliability and validity of data collection instruments, sample recruitment strategies and other aspects of the study to be used when gathering data for the study (Zikmund *et al*., 2010). This may include discovering ways to increase participant interest, engaging them up to completion of the survey and discovering question content, wording and sequencing problems. It is conducted to detect the weaknesses in research design and instrumentation (Cooper & Schindler, 2011). It is a replica and rehearsal of the main survey carried out to test whether the instruments will obtain the required results (Kombo & Tromp, 2009; Dawson, 2002). Creswell (2012) posits that a pilot test is a small scale version done in preparation of the actual study that is used to test the validity and reliability of data collection tools. The procedures followed in a pilot test are congruent to those used during the actual data collection. The sample size should be small, about 1% to 10% of the target population (Mugenda, 2008). This study administered 14 questionnaires to respondents from real estate firms that are not registered with KPDA. This was done to help in testing the validity and reliability of data collection tools and exploring ways of improving the overall quality of survey data. Kibati *et al*. (2014) used a pilot test in their study on the role of mortgage distribution channels on housing affordability among low and income earners in Kenya.

3.7.1 Validity of Data Collection Instruments

Validity refers to the accuracy of the data collected and the extent to which the instruments used measure what they purport to measure (Sekaran & Bougie, 2014). There are many types of validity although construct, content and criterion-

related are the most commonly used in social sciences (Mugenda, 2008). Content validity is done by use of experts to make judgments on the process followed by giving suggestions on how to improve the data collection tool (Mertens, 2010). Criterion – related validity simply refers to the relationship between a tool or scale and some other criterion e.g one validates from a written driving test by proving that it accurately predict how competently one can actually drive a car (Mugenda, 2008). Construct validity refers to the manner in which a question is formulated to measure a particular concept or idea whose results can be generalized across persons, settings and times (Trochim, 2006; Abbott & McKinney, 2013). This study used construct validity where questionnaires were validated by discussing them with six executive real estate managers and seven finance managers of real estate firms that are not registered with KPDA. Their views were evaluated and incorporated to ensure that the constructs used in the study are valid. Kipkirui and Rotich (2015) used construct validity in their study on factors affecting growth of housing units in Kenya.

3.7.2 Reliability of Data Collection Instruments

Reliability is the degree in which a specific measuring instrument produces the same output or results every time it is used (Mugenda, 2008). A reliable instrument is consistent and exhibits stability of measurement over a variety of conditions where the same results are obtained (Abbott & McKinney, 2013). In behavioral research there are various tests used to measure internal reliability: test-retest reliability, alternative forms, split-halves, inter-rater reliability, and internal consistency (Drost, 2011). This study used internal consistency since it is more stable than other types (Cooper & Schindler, 2011). Mogaka *et al.* (2015) used internal consistency in their study on the influence of macro-economic factors on mortgage market growth in Kenya. The reliability of each of the multiple-item

constructs that form the questionnaire was tested by using the Cronbach alpha statistics. Cronbach alpha coefficients for this study ranged from 0.753 to 0.932, indicating that data collection instruments were reliable. As a rule of thumb, a reliability coefficient of 0.70 or higher is considered "acceptable" in social science research (Nunnelly, 1978).

3.8 Data Analysis and Presentation

The primary data collected by use of questionnaire and other instruments may not answer the research questions and hypotheses unless it is analyzed and processed in a coherent and organized manner for inferences and meaning to be derived from it (Zikmund *et al*., 2012). In this study, data analysis was conducted using a two-phase process consisting of confirmatory measurement model and confirmatory structural model. This is in line with the two-phase process suggested by Anderson and Gerbing (1988). A study by Rahman and Razak (2014) employed the two-phase process in their study on willingness to be a partner in *Musharakah Mutanaqisah* Home financing: Empirical investigation of psychological factors in Malaysia. Prior to Confirmatory factor analysis, the exploratory factor analysis (EFA) was performed to identify variables that cluster together. Confirmatory factor analysis (CFA) was performed to evaluate the measurement model applied in the study while Structural equation modeling (SEM) involves generation of path analysis and diagrams which show interrelationships among the study variables.

Analysis of moment structures (AMOS) was used in performing CFA, initial EFA and generating Fit models. The Fit models show the extent to which the theoretical models relate to the sample data and they also establish whether the overall model is acceptable, and if acceptable, researchers then establish whether

specific paths are significant (Moss, 2009). The study used absolute fit indices and incremental fit indices as they are the most commonly used in SEM (Hair *et al.,* 2010). Incremental fit indices measure the extent to which the estimated model fit to a baseline model assuming that all the observed variables are uncorrelated (Ping, 2004) while the absolute fit indices measure how well the researcher's theory is represented by the observed values of the sample data (Hair *et al*., 2010). Bryant and Kohn (2013) in their study on US Housing Bubble Debate Resolved; Amin, Rahman and Razak (2014) in their study on willingness to be a partner in *Musharakah Mutanaqisah* Home financing: Empirical investigation of psychological factors in Malaysia used AMOS for initial EFA, confirmatory factor analysis (CFA), generation of Fit models, structural equation modeling (SEM).

Earlier studies have employed AMOS for SEM and proven that SEM is appropriate in survey based research for example Bryant and Kohn (2010) used SEM to analyze the study objectives in their research entitled: Factors leading to the US housing bubble and found SEM to be superior to the traditional regression models due to its ability to separate measurement errors from specification errors, treating dependent and independent variables as having the potential to bear errors of measurement and ability to handle non-normality data (Golob, 2003). SEM was used for model analysis (Schumacker & Lomax, 1996), including testing for the hypothesized relationships in this study. The study used t-statistics to test whether the hypothesized models are significant at 95% significance level. Kelik, Yahya, Afiff and Rufaidah (2016) study on Core Competence on Real Estate Industry in Globalization Phenomenon: A Contemporary Approach used SEM to test the hypotheses.

Exploratory Factor Analysis (EFA) was used during the early stages of the analysis in order to identify the variables that cluster together (Tabachnick & Fidel, 2013). Tabachnick and Fidel further state that EFA is used to describe in simpler terms large set of variables when one has no *a priori* ideas about which variables will cluster together. Valentini, Ippoliti and Fontanella (2013) used EFA in their study on Modelling US Housing Prices by Spatial Dynamic Structural Equation Models. Prior to performing EFA, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was done to determine the number of factors that best represent the interrelations among the set of variables and Bartlett Test of Sphericity for assessing suitability of the respondent data for factor analysis (Brett, Ted & Andrys, 2010). Argyous (2005) suggest that KMO statistics range from 0 to 1. A value of zero shows that the sum of partial correlation is huge compared to sum of correlations reflecting diffusions in patterns of correlation meaning factor analysis is not appropriate (Costello & Osborne, 2005). A value close to 1 is appropriate for EFA since patterns of correlation are relatively compact (Cooper & Schindler, 2011). Bartlett Test of Sphericity with a p- value less than 0.05 indicates that the items used to measure the constructs are significant (Cooper & Schindler, 2011). Taib, Ramayah and Razak (2008) used KMO and Bartlett Test of Sphericity on their study on Factors Influencing Intention to use of Diminishing Partnership Home Financing in Middle East to assess the suitability of data for factor analysis. EFA key steps include computation of factor loading matrix, communalities and Principal Component Analysis (PCA).

Factor loading matrix shows the extent to which all the measured variables relate to each factor (Hair *et al*. 2010). Communalities values measure the variability of each observed variable which can be explained by the extracted factors (Field, 2009). A low value for communality (e.g less than 0.3) is undesirable indicating

that the variable does not fit well with the other variables in its component/factors (Pallant, 2010). Lastly, Principal Component Analysis (PCA) was employed to identify the number of underlying factors and the extent to which variables load on to each other (Abdi & Williams, 2010). Akinwunmwi (2009) in his study on factors affecting housing finance supply in Emerging Economies: A case of Nigeria conducted PCA where Eigen values were generated to determine the factor loadings for each component. Only factor loadings with greater Eigen values were considered significant (Hair *et al*., 2010).

Additionally, confirmatory factor analysis (CFA) was employed to test whether a relationship exists between the observed variables and their underlying latent constructs (Hair et al., 2010). In this study, CFA was part of SEM and consisted of measurement and structural models respectively (Byrne, 2010; Hair et al, 2010). CFA evaluates the measurement model on multiple criteria such as unidimensionality, convergent validity, scale reliability and discriminant validity (Garver & Mentzer, 1999). After the measurement model was validated the structural relationship among the latent variables was estimated. This structural relationship or path analysis shows causality and the magnitude of the unexplained variance (Ping, 2004). In their study on the influence factors of E-commerce application on the business model of Chinese real estate enterprises Wang and Hui (2013) used confirmatory factor analysis (CFA) to evaluate the measurement model on multiple criteria and AMOS as a statistical tool for analyzing data and performing SEM. Finally, in order to test the effect of the moderating role of government regulations, on the relationship between residential mortgage financing practices and performance of real estate firms, the study employed moderated multiple regression analysis. This is explained in details in subsections 3.8.2.

3.8.1 Statistical Assumptions

Violating statistical assumptions can invalidate statistical data results as majority of the statistical tests depend on various assumptions to draw conclusions about a sample (Pedace, 2013). When these assumptions are not met there may be either Type I or Type II error(s) which may invalidate the results of the analysis (Osborne & Waters, 2002). Some of the key assumptions that were tested for statistical analysis to be valid are multicollinearity, homogeneity of variances, and normality of observations, linearity, common method variance, non-response bias, and outliers.

Multicollinearity is a partial correlation between the explanatory variables or larger variances of the estimators (Martz, 2013). To test for multicollinearity Variance Inflation Factor (VIF) is used. If the VIF for one of the variables is greater than 5 there is a multicollinearity and in such a case one of these variables should be omitted from the regression model (Cohen, West & Aiken, 2003). Valentini *et al.* (2013) tested for multicollinearity in their study on Modelling US Housing Prices by Spatial Dynamic Structural Equation Models.

Homogeneity of variances assumes that the exogeneous variable exhibit equal variance across the range of predictor variables. Where the variance of the dependent variable varies across the data heteroscedasticity is the problem (Park, 2008). Moriya (2008) posit that a sequence of random variables is homogeneous if the random variables in the sequence have the same finite variance and further argues that serious violation of homogeneity of variance may lead to overestimation of fit indices. On the other hand, Field (2009) posited that residual terms at each level of the predictors should have the same variance. Many methods in regression analysis assume equal variance (Park, 2008). Therefore,

Levene test of homogeneity of the variance was used to test the equality of the variances (Tabachnick & Fidell, 2007). Taib *et al.* (2008) study on the Factors Influencing Intention to use Diminishing Partnership Home Financing in Middle East used Levene test of homogeneity of the variance.

Normality of observations is a major assumption in most statistical analysis (Moriya, 2008). Normality of observations is used to visualize the distribution of data or observations. Normally distributed variables should have a mean of zero (Field, 2009). This means that the differences between the model and the observed data should be zero or close zero (Field, 2009). Normality of observations of the dependent variable is often assumed without any empirical test or evidence but it is critical in many statistical methods. Normality of distribution can be tested graphically or numerically (Park, 2008). Numerical methods such as Skewness - Kurtosis test presents a summary which is interpreted based on the rule-of-thumb thresholds (Park, 2008). This study used Skewness-Kurtosis which has been used in similar studies such as Violeta (2012) on her study on the Analysis of Mortgage Market in Romania and its impact on Real Estate.

Linearity was tested in this study where the mean values of the observed variable for each increment of the independent variables are expected to lie on a straight line (Sekaran & Bougie, 2014). This leads to the assumption that the model being generated is a linear one otherwise a non-linear relationship would limit the generalization of the findings (Field, 2009). Akinwunmi (2009) used normal Q-Q plots to test for linearity in his study entitled: An Investigation into Factors Affecting Housing Finance Supply in Emerging Economies. A case of Nigeria.

An outlier is an extreme value that distorts the actual relationship between variables or aberrant scores that lie outside the normal range of scores expected for a particular variable (Abbott & McKinney, 2013). Tabachnick and Fidell (2013) argue that in multivariate data the outliers for ordinal variables are those units representing unusual combination of the ranks of the variables. To test for outliers in multivariate data the Mahalanobis distance D^2 measure will be employed with sample values yielding large values of Mahalanobis distance being identified as outliers (Webb & Cospey, 2011). R-GUI version 2.10.0 software was used to build box plots for univariate and multivariate testing of outliers in the endogeneous variable. In their study on Determinants and Consequences of Mortgage Default, Demyanyk, Koijen, Otto and Hemert (2011) tested for outliers.

Common Method Variance (CMV) is a systematic error variance common to variables measured with the same method (Richardson *et al.*, 2009). This error is attributable to the measurement method rather than to the constructs the measures represent (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). The method biases are the main source of measurement error which threatens the validity of the conclusions (Podsakoff, 2003). The systematic measurement error and the measurement error are a problem in statistical analysis although the former has a serious confounding influence on empirical findings which may be misleading (Richardson *et al*., 2009). The systematic measurement error is a method variance which emanates from myriad sources such as scale type, survey instrument, response format, content of specific nature and the general measurement context. Richardson *et al*. (2009) proposed three ex post techniques used in testing common method variance which include the confirmatory factor analysis (CFA) marker technique, the correlational marker technique and the unmeasured latent method construct (ULMC) technique.

This study employed the CFA marker technique due to its strength in accounting for congeneric and non-congeneric common method variance (Williams, Hartman and Cavazotte, 2003). Congeneric measurement model assumes that there is no co-variance between or within construct error variance (Hair *et al*., 2010) and its assessment is validated through unidimensionality, construct validity and scale reliability (Garver & Mentzer, 1999). Bryant and Kohn (2013) in their study on Housing Bubble Debate Resolved and Amin, Rahman and Razak (2014) in their study on willingness to be a partner in *Musharakah Mutanaqisah* Home financing: Empirical investigation of psychological factors in Malaysia used CFA marker approach to test for common method variance.

Non response bias is one of the most common forms of response bias in most studies (Mugenda, 2008). A major source of non-response bias occurs when some selected persons in the sample fail to respond to the survey leading to a low response rate and also late responses. It may also occur when some respondents leave a few questions unanswered to avoid complex decision making or spending their personal time filling in the questionnaire (Mugenda, 2008). If a study has a high rate of non- response, the cases may be omitted during the analyses and if they are few, the mean of specific items can be used to substitute the non-responses. Razak and Taib (2011) tested for non response bias in their study on Consumers' perception on Islamic Home Financing: Empirical evidences on Baibithaman Ajil (BBA) and Diminishing Partnership (DP) Modes of Financing in Malaysia.

3.8.2 Measurement and Scaling Technique

Measurement in research refers to assigning numbers to empirical events, objects or properties, or activities in compliance with a set of rules (Mugenda, 2008). It also involves selecting observable empirical events, developing a set of mapping rules and applying the mapping rules to each observation of that event (Kothari, 2009). This

study used open-ended questions and a 5-point Likert scale to measure the variabless. Open-ended questions provide a chance to respondents to add information which may not have been included in the closed-ended questions, while the Likert scale, is an interval scale, designed to find out how strongly subjects agree or disagree with a statement (Sekaran & Bougie, 2010). The 5-point Likert scale ranged from "Strongly disagree" to "Strongly agree". Likert Scaling is a unidimensional scaling method (Trochim, 2006) whose concepts are generally easier to understand because you have either more or less of it, and that's all. Kothari (2009), on the other hand, explains that 5-point Likert scales are used because they are more reliable and can provide more information.

Borrower characteristics were measured by income level, financial literacy and attitude towards risk; mortgage distribution channels were measured by depository system, specialized mortgage lending and secondary mortgage market; mortgage marketing practices were measured by agents, online pricing guides and social marketing; mortgage contract terms were measured by ARM, FRM and complex mortgages while underwriting criteria was measured by capacity, collateral and credit history. The moderating variable was measured by physical planning system, efficient legal system and monetary policy. The dependent variable was measured by return on investments, return on assets and sales.

3.8.3 Statistical Model and Hypothesis Testing

In order to test the effects of the moderating role of government regulations the study employed moderated multiple regressions (MMR) analysis which is an inferential procedure of comparing two different least-squares regression equations (Aguinis & Gottfredson, 2010). Moderated multiple regression was suitable for this study because it enables the slope of one or more of the independent variables to vary across values of the moderator variable, thereby

facilitating the investigation of an extensive range of relationships (Goode & Harris, 2007). Estimating interaction effects using moderated multiple regression usually consists of creating an ordinary least squares (OLS) model and a moderated multiple regression (MMR) model equations involving scores for a continuous predictor variable Y, scores for a predictor variable X, and scores for a second predictor variable Z hypothesized to be a moderator (Aguinis & Gottfredson, 2010).

To determine the presence of moderation effect the following equation OLS model was then compared with the MMR model.

$y = \beta_0 + \beta_1 X_1 + \beta_2 Z + \varepsilon$……..…….. Equation (1)

Where,

β_0 = least squares estimate of the intercept,

β_1 = least squares estimate of the population regression coefficient for X observed scores,

β_2 = least squares estimate of the population regression coefficient for Z observed scores and

ε = error term.

The second equation, the MMR was formed by creating a new set of scores for the two predictors (i.e. X, Z), and including it as a third term in the equation.

$y = \beta_0 + \beta_1 X + \beta_2 Z + \beta_3 X*Z + \varepsilon$ ……

Equation (2) where, β_3 is the least squares estimate of the population regression coefficient for the interaction term scores X*Z.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

The main purpose of this chapter was to provide the analyses of the results, interpretation of the results and findings. In this chapter, qualitative analysis of the open-ended questions was carried out. Additionally, a number of steps were initiated towards ensuring building of a good quantitative model as well as key general guidelines for structuring a quantitative model. In general, analyses were done using a two-phase process comprising of confirmatory measurement model and confirmatory structural model.

4.2 Response Rate

The respondents in the study comprised real estate managers and finance managers of real estate firms registered with KPDA. A total of 130 questionnaires were returned. 8 respondents declined to participate in the survey, out of which 3 claimed they had "no-survey" policy, while the rest could not participate at the time. This resulted in a response rate of 94%. Table 4.1 summarizes the response rate in this study. Saunders, Lewis and Thornhill (2007) suggested that 20-30% response rate is adequate. Babbie (1990) posited that a response rate of 50% is adequate while Bailey (1987) set an adequate response rate at 75%. Mugenda (2008) avers that a response rate of 50% is adequate, 60% and above good, and above 70% very good. Based on these assertions a response rate of 94% for this study is adequate. In a related study by Kibati *et al.* (2015) on the Effects of Supply Side Institutional Roles on Housing Affordability among the Low Income Earners in Kenya registered a response rate of 71.4%.

Table 4.1 Response Rate

Unit of Analysis	Questionnaires Distributed	Questionnaires Returned	% Response
Real estate managers	69	64	92.7
Finance managers	69	66	95.6
Total	**138**	**130**	**94**

4.3 Firm Demographics

The demographic characteristics of the respondents comprised of real estate managers and finance managers of real estate firms registered under KPDA. The responses were collated and reviewed based on the information provided in the questionnaire. The number of years in employment, number of employees, period the firm has been in operation, annual turnover of real estate firms were captured, and the results shown in table 4.2.

Majority (66.9%) of the respondents had worked for a period of more than 10 years, 31.5% had worked for a period of 6 to10 years, while a few (1.6%) had worked for a period of 1 to 5 years. The results show that the rate of employee turnover is low as demonstrated by the majority who had worked for more than 10 years in the firm. This could be attributed to retention incentives given by real estate firms to the top employees in order to lower staff turnover. By adopting employee retention strategies, real estate firms are likely to enjoy sustainable competitive advantage since experienced and long serving employees have a strong knowledge base, which results in higher productivity and superior performance (Oloke, Oni, Babalola & Ojelabi, 2017).

Majority (69.2%) of the firms had 10-49 employees, 27.7% had 50-250 employees while a few (3.1%) had 0-9 employees. The study results show that

majority (69.2%) of the firms surveyed are small enterprises since the enterprises comprised of 10 to 49 employees (Gray, 2000), 27.7% are medium enterprises (EC, 2013), while a few (3.1%) of the firms are micro enterprises. This is indicative that majority of the real estate firms operate with smaller teams of employees which helps to keep costs lower than more leveraged firms. Additionally, small firms provide the greatest degree of managerial control and co-ordination for company owners making it easier to develop personal contact with the customers. Ability to build good customer relations is an internal resource/marketing strategy that could be employed by real estate firms to increase their market share and profitability in the long run.

Emanating from the study, majority (30%) of the firms recorded an average annual turnover of between KES 51-100M. Equally (30%) of the firms recorded an average annual turnover of between KES 101-200M, 23.1% of the recorded an average annual turnover of between KES 201-1000M while a few (16.9%) recorded an average annual turnover of between KES 0-50M. The EC (2013) categorized firms with fewer than 250 employees and a turnover not exceeding €50 million as "medium" implying that most of the real estate firms surveyed are medium enterprises. Medium enterprises react quickly to market changes because it is easier to make decisions. If the business owner identifies a business opportunity, it can be exploited immediately since approval from other stakeholders may not be sought. This gives medium enterprises a competitive advantage over large firms where decision making process could be slower.

The results further showed that majority (50.1%) of the real estate firms had been in operation for a period of between 6 to 10 years, 38.4% had been in operation for a period of more than 10 years while a few (11.5%) had been in operation for a period of between 1 to 5 years. The results illustrate that majority of the real estate firms had been in business for a period of 6 to 10 years indicating that they

could possess experience and knowledge advantage that have enabled them penetrate and stabilize in the market. Kristiansen, Furuholt and Wahid (2003) found that length time in operation was significantly linked to business success. Older firms could portray the ability to execute routine business activities, survive competition and achieve core competencies.

Table 4.2 Firm Demographics

Main factor	Factor level	Frequency	Percent %
Years in employment	1-5 years	2	1.6
	6-10 years	41	31.5
	Over 10 years	87	66.9
Number of employees	0-9	4	3.1
	10-49	90	69.2
	50-250	36	27.7
Years in operation	1-5 years	15	11.5
	6-10 years	65	50.1
	Over 10 years	50	38.4
Annual turnover Ksh '000,000'	0-50	22	16.9
	51-100	39	30
	101-200	39	30
	201-1,000	30	23.1

4.4 Correlations of the Study Variables

Correlation is used to find out the relationship among a group of variables (Pallant, 2010). It helps in detecting multicollinearity which is a partial correlation between the predictor variables (Martz, 2013). High correlation among the independent variables is an indication of multicollinearity which could lead to spurious results. Absence of multicollinearity was noted as the correlations are not close to 1 or -1 indicating that factors are different measures of separate variables (Farndale, Hope-Hailey & Kelliher, 2010). Tabachnick and Fidell (2013) posited

that a correlation of 0.9 and above indicates that the two variables could be measuring the same variables. The correlation matrix in table 4.3 shows the correlation among the predictor variables were all lower than 0.9 implying that multicollinearity was not a problem. This enabled the study to utilize all the variables for analysis.

Table 4.3 Correlations of the Study Variables

Variables	BC	MMP	MDC	MCT	UC	GR	PRE
BC	1	-.397**	.116	-.335**	-.111	-.202	-.281**
MMP	-.397**	1	-.012	.107	.342**	.076	.106
MDC	.116	-.012	1	-.032	-.051	-.118	-.052
MCT	-.335**	.107	-.032	1	-.055	.116	.253
UC	-.111	.342**	-.051	-.055	1	.057	.101
GR	-.202	.076	-.118	.116	.057	1	.056
PRE	-.281**	.106	-.052	.253	.101	.056	1

N range from 122-130 ** Correlation is significant at the 0.01 level (2-tailed)

4.5 Descriptive and Qualitative Analysis of the Study Variables

The research instrument was divided into 3 sub-sections. The first sub-section comprised of demographic information that was gathered from all respondents. In the second sub-section, all respondents were subjected to a Likert table. In this section, responses were based on a likert scale which was coded with numerical values for ease of data analysis. The values assigned to the likert were 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree. In this way, every aspect of the variable was addressed and consequently analyzed. The last section consisted of open ended questions. The responses to the open ended questions were subjected to

qualitative analysis. Frequency tables and descriptive statistics were used to represent the results. Kalui and Kenyanya (2015) used the same format in his study on An Investigation on Selected Factors Hindering Access to Mortgage Finance in Kenya. Mogaka *et al.* (2015) also used the same format in their study on the Influence of Macro-economic Factors on Mortgage Market Growth in Kenya.

4.5.1 Analysis of Borrowers Characteristics amongst Real Estate Firms

Borrowers' characteristics were measured in terms of income level, financial literacy and attitude towards risk, and the results, expressed as percentages, shown in table 4.4. The results showed that majority (77%) of the respondents were of the opinion that mortgages are unaffordable in Kenya, 9.1% were neutral, while a few (13.9%) agreed. The number of respondents who disagreed with this statement is relatively high at 77% implying that real estate firms should seek financing from other sources which could be relatively affordable. Unaffordability of mortgages could be attributed to high interest rates and level inflation (Mati & Moronge, 2014). Housing being a basic human want has no close substitute implying that bargaining power of buyers is high. Therefore, to cope with high bargaining power of the customers, real estate firms should endeavour to use cheaper building technology that would ensure more housing units are available in the market at an affordable cost. A few (13.9%) of the respondents who agreed that mortgages are affordable could probably represent those real estate firms with the ability to do better than comparable firms in sales, market shares, or profitability. In such a case, real estate firms should adopt a focused (market niche) strategy that involves serving niche members to increase their competitiveness in the market (Ingaramo & Sabatino, 2011).

Emanating from the results, majority (74.6%) of the respondents agreed that real estate income is growing significantly making real estate firms feel more confident

to borrow loans for building more residential houses, 13.1% remained neutral, while a few (12.3%) disagreed. Majority of the respondents felt that growth in real estate income has been significant which could be attributed to increased sale of houses and property rental income arising from high demand for real estate property. This may have been motivated by growth of the middle income class population and rural urban migration which has led to high demand for mortgages (Kanjumba, 2015). These findings corroborate those ones of a residential mortgage survey by CBK (2014) which confirmed that mortgage loans in the market went up to 22,013 in December 2014 from 19,879 in December 2013 signifying growth in the mortgage market.

In such a case, real estate firms should aim at increasing their income and market share further by employing low-cost leadership strategy where they will provide more affordable housing units to majority of the people (Altuntas, Semercioz & Noyan, 2014). This agrees with Vuluku and Gachanja (2014) study on Supply Side Aspects of Residential Housing for Low Income Earners in Kenya which recommended that real estate firms should deviate from using conventional building materials which are expensive, but instead they should be innovative and make an effort in using cheaper alternative building materials that would ultimately bring the cost of housing down. In so doing, they will sell more housing units, in turn increasing their market share.

Majority (84.6%) of the respondents were of the opinion that mortgages are mainly borrowed by firms with relatively high cash flow, 4.6% remained neutral while a few (10.8%) disagreed. This shows majority of the respondents felt that mortgages are borrowed by those firms which operate with high cash flow as they are able to make regular monthly installments without default up to maturity. This finding is in line with Zhou, Yang and Zhang (2012) study on the Relationship between cash

flow and financial performance of listed Real Estate Companies in China which found out that superior performance of real estate firms is positively related to a firm's future cash flows. A few (10.8%) of the respondents who disagreed could be from real estate firms where future cash flows are uncertain. Therefore, for such firms to obtain financing, use of asset-based loan strategy could be better than reliance on future cash flows.

Asked whether real estate firms repay their monthly installment together with interest rate at the agreed time, majority (60%) of the respondents disagreed, 19.3% remained neutral, while a few (20.7%) of the respondents agreed. One of the most common measure for the ability to repay is the debt-service coverage ratio (Mogaka *et al*., 2015). The lower the debt-service coverage ratio, the greater the constraint to real estate firm when making debt payments and this explains why majority of the respondents disagreed with the statement. The study results agree with Kigige and Omboi (2011) study on Factors Influencing Real Estate Property Prices: A Survey of Real Estates in Meru Municipality, Kenya which found out those firms with low debt-service coverage ratio struggle in repaying mortgage since their income is constrained. Such real estate firms should consider adopting conglomerate diversification by acquiring other similar firms to achieve growth and dominance in the industry.

On the other hand, those respondents who agreed with the statement could be having high debt-service coverage ratio implying that they are able to repay their monthly installment plus interest rate at the agreed time. A higher ratio indicates that there is sufficient income available to service debt. The findings resonate with a study by Kiguru (2015) on Determinants of Real Estate Mortgage Uptake in Kenya where majority of the respondents agreed that indeed low debt-service coverage ratio has contributed significantly to low mortgage uptake as majority of

mortgage lending institutions find it risky to lend to real estate firms with major debt repayment obligations.

Table 4.4 Response on Income Level

Income level		SD	D	N	A	SA	Mean	Std.Dev
BC1	%	30.8	46.2	9.1	7.7	6.2	2.123	1.120
BC2	%	7.7	4.6	13.1	35.4	39.2	3.938	1.186
BC3	%	3.1	7.7	4.6	36.9	47.7	4.184	1.040
BC4	%	15.4	44.6	19.3	13.8	6.9	2.523	1.221

Financial literacy was measured using the Likert-scale and the results, expressed as percentages, shown in table 4.5. Asked whether profitable investment decisions were made after wide consultations with financial experts, majority (74.5%) of the respondents agreed, a few (23.9%) disagreed while 1.6% remained neutral. This is indicative that majority of the real estate firms consult financial experts on profitable business explaining why the turnover for most of those surveyed was high. A few (23.9%) of respondents make decisions without consultation. This could explain why some real estate firms had low turnover. This is in line with Mochere, Atambo and Mogwambo (2016) study on Influence of Behavioral Factors on Real Estate Performance in Kisii town which found out that some real estate firms do not consult leading to low performance. To boost performance, such real estate firms should consider employing co-sourcing strategy where external workers are hired to provide expertise that internal staff lacks.

On whether employees in the finance department regularly attend training workshops to sharpen their skills, majority (88.3%) of the respondents agreed, a few (4.3%) disagreed while 7.4% remained neutral. This is an indication that majority of the organizations have realized the importance of equipping workers in the finance department with financial management skills needed for their work transactions. Regular training of employees contributes to operational and financial improvement in organizations (Sikora & Ferris, 2014). It is therefore incumbent upon real estate firms to develop a culture of training of employees to achieve operational success and growth.

Emanating from the study, majority (87.7%) of the respondents agreed that top management allocate sufficient resources for creating financial awareness among employees, 3.8% were neutral while a few (8.5%) disagreed. The fact that an overwhelming majority of the firms allocated sufficient resources for creating financial awareness among employees is a clear demonstration that organizations today consider financial awareness as a key driver towards profitability. Firms that fail to utilize their resources to create financial awareness among its employees could be lacking strategic leadership (Hassan, Yaacob, & Abdullatiff, 2014). These results are supported by Babatunge (2016) in his study on Exploring Leadership Strategies to Maximize Profitability in the Nigerian Housing Sector which found out that in organizations where top management allocates adequate resources for creating financial awareness among employees are more likely to generate sustainable competitive advantage.

Table 4.5 Response on Financial Literacy

Financial literacy	%	SD	D	N	A	SA	Mean	Std.Dev
BC5	%	21	2.9	1.6	49.4	25.1	3.356	.8253
BC6	%	2.9	1.4	7.4	30.3	58	4.077	.7677
BC7	%	2.0	6.5	3.8	7.7	80.0	4.088	.8823

The results of measurement of attitude towards risk are shown in table 4.6. The results show that majority (84.4%) of the respondents agreed with the statement that most real estate firms fear expensive mortgage loans, 11.2% remained neutral while a few (4.4%) disagreed. This fear could be attributed to unpredictable future cash flows and macro-economic changes that make majority of the borrowers risk averse. A few of the respondents who disagreed with this statement could be from real estate firms that may have adopted risk mitigation strategies where risk management practices have been given top priority. Langat, Mugo and Otuya (2013) study on Effect of Credit Risk Management Practices on Lending Portfolio also found out that when firms adopt risk mitigation strategies fear for borrowing loans is greatly minimized. Real estate firms with high risk aversive tendency should benchmark with their competitors to evaluate their risk landscape so that they can develop a contingency plan which would lead to improved performance in the long run.

On whether the risk of losing mortgaged property due to default in payment is high, majority (87.8%) of the respondents agreed with this opinion, 8.9% remained neutral while a few (3.3%) disagreed. This could be due to the fact that mortgage loans are secured implying that failure to repay may easily lead to loss of the mortgaged property to recover the unpaid amount of money. Real estate firms should avoid default and the guilt of foreclosure that result to financial and

non-financial losses by seeking mortgages from lenders that employ risk-based pricing strategy. This would go a long way in identifying high risk borrowers in residential mortgage lending thus improving efficiency in the market. Quercia, Pennington-Cross and Tian (2012) study on Mortgage Default and Prepayment Risks among Moderate and Low-Income Households also found out that adopting a risk-based pricing model cushion borrowers from losing their mortgaged property. Real estate firms in Kenya should therefore be strategic in their operational processes to prevent risk associated with default and foreclosure.

Table 4.6 Response on Attitude towards Risk

Attitude towards risk	%	SD	D	N	A	SA	Mean	Std.dev
BC8	%	3.3	1.1	11.2	52.2	32.2	4.188	.8923
BC9	%	1.2	2.1	8.9	72.2	15.6	4.277	.9677

When the respondents were asked to give reasons why mortgage uptake was low in Kenya, it was established that majority (38.4%) of the respondents attributed it to limited access to long term funds, 24.5 % to low income level, 18.8% to high interest rates, 12.9% to credit risk while a few (5.4%) to lack of reliable information. The results are depicted in figure 4.1. The results showed that, some of the most important factors affecting access to mortgage finance were shortage of long term funds and low income level. 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. Credit risk also affects access to mortgage finance as banks take caution when lending. This demonstrates the range of factors and obstacles faced by real estate firms in pursuit for mortgage financing which could be solved through diversification and innovation (CBK, 2013). For example, real estate firms should finance the construction of residential houses by

requesting for advance deposit from home buyers which would provide part of the needed finance in housing construction. They may also issue local purchasing orders to suppliers of building materials which is a business strategy that allows optimization of working capital through differing payments to creditors, turning over inventories quickly, and quickly collecting on account receivables (Enqvist, Graham, Nikkinen, 2014). This support the findings by Mwathi (2016) study on the effect of financing sources on real estate development in Kenya which found out that real estate firms should develop creative ways of financing real estate projects beside equity and venture capital.

Majority of real estate firms rely on external sources of finance but as Allen, Chakrabarti, De, Qian and Qian (2012) argued in their study on Financing Firms in India, this is just an alternative means of accessing finance. Therefore, real estate firms should rely on internal resources which are made up of specialized expertise and innovation and align them with the external sources so as to deal with the resource constraints they face (Camison & Fores, 2015). Therefore, the interaction between the external and internal resources would help in higher mortgage uptake (Dibrell, Fairclough & Davis, 2015).

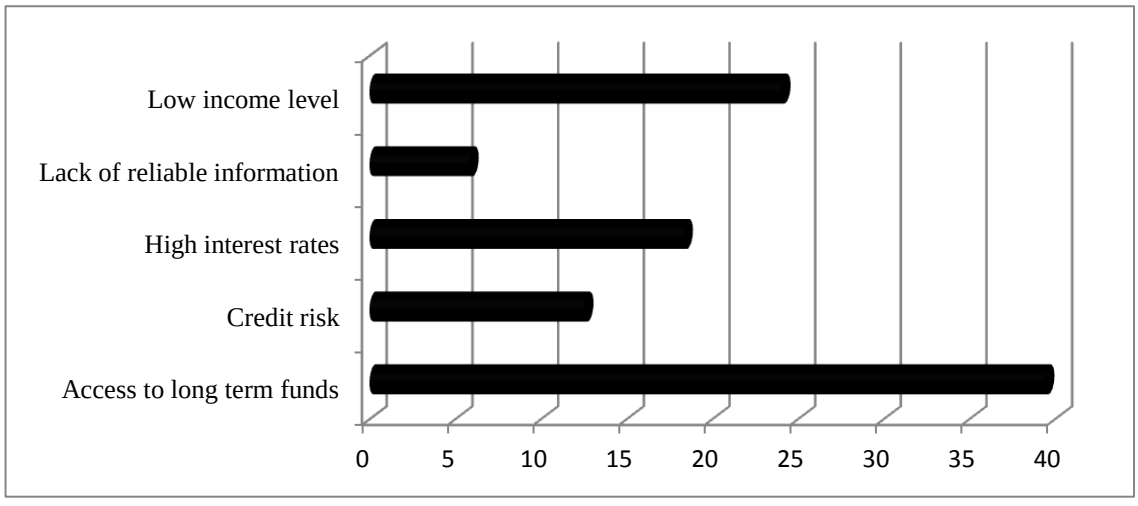

Figure 4.1 Determinants of Mortgage Uptake in Kenya

4.5.2 Analysis of Mortgage Distribution Channels amongst Real Estate Firms

The mortgage distribution channels were measured in terms of depository system, specialized mortgage lending and secondary market, and the results, expressed as percentages, shown in table 4.7. Majority (80.0 %) of the respondents agreed with the opinion that higher savings at the time of borrowing a mortgage loan makes it cheaper, 4.5% were neutral while a few (15.5 %) disagreed. This is indicative that majority of real estate firms which save highly before applying for a loan enjoy better loan terms which are cheaper meaning that they can manage to qualify for a higher mortgage loan amount. Real estate firms seeking above average returns should consider saving as an internal strength which would enable them attract cheaper loans. By so doing, they would make saving part of their culture which according to Naor, Jones, Bernades and Goldstein (2014) would become an internal resource that may not be easily imitated by competitors. Mwathi (2016) study on Financing Sources of Real Estate Firms in Kenya also found out that savings is one of the most significant sources of mortgage financing for real estate development. The study findings also concur with that of Osoro (2014) which revealed that savings was a major source of financing mortgages in Kenya.

The respondents were further asked whether mortgage financing require borrowers to deposit some savings as down payment to meet part of the cost of the property being purchased. Majority (81.1%) of the respondents agreed, 2.1% remained neutral while a few (16.8 %) disagreed. The results are shown in Table 4.7. This implies that real estate firms should develop the culture of saving so that they can accumulate the deposit needed when applying for a mortgage loan. This is in line with the findings of Kalui and Kenyanya (2015) study on Selected Factors Hindering Access to Mortgage Finance in Kenya which found out that making a down payment is a major requirement for mortgage financing.

Table 4.7 Response on Depository System

Depository system Factors	%	SD	D	N	A	SA	Mean	Std.dev
MDC1	%	6.7	8.8	4.5	44.4	35.6	4.033	.9276
MDC 2	%	7.8	9.0	2.1	36.7	44.4	3.900	.8187

Regarding the statement that mortgage institutions have made a remarkable positive impact in the area of real estate financing and development, majority (68.0 %) of the respondents agreed, 8.6% remained neutral, while a few (23.4%) disagreed. This is shown on table 4.8. This could be explained by the inclusion of commercial banks in mortgage lending which has put pressure on mortgage lending institutions to increase output and lower costs due to competition. Porter (2006) posited that increase in competition triggers an increase in product supply in the market leading to better performance. Therefore, real estate firms should make strategic decisions focused on reaping from this remarkable growth as mortgage lending institutions compete for more borrowers. The findings confirm the observations by Ezimuo *et al.* (2014) in their study on Sources of Real Estate Finance and their impact on Property Development in Nigeria: A case Study of Mortgage Institutions in Lagos Metropolis which found out that efforts by mortgage lending institutions to finance real estate have experienced significant growth due to increased competition among the players in the industry due to low barriers to entry.

Majority (55.3%) agreed with the statement that mortgage institutions are fair when rendering services, a few (33%) disagreed, while 11.7% were neutral. Fairness in offering quality services is a critical aspect in strategic management as good customer care strategies are unique capabilities which act as a resource for earning above average returns (Lin & Wu, 2014). To attain long term success, real

estate firms should equally develop processes that would improve fairness in rendering services. WB (2011) report on Developing Kenya's Mortgage Market also noted that the mortgage housing finance system had grown fast in terms service delivery, loan size and the number of loans which made Kenya to be ranked third after Namibia and South Africa in Sub- Saharan Africa.

The percentage of the respondents who disagreed and remained neutral is unsettling, standing at almost a half of the respondents. Unfairness when rendering services could be explained by the fact that some mortgage lending institutions may not be facing stiff competition because they enjoy a large market share. By increasing competition, fairness in delivery of services would be sustainable (Hassan *et al*., 2014). This is in line with Babatunge (2016) study on exploring leadership strategies to maximize profitability in the Nigerian housing sector which found out that competition amongst real estate firms improves fairness in delivery of housing to customers.

Table 4.8 Response on Specialized Mortgage Lending

Specialized Mortgage Factors	%	SD	D	N	A	SA	Mean	Std.Dev
MDC 3	%	6.5	16.9	8.6	65.0	3.0	3.631	1.388
MDC 4	%	12.4	20.6	11.7	18.7	36.6	3.525	1.407

Majority (72%) of the respondents agreed that selling mortgaged houses to other users is a strategy used by real estate firms to raise funds, 9.5% remained neutral while a few (18.5%) disagreed. The results are shown in table 4.9. This is a business strategy that provides real estate firms with broader diversification that would enable them gain strategic advantage as it aims at reducing cost, improving

performance, productivity and growth (Tidd, 2009). By so doing, real estate firms are able to raise funds in the secondary market as the proceeds from the sale are ploughed back into the system creating more funds for mortgage**.** CBN (2013) report on Mortgage Financing in Nigeria also noted that the secondary market is one of the best strategies used in providing long-term finance in the housing market.

Emanating from the study majority (65.9%) of the respondents agreed with the statement that the secondary market is one of the most preferred channels for distributing long term funds, 10.8% remained neutral while a few (23.3%) disagreed. This shows that growth in the size of the secondary market would boost the amount of capital available for mortgage lending and, in turn, borrowers' options for financing the purchase of a home. This is in line Gabriel and Rosenthal (2007) study on Secondary Markets, Risk, and Access to Credit: Evidence from the Mortgage Market which found out that if more funding were available through the secondary market, then more mortgages were likely be originated thus improving performance of real estate firms. This indicative that real estate firms should endeavor to exploit this long term funding model in order to develop new sources of income, and probably reach more profitable positions in the competitive landscape.

The fact that a few (23.3%) of the respondents did not agree with the opinion is a pointer that other sources of long term funding that exist. For example, Mwathi (2016) study on the effect of financing sources on real estate development in Kenya revealed that equity and venture capital financing are prime sources of funding real estate development. The results are supported by resource-based view theory which states that firm performance is determined by the resources it owns, and

that the firm with more valuable scarce resources is more likely to generate sustainable competitive advantages (Liang, You & Liu, 2010).

Table 4.9 further shows that majority (77.5%) of the respondents strongly agreed that secondary market is well developed in Kenya, 5.9 % remained neutral while a few (16.6 %) disagreed. The implications of these findings are that the growth of the secondary market has been vibrant probably due to the presence of an investor community and the advanced level of market infrastructure in Kenya as revealed by a big percentage of the respondents. This could be attributed to the introduction of government securities in the secondary market. Real estate firms seeking superior performance should consider using it to raise long term funds. These findings are consistent with WB (2011) report in its article entitled Developing Kenya's Mortgage Market which posited that over the past decade the secondary housing market in Kenya has developed rapidly especially after benchmarking with the South African model.

Emanating from the study majority (69.1 %) of the respondents agreed with the opinion that the secondary market is financed by primary lenders in Kenya, 6.4% remained neutral while a few (24.5%) disagreed. This implies that the secondary market for mortgages is based on the primary market as shown by majority of the respondents. This could be explained by the fact that few homebuyers have adequate savings to buy a home outright, and many need to borrow finance to buy their first home or to move to another one. Without the ability to borrow against the value of the home they are purchasing, many prospective buyers would be shut out of the market. Similar findings were found in a study by Ubom and Ubom (2014) entitled the Contributions of Primary Mortgage Institutions to Real

Estate Development in Nigeria which revealed that growth of the secondary market is closely related to primary mortgage institutions.

Therefore, in order to have a sustainable secondary mortgage market existence of a well developed primary mortgage market is a priority. This is because the primary mortgage market is the main originator of mortgage loans, servicing and risk management while the secondary market allows participants in the mortgage system to access funds from investors located in different parts of the world (WB, 2011). This implies that the secondary market creates a linkage between primary mortgage market and real estate firms by enabling them to diversify their risk portfolio.There are doubtlessly other important sources of financing such as equity capital, mortgage financing, venture capital and savings (Mwathi, 2016) as revealed by 30.9% of the respondents who had a different opinion and real estate firms should explore all channels to raise the huge capital outlay required to meet the housing needs of the teeming Kenyan population.

Table 4.9 further shows that majority (70.7%) of the respondents agreed that purchasing a house in the secondary market is expensive in Kenya, 5.2% remained neutral while a few (24.1%) disagreed. This could be attributed to extra costs such as property taxes, utilities, insurance, real estate agent's commission and the high profit margin anticipated. This could be a time-consuming business venture because real estate firms want to buy low and sell high just like many other investments. But rather than buy-and-hold strategy, real estate firms should complete the transaction as quickly as possible to limit the amount of time that their capital is at risk. The results are in line with Weiss and Neuenschwander (2013) study on the Real Estate Secondary Market: Enhanced Returns with Lower Risk which found out that real estate firms which are able to sell their houses quickly can exploit the wide supply-demand gap in the market to achieve enhanced returns at lower risk.

The percentage of the respondents who disagreed and remained neutral is unsettling, standing at almost a third of the respondents. This could be due to respondents who sell houses to high end customers with high purchasing power. To maximize profitability, real estate firms should adopt focus strategy by trying to appeal to this group of customers by concentrating on cost or differentiation concerns. The findings are congruent to WB (2011) report on Developing Kenya's Mortgage Market which noted that the property market in most African cities are segmented into various categories ranging from low, middle and high end market. The development of the high end market allows banks to value their property more accurately giving them comfort that should they need to realize their loan collateral, a relatively liquid market exists where they will be able to sell their loan collateral.

Table 4.9 Response on Secondary Market

Secondary Market Factors		SD	D	N	A	SA	Mean	Std.Dev
MDC 5	%	10.0	8.5	9.5	42	30	3.866	1.271
MDC 6	%	6.3	17.0	10.8	45	20.9	3.706	1.194
MDC 7	%	12.8	3.8	5.9	42.4	35.1	3.844	1.469
MDC 8	%	6.4	18.1	6.4	41.5	27.6	3.875	1.365
MDC 9	%	11.0	13.1	5.2	40.0	30.7	3.989	1.238

The respondents were further asked to indicate the most preferred mortgage distribution channel. Majority (39.6%) of the respondents pointed out that commercial banks were the most preferred channel of distributing mortgage

finance, 9.4% credit unions, 13.5% mortgage brokers, 14.4% mortgage companies, 15.2% savings and loans while a few (7.9%) preferred the secondary market. The results are shown in figure 4.2. The study findings indicate that the distribution of mortgage finance is dominated by commercial banks and mortgage companies while the secondary market is the least preferred channel.

The fact that commercial banks are the main mortgage distribution channels is a clear indication that barriers to entry are high making it difficult for other lenders to enter the market and thrive. This could be attributed to capital requirements, economies of scale, cost disadvantages or government policies that inhibit new entrants (Porter, 2008). In light of this, real estate firms should exploit the available channels for distributing mortgage finance by opting for other channels such as mortgage companies and savings as this in turn would lower the cost of borrowing due to increased competition thus improving profitability in the long run. This resonate with the findings by Kibati (2015) study on Effects of Supply Side Institutional Roles on Housing Affordability among the Low Income Earners in Kenya which argued that creating a mix of channels has become an important strategic variable in the competitive mortgage distribution landscape and real estate firms should take advantage of it.

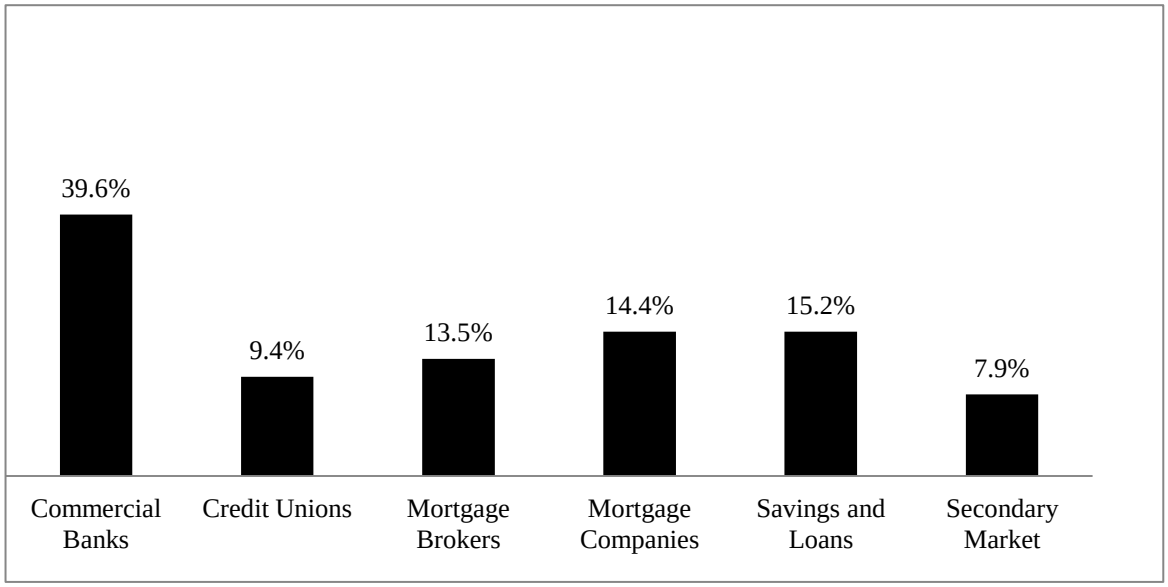

Figure 4.2 Preferred Distribution Channel of Mortgage Finance in Kenya

4.5.3 Analysis of Mortgage Marketing Practices amongst Real Estate Firms

The mortgage marketing practices were measured in terms of agents/brokers, online pricing guides and social marketing. The respondents were asked to indicate whether agents/brokers provide potential borrowers with all the relevant facts of the mortgage contract during the origination period. Majority (61.2%) of the respondents agreed with the statement, 14.5% remained neutral while a few (24.3%) disagreed as shown in Table 4.10. The results indicate that there is a wide range of brokerage firms some of which hardly reveal all material facts to borrowers as shown by a big percentage of the respondents. It is therefore incumbent upon that real estate firms to scan their operating environment broadly before making decisions to borrow in order to gather relevant material facts regarding the most competitive mortgage options in the market for them to finance their housing projects.

The findings corroborate with Anshasy, Elliehausen and Shimazaki (2006) study on the Pricing of Subprime Mortgages by Mortgage Brokers and Lenders which argued that due to the glaring information asymmetries, brokers do not act in the best interest of the borrowers and may not reveal all material facts of a mortgage. On the other hand, a few (24.3%) of the respondents who disagreed are likely to be agents for potential buyers who normally convince them beyond any reasonable doubt that the deal is worth and should be clinched immediately. Such customer-oriented firms are able to address the needs of their customers better than competitors and are likely to perform better.

Majority (73.5%) of the respondents were of the opinion that mortgages borrowed through a broker are not fairly priced, 10.8% remained neutral while a few (15.7%) disagreed. A big percentage of the respondents demonstrate that mortgages originated through brokers are expensive. This could be attributed to the fact that mortgage brokers charge a direct fee to the borrower and earn an indirect fee which is known as the yield spread premium from the lender. Cheng, Lin, Liu and Seiler (2015) in their study on The Benefit of Search in Housing Markets found out that brokers charges increase the cost of mortgages. Real estate firms seeking to perform better than their rivals should shun services from mortgage brokers whose yield spread premium is not competitive. In turn, they should source for competitive brokerage firms in order to gain cost advantage. The study findings are similar to Levitt and Syverson (2008); Rutherford, Springer and Yavas (2005) who found out that housing units sold by real estate brokers are expensive.

The respondents were further asked if competitive mortgage deals can be obtained in the market without brokers. Majority (66.2%) of the respondents disagreed, 5.4% remained neutral while a few (28.4%) agreed. This could be attributed to the

fact that mortgage brokers act as financial intermediaries who match borrowers with lenders. This help in the selection of loans and the completion of the loan application process because brokers have a platform for trading mortgages and properties (Berndt, Hollifield & Sandas, 2010). Therefore, to achieve long term goals such as profitability and increased rate of return, real estate firms should form strategic alliances or partnerships with mortgage brokers who are major players in the real estate industry (Anshasy *et al.*, 2006).

The fact that 28.4% of the respondents were of the opinion that real estate firms would get competitive mortgage deals without using brokers is a clear demonstration that numerous search options exist in the market. Therefore, real estate firms should diversify their search strategies by possibly using referrals and the Internet in order to get competitive mortgage deals that would in turn lead to superior performance. This resonate with Saber and Messinger (2010) study on the Impact of e-information on Residential Real Estate Services: Transaction Costs, Social Embeddedness and Market Conditions which found out that potential buyers were less likely to use an agent in a slow market implying that the success of an agent will be inversely related to the general level of activity of the market.

Table 4.10 Response on Brokers/Agents

Brokers/Agents Factors		SD	D	N	A	SA	Mean	Std.Dev
MMP 1	%	21.7	2.6	14.5	53.3	7.9	3.744	1.126
MMP 2	%	11.3	4.4	10.8	65.1	8.4	3.833	1.269
MMP 3	%	28.0	38.2	5.4	12.5	15.9	2.751	1.124

Regarding the statement that there is sufficient information about mortgages online, majority (79.9%) of the respondents agreed, 10.2% remained neutral while a few (9.9%) disagreed as shown in Table 4.11. Majority of the respondents agreed that the Internet has become a significant source of information which has dramatically changed the strategies of marketing, distribution and servicing of financial products. To achieve a competitive position in the industry, real estate firms should embrace internet technology in doing business. This corroborate with Beracha and Wintoki (2013) study entitled Forecasting Residential Real Estate Price Changes which found out that advancement in internet technology has helped in improving information access and market efficiency. This further agrees with NAR (2012) report that 90% of home buyers used the Internet in their search for mortgage information implying that a big percentage of buyers seek mortgage information online.

The fact that a few 9.9% of the respondents disagreed with the statement could be a pointer that some real estate firms could be technological laggards yet technology have been identified as a key strategic resource that enable firms to remain competitive in the market (Ehigie & McAndrew, 2010). Such real estate firms should focus their attention on investing in technology adoption in order to strengthen the operational aspect of the business, as well as enhancing the

efficiency of the supply chain, and further support the inter-firm relationship (Abdullah, 2009).

Regarding the statement that latest information on mortgages is always published on the websites, majority (72.3 %) of the respondents agreed, 10.5% remained neutral while a few (17.2%) disagreed. The big percentage of respondents who agreed with the statement shows presence of informational sites which could have created a pool of online mortgage shoppers due to sufficiency of current information. This enable people shopping for mortgages get real time information and purchase products conveniently thus improving performance. Equally, real estate firms should avail current information about their products online. This could increase their sales and improve performance. The study findings agree with those of Richardson and Zumpano (2012) who examined the use of Internet on buyer search efforts and found out that Internet searches are rich in information which furnishes borrowers with requisite information thus increasing buyer search intensity.

Table 4.11 further shows that majority (82.5%) of the respondents agreed that good mortgage deals can be found in the Internet, 10.8% remained neutral while a few (6.7%) disagreed. This is indicative that using internet gives variety where one is able to find fairer deals. Real estate firms should also advertise their products in the Internet to enable prospective shoppers choose the fairer deals. By so doing, such real estate firms would gain a strategic advantage in the market place. In their study on Analysis on the Path of Internet Finance Penetrating into China Real Estate Industry, Xiaoyong and Lin (2015) also found out that real estate firms can access mortgage loans directly from the internet in a convenient manner.

Table 4.11 Response on Online Pricing Guides

Online pricing guides Factors		SD	D	N	A	SA	Mean	Std.Dev
MMP 4	%	5.5	4.4	10.2	50.0	29.9	3.821	1.453
MMP 5	%	7.0	10.2	10.5	52.3	20.0	4.007	.9725
MMP 6	%	6.7	0	10.8	46.9	35.6	4.205	.9876

On whether the organization maintains an effective referral system, majority (69.8 %) of the respondents agreed, 9.4% remained neutral while a few (20.8%) disagreed. The results are shown in table 4.12. Majority of the respondents agreed that their organizations use referral system to attract potential home buyers to their businesses. In so doing, firms do not waste a lot of time trying to reach disinterested and cold prospects. This way, firms can focus on interested customers and their influences. By using referral marketing system, real estate firms can lower advertising expenses that could enable them gain cost advantage. The study findings are congruent with Ntai (2011) study on the relationship between Social Marketing of Mortgage Finance and the Performance of Residential Housing in Kampala which argued that real estate firms that maintain an efficient referral system are likely to attract more new customers from referrals by previous customers.

The fact that more than 30.2% of the respondents don't maintain an effective referral system is a pointer that some real estate firms have little regard to social marketing yet it's a key strategy for broadening their marketing audience (Line, & Runyan, 2014). Therefore, with the increasing competition in the business environment, real estate firms should generate ways and methods of providing

quality service. This help in creating a long lasting impression on customers implying that real estate firms adopting this marketing strategy are likely to perform better than their business rivals (Richey, Musgrove, Gillison & Gabler, 2014).

Regarding the statement that social media is used to market real estate products majority (63.5%) disagreed, 9.5% remained neutral while a few (27%) agreed. This is indicative that majority of real estate firms have not yet embraced the use social media platform in marketing their products as revealed by a big percentage of the respondents. This could be attributed to the fact that majority of the real estate firms in Kenya take social media as a platform for social interaction and not for serious business. One of the strategic decisions of real estate firms should be to adopt a strong social media presence because this is likely to open the door to deeper discussions with potential buyers that go beyond the limitations typical of traditional marketing. This confirms the findings by Kendall (2014) study on the Impact of Social Media on Real Estate Marketing which argued that majority of real estate firms that use Face book and Twitter were able to engage more potential home buyers who are likely to buy their products. This is further confirmed by Pliska (2012) in his article entitled Real Estate Issues who pointed out that interaction through the social media is a necessity for modern businesses as most of the customers hardly make decisions before interacting with their peers through it.

The results also showed that majority (70%) of the respondents agreed with the opinion that with increase in social capital the performance of real estate firms in Kenya will most likely become better, 20.5% remained neutral while a few (9.5%) disagreed. This is illustrative of the need to build social capital as it focuses on members of a community who interact directly, frequently, in

multifaceted ways, generating opportunities which enable them gain a competitive advantage in pursuing their ends (Webb, 2008). The study findings confirm the observations of Ntai (2011) study the relationship between Social Marketing of Mortgage Finance and the Performance of Residential Housing in Kampala which found out that Social Capital affects Performance of Real Estate firms in Uganda. This implies that with increased social capital, there would be increased access to mortgage finances from financial institutions through recommendations which is likely to improve real estate performance. Therefore, a few (9.5%) of the respondents who disagreed with this statement should probably benchmark with their competitors in order to improve on their performance.

Table 4.12 Response on Social Marketing

Social Marketing Factors		SD	D	N	A	SA	Mean	Std.Dev
MMP 7	%	12.6	8.2	9.4	22.0	47.8	3.766	1.545
MMP 8	%	30.0	33.5	9.5	22.5	4.5	2.433	1.133
MMP9	%	5.1	4.4	20.5	42.2	27.8	3.944	.9725

Respondents were further asked to indicate the extent at which marketing practices determined the housing units sold within a given year. Majority (76%) of the respondents answered that marketing practices determine the housing units sold within a year to a great extent, 10% moderate extent, 9% little extent while a few (5%) not at all. The results are shown in Figure 4.3. The high percentage of respondents agreed that marketing practices allowed firms to connect positively with the needs of the customers. This resonate with the findings by Chukwuemeka (2016) study on Marketing Strategies and Performance of Indigenous Construction Firms in Nigeria which found out that marketing real

estate enable firms to discern the needs of the customers and address them accordingly. A few (14%) of the respondents who stated that marketing practices determined the housing units sold to a little or no extent at all could be from real estate firms which use the product-oriented strategy where new products are produced to respond to competition. However, if the real estate firms fail to market these products, capturing the consumer attention may be difficult. The goal of marketing is to improve the profitability level of a firm and with increasing competition, real estate firms must change from product-oriented strategy to market-oriented strategy where they will be able to serve the needs of their market segments through differentiation (Nalcaci & Yagci, 2014).

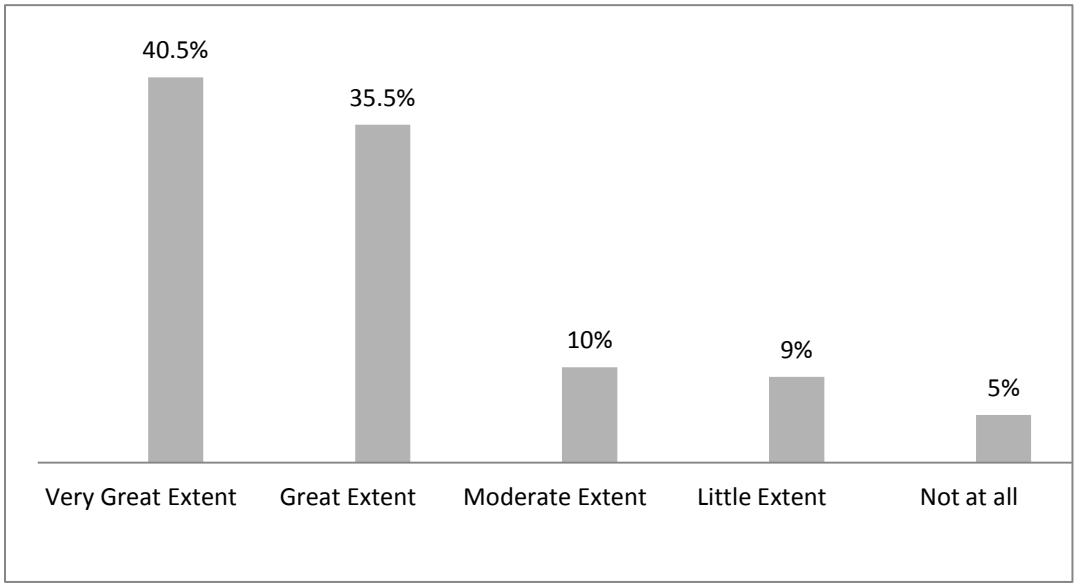

Figure 4.3 Extent at which Marketing Practices Determine Housing Units sold in a Year

4.5.4 Analysis of Mortgage Contract Terms amongst Real Estate Firms

Mortgage contract terms were measured in terms of variable rate mortgage, fixed rate mortgage and complex mortgages, and the results, expressed as percentages, shown in table 4.13. When asked whether variable mortgage rates are the most

preferred in Kenya, majority (75%) of the respondents agreed with the opinion, 15.5 % remained neutral while a few (9.5 %) disagreed. In line with this Kalui and Kenyanya (2015) study on Investigation into Selected Factors hindering Access to Mortgage Finance in Kenya, argued that majority of real estate firms prefer variable rate mortgages. This could be due to the fact that the initial interest rate is lower than that of fixed rate mortgage (Sven & Erik, 2015). A lower rate means lower payments, which may help the firm qualify for a larger loan. This is a short-term funding strategy that could be enjoyed by real estate firms which buy/build houses for sale since the risk of interest rate rising goes down.

Table 4.13 Response on Variable Rate Mortgage

Variable rate mortgage Factors		**SD**	**D**	**N**	**A**	**SA**	**Mean**	**Std.Dev**
MCT 1	%	1.5	8.0	15.5	35.4	39.6	3.8234	1.058

Emanating from the study, respondents were further asked whether they prefer mortgage rates that remain constant over the whole loan repayment period. Majority (65.8%) disagreed with this opinion, 7.0% remained neutral while a few (27.2%) agreed as shown in table 4.14. The study findings are congruent to that of Dungey *et al.* (2012) which found out that there is a consistent preference for adjustable mortgage rates among most real estate firms. This could be due to the hope that incase the interest rate drops, borrowers are likely to enjoy cheaper mortgage rate making houses affordable to some extent. Therefore, real estate firms seeking better performance should consider choosing adjustable rate mortgages as this would position them above their rivals in the long run. The fact that, a few (27.2%) of the respondents agreed that they prefer mortgage rates that remain constant over the whole loan repayment period is a pointer that some real

estate firms are able to project their expenditure and plan for it well in advance within their budget. Such real estate firms may enjoy low cost advantage during periods of high interest rates as their loan repayment stand fixed over the whole repayment period.

On whether mortgage lending institutions prefer to lend at fixed rate, majority (62.8%) of the respondents disagreed with this statement, (5.2%) remained neutral while a few 32% agreed. This illustrate that preference for fixed rate mortgages is low as demonstrated by majority of the respondents. Therefore, real estate firms should align their business models with the demands of the external business environment for them to record better returns in the long run. The findings were supported by Sven and Erik (2015) study entitled The Myopic Choice between Fixed and Adjustable Rate Mortgages in Flanders which demonstrated that majority of mortgage lending institutions and real estate firms have a strong preference for adjustable rate mortgage as opposed to fixed rate mortgages. The percentage of the respondents who agreed is unsettling, standing at 32% of the respondents. This is an illustration that some lenders prefer fixed rate mortgages which could be explained by the rationale that when interest rates fall down for an extended period of time, the probability that the value of a residential house falling below the current loan balance could be high. In such a case, real estate firms may experience significant financial loss in case of default or foreclosure which would ultimately lower their share in the market.

Table 4.14 Response on Fixed Rate Mortgage

Fixed Rate Mortgage Factors		SD	D	N	A	SA	Mean	Std.Dev
MCT 2	%	25.5	40.3	7.0	11.8	15.4	2.599	1.247
MCT 3	%	25.0	37.8	5.2	28.5	3.5	2.834	1.436

From table 4.15, majority (89.1%) of the respondents agreed that different mortgage lending institutions charge different interest rates to borrowers, 4.4% remained neutral while a few (6.5%) disagreed. This is an illustration that the mortgage market is diverse with various lenders offering different rates to real estate firms as revealed by the overwhelming majority of the respondents. In such an industry, real estate firms should carry out a market survey before settling on a certain lender to ensure they get competitive rates from the mortgage lending institutions. Equally, real estate firms should strive to provide a variety of houses that would appeal to a wide range of customers. The findings are congruent to Njiru and Moronge (2013) study on factors affecting growth of mortgage industries in Kenya which found out that mortgage lending institutions offer different rates to different borrowers depending on the prevailing market forces and level of market risk at that period of time.

The respondents were further asked whether they were able to distinguish between adjustable and fixed rates of mortgages at the time of taking a mortgage, majority (90.2%) agreed with the statement, 4.0% remained neutral while a few (5.8%) disagreed. The choice between fixed and adjustable rate mortgages has generated mixed reaction due to the complexity involved but as majority of the respondents in this study revealed the ability to differentiate between the two types of mortgage rate at the time of loan origination is possible. This means that

majority of the real estate firms have knowledge of the lending market as opposed to a few (9.8%) of the respondents who had a different opinion. Such real estate firms may find it difficult to differentiate between variable and fixed rate mortgages at the time of loan origination. This could lead to delinquency and default that would affect future performance. This is in line with Amromin *et al*. (2011) in their study entitled Complex Mortgages which found out those firms opting for complex mortgages knowingly or unknowingly may experience low performance due to increased chances of delinquency or default since loan repayment can be postponed.

Table 4.15 Response on Complex Mortgages

Complex Mortgages Factors		**SD**	**D**	**N**	**A**	**SA**	**Mean**	**Std.Dev**
MCT 4	%	4.2	2.3	4.4	60.0	29.1	4.578	.7397
MCT 5	%	1.6	4.2	4.0	60.2	30.0	4.602	.7239

The respondents were further asked to give their opinion on whether the content of loan agreement is usually clear to real estate firms. Majority (58.4%) agreed that loan agreement content is usually not very clear, 3.4% remained neutral while a few (38.2%) disagreed as indicated in table 4.16. The study finding is congruent to that of Carlin and Manso (2010) who posited that most terms in loan agreements are unclear and hard to understand especially for the naive borrowers who could be affected predatory lending practices. Majority of the respondents revealed that they find it hard to understand the contents of loan agreement which could be attributed to the fact that most lenders prefer to use their own agreement when negotiating with borrowers. Real estate firms should outsource or hire legal experts to ensure that the terms and conditions of mortgages are well understood

and funds will be available to them at the expected time. The fact that over 38% of the respondents disagreed with this statement is a pointer that some real estate firms engage the services of legal experts to interpret the content of the agreement and bargain on their behalf which would ultimately lead to better loan terms. In order to serve the needs of their customers well, all real estate firms should equally make use of legal experts when signing sale agreement so that the home buyers can understand the terms clearly.

Table 4.16 Response on Loan Agreement

Loan agreement Factors		SD	D	N	A	SA	Mean	Std.Dev
MCT 6	%	30.0	8.2	3.4	9.8	48.6	3.419	1.84

The respondents were asked to give their views on whether mortgage contract terms were favorable to people applying for mortgage finance. Majority (37.5%) answered that mortgage contract terms were unfavorable, 22.1% somewhat favorable, 17.2% favorable, and 15.7% very favorable while a few (7.5%) were neutral. The results are shown in figure 4.4. Majority of the respondents perceive mortgage contract terms as unfavorable which could be attributed to the difficulty in making the distinction between variable rates and fixed rates at the point of loan origination. The complexity of mortgage products and asymmetry of information may also account for the large number of respondents who perceive mortgage contract terms as unfavorable. Real estate firms should therefore outsource such non-core functions to third party agencies which would provide them with unbiased information on cost at the time of loan origination. Mugerman *et al*. (2013) posited that developing favorable contract terms would be a competitive differentiator in the real estate industry as majority of the firms are likely to make informed mortgage financing decisions that would propel them

towards better performance. This corroborate with the findings by Dell'Ariccia *et al.* (2008) study on Credit Booms and Lending Standards: Evidence from the Subprime Mortgage Market which noted that favorable mortgage contract terms lead to increased homeownership because real estate firms and households can afford to borrow mortgages at fair terms.

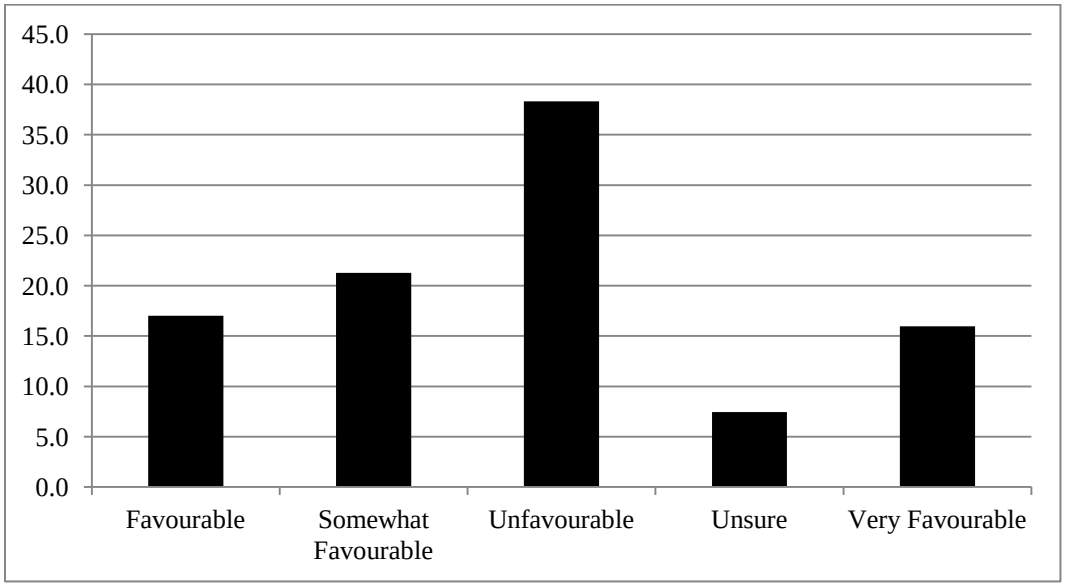

Figure 4.4 Borrower's Perception on Mortgage Contract Terms

4.5.5 Analysis of Underwriting Criteria amongst Real Estate Firms

The underwriting criteria factor was measured in terms of capacity, collateral and credit history. Response on capacity factor was measured using the Likert scales and the results, expressed as percentages, shown in table 4.17. Majority (89.7%) of the respondents agreed with the statement that the current financial state of a firm determines its ability to qualify for mortgage loans, 3.4% remained neutral while a few (6.9%) disagreed. This could be an indication that when applying for a mortgage loan, ability to pay is an internal strength which most lenders rely on. Managing internal resources of an organization strategically is essential for

organizational profitability (Babatunge, 2016). Research has shown that a firm's use of particular resources, especially financial capital, has a stronger effect on performance than do industry characteristics (Barney & Arikan, 2001). The results are supported by resource-based view theory which states that firm performance is determined by the resources it owns, and that the firm with more valuable rare resources is more likely to generate sustainable competitive advantages (Liang, You & Liu, 2010).

On the flipside, Yartey (2011); Allen, Chakrabarti, De, Qian and Qian (2012) argued that organizations should not only depend on the internal financial resources for investment, but instead they should explore alternative means of generating financial resources to enable growth including external sources. Therefore, real estate firms should seek alternative sources of income to increase their capacity for building more houses.

Emanating from the study, majority (87.2%) of the respondents agreed that the loan prequalification process is long, expensive and tedious, 8.5% remained neutral while a few (4.3%) disagreed as shown in table 4.17. These results can be compared to Kigige and Omboi (2011) study on factors influencing real estate prices: A survey of real estate in Meru municipality, Kenya which found out that the speed of processing loans is slow and expensive. This could be attributed to the length of time taken during valuation of the collateral, charging the title deed against the mortgaged property, ensuring payment of legal fees and stamp duty. To reduce costs and increase speed of the loan pre-qualification process, mortgage lending institutions should automate their services which would also enable them weed out risky applications quickly. The success and future survival of organizations depend on how much they have learned the innovative principles and employed them in their business operations (Krishnaswamy, Mathirajan &

Subrahmanyaet, 2014). Real estate firms should be innovative in order to attain competitive advantage in market place.

Table 4.17 Response on Capacity

Capacity Factors		SD	D	N	A	SA	Mean	Std.Dev
UC 1	%	4.4	2.5	3.4	55.6	34.1	3.975	0.956
UC2	%	2.0	2.3	8.5	32.1	55.1	3.985	0.769

The respondents were further asked to give their opinion on whether the value of the collateral determines the amount of loan to be advanced. Majority (90.6%) of the respondents agreed with this statement, 6.2% remained neutral while a few (3.2%) disagreed with the statement as shown in table 4.18. The study findings agree with Kalui and Kenyanya (2015) study entitled An Investigation into Selected Factors Hindering Access to Mortgage Finance in Kenya which found out that 95% of the study respondents affirmed that the value of collateral determines the amount of loan to be advanced. A big percentage of the respondents revealed that the value of collateral is used to determine the amount of loan to be advanced to real estate firms. This indicates that if the collateral has a high market value a higher amount could be advanced to the real estate firm. The ability of a firm to achieve a strong competitive position in its operational environment rests on how well its strategic resources support the products that are critical to its success within its competitive market (Porter, 2008). Therefore, real estate firms should invest in strategic resources which may position them above their peers in the market.

Table 4.18 Response on Collateral

Collateral Factors		SD	D	N	A	SA	Mean	Std.Dev
UC 3	%	1.7	1.5	6.2	64.3	26.3	3.946	.781

Credit history factor was measured using the Likert scale and the results tabulated in table 4.19. The results showed that majority (94.5 %) of the respondents agreed to the opinion that for a real estate firm to qualify for a mortgage loan in Kenya today, clearance from a Credit Reference Bureau (CRB) is mandatory, 2.3 % remained neutral while a few (3.2 %) disagreed. On whether real estate firms with a poor credit rating find it hard to get a mortgage loan, majority (88.8%) of the respondents agreed with the opinion, 4.5 % remained neutral while a few (6.7 %) disagreed. As noted by Kisengese (2014) study on the Impact of Credit Information Sharing on the Level of Non Performing Loans among Commercial Banks in Kenya, lenders who evaluated the credit history of their prospective borrowers recorded superior performance as losses due to loan default were reduced significantly.

The results indicate that majority of the respondents agreed that lenders normally evaluate their credit history to determine their financial stability, ability to manage credit, and willingness to make timely payments. This point out that effective assessment of risk is a critical component essential to the long-term success of an organization (Basel, 2006). Therefore, assessment of risk should be an integral part in real estate investment analysis as it takes into account types of risk such as land value risk, land exploitation risk, planning permit risk, construction risk, revenue and duration risk that may affect performance of real estate firms unless mitigating measures at project level are undertaken.

Table 4.19 Response on Credit History

Credit History Factors		SD	D	N	A	SA	Mean	Std.Dev
UC 4	%	1.4	1.8	2.3	50.4	44.1	3.997	0.696
UC 5	%	3.4	3.3	4.5	47.2	41.6	3.90	0.673

4.5.6 Analysis of Government Regulations on Performance of Real Estate Firms

The government regulations factor was measured in terms physical planning system, monetary policy and efficient legal system. Regarding the statement that housing plans must be approved by the County governments, majority (86.1%) agreed, 7.4% remained neutral while a few (1.1%) disagreed as shown in table 4.20. Still on physical planning system, the study sought to find out whether it takes a long period of time to approve a house plan, majority (68.4%) of the respondents agreed, 16.7% remained neutral while a few (14.9%) disagreed. The number of respondents who agreed that building plans must be approved by the County Governments is relatively high at 86.1%, showing that majority of the real estate firms surveyed have realized the importance of obtaining approved housing plans prior commencement of construction. This demonstrates strategic fit as the real estate firms align their business strategy to the demands of the external environment. This is in line with the argument by Wang, Chen and Chen (2012) that proper handling of the external environment leads to organizational survival, a better relationship with stakeholders and organizational performance.

The percentage of the respondents who disagreed and remained neutral regarding the statement that it takes a long time to approve house plans stands at approximately a third of the respondents. This implies that the speed of approval may have increased in the recent past which could be attributed to the introduction of online housing approval system that saves time. Real estate firms should exploit such opportunities that enable them make first mover initiatives by forwarding house plans online for approval in order to enjoy speedier processing that would help them construct houses without delay. By so doing, this could become the source of competitive advantage in marketplace. CAHFA (2013) article entitled Scoping Study: Overview of the Housing Finance Sector in Zambia also found out that building application process and procedures should be quicker in order to increase the number of houses being constructed.

Majority (68.1%) of the respondents disagreed with the statement that physical planners are readily available in the market to offer advice to real estate firms, 7.4% remained neutral while a few (24.4%) agreed. The results are shown in table 4.20. The findings indicate that there a few physical planners employed by the County governments to provide essential services needed by the real estate firms as revealed by the small percentage of the respondents. The strategic use of human resource gives an organization competitive advantage (Martin-Rios, 2014). Organizations may gain in the long term from outsourcing human resource, and maximize capabilities at a strategic level (Zitkiene & Blusyte, 2015). Therefore, real estate firms should consider outsourcing or recruiting competent employees to ensure their competitiveness in the industry remains. The study findings corroborate that of Kibati (2015) study on Effects of Supply Side Institutional roles on Housing Affordability among Low Income Earners which found out that availability of technical assistance can increase the capacity of real estate firms in increasing housing delivery.

Table 4.20 Response on Physical Planning System

Physical Planning System Factors		SD	D	N	A	SA	Mean	Std.Dev
GR 1	%	1.1	5.3	7.4	40.4	45.7	4.244	.8882
GR 2	%	6.4	8.5	16.7	34.0	34.4	3.914	1.197
GR 3	%	26.6	41.5	7.4	10.6	13.8	2.436	1.356

Monetary policy factor was measured using Likert-scale where respondents were asked whether the rate of interest affect the cost of mortgages in the Kenyan market. Majority (75.8%) agreed, 7.4% remained neutral while a few (11.6%) disagreed as shown in Table 4.21. The findings corroborate that of Mogaka *et al*. (2011) study on the Influence of Macro Economic Factors on Mortgage Market Growth in Kenya which found out that interest rates affect the cost of mortgages. Interest rates have a strong influence on house prices, principally because changes in the interest rate affect the cost of mortgage payments. When interest rate goes up, real estate firms should explore alternative/cheaper sources of funding like equity financing that would enable them adopt low cost strategy (Mwathi, 2016). In so doing, such real estate firms would enjoy strategic advantage over their rivals since their products would be relatively cheaper.

Table 4.21 Response on Monetary Policy

Monetary Policy Factors		SD	D	N	A	SA	Mean	Std.Dev
GR 4	%	0	11.6	12.6	48.4	27.4	3.915	.930

Regarding the statement that the process of acquiring a title deed is long and costly in Kenya, majority (73.4%) of the respondents agreed, 17.0% remained neutral while a few (9.6%) disagreed as depicted in Table 4.22. A big percentage of the respondents revealed that the process of obtaining a title deed is currently slow, expensive and unreliable. As such it is a major obstacle to the development of the real estate firms where lending collateralized by property is hampered. This creates the need for an online title registration system which would be efficient, reliable and cost effective. In so doing, real estate firms targeting above-normal returns should be early adopters of such technological innovation which would be faster, convenient and cost effective. Similar findings were found in a study by Arvanitis (2013) article entitled African Housing Dynamics: Lessons from the Kenyan Market where an efficient land registration and regulation for land acquisition were cited as major factors influencing development of housing. The findings are further supported by Appiah (2007) study on the Role of Government and Regulation in the Emerging Real Estate Industry in Ghana which found out that there was an urgent need to review property registration system so as to have an efficient titling and registration system.

Majority (72.3%) of the respondents agreed with the opinion that changing land use from agricultural to residential is not an easy process in Kenya, 13.8% remained neutral while a few (13.8%) disagreed as shown in Table 4.22. Majority of the respondents agreed that change of land user is a complicated process which

could probably be attributed to the wide consultation needed from various stakeholders and the cost implication. Wu and Cho (2007) study on constraints in urban housing planning and control argued that due to the increasing demand of land for residential use, most local governments have imposed strict land use control resulting to higher housing prices which make housing unaffordable to majority of middle and low income households. Government regulations on housing and land use promote housing sustainability in most countries across the world (Yakob *et al*., 2012). Therefore, land use control must strike a balance between private property rights and the public interest as it is a critical element in achieving long term economic growth and sustainable development (Kargi, 2013). In their strategic plans, real estate firms should factor in the time taken to change land use from agricultural to residential so that housing projects kick off at the designated time. This would ensure that the rate of construction of houses is not affected by delays in change of land user and if possible they can acquire land that does not need change of user. The study findings concur with those of Caldera and Johansson (2011) who in their paper on The Price Responsiveness of Housing Supply in OECD Countries posited that supply of newly built houses does not only depend on geographical and urban characteristics only but also on national land use policies and planning regulations. The findings are further supported by Gyourko (2009) paper on Understanding Commercial Real Estate: Just How Different from Housing is it which argued that land use policies contribute significantly to the cost of housing.

Table 4.22 Response on Efficient Legal System

Efficient Legal system Factors		SD	D	N	A	SA	Mean	Std.Dev
GR 5	%	4.3	5.3	17.0	50	23.4	3.829	.9906
GR 6	%	6.4	7.4	13.8	40.4	31.9	3.840	1.148

Respondents were further asked to give their views on the extent at which government regulations affect the rate of constructing houses in Kenya. Majority (82%) of the respondents revealed that government regulations affect the rate of constructing houses to a great extent, 4.0 % not at all, 9% moderate extent while a few (5%) to a little extent. The results are depicted in Figure 4.5. This implies that government regulations affect the rate at which houses are constructed to a great extent as demonstrated by majority of respondents in this study. As noted by Guan and Yam (2015) the purpose of government regulations is to stimulate national economic growth and promote innovation while on the other hand Kivimaa (2014) argued that government regulations provide an enabling environment for joint problem solving by all actors in the industry concerned. However, some government regulations may fail to promote the desired positive development in real estate due to imperfection of government regulations that may emanate from lack of information, commitment and strategic issues (Cirone & Urpelainen, 2013). In such a case, this study suggest that for government regulations to be effective in achieving the desired positive goal, they should undergo a trial period to test acceptability and applicability before implementation

which would give space to real estate firms to re-align their business strategies with the demands of the remote environment to avoid strategic drift.

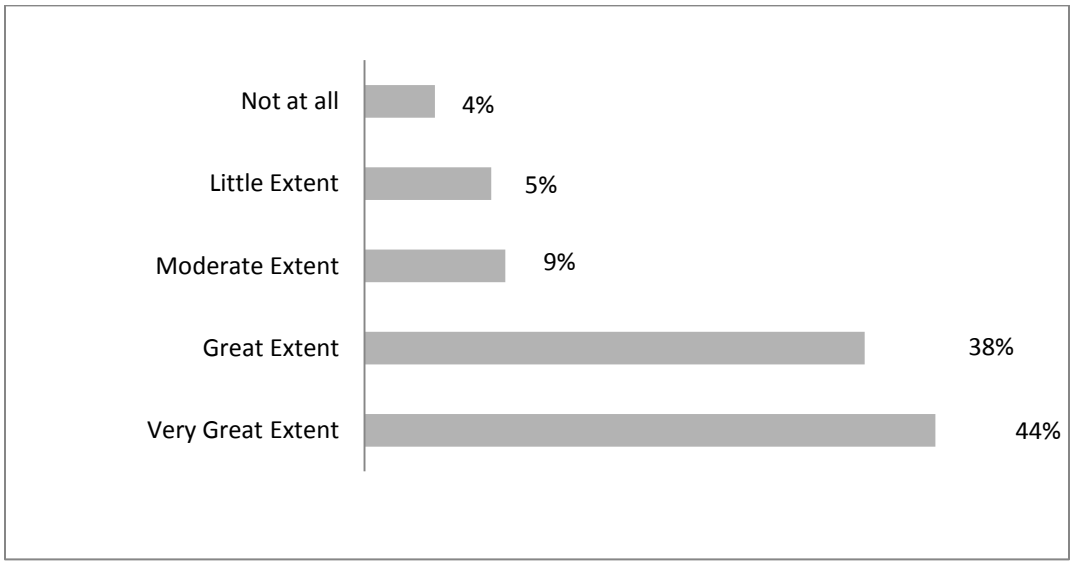

Figure 4.5 Extent at which Government Regulations affect the Rate of Housing Construction in Kenya.

4.5.7 Analysis of Performance of Real Estate Firms

Performance of real estate firms (PRE) was the dependent variable in this study and was measured in terms of return on investments (ROI), return on assets (ROA) and sales turnover. These constructs were later renamed performance indicators in the data collection instrument for ease of data collection and grouped into six indicators, that is, average profit before tax, return on equity, and return on assets, employment growth, market share and sales turnover, as shown in table 4.23. The analysis shows the average growth for the indicators of real estate performance. From the analysis, the average growth for profit before tax , return on equity, return on assets and employment ranged from 88.3% to 97%, apart from sales turnover which stood at 126.58%. The success of a business enterprise depends on how well it uses the internal resources within an organization to an advantage. For instance, Jang (2013) posited that the internal resources increases organizational

performance while Hassan *et al*. (2014) explained that using the internal resources of an organization become its strength against any competitions.

On the other hand, Naor *et al*. (2014) argued that the internal culture that an organization develops become its internal resource which is inimitable and unique. The internal resources are different for all organizations because of management strategies and how well the internal culture grows and this explains why organizations perform differently in the same industry (Chae *et al*., 2014). In this study the internal resource is the sales turnover which depends on employees' skills, product quality, ability to satisfy customers and efficiency in production costs (Hasnelly & Sari, 2012). Sales turnover had the highest amount of variation from the average, an indicator of the varying operation efficiency amongst real estate firms, at using employees' skills and product quality to satisfy customers and generate earnings.

Table 4.23 Performance Real Estate Firms

PRE Factors	%	**Mean**	**Std.Dev**
PRE 1		88.3	8.4
PRE 2		89.4	9.6
PRE 3		90.8	7.9
PRE 4		97.0	8.5
PRE 5		96.5	7.9
PRE 6		126.58	12.9

Testing for Outliers and Normality on the Dependent Variable

Outliers were tested univariately on the dependent variable since the dependent variable constructs were in continuous scales. Univariate outliers are extreme values for a single variable (Tabachnick & Fidell, 2007). The results showed possible outliers as depicted in Figure 4.6

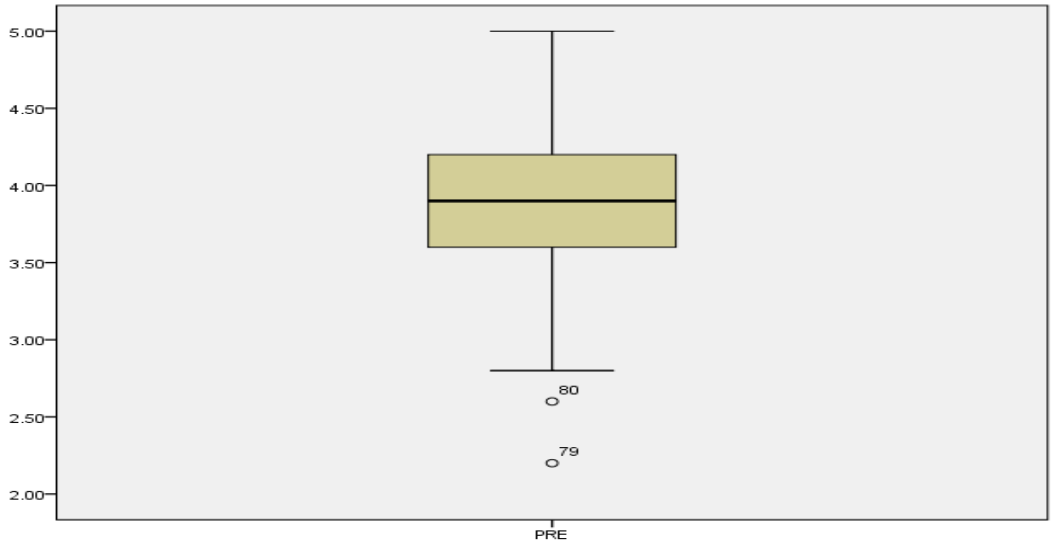

Figure 4.6 Box- Plot with Outliers

Outliers within performance of real estate constructs were dropped as shown in figure 4.7. That is, cases 79 and 80 were showing characteristics or values different from the majority of cases in a data set. In such a case, Kline (2005) and Hair *et al.* (2010) suggested that they should be dropped. This is because they distort the true relationship between variables, either by creating a correlation that should not exist or suppressing a correlation that should exist (Abbott & McKinney, 2013).

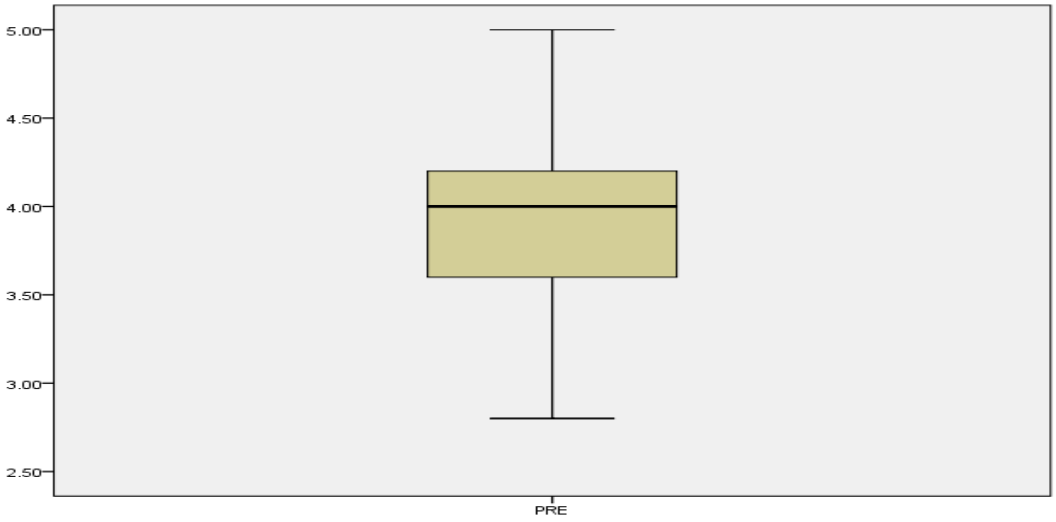

Figure 4.7: Box-Plot without Outliers

Mahalanobis d-squared was used for multivariate testing on the predictor variables where they produced reasonable box-plots as shown in figure 4.8 where all the constructs are symmetrical and with no outliers identified. In their study on Determinants and Consequences of Mortgage Default, Demyanyk *et al.* (2011) tested for outliers.

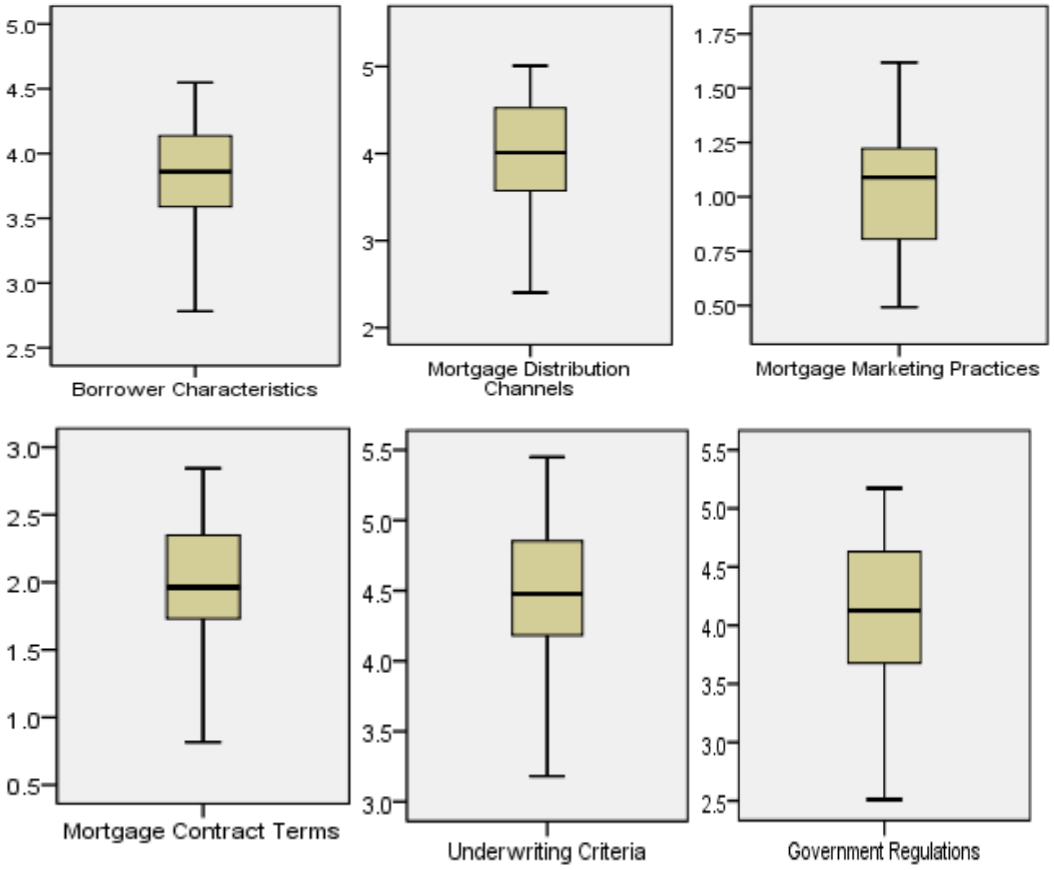

Figure 4.8: Multivariate Testing of Outliers

Normality Tests

Normality of observations is a major assumption in most statistical analysis (Moriya, 2008). Normality of observations is used to visualize the distribution of data or observations. Normally distributed variables should have a mean of zero (Field, 2009). This means that the differences between the model and the observed data should be zero or close zero (Field, 2009). Normality of observations of the dependent variable is often assumed without any empirical test or evidence but it is critical in many statistical methods. Normality of data distribution was examined using Skewness-Kurtosis. A variable with an absolute skew-index value greater than 3.0 is extremely skewed while a kurtosis index

greater than 8.0 is an extreme kurtosis (Kline, 2005). An index smaller than an absolute value of 2.0 for skewness and an absolute value of 7.0 is the least violation of the assumption of normality (Cunningham, 2008). The results of the normality test of the dependent variable indicated skewness-Kurtosis in the range of -1 and +1 as shown in appendix XI. This implied that the assumption of normality was satisfied. Violeta (2010) tested for normality using the Skewness-Kurtosis in his study on Analysis of the Mortgage Market in Romania and its impact on Real Estate which found that the assumption of normality was satisfied.

4.6 Test of Assumptions of the Study Variables

To ensure that there was no violation of the assumptions, this study tested for linearity, homoscedasticity, multicollinearity, non-response bias and common method variance. Prior to embarking on their analysis Mitra and Walczak (2012) study on Consumer Decision Making for Residential Mortgages conducted preliminary analyses to ensure that there was no violation of the assumptions of multicollinearity, linearity, heteroscedasticity and non-response bias in their study on Consumer Decision making for Residential Mortgages.

4.6.1 Multicollinearity

Table 4.24 shows that multicollinearity was not a problem in this study because the Variable Inflation Factor (VIF) of all the study variables was below 5 as recommended by Cohen, West and Aiken (2003).

Table 4. 24 Multicollinearity Test Results for the Study Variables

Variables	VIF**(1/(1-R^2))**	Tolerance **(1-R^2)**
BC	1.077	0.929
MDC	1.269	0.788
MMP	1.141	0.877
MCT	1.106	0.904
UC	1.134	0.882
GR	1.156	0.895
Mean VIF	**1.147**	

4.6.2 Linearity

The mean values of the observed variable for each increment of the independent variables are expected to lie on a straight line (Sekaran & Bougie, 2014). This leads to the assumption that the model being generated is linear otherwise a non-linear relationship would limit the generalization of the findings (Field, 2009). In this study linearity was not a problem, as shown in Appendix V. Akinwunmi (2009) tested for linearity in his study entitled: An Investigation into Factors Affecting Housing Finance Supply in Emerging Economies. A case study of Nigeria.

4.6.3 Heteroscedasticity

Heteroscedasticity in a study usually happens when the variance of the errors varies across observation (Park, 2008). Breusch-Pagan and Koenker was used to test the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables.

Breusch-Pagan and Koenker test the null hypothesis that heteroskedasticity not present (homoskedasticity) if sig-value is less than 0.05, reject the null hypothesis.

Ho: Constant variance

Variables: Borrower characteristics (BC), Mortgage distribution channels (MDC), Mortgage marketing practices (MMP), Mortgage contract terms (MCT) and Underwriting criteria (UC).

A large chi-square value greater than 9.21 would indicate the presence of heteroscedasticity (Sazali, Hashida, Jegak & Raduan, 2009). In this study, the chi-square value was 5.763 indicating that heteroscedasticity was not a concern as shown in table 4.25. Taib, Ramayah and Razak (2008) in their study on Factors Influencing Intention to use of Diminishing Partnership Home Financing in Middle East tested for heteroskedasticity using Breusch-Pagan and Koenker test.

Table 4.25: Breusch-Pagan and Koenker Test for Heteroscedasticity

Ho	Variables	Chi2(1)	Prob > Chi2
Constant Variance	BC,MDC,MMP,MCT,UC	5.763	0.330

4.6.4 Non-Response Bias

This was measured using the extrapolation method of Armstrong and Overton (1977). Out of 130 responses, 80% (n=104) responses were grouped as early responses while 20% (n=26) were grouped as late responses. The evaluation of non-response bias was done by comparing the means of the characteristics of early and late responses. The results of the student test (t-test) revealed that there was no significant difference between early and late responses (at p=0.05) as shown in table 4.26, providing evidence of a representative and unbiased sample. Hamid et al. (2011) tested for non-response bias in their study on Factors adopting Home Financing: A case Study among Consumers of Islamic bank in Malaysia.

Table 4.26 Testing for Non-Response Bias using Extrapolation Method

Characteristics	Categories	Mean	F-Value (d.f)	Sig. level
BC	Early response	3.7426	0.349 (128)	0.556
	Late response	3.8461		
MDC	Early response	2.7546	2.633 (128)	0.108
	Late response	2.7925		
MMP	Early response	3.3313	0.303 (128)	0.583
	Late response	3.4102		
MCT	Early response	3.403	0.726 (128)	0.397
	Late response	3.3761		
UC	Early response	4.3196	.499 (128)	0.482
	Late response	4.3849		
GR	Early response	3.9762	1.471 (128)	0.228
	Late Response	3.838		
PRE	Early response	1.0105	.761 (128)	0.385
	Late Response	0.9391		

4.6.5 Common Method Variance

Common Method Variance (CMV**)** is a systematic error variance common to variables measured with the same method (Richardson *et al*., 2009). This error is attributable to the measurement method rather than to the constructs the measures represent (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). The method biases are the main source of measurement error which threatens the validity of the conclusions (Podsakoff, 2003).

Rindfleisch, Malter,Ganesan and Moorman (2008) in their study on Cross-Sectional versus Longitudinal Survey Research: Concepts, Findings and Guidelines, gave a threshold of up to 0.21 for the t-statistic value of common method variance test. In this study, the test for the common method variance using CFA marker technique produced a t-statistic of 0.0196 (0.14^2), as shown in figure 4.9, and thus it was concluded that common method variance was not a concern for this study because the figure was less than 0.21. Doty, & Glick (1998) in their study on Common Methods Bias: Does Common Methods Variance Really Bias Results?, tested for common method variance. Podsakoff, MacKenzie, Lee & Podsakoff (2003) in their study on Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies, also tested for common method variance, and got a t-statistic of 0.11.

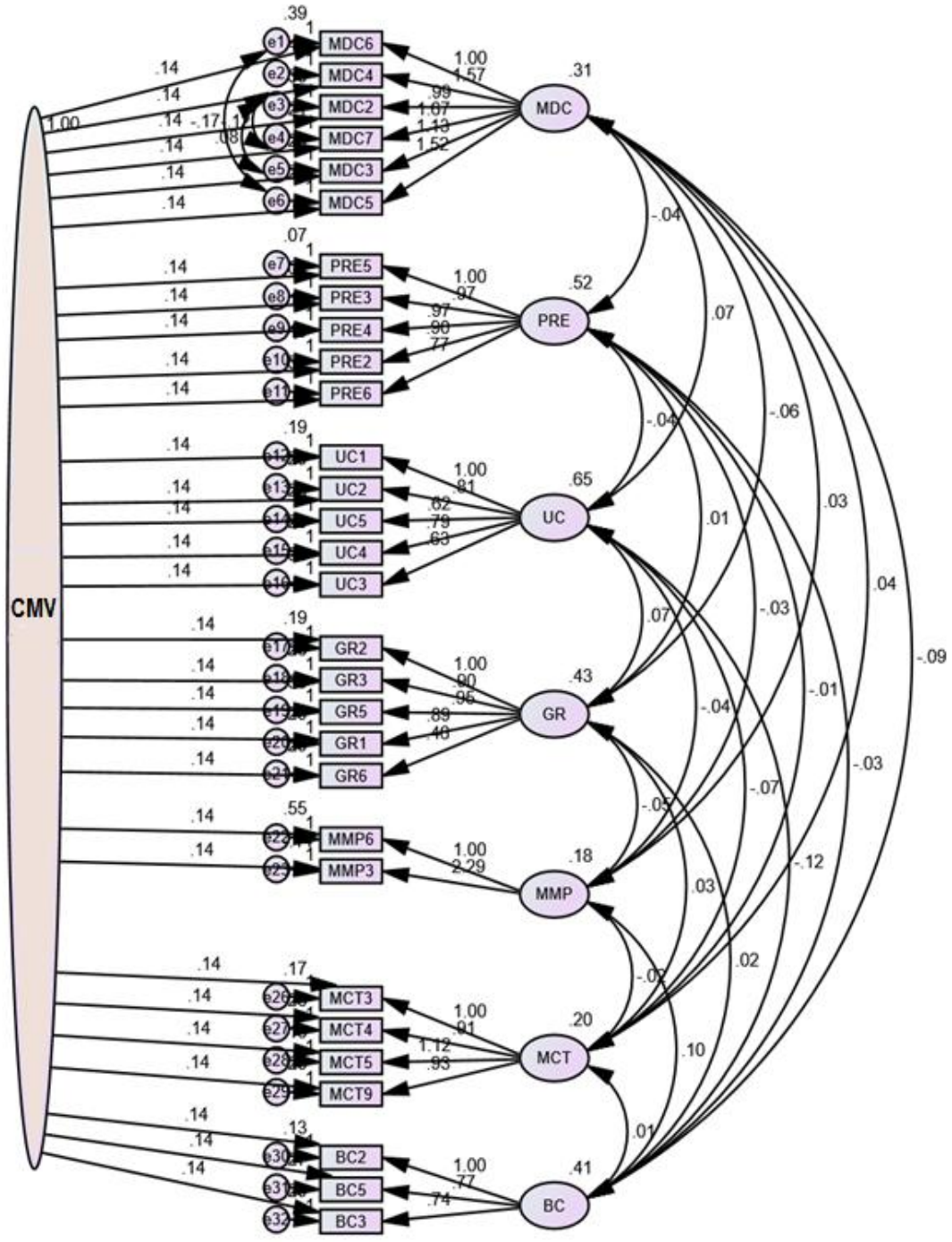

Figure 4.9: Common Method Variance

4.7 Data Analysis and Results of the Study Variables

In this study, data analyses were conducted using a two-phase process consisting of confirmatory measurement model and confirmatory structural model. This is in line with the two-phase process suggested by Anderson and Gerbing (1988). A study on Willingness to be a Partner in *Musharakah Mutanaqisah* Home Financing: Empirical investigation of Psychological Factors in Malaysia by Amin, Rahman and Razak (2014) conducted analyses using a two-phase process consisting of confirmatory measurement model and confirmatory structural model. A study by Ali, Raza and Chin-Hong (2015) on Islamic home financing in Pakistan: A SEM based approach using modified TPB model also conducted analyses using a two-phase process suggested by Anderson and Gerbing (1988).

4.7.1 Confirmatory Measurement Model

The first step involved confirmatory factor analysis (CFA) that evaluates the measurement model on multiple criteria such as internal reliability, convergent, and discriminant validity. Before CFA was done, the exploratory factor analysis (EFA) was done whose key steps included the computation of factor loading matrix, communalities and principal components analysis (PCA).Tabachnick and Fidell (2013) opined that Exploratory Factor Analysis (EFA) is used when you have a large set of variables that you want to describe in simpler terms and you have no *a priori* ideas about which variables will cluster together. It has the potential to narrow down a large sample of data into smaller one. In other words it helps the researcher in determining the belongings of the variables (Emory & Cooper, 1991). Ali and Chin-Hong (2015) in their study on factors affecting intention to use Islamic personal financing in Pakistan: Evidence from the modified TRA model used (EFA).

Before conducting EFA, two statistical tests which assess the suitability of data for structure detection were performed, that is, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. Table 4.27 indicates the results of the test for suitability of structure detection. The KMO value of data in this study was 0.709 which is close to 1 implying that factor analysis was suitable. With $p< 0.05$ in the Bartlett's Test of Sphericity, this is an indication of suitability of data for structure detection.

For the sampling adequacy of their study on Islamic home financing in Pakistan: A SEM based approach using modified TPB model, Ali, Raza and Chin-Hong (2015) used KMO and Bartlett's test of sphericity test values. The KMO value in their study was 0.71 which satisfied the minimum criteria suggested by Kaiser (1974). In addition, the prob. value of Bartlett'e test of spericity was 0.000 (which was less than 0.05) an indication that the correlation between the items at the 5 percent level of significance was sufficient and adequate for further analysis.

Table 4.27: Results of the Test for Suitability of Structure Detection

KMO Measure of Sampling Adequacy	**Bartlett's Test of Sphericity**	
0.709	Approx. Chi-Square	1991.050
	df	496
	Sig.	***0.000***

This study applied principal component analysis (PCA) in order to validate the construct validity of the items. A total no. of 32 items were loaded, whereas these items were split into seven factors, namely, borrowers characteristics (BC), mortgage distribution channels (MDC), mortgage marketing practices (MMP), mortgage contract terms (MCT), underwriting criteria(UC), government regulations(GR) and performance of real estate (PRE). In addition, the factor

loadings for all items ranged from 0.625 to 0.939, which satisfied the minimum criteria of 0.30 (Hair *et al.*, 2010). Hence, table 4.28 indicates the results of factor analysis. Akinwunmi (2009) used factor loading matrix plots to check validity of constructs in his study entitled: An Investigation into Factors Affecting Housing Finance Supply in Emerging Economies.

Table 4.28: Loadings and Cross-Loadings for the Measurement Model

Items	Mortgage distribution channels	Performance of real estate	Mortgage underwriting criteria	Government regulations	Mortgage Marketing practices	Mortgage contract terms	Borrower characteristics
MDC6	.829						
MDC4	.828						
MDC2	.824						
MDC7	.819						
MDC3	.782						
MDC5	.776						
PRE5		.939					
PRE3		.934					
PRE4		.920					
PRE2		.886					
PRE6		.761					
UC1			.855				
UC2			.829				
UC5			.815				
UC4			.795				
UC3			.780				
GR2				.887			
GR3				.804			
GR5				.787			
GR1				.748			
GR6				.625			

MM P6	.812		
MM P3	.728		
MM P2	.709		
MM P7	.683		
MC T3		.823	
MC T4		.806	
MC T5		.799	
MC T9		.723	
BC2			.857
BC5			.840
BC3			.798

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Communality values are used to measure the variability of each observed variable that could be explained by the extracted factors (Field, 2009). The factor extraction procedure was performed to determine the smallest number of factors that can best be used to represent the interrelations among the set of variables. The most used extraction technique is the principal component analysis while others are image factoring; maximum likelihood factoring; alpha factoring; unweighted least squares and generalized least square. As a rule of the thumb, only variables with loadings greater than .32 are interpreted (Pallant, 2010). The greater the loading, the more the variable is considered to be a pure measure of the factor. Loadings in excess of 0.71 (50% overlapping variance) are considered excellent, 0.63 (40% overlapping variance) as very good, 0.55 (30% overlapping variance) as good, 0.45 (20% overlapping variance) as fair and 0.32 (10% overlapping variance) as poor (Tabachnick & Fidell, 2007). The number of

factors to be retained can be decided using Kaiser's criterion/Eigen value with factors of Eigen value of 1.0 or more being retained for further investigation (Kaiser 1960; Field 2000).

Small values indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis. The extraction communalities for this solution were all greater than 0.5 as shown in (Appendix VIII) and are acceptable indicating that the variables fitted well with other variables in their factor (Pallant, 2010). Crowston *et al*. (2015) in their study on Social Networks and the Success of Market Intermediaries: Evidence from the US Residential Real Estate Industry used communality values to measure the variability of each observed variable that could be explained by the extracted factors.

Principal Components Analysis (PCA)

The purpose of Principal Components Analysis (PCA) is to extract maximum variance from the data set with each component (Tabachnick & Fidell, 2013). Appendix IX shows extracted components obtained by constraining factors and the total variance explained by the initial Eigen values. The study used variance percentage, Kaiser's criterion to determine the number of factors that can be best used to represent the interrelations among the set of variables (Hair *et al*., 2010).

Based on these criteria therefore, seven factors, out of a total 32 factors, were imputed as shown in Appendix IX. Amongst themselves, they were able to explain (71%) of the total variance in the data. The seven factors in the initial solution have Eigen values greater than 1.6, with the threshold being Eigen value greater or equal to 1.0 (Hair, Black & Babin, 2010). The fewer the variables explaining more of the variability in the original variables, the better it is in ensuring that there is no redundant information (Hair *et al*., 2010).

The Appendix X also shows the variance explained by the extracted factors before rotation. The cumulative variability explained by these seven factors in the extracted solution is (71%), showing no difference from the initial Eigen values. Thus, nothing of the variation explained by the initial Eigen values is lost due to latent factors unique to the original variables and variability that simply cannot be explained by the factor model (Hair *et al*., 2010). Ali *et al.* (2015) used PCA to show the extracted components obtained by constraining factors.

Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) was employed to test whether there exist a relationship between the observed variables and their underlying latent constructs (Hair *et al*, 2010). In the CFA model, 30 items were loaded to best fit the sample data between observed and un-observed variables (Byrne, 2013). The items for the study variables were examined using confirmatory factor analysis (CFA) on the basis of EFA results to examine the dimensionality of each variable and to test the model fit of the factors of the study variables (Anderson & Gerbing, 1988). Each observed variable was assigned to one and only one latent variable as shown in figure 4.10 which confirmed that a relation exist between the observed and latent variables as shown by the correlations.

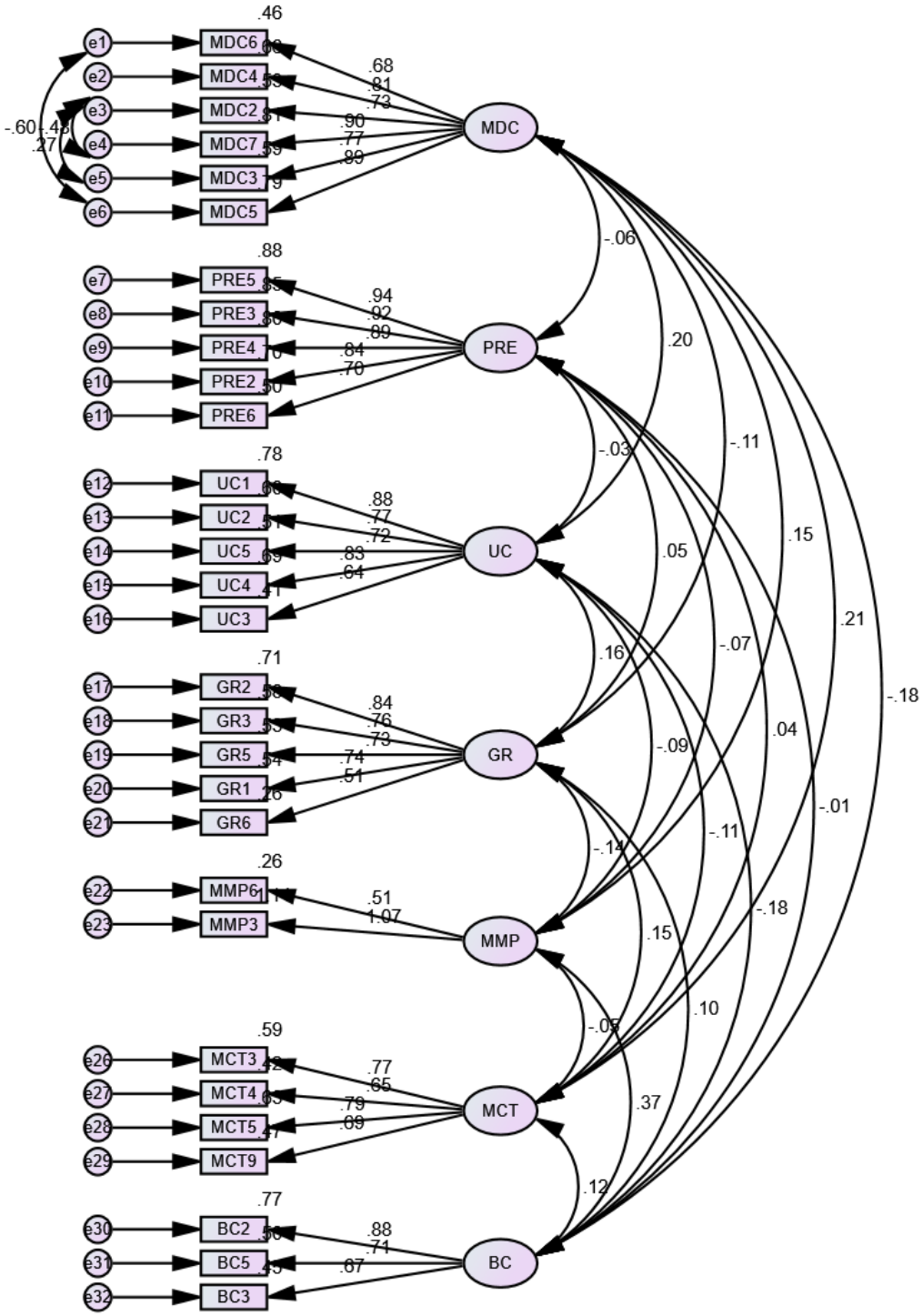

Figure 4.10: CFA Measurement Model for Study Variables

Confirmatory Factor Analysis was also done to measure the construct validity in the measurement model on multiple criteria such as convergent, internal reliability and discriminant validity. Bahl and Wali (2014) argued that convergent and discriminant validity is both subcategories of construct validity. Evidence that construct validity exist is demonstrated by presence of both discriminant and convergent validity. None alone is sufficient for measuring construct validity. Bryant and Kohn (2013) in their study on Housing Bubble Debate Resolved used CFA to measure both convergent and discriminant validity.

For convergent validity, the factor loadings should be 0.5 or higher (Pansuwong, 2009; Hair *et al.*, 2010). In this study, the average loadings are more than 0.7, implying that they are high enough to be convergent, as shown in table 4.28. Composite reliability (CR) suggests a value of 0.6 for acceptability which indicates internal consistency of the measurement model (Kline, 2005; Hair *et al*., 2010). As depicted in Table 4.29 the composite reliability (CR) value of all items ranged from 0.801 to 0.935 suggesting that high internal reliability of the data exist. Therefore, convergent validity was met. Taib, Ramayah and Razak (2008) used convergent validity on their study on Factors Influencing Intention to use of Diminishing Partnership Home Financing in Middle East to measure the extent to which the underlying latent construct correlated to the observed variables that were designed to measure the same construct.

Table 4.29: Convergent Validity

Constructs	Composite reliability	Average variance Extracted (AVE)
MCT	0.816	0.528
MDC	0.913	0.639
PRE	0.935	0.745
UC	0.880	0.598
GR	0.843	0.524
MMP	0.808	0.702
BC	0.801	0.576

To establish discriminant validity, one needs to show that measures that should not be related are, in reality, not related (Hair *et al.*, 2010). In table 4.30, none of the loadings is greater than 0.7 demonstrating discriminant validity. In their study on Social Networks and the Success of Market Intermediaries: Evidence from the US Residential Real Estate Industry, Crowston *et al.* (2015) used discriminant validity to show that measures that should not be related are, in reality, not related.

Table 4.30: Discriminant Validity

Construct	MCT	MDC	PRE	UC	GR	MMP	BC
MCT	**1.000**						
MDC	0.215	**1.000**					
PRE	0.038	-0.063	**1.000**				
UC	-0.107	0.196	-0.030	**1.000**			
GR	0.148	-0.115	0.051	0.163	**1.000**		
MMP	-0.049	0.147	-0.074	-0.091	-0.137	**1.000**	
BC	0.119	-0.179	-0.006	-0.175	0.103	0.369	**1.000**

Scale reliability was assessed by computing a Cronbach's alpha reliability coefficient for each of the constructs. The overall Cronbach's alpha statistic in this study is greater than 0.7, ranging from 0.753 to 0.932, as shown in Appendix X.

DeVellis (2003) and Nunnaly and Bernstein (1994) recommended a value of 0.7 and above for the coefficient alpha to infer to the internal consistency of the items. Thus reliability is demonstrated as the overall Cronbach's alpha statistic is greater than 0.7. Valentini, Ippoliti and Fontanella (2013) assessed the reliability and validity of the measurement model by evaluating internal consistency, convergent validity, and discriminant validity in their study on Modelling US Housing Prices by Spatial Dynamic Structural Equation Models. Taib, Ramayah and Razak (2008) also assessed the reliability and validity of the measurement model by evaluating internal consistency, convergent validity, and discriminant validity in their study on Factors Influencing Intention to use of Diminishing Partnership Home Financing in Middle East.

Chi-Square Goodness–of- Fit Test

When an analyst tries to fit a statistical model to observed data, he or she may wonder how well the model fit the data, that is, the closeness of the observed values to those which would be expected under the fitted model (Arbuckle & Wothke, 1999). One statistical test that is used to address this issue is the chi-square goodness of fit test. Reinard (2006) posited that chi-square is one of the best traditional measure used in assessing overall model fit when the sample sizes are less than 200. This study employed chi-square since the sample size was less than 200. Chi-square goodness of fit was mainly employed in this study as it best represents the differences between the observed and estimated covariance matrices. A low value of Chi-square indicates that there is no difference between the observed and the theoretical model. The lower the Chi-square value the better the fit of the model indicating that the specified model was supported by the data. If the chi-square value is large, then the observed and theoretical values are not close and the model is a poor fit to the data (Arbuckle & Wothke, 1999). Knapp

(2005) indicated that if the p-value is less than 0.001 then the proposed model fits the observed covariances and correlations sufficiently. Table 4.31 shows that Chi-square goodness of fit test is significant at $p<0.001$.

Table 4.31: Chi-square Goodness-of-Fit Test

Chi-Square	df	Sig.
525.326	128	.000

4.7.2 Confirmatory Structural Model and Hypotheses Testing of the Study Variables

The second step involved answering the study's objectives where AMOS software version 21 was used for confirmatory factor analysis, measurement model and structural equation modeling. Structural equation modeling (SEM) is a very general, chiefly linear, chiefly cross-sectional statistical modeling technique (Schumacker & Lomax, 2004). Jackson, Gillaspy and Purc-Stephenson (2009) argued that SEM is largely a confirmatory technique rather than exploratory and the AMOS software can be used to perform CFA. In the same vein they noted that path analysis, factor analysis and regression are all special cases of SEM. In this study, SEM was used to test hypotheses and to fit the theoretical model. A study by Kohn and Bryant (2010) on factors leading to the U.S. housing bubble: A structural equation modeling approach used SEM to test the research hypothesis, fit theoretical model and statistical modeling.

Each model variable was tested for normality and outliers on variables aspects. This was an exploratory data analysis (EDA) for understanding the structure of the variable before further data analyses was undertaken. This assisted in employing the appropriate analytical data analyses techniques to avoid crucial violations of key assumptions in consequent modeling processes. This was

followed by model fit testing. In structural equation modeling, the fit indices establish whether, overall, the model is acceptable, and if acceptable, researchers then establish whether specific paths are significant (Moss, 2009).

The study considered two types of fit indices that are commonly used, that is, absolute fit indices and incremental fit indices (Hair *et al.*, 2010). For absolute fit indices, this study used on Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI) and Root- Mean-Square Error of Approximation (RMSEA). For incremental fit indices Comparative Fit Index (CFI) and Normed-Fit Index (NFI) were used. Wei and Wang (2010) used absolute and incremental fit indices for assessing model fit in their study on Dynamic Model: House Price Returns, Mortgage rates and Mortgage Default rates to estimate the dynamic relations among house price returns, mortgage default rates and mortgage rates.

For the measurement model, table 4.32 shows results of the alternative goodness of fit test statistics for the CFA model. RMSEA for the study was .064. A rule of thumb is that RMSEA < .05 indicates close approximate fit; values between .05 and .08 suggest reasonable error of approximation and RMSEA > 0.10 suggests poor fit (Browne & Cudeck, 1993). The study's RMSEA was considered a moderate fit. As depicted in Table 4.32, NFI was found to be a good fit with a value of 0.742. Kline (2005) suggested that the acceptable value of NFI in order to make it a good fit is NFI > 0.90. In the same vein, the inclusion of GFI is also of importance to expound the model fit. According to Kline (2005), GFI = 1.0 indicates a perfect model fit, GFI > 0.90 may indicate a good fit, and values close to zero indicate a very poor fit. However, values of the GFI can fall outside the range of 0 to 1.0. Values greater than 1.0 can be found with just-identified models or with over-identified models with almost perfect fit; negative values are most likely to happen when the sample size is small or when model fit is extremely

poor. In consonance with these arguments, the present finding reports GFI > 0.90. This explained that the study's model was within the acceptable range.

As for CFI, a rule of thumb for the CFI and other incremental indices is that values greater than roughly 0.90 may indicate reasonably a good fit of the researcher's model (Hu & Bentler, 1999). The study's CFI is exceeding 0.90, which leads to a conclusion that the study's had a good fit for CFI. In summary, all the model fit measures of the measurement model achieved the minimum threshold level; hence, the measurement model for residential mortgage financing was appropriate. Bryant and Kohn (2013) in their study entitled A Housing Bubble Debate Resolved tested their research model using the goodness-of-fit test indicators which revealed that the values were within the range of recommended levels.

Table 4.32: Confirmatory Factor Analysis Model Fits

Model	CFI	GFI	AGFI	NFI	RMSEA
Default model	.910	0.737	0.679	0.742	0.064
Saturated model	1	1		1	
Independent model	0	0.371	0.327	0	0.199

Effect of Borrower's Characteristics on Performance of Real Estate Firms in Kenya

The first specific objective of this study was to establish the effect of borrower's characteristics on the performance of real estate firms in Kenya. Normality test on the factors produced Skewness and Kurtosis values of between -1 and +1. The outliers were tested for each of the observations, with observations farthest from the centroid, Mahalanobis distance, being taken into consideration. There were no outliers detected. The values obtained in testing the model fit indices were within the thresholds as shown in table 4.33.

Table 4.33 Model- Fit Indices for the Influence of Borrower Characteristics on Performance of Real Estate Firms in Kenya

Model	CFI	GFI	AGFI	NFI	RMSEA
Default model	.995	0.948	0.902	0.959	0.037
Saturated model	1	1		1	
Independent model	0	0.371	0.327	0	0.437

The hypothesis to test for this specific objective was:

H_{01}**:** There is no significant relationship between borrower characteristics and performance of real estate firms in Kenya.

Figure 4.11 shows there was a positive (regression weight = 0.40) and statistically significant relationship between borrower's characteristics and performance of real estate firms. In this regard H_{01} was rejected. Therefore, this model was significant at 95% significance level (α-level 5% for a 2-tailed test). Popular α-levels are 10% (0.1), 5% (0.05), 1% (0.01), 0.5% (0.005), and 0.1% (0.001) (Fisher, 1926). The precision is lowered to capture the appropriate significance. Dungey *et al*. (2014) in their study on Mortgage Choice Determinants: The role of Risk and Bank Regulations found out that borrower's characteristics such as income determines the borrowing power of real estate firms. This indicates that firms that have the ability to repay loans are likely to borrow mortgages for building residential houses; hence improved performance. On the other hand, households with ability to repay mortgage loans are able to buy the residential houses built by real estate firms leading to increased turnover.

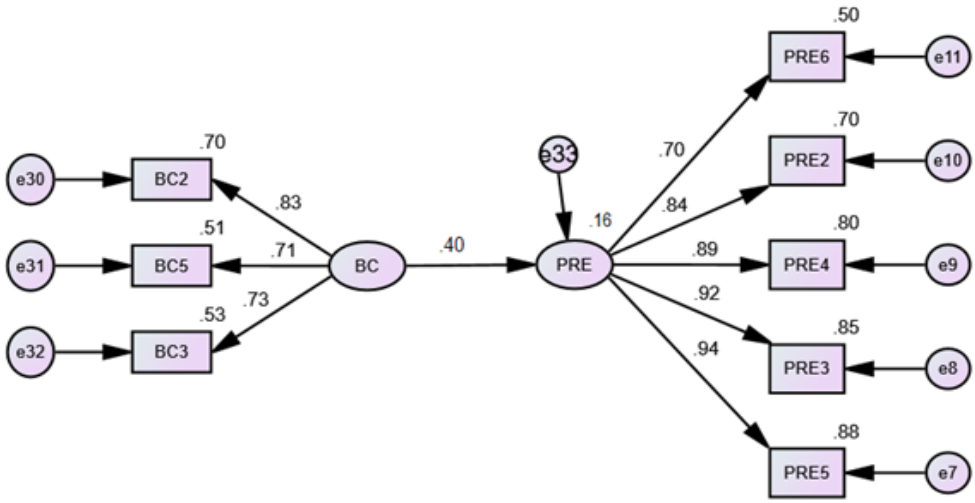

Figure 4.11: Significance Test for Borrower Characteristics

Effect of Mortgage Distribution Channels on Performance of Real Estate Firms in Kenya.

The second objective of this study was to establish the effect of mortgage distribution channels on the performance of real estate firms in Kenya. Normality test on the factors produced Skewness and Kurtosis values of between -1 and +1. The outliers were tested for each of the observations, with observations farthest from the centroid, Mahalanobis distance, being taken into consideration. There were no outliers detected. The values obtained in testing the model fit indices were within the thresholds as shown in table 4.34.

Table 4.34: Model Fit Indices for the Influence of Mortgage Distribution Channels on Performance of Real Estate Firms in Kenya

Model	CFI	GFI	AGFI	NFI	RMSEA
Default model	.966	0.888	0.816	0.922	0.087
Saturated model	1	1		1	
Independent model	0	0.322	0.187	0	0.400

The hypothesis to test for this specific objective was:

H_{02}: There is no significant relationship between mortgage distribution channels and performance of real estate firms in Kenya.

Figure 4.12 shows there was a positive (regression weight = 0.33) and statistically significant relationship between mortgage distribution channels and performance of real estate firms.

Therefore H_{02} was rejected. The null hypothesis was rejected at 95% significance level implying that there is a significant relationship between mortgage distribution channels and performance of real estate firms in Kenya.

Kibati *et al.* (2015) in their study on Effects of Supply Side Institutional Roles on Housing Affordability among the Low Income Earners in Kenya, found out that mortgage distribution channels positively influenced affordability of housing by low income earners in Kenya, ultimately leading to real estate performance. Their findings showed that increase in competition among the mortgage lending channels would lower the mortgage interest rates in the long run enabling more low income earners afford mortgages which translate to increase in housing units sold by real estate firms in Kenya. Their findings are similar to Ezimuo *et al*. (2014) study on Sources of Real Estate Finance and their impact on Property Development in Nigeria: A case Study of Mortgage Institutions in Lagos Metropolis which found out that availability of multiple mortgage distribution channels has increased competition among players in the industry due to low barriers to entry. This in turn led to better mortgage rates in the market that accounted for the significant growth experienced in the performance of real estate firms.

Mwathi (2016) study on Financing Sources of Real Estate Firms in Kenya found out that the depository system is one of the most significant channels of distributing mortgage finance for real estate development. The study findings

also concur with those of Osoro (2014) in the article from The Centre for Research on Financial Markets and Policy that revealed that the depository system was a major mortgage distribution channel in Kenya. Similar findings were found in CBN (2013) Occasional paper No 50 entitled Mortgage Financing in Nigeria where the secondary market was cited as a lifeline in providing long term funds meaning that if less funding were available through the secondary market, then fewer or smaller mortgages would likely be originated affecting performance of real estate firms negatively.

Therefore, the availability of mortgage distribution channels is indispensable in addressing sources of finances for real estate firms among many developing Countries (Iacobucci & Winter, 2005). In such a case, real estate firms should seek new mortgage distribution channels that favor investment and growth thus giving them an opportunity to develop long-term sustainable advantage. For instance, real estate firms should consider adopting the depository system which according to the findings of this study emerged as strength built through savings and may be used to attract cheaper loans for housing construction and development from mortgage lending institutions. In such a case, real estate firms would develop the saving culture which according to Naor *et al.* (2014) would become an internal resource that may not be easily copied by competitors.

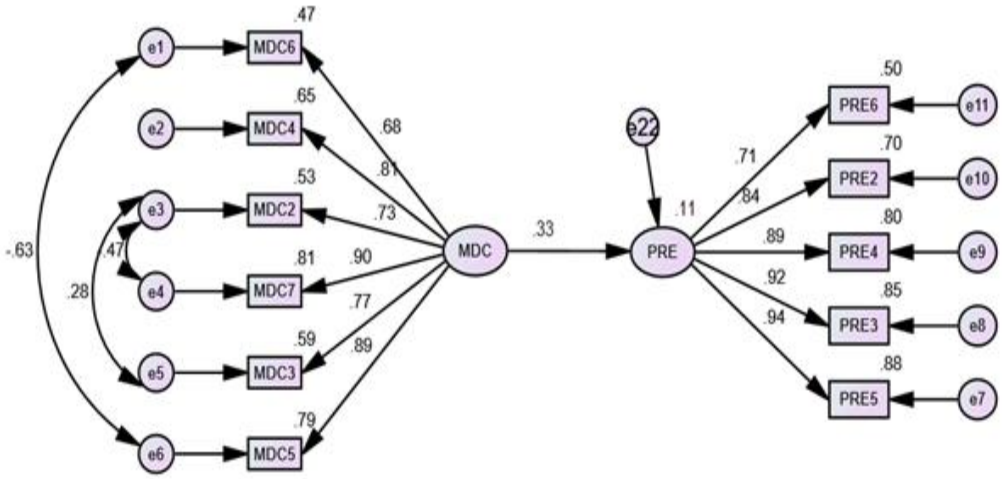

Figure 4.12 Significance Test for Mortgage Distribution Channels

Effect of Mortgage Marketing Practices on Performance of Real Estate Firms in Kenya

The third objective of this study was to explore the effect of mortgage marketing practices on the performance of real estate sector in Kenya. Normality test on the factors produced Skewness and Kurtosis values of between -1 and +1. The outliers were tested for each of the observations, with observations farthest from the centroid, Mahalanobis distance, being taken into consideration. There were no outliers detected. The values obtained in testing the model fit indices were within the thresholds as shown in table 4.35.

Table 4.35: Models Fit Indices for the Influence of Mortgage Marketing Practices on Performance of Real Estate Firms in Kenya

Model	CFI	GFI	AGFI	NFI	RMSEA
Default model	.995	0.948	0.902	0.951	0.036
Saturated model	1	1		1	
Independent model	0	0.390	0.216	0	0.422

The hypothesis to test for this specific objective was:

H_{03}: There is no significant relationship between mortgage marketing practices and performance of real estate firms in Kenya.

Figure 4.13 shows there was a positive (regression weight = 0.46) and statistically significant relationship between mortgage marketing practices and performance of real estate firms. Therefore H_{03} was rejected. The null hypothesis was rejected at 95% significance level implying that there is a significant relationship between mortgage marketing practices and performance of real estate firms in Kenya.

Kinyua (2013) study on effect of Strategic Marketing Practices on the Performance of Housing Sector in Kenya identified marketing as one of the most important driving force in the performance of real estate firms. The study found a positive relationship between marketing practices and performance of real estate firms which was found to be embedded on appropriate customer driven marketing practices. The study findings are also consistent with Macharia (2013) study on Influence of Marketing Strategies on Performance of Real Estate Business in Nairobi, Kenya that posited that for real estate firms to survive and outperform their peers in the domestic competitive business environment they must differentiate themselves through marketing practices. This is because marketing

practices aim at improving the profitability level in organizations by allowing them to connect with the needs of the customers (Sacuia & Dumitru, 2014).

Mortgage marketing practices are drivers of organizational positioning in a dynamic environment, which helps in enhancing the development of new product/service for existing markets through technology (Kahreh *et al*., 2014). Findings in this study revealed that internet has become a significant and growing source of information that has dramatically changed the strategies of marketing, distribution and servicing of mortgage products. This means that technological advancement has brought a revolution in the way modern business is being carried out and real estate firms must be early adopters of information technology in marketing to position themselves. This would make real estate firms that are laggard's benchmark with their competitors for better performance. This corroborate with Beracha and Wintoki (2013) study entitled Forecasting Residential Real Estate Price Changes which pointed out that advancement in internet technology has helped in improving information access and marketing efficiency which ultimately led to better performance.

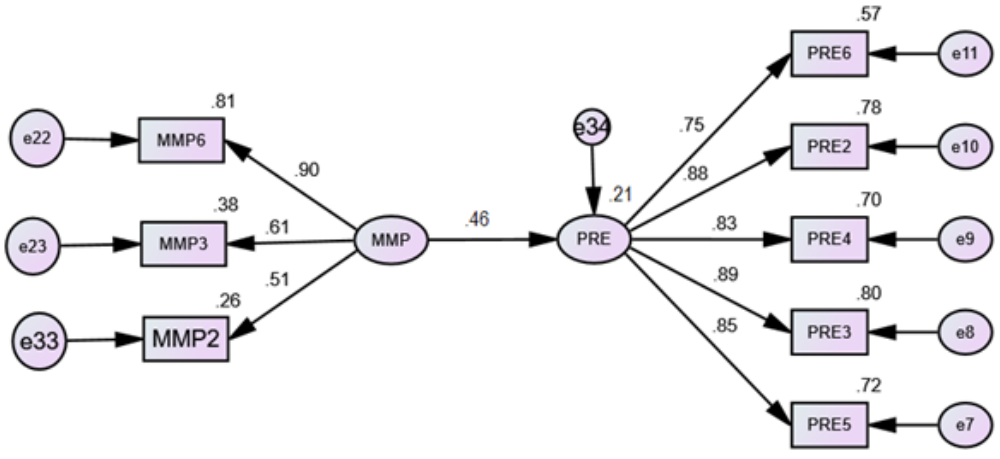

Figure 4:13 Significance Test for Mortgage Marketing Practices

Effect of Mortgage Contract Terms on Performance of Real Estate Firms in Kenya

The fourth objective of this study was to determine the effect of mortgage contract terms on the performance of real estate firms in Kenya. Normality test on the factors produced Skewness and Kurtosis values of between -1 and +1. The outliers were tested for each of the observations, with observations farthest from the centroid, Mahalanobis distance, being taken into consideration. There were no outliers detected. The values obtained in testing the model fit indices were within the thresholds as shown in table 4.36

Table 4.36: Models Fit Indices for the Influence of Mortgage Contract Terms on Performance of Real Estate Firms in Kenya

Model	CFI	GFI	AGFI	NFI	RMSEA
Default model	.995	0.939	0.895	0.949	0.034
Saturated model	1	1		1	
Independent model	0	0.382	0.227	0	0.398

The hypothesis to test for this specific objective was:

> H_{04}: There is no significant relationship between mortgage contract terms and performance of real estate firms in Kenya.

Figure 4.14 shows there was a positive (regression weight = 0.62) and statistically significant relationship between mortgage contract terms and performance of real estate firms. Therefore H_{04} was rejected. The null hypothesis was rejected at 95% significance level implying that there is a significant relationship between mortgage contract terms and performance of real estate firms in Kenya.

A study by Kalui and Kenyanya (2015) on Selected Factors hindering Access to Mortgage Finance in Kenya found out that mortgage contract terms play a

significant role in the performance of real estate firms. Their study demonstrated that mortgage contract terms is a major determinant of success in real estate firms as majority of them opt for adjustable mortgage rate to fixed rate mortgages. This finding also agreed with Coulibaly and Li (2009) in their study on Choice of Mortgage Contracts. Evidence from the Survey of Consumer Finances which found out that mortgage contract terms tend to dominate the choice of mortgage rate where preference for adjustable rate mortgages to fixed rate mortgages attracted majority of the borrowers. This has an influence on the performance of real estate firms as residential houses may become more affordable in the future should interest rates fall for an extended period of time.

The findings of this study illustrated that preference for fixed rate mortgages was low an indication that preference of variable mortgage rates remains high in the mortgage industry and real estate firms should therefore align their business models to this reality for them to record better returns in the long run. The findings were supported by Sven and Erik (2015) study entitled The Myopic Choice between Fixed and Adjustable Rate Mortgages in Flanders which demonstrated that majority of real estate firms have a strong preference for adjustable rate mortgage to fixed rate mortgages.

The fact that mortgage lending institutions avail a variety of mortgage rates where borrowers are able to choose depending on their current and projected flow of income is a clear manifestation that those organizations which are highly focused in providing a variety of products are likely to record superior performance (Eisingerich *et al*., 2009). Likewise, real estate firms seeking improved performance should provide a wide range of housing products tailored to meet the needs of customers. This would emerge as strength or an advantage that such firms would have over

their business rivals thereby increasing the size of their market segment in the long-run.

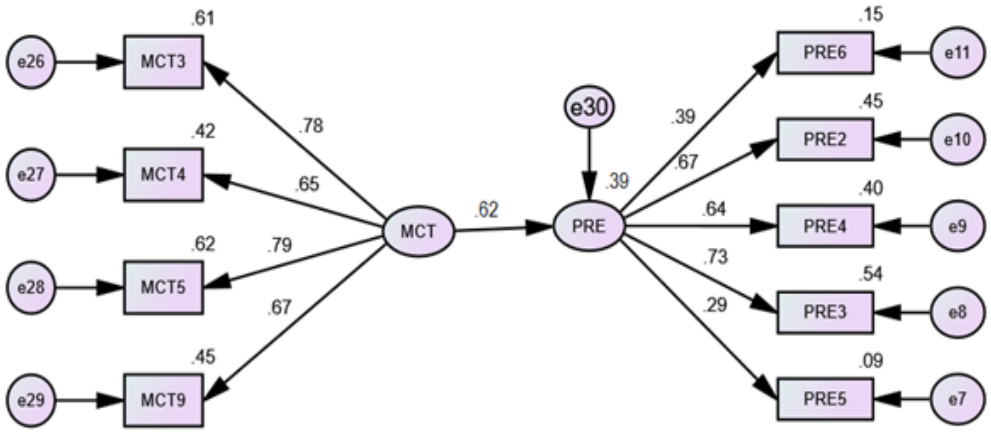

Figure 4.14 Significance Test for Mortgage Contract Terms

Effect of Underwriting Criteria on the Performance of Real Estate Firms in Kenya

The fifth objective of this study was to assess the effect of underwriting criteria on the performance of real estate firms in Kenya. Normality test on the factors produced Skewness and Kurtosis values of between -1 and +1. The outliers were tested for each of the observations, with observations farthest from the centroid, Mahalanobis distance, being taken into consideration. There were no outliers detected. The values obtained in testing the model fit indices were within the thresholds as shown in table 4.37.

Table 4.37 Model-Fit Indices for the Influence Underwriting Criteria on the Performance of Real Estate Firms in Kenya

Model	CFI	GFI	AGFI	NFI	RMSEA
Default model	.993	0.932	0.890	0.944	0.038
Saturated model	1	1		1	
Independent model	0	0.353	0.209	0	0.392

The hypothesis to test for this specific objective was:

H_{05}: There is no significant relationship between underwriting criteria and performance of real estate firms in Kenya.

Figure 4.15 shows there was a positive (regression weight = 0.03) but statistically insignificant relationship between underwriting criteria and performance of real estate firms. Therefore, the study failed to reject the null hypothesis implying that there was no statistically significant relationship between underwriting criteria and performance of real estate firms in Kenya.

Basdeo, T. (2017) study on Ranking of Mortgage Underwriting Criteria for Multifamily Rental Property found out that underwriting criteria had a positive but statistically insignificant relationship with performance of real estate firms. He argued that tighter underwriting criteria on residential real estate loans was a major cause of financial crisis since limited financing could hinder the quality and number of residential housing units available for in the market, thereby affecting performance of real estate firms. Vojtech, Kay and Driscoll (2016) study on The Real Consequences of Bank Mortgage Lending Standards also found out that underwriting criteria had a positive but statistically insignificant relationship with performance of real estate firms. They argued that excessive easy underwriting criteria increase the ability to purchase homes in the short-run. However, in the

long run the excessive demand outstrips supply leading to hike in house prices that translates to lower real estate sales.

This finding corroborates the results by O'Keefe (2009) study on the Effects of Underwriting Practices on Loan Losses: Evidence from the FDIC Survey of Bank Lending Practices which demonstrated that there was a positive and statistically insignificant relationship between underwriting criteria for real estate loans and performance of real estate firms. This was illustrative that the performance of the loan borrowed in terms of future repayment cannot be fully pre-determined by the underwriting criteria during loan application. The study results supported the commonly held view that the underwriting criteria depends on the prevailing macro-economic conditions facing the mortgage industry. Therefore, qualifying for a mortgage loan by the real estate firms is not enough, but perhaps tempered with some level of loan portfolio management and administration, appreciation of collateral requirements and financial transparency could result into improved firm performance.

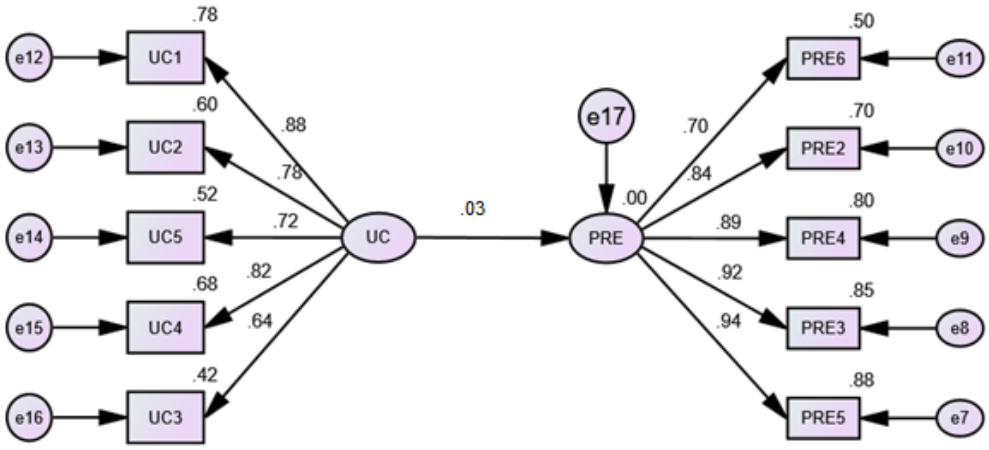

Figure 4.15 Significance Test for Underwriting Criteria

In summary, the retained model containing only the sub-variables that were significant after establishing the hypothesized relationships are shown in figure 4.16. The sub-variables are borrowers' characteristics (BC), mortgage distribution channels (MDC), mortgage marketing practices (MMP) and mortgage contract terms (MCT). Figure 4.16 further shows the overall retained model where mortgage contract terms was found to have a strong positive significant relationship on performance of real estate firms in Kenya compared to the other variables with a regression weight of 0.61. Note the average correlations between the sub-variables, with the correlation between MDC and MMP being the highest.

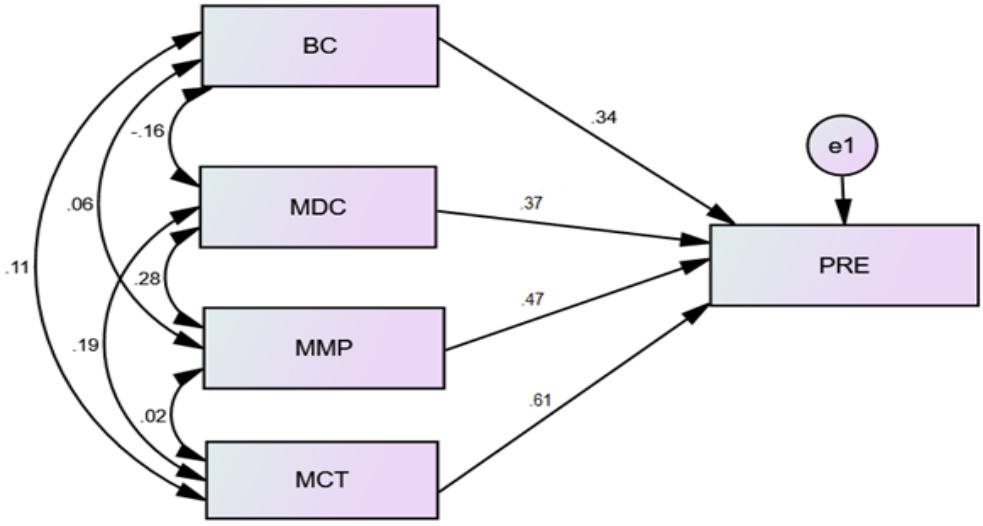

Figure 4.16: Retained Model after Hypothesis Testing

Effect of Moderation on the Relationship between Residential Mortgage Financing Practices and Performance of Real Estate Firms in Kenya

The sixth objective of this study was to assess the moderating effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya. Normality test on the factors produced Skewness values and Kurtosis of between -1 and +1. The

outliers were tested for each of the observations, with observations farthest from the centroid, Mahalanobis distance, being taken into consideration. There were no outliers detected. The values obtained in testing the model fit indices were Table 4.38 indicates the model fit indices for the predictor variables and the dependent variable (performance of real estate) which were found to be within the acceptable thresholds.

Table 4.38: Model- Fit Indices for the Overall Structural Equation Model

	CFI	GFI	AGFI	NFI	RMSEA
Default model	.901	0.916	0.907	0.946	0.075
Saturated model	1	1		1	
Independent model	0	0.380	0.324	0	0.191

The hypothesis to test for this specific objective was:

H_{06}: Government regulations do not moderate the relationship between residential financing practices and performance of real estate firms in Kenya.

Two structural models were used to test the objective. Model 1 represented the structural equation model (SEM) while model 2 represented overall SEM with moderation. Figure 4.17 shows the structural equation modeling (SEM) for the sixth objective. Regression weights were used to determine the direction and strength of the variables. Table 4.39 shows regression weights for borrower characteristics was 0.36; for mortgage distribution channels 0.41; for mortgage marketing practices 0.49; for mortgage contract terms 0.64; for 0.07 for underwriting criteria and government regulations 0.70. Figure 4.17 in Model 1, also shows that, there was a strong relationship between predictor variables and performance of real estate ($R^2 = 0.72$). An R^2 of 0.72 indicate that 72 % of the variations in performance in real estate firms were explained by the model.

Table 4.39: Overall T-Statistics Value without Moderation

			Estimate	S.E.	C.R.
BC	->	PRE	0.361	0.051	7.078
MDC	->	PRE	0.412	0.055	7.490
MMP	->	PRE	0.491	0.044	11.159
MCT	->	PRE	0.640	0.063	10.158
UC	->	PRE	0.070	0.038	1.842
GR	->	PRE	0.705	0.043	16.395

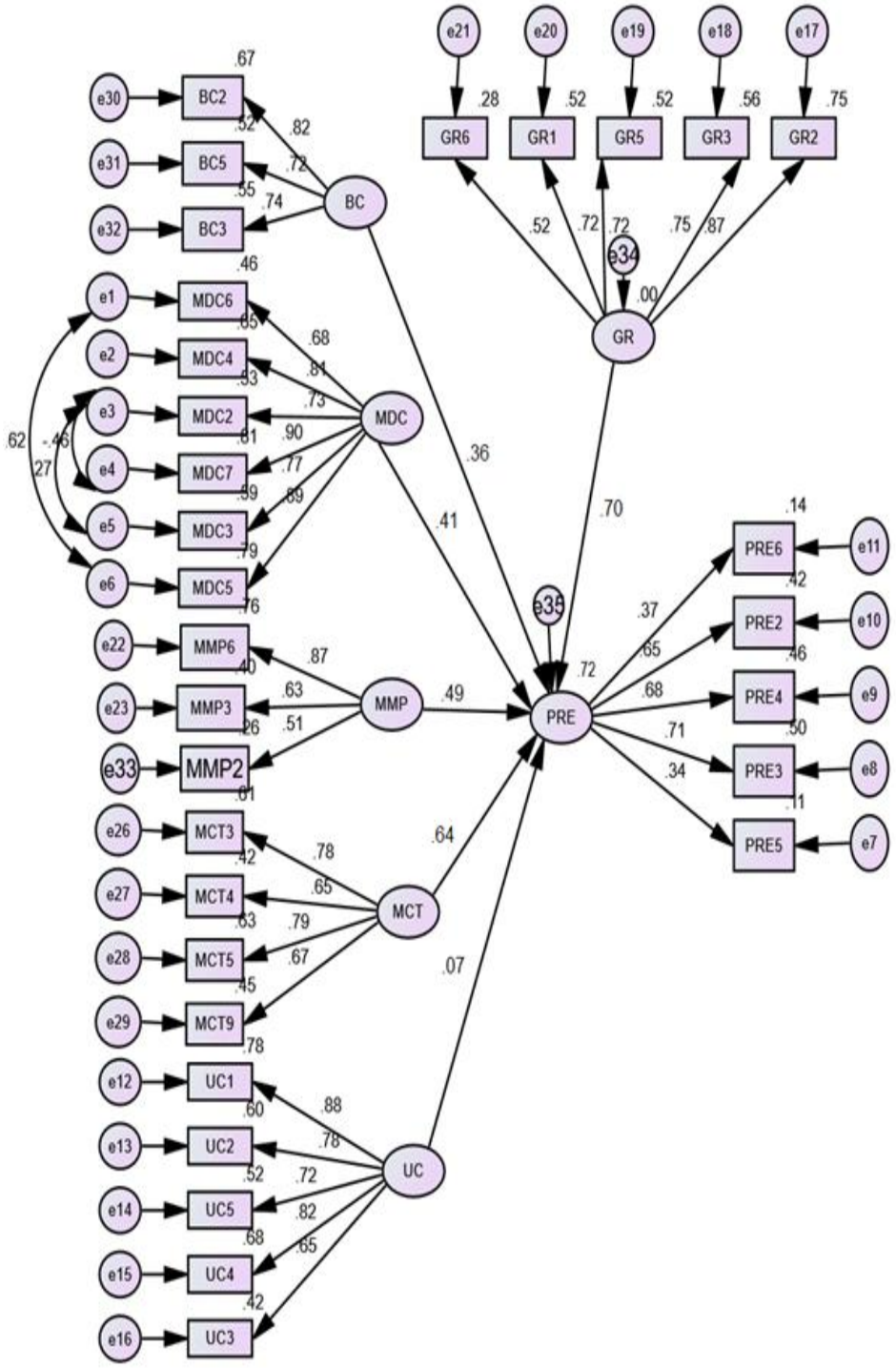

Figure 4.17: Structural Equation Model

4.8 Confirmatory Structural Equation Model with Moderation

The structural equation modeling (SEM) for the sixth objective for model 2 is as shown in figure 4.18. Normality test on the factors produced Skewness values of between -1 and +1. The outliers were tested for each of the observations, with observations farthest from the centroid, Mahalanobis distance, being taken into consideration. There were no outliers detected. The values obtained in testing the model fit indices for the predictor variables and the dependent variable and the moderator were found to be within the acceptable thresholds as shown in table 4.40.

Table 4.40: Model-Fit Indices for the Effect of Moderation on the Relationship between Residential Mortgage Financing Practices and Performance of Real Estate Firms in Kenya

	CFI	GFI	AGFI	NFI	RMSEA
Default model	.908	0.918	0.902	0.939	0.075
Saturated model	1	1		1	
Independent model	0	0.397	0.356	0	0.176

Model 2 shows the results after Structural Equation Modeling (SEM) with moderation was carried out. Regression weights were used to determine the direction and strength of the factor. From figure 4.18, path coefficient of borrower characteristics was 0.67; for mortgage distribution channels 0.45; mortgage marketing practices was 0.53, for mortgage contract terms 0.66 and for underwriting criteria 0.09. The results show that with the introduction of the moderator, the effect of government regulations on performance of real estate firms improved. R^2 was used to show the proportion of variation in dependent variable explained by the structural equation modeling (SEM) model. Aiken and West (1996) posited that moderation occur when variable M alters the relationship between the variables X and Y, by enhancing, strengthening or weakening the relationship. In order to determine the function of the moderator,

difference in R^2 as recommended by Carte and Russell (2003) was used. The results shows a coefficient $R^2 = 0.76$ which is higher than that of explanatory variables of 0.72. Model 2, shows a strong relationship between independent variables and performance in real estate firms. Inclusion of interaction term resulted in an R^2 change of 4%. An R^2 change of 4% indicates that, moderating effect explains 4% variances in performance of real estate firms above and beyond the variance explained by explanatory variables. This shows a significant presence of moderating effect of government regulations on the relationship between predictor variables and performance of real estate firms. The null hypothesis H_{06} was rejected and the study therefore concluded that government regulations do moderate the relationship between residential mortgage financing practices and performance of real estate firms in Kenya.

Although there are a few scholars who have discussed the moderating role of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya this study has enriched the body of knowledge by showing that there is moderation effect, as shown in figure 4.18. Literature, on the other hand, has demonstrated the positive relationship between residential mortgage financing practices and performance of real estate firms in Kenya. In their study on Markets and Housing Finance, Warnock and Warnock (2008) argued that government regulations affect performance of real estate firms. They found out that the supply of housing finance across many countries is greatly influenced by the government regulations while Ijaiya *et al.* (2012) in their study on Microfinance and Mortgage Financing in Nigeria: A Rural Experience, argued that an efficient legal system safeguards registration of property rights and have a positive effect on real estate firms.

On the flip side, government regulations may fail to promote the desired positive development for instance, Guan and Yam (2015) posited that the Chinese government regulations on financial incentives failed to initiate the desired technological progress in the 1990s while Onyegiri (2011) argued that government regulations on land accounted for the slow growth in the real estate industry in Nigeria as the process of acquiring land took a long period because of the protocol involved with the government officials.

Government regulations are external factors that have a significant effect on the performance of an organization (Bjornalia & Ellingsen, 2014). Organizations face operational challenges when there is a lack of alignment between the organizations' internal resources and the external environments (Camison & Fores, 2015). Balancing the influence of the external environment on the profitability of organizations has become integral as the performance of most organizations highly depends on how well their overall objectives are aligned to the external environment (Akbar, Nemeth, & Niemeier, 2014). In most cases the external factors are difficult to control implying that strategic fit for real estate firms may only be achieved by matching their activities and resources with the environment in which they operate. Therefore, aligning the operations of real estate firms with the demands of the external business environment may enhance their competitiveness in the housing industry.

Table 4.41: Overall T-Statistics Value with Moderation

			Estimate	S.E.	C.R.
BC	->	PRE	.674	.060	11.233
MDC	->	PRE	.452	.053	8.528
MMP	->	PRE	.534	.082	6.512
MCT	->	PRE	.660	.072	9.166
UC	->	PRE	.092	.067	1.373
GR	->	PRE	.731	.053	13.792

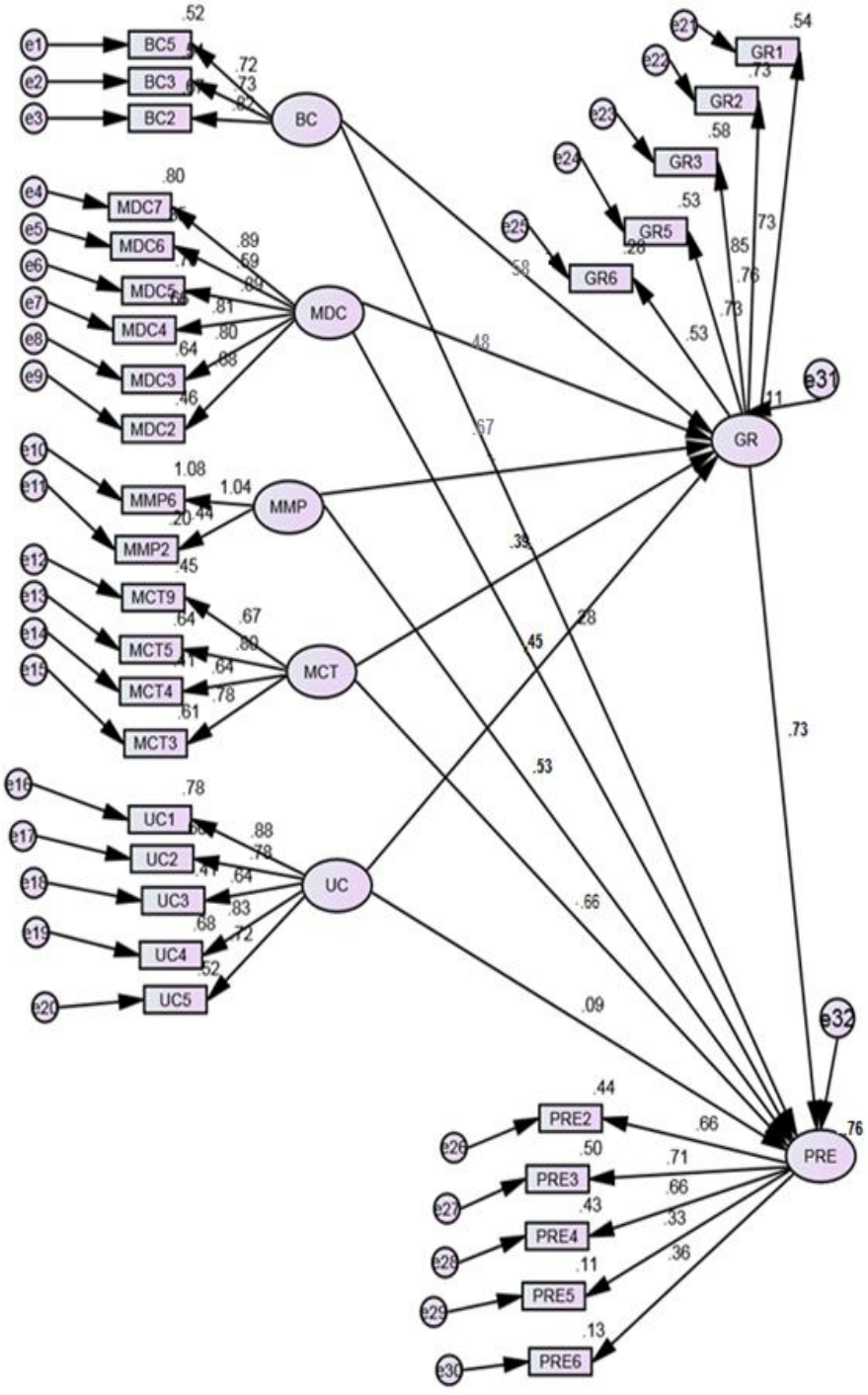

Figure 4.18: Overall Structural Equation Model with Moderation

4.9 Moderating Effect of Government Regulations on the Relationship between Independent and Dependent Variables

Using moderated multiple regression (MMR) analysis in this study, the moderating effect of the variable (interaction term) was analyzed by interpreting the R^2 change in the models obtained from the model summaries, and by interpreting the regression coefficients for the interaction term obtained from the coefficients tables. In their study on the influence factors of E-commerce application on the business model of Chinese real estate enterprises Wang and Hui (2013) analyzed the moderating effect of the variable (interaction term), by interpreting the R^2 change in the models and by interpreting the regressions coefficients for the interaction term. The results of the moderated multiple regression (MMR) analysis corroborated the results of the Structural Equation Modeling (SEM) with moderation reported earlier. Both models revealed that government regulations moderated the relationship between the residential mortgage financing practices except underwriting criteria which was not statistically significant.

4.9.1 Moderating Effect of Government Regulations on the Relationship between Borrower Characteristics and Performance of Real Estate Firms in Kenya

Table 4.42 shows the moderating effect of government regulations on the relationship between borrower characteristics and performance of real estate firms in Kenya. From table 4.42, Model 1 shows that R=0.402, R^2= 0.162 and [F (2, 92) = 9.172, p = 003]. The value of R^2 with a change of 0.162 indicates that 16.2% of the variance in performance of real estate can be accounted by borrower characteristics scores and government regulations. This implies that the goodness of fit improves with the introduction of government regulations hence a

conclusion that government regulations has a strong positive moderating effect on the relationship between performance of real estate firms and borrower characteristics. Further, R^2 means that 16.2% of the variance in performance of real estate is explained by borrower characteristics and government regulations.

Table 4.42: Moderated Multiple Regression Model Summary for Borrower Characteristics

					Anova			
Model	R	R Square	Std. Error of the Estimate	R Square Change	F-Value	df 1	df 2	Sig. F Change
1	.402	.162	.23128	.162	9.172	1	92	.003
2	.571	.326	.23462	.164	3.244	3	90	.026

a. Predictors: (Constant), BC

a. Predictors: (Constant), BC, GR, BC * GR

Model 2 in table 4.42, shows the results after interaction term government regulations was added and introduced into the model (Borrower characteristics* Government regulations). Table 4.42 also indicates that, the inclusion of the interaction term resulted in an R^2 change of 0.164, [F (1, 90) =3.244, p =.026] showing presence significant moderating effect. This means the moderating effect of government regulations gained 16.4% variance in performance of real estate firms, above and beyond the variance by borrower characteristics and government regulations. The magnitude of the change in R^2 is a measure of the increase in the predictive power of particular dependent variable/variables, given the dependent variable or variables already in the model. Therefore, the null hypothesis was rejected and hence government regulations moderate the relationship between borrower characteristics and performance of real estate firms in Kenya.

In table 4.43, Model 1 indicates that borrower characteristics was statistically significant (p=0.000, β = 0.338). This implies that for a 1- point increase in borrower characteristics, performance in real estate firms is predicted to have a difference by 0.338; given that government regulations is held constant. The regression coefficient associated with government regulation means that the difference in performance of real estate firms with high government regulations is 0.209, given that borrower characteristic is held constant. Substituting in equation 1, we have:

PRE = 1.769 + 0.338 (BC) + 0.209(GR)……..……..Equation 3

Model 2 shows the result after interaction term (Borrower Characteristics* Government Regulations) was introduced in the model. Borrower characteristics was found to be significant (p=000<0.05, β = 0.396). Government Regulations was found to be significant too with p= 0.000<0.05, β = 0.209) Borrower Characteristics* Government Regulations and was also found to be significant (p = 0.012< 0.05, β = 0.125) as shown in table 4.43. On substituting of the coefficients in equation 2, we obtain,

PRE =2.886 + 0.396 (BC) + 0.209 (GR) + 0.125 (BC*GR)…….Equation 4

The result for Table 4.41 indicate that for a 1-point increase in the borrower characteristics, the Performance of real estate firms is predicted to increase by 0.396 units, given that government regulation is held constant. The interpretation of the regression coefficients for the interaction term in Equation (4) is that there was a 0.125 difference between the slopes of performance of real estate firms on borrower characteristics between firms with high government regulations.

Table 4.43: Moderated Multiple Regression Model Coefficients for Borrower Characteristics

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.769	.327		5.405	.000
	BC	.338	.087	.403	3.877	.000
2	(Constant)	2.886	.221		13.087	.000
	BC	.396	.109	.472	3.617	.000
	GR	.209	.091	.284	2.313	.023
	BC * GR	.125	.049	.901	2.548	.012

a. Dependent Variable: PRE

The slope regressing performance of real estate on borrower characteristics is steeper for firms with high government regulations as compared to real estate firms with low government regulations, as shown in figure 4.19. Results based on equation (4) led to the conclusion that there was a significant moderating effect of government regulations.

The fact that government regulations moderate the relationship between borrower characteristics and performance of real estate firms is very vital to the owner/managers of these firms as they can form strategic alliances with the

government to develop affordable housing units for low-income and middle-income groups. Low affordability in housing in Kenya has been driven by high cost of mortgages and low income level (Kanjumba, 2015). By forming strategic alliances with the government, real estate firms would be able to supply more housing units that would in turn culminate to improved performance while the government would reduce the levels of slum dwellers and use the real estate industry as an investment tool to stabilize the economy (Omengo, 2012). This confirms the argument that government regulations affect all the business activities in a country by prescribing the rules and using its powers to induce equity and fairness in business operations (Kelkar & Rao, 2013).

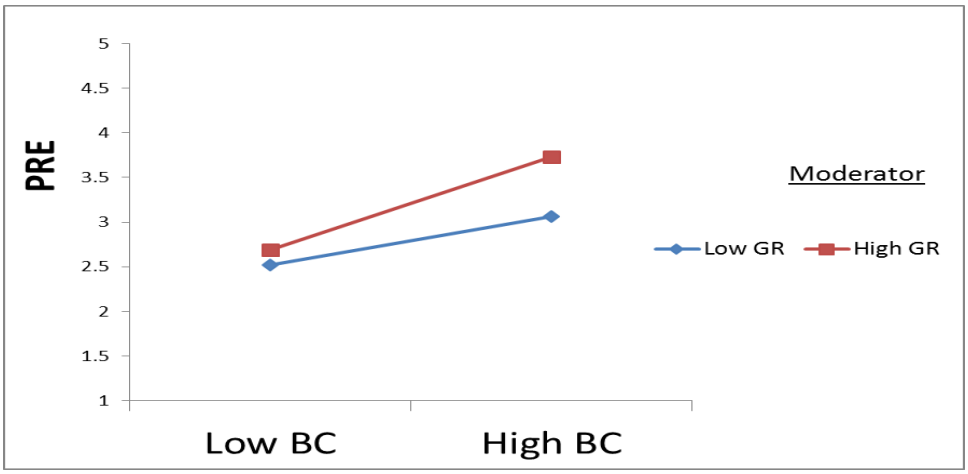

Figure 4.19: Slope of Performance of Real Estate Firms on Borrower Characteristics for Government Regulations

4.9.2 Moderating Effect of Government Regulations on the Relationship between Mortgage Distribution Channels and Performance of Real Estate Firms in Kenya

Table 4.44 shows the moderating effect of government regulations on the relationship between mortgage distribution channels and performance of real estate firms in Kenya. From table 4.44, Model 1 shows that R=0.395, R^2= 0.156

and [F (2, 92) = 9.736, p = 002]. The value of R^2 with a change of 0.156 indicates that 15.6% of the variance in performance of real estate can be accounted by mortgage distribution channels scores and government regulations. This implies that the goodness of fit improves with the introduction of government regulations hence a conclusion that government regulations has a strong positive moderating effect on the relationship between performance of real estate firms and mortgage distribution channels. Further, R^2 means that 15.6% of the variance in performance of real estate firms is explained by mortgage distribution channels and government regulations.

Model 2 shows the results after the interaction term (Mortgage distribution channels*Government Regulation) was included in the equation. Table 4.44 also indicates that the inclusion of the interaction term resulted into an R^2 change of .075, [F (1, 90) = 3.451, $p < 0.05$]. The results show a presence of significant moderating effect. In other words, the moderating effect of government regulations explains 7.5% variance in the Performance of real estate firms, above and beyond the variance by Mortgage distribution channels and Government Regulation. Thus the null hypothesis was rejected and therefore Government Regulation moderates the relationship between Mortgage distribution channels and Performance of real estate firms.

Table 4.44: Moderated Multiple Regression Model Summary for Mortgage Distribution Channels

					Anova			
Model	R	R Square	Std. Error of the Estimate	R Square Change	F-Value	df1	df2	Sig. F Change
1	.395	.156	.30628	.156	9.736	1	92	.002
2	.481	.231	.30275	.075	3.451	3	90	.020

a. Predictors: (Constant), MDC

b. Predictors: (Constant), MDC, GR, MDC * GR

In table 4.45, Model 1 indicates that Mortgage distribution channels was statistically significant (p = 0.000; Beta value = 0.420); Government Regulation was also statistically significant (p = 0.000; Beta value=0.321). Equation 7 shows that for a 1-unit increase in Mortgage distribution channels, the Performance of real estate firms is predicted to increase by 0.420 units, given that the government regulations is held constant. The regression coefficient associated with Government Regulations means that the difference in performance of real estate firms with high government regulations and real estate firms with low government regulations is 0.321, given that Mortgage distribution channels are held constant.

PRE = 1.311 + 0.420 MDC +
0.321GR……Equation (5)

Model 2 reveals the details of the inclusion of the interaction term in the model Mortgage distribution channels was found to be significant (p=.000, Beta value=0.540). Government regulations was found to be significant (p=0.000, Beta value=0.321) and Mortgage distribution channels*Government regulations was also found to be significant (p=0.008, Beta value=0.155). On substitution of the coefficients in equation (2), we obtain:

PRE = 1.018 + 0.540 MDC + 0.321GR + 0.155(MDC*GR)…….Equation (6)

The result for Table 4.45 indicate that for a 1-point increase in the mortgage distribution channels, the performance of real estate firms is predicted to increase by 0.540 units, given that government regulation is held constant. The interpretation of the regression coefficients for the interaction term in Equation (6) is that there was a 0.155 difference between the slopes of performance of real estate firms on mortgage distribution channels between firms with high government regulations.

Table 4.45: Moderated Multiple Regression Model Coefficients for Mortgage Distribution Channels

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.311	.327		4.005	.000
	MDC	.420	.092	.499	4.561	.000
2	(Constant)	1.018	.201		5.074	.000
	MDC	.540	.108	.640	4.998	.000
	GR	.321	.085	.436	3.793	.000
	MDC * GR	.155	.057	.895	2.734	.008

a. Dependent Variable: PRE

The slope regressing performance of real estate firms on mortgage distribution channels is steeper for firms with high government regulations as compared to real estate firms with low government regulations, as shown in figure 4.20. Results based on equation (6) led to the conclusion that there was a significant moderating effect of government regulations.

The findings confirm that, the government regulations moderate the relationship

between mortgage distribution channels and performance of real estate firms in Kenya. This is a clear indication availability of mortgage finance depends on macroeconomic conditions, banking regulations, the size of the banking system, taxation, subsidy programs and the structure of the housing market (Manoj, 2010). Kitson and Thomson (2012) further argued that availability of mortgage distribution channels is indispensable for effectively addressing the quantitative and qualitative housing problems in developing countries under a stable regulatory environment. Therefore, government regulations must be provide a conducive environment for proliferation of mortgage distribution channels that will be competitive in the provision of mortgage finance for real estate firms. Real estate firms should match their resources and capabilities with the government regulations to achieve better returns.

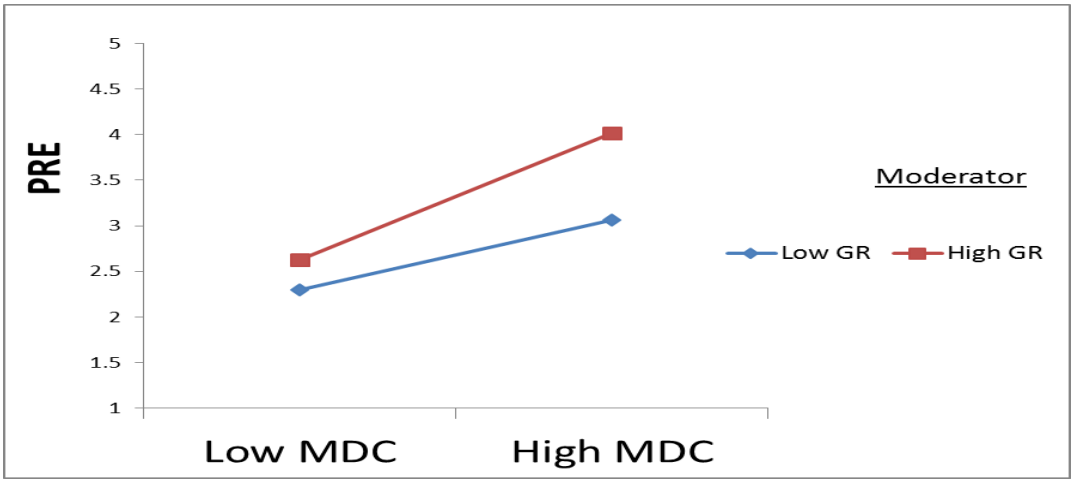

Figure 4.20: Slope of Performance of Real Estate Firms on Mortgage Distribution Channels for Government Regulations

4.9.3 Moderating Effect of Government Regulations on the Relationship between Mortgage Marketing Practices and Performance of Real Estate Firms in Kenya

Table 4.46 shows the moderating effect of government regulations on the relationship between mortgage marketing practices and performance of real estate firms in Kenya.

From table 4.46, Model 1 shows that R=0.481, R^2= 0.232 and [F (2, 92) = 6.721, p = 011]. The value of R^2 with a change of 0.231 indicates that 23.1% of the variance in performance of real estate firms can be accounted by mortgage marketing practices scores and government regulations. This implies that the goodness of fit improves with the introduction of government regulations hence a conclusion that government regulations has a strong positive moderating effect on the relationship between performance of real estate and mortgage marketing practices. Further, R^2 means that 23.1% of the variance in performance of real estate is explained by mortgage marketing practices and government regulations.

Model 2 shows the results after the interaction term (Mortgage marketing practices*Government Regulation) was included in the equation. Table 4.46 also indicates that the inclusion of the interaction term resulted into an R^2 change of .062, [F (1, 90) = 3.358, $p < 0.05$]. The results show a presence of significant moderating effect. In other words, the moderating effect of government regulations explains 6.2% variance in the Performance of real estate firms, above and beyond the variance by Mortgage marketing practices and Government Regulations. Thus the null hypothesis was rejected and therefore Government Regulation moderates the relationship between Mortgage marketing practices and Performance of real estate firms.

Table 4.46: Moderated Multiple Regression Model Summary for Mortgage

Marketing Practices

Model	R	R Square	Std. Error of the Estimate	R Square Change	Anova F-Value	df1	df2	Sig. F Change
1	.481	.232	.29491	.232	6.721	1	92	.011
2	.542	.294	.31556	.062	3.358	3	90	.022

a. Predictors: (Constant), MMP

b. Predictors: (Constant), MMP, GR, MMP * GR

In table 4.47, Model 1 indicates that Mortgage marketing practices was statistically significant (p = 0.000; Beta value = 0.367); Government Regulation was also statistically significant (p = 0.001; Beta value=0.153). Equation 9 shows that for a 1-unit increase in mortgage marketing practices, the performance of real estate firms is predicted to increase by 0.367 units, given that the government regulations is held constant. The regression coefficient associated with Government Regulations means that the difference in performance of real estate between firms with high government regulations and firms with low government regulations is 0.153units, given that mortgage marketing practices were held constant.

PRE = 0.711+ 0.367 MMP + 0.153GR…… Equation (7)

Model 2 reveals the details of the inclusion of the interaction term in the model Mortgage marketing practices was found to be significant (p=.000, Beta value=0.415). Government regulations was found to be significant (p=0.000, Beta value=0.153) and Mortgage marketing practices*Government regulations was also found to be significant (p=0.000, Beta value=0.289). On substitution of the coefficients in equation (2), we obtain:

PRE = 0.860 + 0.415 MMP + 0.153GR + 0.289(MMP*GR)…… Equation (8)

The result for Table 4.47 indicate that for a 1-point increase in the mortgage marketing practices, the Performance of real estate firms is predicted to increase by 0.415 units, given that government regulation is held constant. The interpretation of the regression coefficients for the interaction term in Equation (8) is that there was a 0.289 difference between the slopes of performance of real estate on mortgage marketing practices between firms with high government regulations.

Table 4.47: Moderated Multiple Regression Model Coefficients for Mortgage Marketing Practices

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.711	.351		2.029	.045
	MMP	.367	.074	.581	4.937	.000
2	(Constant)	.860	.151		5.711	.000
	MMP	.415	.080	.656	5.213	.000
	GR	.153	.046	.208	3.320	.001
	MMP * GR	.289	.077	.592	3.767	.000

The slope regressing performance of real estate on mortgage marketing practices is steeper for firms with high government regulations as compared to real estate firms with low government regulations, as shown in figure 4.21. Results based on equation (8) led to the conclusion that there was a significant moderating effect of government regulations.

The study findings confirm that government regulations moderate the relationship between mortgage marketing practices and performance of real estate firms in Kenya. Organizations are coming up with ways and methods to develop competitive advantage by fulfilling the needs of the customers where

collaboration and feedbacks from these customers become a strategy for effective marketing (Line & Runyan, 2014). In a similar vein, Chen, Li and Arnold (2013) reiterated that superior performance of organizations emanated from collaborative communication with the customers, which led to developing market capabilities and knowledge supported by favorable government regulations. This is in line with the argument by Warnock and Warnock (2008) that a favorable legal and regulatory environment is what real estate firms need to market their products and increase supply for housing to majority of households in developing countries.

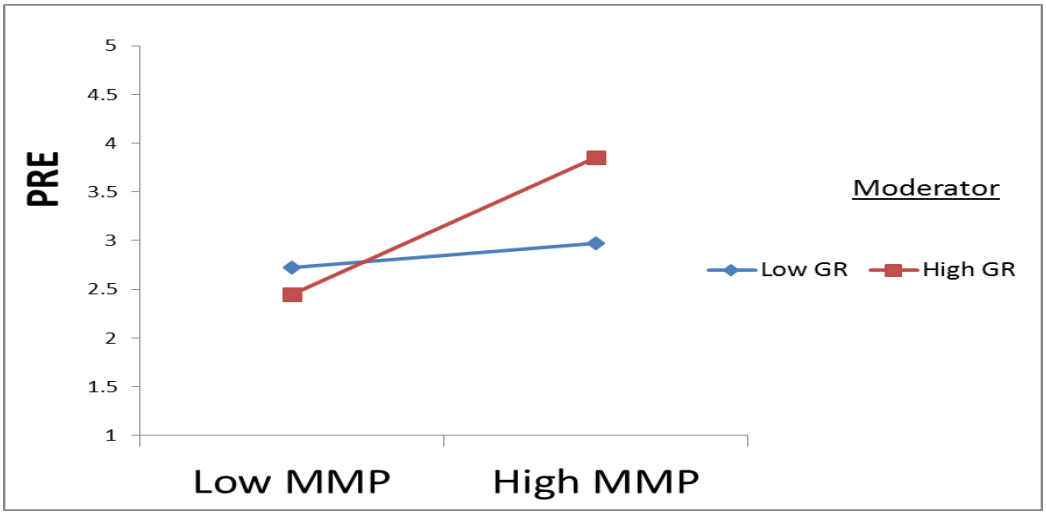

Figure 4.21: Slope of Performance of Real Estate Firms on Mortgage Marketing Practices for Government Regulations

4.9.4 Moderating Effect of Government Regulations on the Relationship between Mortgage Contract Terms and Performance of Real Estate Firms in Kenya

Table 4.48 shows the moderating effect of government regulations on the relationship between mortgage contract terms and performance of real estate firms in Kenya. From table 4.48, Model 1 shows that R=0.586, R^2= 0.343 and [F (2, 92) = 6.721, p = 011]. The value of R^2 with a change of 0.586 indicates that 58.6% of the variance in performance of real estate can be accounted by mortgage contract

terms scores and government regulations. This implies that the goodness of fit improves with the introduction of government regulations hence a conclusion that government regulations has a strong positive moderating effect on the relationship between performance of real estate firms and mortgage contract terms. Further, R^2 means that 58.6% of the variance in performance of real estate firms is explained by mortgage contract terms and government regulations.

Model 2 shows the results after the interaction term (Mortgage contract terms*Government Regulation) was included in the equation. Table 4.48 also indicates that the inclusion of the interaction term resulted into an R^2 change of .132, [$F(1, 90) = 3.358$, $p < 0.05$]. The results show a presence of significant moderating effect. In other words, the moderating effect of government regulations explains 13.2% variance in the Performance of real estate firms, above and beyond the variance by Mortgage contract terms and Government Regulations. Thus the null hypothesis was rejected and therefore Government Regulation moderates the relationship between mortgage contract terms and performance of real estate firms.

Table 4.48: Moderated Multiple Regression Model Summary for Mortgage Contract Terms

			Std.		Anova			
			Error of	R				
		R	the	Square	F-			Sig. F
Model	R	Square	Estimate	Change	Value	df1	df2	Change
1	.586	.343	.29491	.343	6.721	1	92	.011
2	.689	.475	.31556	.132	3.358	3	90	.022

a. Predictors: (Constant), MCT

b. Predictors: (Constant), MCT, GR, MCT * GR

In table 4.49, Model 1 indicates that Mortgage contract terms was statistically significant (p = 0.000; Beta value = 0.374); Government Regulation was also statistically significant (p = 0.001; Beta value=0.289). Equation 11 shows that for a 1-unit increase in mortgage contract terms, the performance of real estate firms is predicted to increase by 0.374 units, given that the government regulations is held constant. The regression coefficient associated with Government Regulations means that the difference in performance of real estate between firms with high government regulations and firms with low government regulations is 0.289 units, given that mortgage contract terms are held constant.

PRE = 0.918+ 0.374 MCT + 0.289 GR……. Equation (9)

Model 2 reveals the details of the inclusion of the interaction term in the model Mortgage contract terms was found to be significant (p=.000, Beta value=0.401). Government regulations was found to be significant (p=0.000, Beta value=0.289) and Mortgage contract terms*Government regulations was also found to be significant (p=0.000, Beta value=0.354). On substitution of the coefficients in equation (2), we obtain:

PRE = 0.980 + 0.401MCT + 0.289GR + 0.354(MCT*GR)…… Equation (10)

The result for Table 4.49 indicate that for a 1-point increase in the mortgage contract terms, the Performance of real estate is predicted to increase by 0.401 units, given that government regulation is held constant. The interpretation of the regression coefficients for the interaction term in Equation (10) is that there was a 0.354 difference between the slopes of performance of real estate on mortgage contract terms between firms with high government regulations.

Table 4. 49: Moderated Multiple Regression Model Coefficients for Mortgage Contract Terms

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.918	.215		4.280	.000
	MCT	.374	.087	.356	4.279	.000
2	(Constant)	.980	.112		8.789	.000
	MCT	.401	.080	.382	5.037	.000
	GR	.289	.086	.394	3.360	.001
	MCT * GR	.354	.087	.688	4.085	.000

a. Dependent Variable: PRE

The slope regressing performance of real estate on mortgage contract terms is steeper for firms with high government regulations as compared to real estate firms with low government regulations, as shown in figure 4.22. Results based on equation (10) led to the conclusion that there was a significant moderating effect of government regulations.

The findings demonstrated that government regulations moderate the relationship between mortgage contract terms and performance of real estate firms in Kenya. This is in line with the findings by Tomlison (2007) who posited for real estate firms to access long term sources of funding their operations there must be a favorable macroeconomic, legal, institutional and regulatory environment. The government regulations create conducive environment for real estate firms seeking funding from mortgage lending institutions to safeguard them from predatory lending practices. Top managers of real estate firms must keep abreast with positive changes in government regulations affecting their operations for

them make strategic decisions aimed at achieving above normal returns in the market.

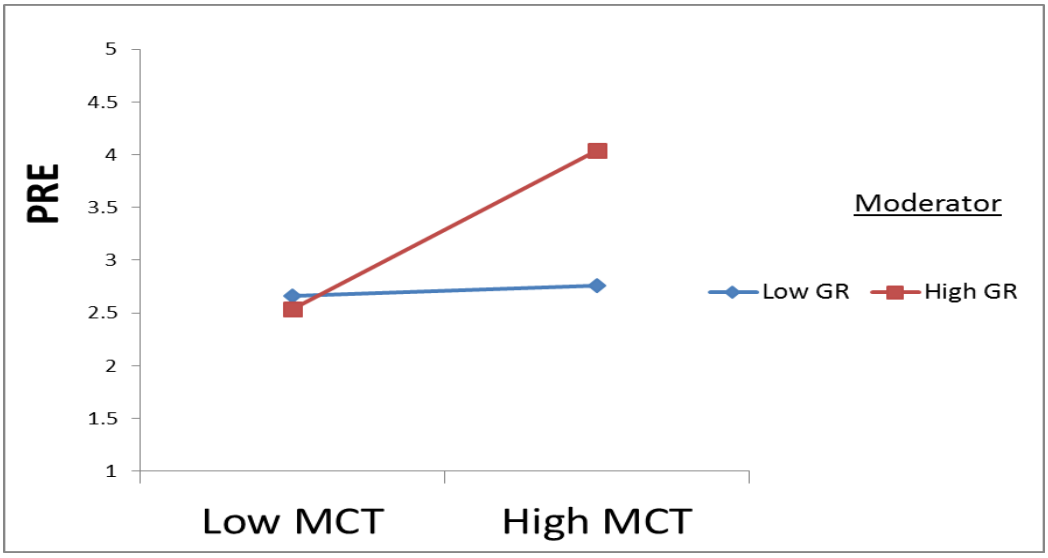

Figure 4.22: Slope of Performance of Real Estate Firms on Mortgage Contract Terms for Government Regulations

4.10 Summary of Hypothesis Testing Results

Table 4.50 shows summary of the results after testing the six hypothesized relationships. Five null hypotheses were rejected at 95% level of significance and only one hypothesis failed to be rejected. The relationships between all predictor variables and the dependent variable were positive and significant except for underwriting criteria that was not significant meaning that only one independent variable failed to contribute immensely to performance of real estate firms.

Table 4.50: Summary of Hypothesis Testing Results

Hypotheses	Std error of estimate (SEE)	CR	Results	Conclusion
H_{01}: There is no significant relationship between borrower characteristics and performance of real estate in Kenya.	.088	3.841	Positive and statistically significant	Reject H_{01}
H_{02}: There is no significant relationship between mortgage distribution channels and performance of real estate firms in Kenya.	0.113	3.710	Positive and statistically significant	Reject H_{02}
H_{03}: There is no significant relationship between mortgage marketing practices and performance of real estate firms in Kenya.	0.074 0.076	4.963 4.971	Positive and statistically significant	Reject H_{03}
H_{04}: There is no significant relationship between mortgage contract terms and performance of real estate firms in Kenya.			Positive and statistically significant	Reject H_{04}
H_{05}: There is no significant relationship between mortgage underwriting criteria and performance of real estate firms in Kenya.	0.101 0.043	0.285	Positive and statistically insignificant	Failed to reject H_{0}
H_{06} Government regulations do not moderate the relationship between residential mortgage financing practices and performance of real estate firms in Kenya.		8.084	Positive and statistically significant	Reject H_{06}

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The summary of the study are presented in this chapter as guided by the specific objectives. These are followed by conclusions and recommendations. The chapter finally gives direction on areas of further research.

5.2 Summary of Findings

The general objective of this study was to investigate the effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya. The study relied on theoretical and empirical studies on residential mortgage financing and consequently developed a conceptual model of the relationship between the independent variables and the dependent variable. The hypothesized relationships were then tested using SEM.

Before the empirical tests were done certain assumptions about the variables used in the analysis were tested for, since most statistical tests rely upon them. The study found no violation of the assumptions of heteroscedasticity, normality, linearity, multicollinearity, linearity, outliers, non-response bias and common method variance.

5.2.1 To Establish the Effect of Borrower's Characteristics on Performance of Real Estate Firms in Kenya

Borrower's characteristics had a positive relationship with performance of real estate firms in Kenya. Consequently, the null hypothesis was rejected. Borrower's characteristics also had a statistically significant effect on the performance of real estate firms in Kenya. As well, borrower's characteristics explained above average variation in real estate performance. Borrower's characteristics were

measured using income level, financial literacy of borrowers and attitude towards risk. However, only income level was found to have a significant contribution on performance of real estate firms in Kenya.

These results are congruent with the findings from other studies that have emphasized the significant role that borrower's characteristics play on the performance of real estate firms. Neuenschwander and Proffitt (2013) in their study on Loan Characteristics, Borrower Characteristics, or Housing Price Declines: What Drives Mortgage Defaults found out that borrower's characteristic determine the performance of mortgages which ultimately impact on performance of real estate firms.

5.2.2 To Examine the Effect of Mortgage Distribution Channels on Performance of Real Estate Firms in Kenya

Mortgage distribution channels had a positive relationship with performance in the real estate firms. In this regard the null hypothesis that mortgage distribution channels had no relationship with performance of the real estate firms in Kenya was rejected. Mortgage distribution channels also explained a substantial variation in performance of real estate firms. All the three factors of mortgage distribution channels, namely depository system, specialized lending and secondary market contributed significantly to mortgage distribution channels affecting performance of real estate firms.

These results are consistent with the findings from other studies that have emphasized the significant role by mortgage distribution channels on the performance of real estate firms. Kibati *et al.* (2015) study on the Effects of Supply Side Institutional Roles on Housing Affordability among the Low Income Earners in Kenya found

out that mortgage distribution channels positively influenced affordability of housing among low income earners in Kenya, ultimately leading to real estate performance. Indeed, increase in competition among the mortgage distribution channels lowers the cost of mortgages in the long run enabling more low income earners afford mortgages. This in turn translates into increased sale of housing units by real estate firms in Kenya.

5.2.3 To establish the effect of Mortgage Marketing Practices on the Performance of Real Estate Firms in Kenya

Mortgage marketing practices had a relationship with performance of real estate firms. Two factors, namely brokers/agents and online pricing guides contributed to mortgage marketing practices influencing performance of real estate firms in Kenya. Thus the hypothesis that there is no relationship between mortgage marketing practices and performance of real estate firms in Kenya was rejected. Mortgage marketing practices also explained a substantial variation in performance of real estate firms.

The study findings are consistent with Macharia (2013) study on Influence of Marketing Strategies on Performance of Real Estate Business in Nairobi, Kenya which found out that for real estate firms to survive and outperform their peers in the domestic competitive business environment they must differentiate themselves through marketing practices. This is because marketing practices aim at improving the profitability level in organizations by allowing them to connect with the needs of the customers (Sacuia & Dumitru, 2014).

5.2.4 To establish the effect of Mortgage Contract Terms on Performance of Real Estate Firms in Kenya

Mortgage contract terms were found to have a positive relationship with performance of real estate firms in Kenya. Consequently, the null hypothesis that mortgage contract terms had no significant relationship with performance of real estate firms in Kenya was rejected. Mortgage contract terms explained a substantial variation in performance of real estate firms. Out of the three factors measuring mortgage contract terms, adjustable rates, fixed rates and complex rates were found to have contributed significantly to mortgage contract terms influencing performance of real estate firms in Kenya.

The findings were supported by Sven and Erik (2015) study entitled The Myopic Choice between Fixed and Adjustable Rate Mortgages in Flanders, Belgium which demonstrated that the choice of mortgage contract terms made by real estate firms when borrowing loans for construction of houses is a major determinant of their performance. This supports earlier findings by Amromin *et al.* (2011) in their study entitled Complex Mortgages which found out that the type of mortgage contract terms opted for by real estate firms determines the cost of the mortgage which ultimately impact on the performance of the organization.

5.2.5 To Establish the Effect of Underwriting Criteria on the Performance of Real Estate Firms in Kenya

Underwriting criteria had a positive relationship with performance of real estate firms. All factors namely, capacity, collateral and credit history contributed to underwriting criteria influencing performance of real estate firms in Kenya. However, while this study found a relationship between underwriting criteria and performance of real estate firms, this relationship was not statistically significant implying that an

increase in underwriting criteria did not increase performance of real estate firms in Kenya. Therefore, this study failed to reject the null hypothesis that underwriting criteria does not influence the performance of real estate firms in Kenya.

A study by O'Keefe (2009) on the Effects of underwriting practices and loan losses: Evidence from FDIC Survey of Bank Lending Practices also found a weak statistical relationship between underwriting criteria for real estate loans and performance of real estate firms. This clearly demonstrate that success, sustainability, and profitability of a firm goes beyond acquisition of resources but on how well good business practice strategies are implemented by the management (Stefanm, 2015). Formulating and implementing good business strategies involve understanding the resources available in the organization which is a leadership task that many firms may lack leading to low performance (Mapetere, Mavhiki, Nyamwanza, Sikomwe & Mhonde, 2012).

5.2.6 To Establish the moderating effect of Government Regulations on the Relationship between Residential Mortgages Financing Practices and Performance of Real Estate Firms in Kenya

To determine the presence of the moderating effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya, moderated multiple regression was used. The findings reported significant moderating effect on the relationship between borrower characteristics and performance of real estate firms in Kenya when the interaction term (Borrower characteristics* Government regulations) was included. Significant moderating effect was also reported in the relationship between mortgage distribution channels and performance of real estate firms in Kenya when the interaction term (mortgage distribution channels* Government regulations) was included. Significant moderating effect was also reported in the

relationship between mortgage marketing practices and performance of real estate firms in Kenya when the interaction term (mortgage marketing practices * Government regulations) was included. Lastly, significant moderating effect was reported in the relationship between mortgage contract terms and performance of real estate firms in Kenya when the interaction term (mortgage contract terms * Government regulations) was included.

These results were corroborated when structural equation modeling (SEM) with moderation was carried out. Therefore, the study rejected the null hypothesis that government regulations do not moderate the relationship between residential mortgage financing practices and performance of real estate firms in Kenya. The findings resonated with Appiah (2007) study on the Role of Government Regulations in the Emerging Real Estate industry in Ghana which found out that favorable government regulations determine the performance of real estate firms.

5.3 Conclusions

Emanating from the analyses, borrower's characteristics had a statistically significant positive relationship with performance of real estate firms in Kenya. This is in line with the resource based view theory which argue that internal resources refer to the owned assets of an organization that include management capabilities, knowledge, skills, and information abilities, which assist in neutralizing any internal and external threats to competition. Essentially, borrower's characteristics could be regarded as internal resources within a firm that become a body of strength against competitions. These internal resources are not homogeneous in all organizations because of management and how internal cultures grows implying that they are inimitable and can lead to superior

performance (Chae *et al*., 2014). Thus it can be said that borrower's characteristics can be used as a vital tool in improving the performance of real estate firms in Kenya.

Mortgage distribution channels were also found to have a statistically significant influence on the performance in the real estate firms. This was in line with the Porter's five forces model where competitive rivalry among industry players emanate from low barriers to entry. In this case presence of multiple mortgage distribution channels brings competition that could lower the cost of mortgages. This enables real estate firms access mortgage competitively which could lead to better performance. This is in line with Kibati *et al.* (2014) in their study on the Role of Mortgage Distribution Channels on Housing Affordability among the Low Income Earners in Kenya which established that mortgage distribution channels positively influenced affordability of housing among low income earners in Kenya, ultimately leading to real estate performance. Their findings showed that increase in competition among the mortgage distribution channels lowers the cost of mortgages in the long run enabling more low income earners afford mortgages. This in turn translates into increased sale of housing units by real estate firms in Kenya.

Mortgage marketing practices was found to have a positive relationship with performance of real estate firms. This is consistent with market orientation theory which maintains that for businesses to be successful they should determine customers' needs and wants, and satisfy them in a more superior manner than their rivals. For a real estate firm to offer affordable housing it must take the lead in identifying the needs of its customers and use the most effective way to meet these needs. Market orientation theory suggest that to address the challenge of current and future needs of customers the adoption of new behaviors through innovation is vital. Real estate firms that are innovative are able to use the latest

technology in marketing new goods and services at an early stage. For example, use of social media in marketing houses is an innovation that would position real estate firms that will be early adopters of this technology above their competitors in the market. By adopting modern marketing practices, firms are able to improve their profitability as it allows them to connect with the needs of customers (Sacuia & Dumitru, 2014). The study found out that those real estate firms that record superior performance adopt customer driven marketing practices that are able to meet the needs of customers. It can be concluded that real estate firms should use marketing practices as a tool for improving their performance as it enables them to carefully analyze the customers' product needs and service them profitably.

Mortgage contract terms also had a statistically significant influence on performance of real estate firms in Kenya. This is in line with contract theory which analyzes how different parties decide to enter in to a contract under particular terms where there is uncertainty. It describes how individuals and real estate firms make contracts with asymmetric information about the market. A major strength of this theory is its ability to find the optimal decision by a real estate firm when borrowing a mortgage loan. This theory illustrates that some real estate firms may not fully understand the terms and conditions of their mortgages due to information asymmetry making a large number of them opt for the adjustable rate mortgages instead of the fixed rate mortgages. This could be disadvantageous to the real estate firms which can be prevented through hiring independent/third party agencies which would provide unbiased information to both sophisticated and unsophisticated borrowers at time of loan origination. This would probably protect real estate firms from unfavorable contract terms which have a direct effect on performance of real estate firms as revealed by this study.

The finding also agreed with Coulibaly and Li (2009) in their study on Choice of Mortgage Contracts: Evidence from the Survey of Consumer Finances which found out that mortgage contract terms tend to dominate the choice of mortgage rate where preference for adjustable rate mortgages to fixed rate mortgages attracted majority of the borrowers. This has an influence on the performance of real estate firms as residential houses may become more affordable in the future should interest rates fall for an extended period of time. In light of this it can be concluded that choice of favorable mortgage contract terms is a cornerstone of residential mortgage financing practices that could lead to superior performance of real estate firms in Kenya.

Government regulations were found to moderate the relationship between residential mortgage financing practices and performance of real estate firms in Kenya. This is consistent with regulation theory that postulates that the need for regulation is called for by the consumers to correct inequitable market practices. To ensure equitable distribution of housing a strong government participation in the real estate industry is needed for superior development to be realized. This is because government regulations are assumed to benefit the whole society instead of a few business people. It has been suggested that market imperfections may be more pronounced, and therefore the case for government regulation is stronger, in developing countries (Stiglitz, 1998). For real estate firms to supply affordable housing to majority of low and middle income groups, government regulations are necessary due to the existence of markets imperfections and externalities arising from income, wealth distribution effects and flow of information. Therefore, performance of real estate firms is dependent on a favorable macroeconomic environment where the monetary policy should lower the cost of borrowing and increase long term funding for construction of new houses. More so, the government should enact favorable laws that support quick acquisition and

registration of land so that real estate firms can hasten the speed of building more houses.

The core finding of this study is that residential mortgage financing practices had a positive and significant effect on the performance of real estate firms in Kenya. Similar findings were reported by Violeta (2012) study entitled Analysis of the Mortgage Market in Romania and its Impact on Real Estate, confirmed significant and positive association between mortgage financing practices and performance of real estate firms. Results of this study also indicated that government regulations significantly moderated the relationship between residential mortgage financing practices and performance of real estate firms in Kenya. Thus the results provide some exploratory information that hoped to deepen the understanding of the interrelationship between mortgage financing, government regulations and performance of real estate firms. Government regulations provide an enabling environment for joint problem solving by all actors in any industry (Kivimaa, 2014). Additionally, Kamal and Roy (2016) noted that Government regulations pertaining to land supply, target groups, affordability, making by-laws and regulatory framework play a significant role in the performance of real estate firms.

Therefore, real estate firms in Kenya need to embrace government regulations in order to promote housing sustainability (Yakob *et al*., 2012). Embracing government regulations leads to organizational survival, a better relationship with stakeholders and organizational performance (Wang *et al*., 2012). Alignment of business strategy with the prevailing government regulations could be one of the best business practices that must have been exhibited by real estate firms registered with KPDA.

In summary, it is hoped that this study can offer insights to future studies in this area and help real estate firms appreciate the moderating role of government regulations in their operating environment as it affect their performance in a big way. This study extends the borderline of existing knowledge in the areas of residential mortgage financing practices, performance of real estate firms and government regulations. It also fills pertinent gaps in literature by linking residential mortgage financing practices and performance of real estate firms with government regulations moderating this relationship. This study therefore has added value to the body of knowledge by providing a model that real estate firms in Kenya and in the rest of the world can adopt in order to improve on their performance.

5.4 Recommendations

In general, the results provide practitioners with important insights by highlighting the benefits that real estate firms, the government, prospective home owners and mortgage lending institutions can derive from residential mortgage financing practices.

5.4.1 Recommendations on effect of borrower characteristics on performance of real estate firms

Essentially, borrower's characteristics are regarded as internal resources within a firm that become a body of strength against competitions. These internal resources are not homogeneous in all organizations hence the need for top management to inculcate a rare inimitable culture that would propel an organization towards recording superior performance.

5.4.2 Recommendations on effect of mortgage distribution channels on performance of real estate firms

Specifically, factors associated with access to long term funding need to be accorded special regard as they have shown to have one of the greatest effects on performance of real estate firms. Reliance on market-based housing finance strategy has proved to be inadequate and this study recommends that zero-down house sales strategy should be introduced to support prospective home owners who might not be able to meet the terms of market-based housing finance strategy. It also recommends that mortgage lending institutions should reduce cost of debt financing by further lowering the rate of interest and introduce installment plan for making down payment. They should also formulate new as well as review existing housing finance policies that would ensure that majority of the real estate firms are able to access long term funding for building more houses.

5.4.3 Recommendations on effect of mortgage marketing practices on performance of real estate firms

In order to prosper, the most forward-thinking real estate firms need to make sure they have the right capabilities and qualities needed in the industry. For example, by developing a clear marketing policy prospective home owners would not be susceptible to the risk of moral hazards and adverse selection making it possible for them to buy more houses. This would also result in improved performance of real estate firms and an increase in new customer acquisition. Such a policy would ensure that all material facts regarding the house purchase is declared making transparency an integral part in the overall marketing policy of real estate firms. This may be done by disseminating information through educational materials, publications and fair housing handbooks which would help curb cases of real estate firms which are currently earning illegal profits. Indeed the Kenyan government, as it tries to achieve Vision 2030, can develop a legal framework which would guide real estate firms in marketing their products without taking undue advantage to unsophisticated households. In so doing, openness and transparency would become a core value in the

overall marketing policy of real estate firms which would be considered as best practice.

5.4.4 Recommendations on effect of mortgage contract terms on performance of real estate firms

In particular, some real estate firms may fail to have full disclosure of the terms and conditions of their mortgages due to information asymmetry in the mortgage market. The proposed model can serve as a guide for providing unbiased information to real estate firms at time of loan origination since it recommends hiring independent/third party agencies that would provide unbiased information to both sophisticated and unsophisticated borrowers at time of loan origination. This would probably protect real estate firms from unfavorable contract terms which could have a direct effect on their performance.

5.4.5 Recommendations on effect of mortgage underwriting criteria on performance of real estate firms

Factors associated with management of resources need to be accorded special attention since success, sustainability, and profitability of a firm goes beyond acquisition of resources.

5.4.6 Recommendations on moderating effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms

To address the problem of affordable housing, social equity and a secure living environment as outlined in the fifth section under the Social pillar in Kenya's Vision 2030, government regulations should be accorded premium priority since the success and survival of real estate firms depends on how well their strategic plans and business models are in tandem with the demands of this external environment. Therefore, this study recommends that the Ministry of Land, Housing and Urban

Development should ensure they evaluate the success of National Government policies in particular the land policy. In Kenya, transfer of land to a new party takes a period of 90 days (Land Registration Act, 2012). A supportive legal framework should be put in place to ensure that assets such as land are registered in less than 90 days so that their title deeds can be used as collateral to secure funding for real estate firms in Kenya. In the same breadth, a new policy on change of land use process need to be put in place due to its ability to make land available for accelerating delivery of more housing units.

The role of the County Governments on housing as indicated in the fourth schedule of the Constitution is one of county planning and development, including housing. County Governments majorly deal with actualizing the housing framework through implementation. As the entity responsible for construction and management of housing stock and ensuring an adequate housing supply for Kenyans this study recommends adoption of online housing plans approval programs which would lower costs and enable applicants track the progress online. This would also reduce the time spent by real estate firms waiting for the approval of their housing plans. This study also recommends scrapping of duplicative fees charged by NEMA and NCA during the approval and construction periods that amount to double taxation. Eliminating such fees would lower the cost of building new houses substantially which would probably boost the number of housing units delivered in the market every year. This means that there would be more decent housing which translates to reduction in proliferation of informal dwellings that are characterized by inadequate provision of basic infrastructure and public services necessary to sustain health, such as water, sanitation, sewerage and drainage.

Lastly, the Government may enact regulations which would ensure that all real estate firms are recognized by being registered members of an accredited centralized real estate association such as KPDA, as there is no such law in

Kenya. Enacting such regulation would assist the government to regulate real estate firms through their association. This would also ensure that ethics in the operation of real estate firms and the industry in general are upheld.

5.5 Areas for Further Studies

The findings of this study set a ground for further research in a number of areas. First, the moderating variable used in this study concentrated only on a few government regulations. Without doubt, other regulations come into the interplay and provide perceptive results to the issue of real estate performance. Further studies should look more deeply into other regulations such building codes, zoning and land use regulations, and environmental regulations. This way, the government would have a chance to get data based evidence and expert advice that would inform future policy development on housing.

Secondly, channels of distributing long term mortgage finance are multiple. One study is not enough to capture all the channels used to distribute mortgage finance to real estate firms within a limited period of time. As such, more vigorous academic inquiry is invited to provide a wider observation of the required long-term funding for housing through the capital markets, housing co-operatives, pension and insurance. Such studies would provide additional information on long term funding options to residential real estate firms and the industry in general.

Thirdly, the study found out that mortgage underwriting criteria had no significant influence on performance of real estate firms in Kenya. This finding was based on only a few sub-variables. Other studies could be undertaken with researchers extending the scope wider to more sub-variables such as effective verification of income and other financial information, reasonable debt service coverage, appropriate loan-to-value ratios and prudent use of mortgage insurance. This

would promote minimum residential mortgage underwriting criteria and describe tools that could be used during loan pre-qualification process and monitoring by mortgage lending institutions and other lenders.

Lastly, the explanatory variables that were used to predict performance of real estate firms in this study were limited to residential mortgage financing practices alone. Future multifaceted studies should be extended to other factors such as availability of prime land and its cost, proximity to social amenities, infrastructural development like roads, power, water and sewerage. This would provide an in depth understanding of the real estate industry in general thereby enabling real estate managers to become more innovative about how they design and build houses while seeking to use space and resources more efficiently. This would go a long way in supplying affordable housing to low, middle and high income groups of our society.

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APPENDIX 1

LETTER OF INTRODUCTION

To……

Dear Sir/Madam,

RE: COLLECTION OF RESEARCH DATA

My name is Peter Githae a PhD student in Business Administration at Jomo Kenyatta University of Agriculture and Technology. Currently, I' am carrying out a research entitled ***"Effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya"***. I am in the process of gathering relevant data for this study. You have been identified as one of the respondents in this study. I therefore kindly request you to take some time to respond to the attached questionnaire. I wish to assure you that your responses will be treated with confidentiality and will be used solely for academic purpose of this study.

I thank you in advance for your time and responses. It will be appreciated if you can fill the questionnaire soonest possible to enable early finalization of the study.

Yours sincerely
Peter Githae

PhD BA Student

APPENDIX II

LETTER OF AUTHORIZATION

The Manager

……..

NAIROBI

Dear Sir/Madam,

RE: ACADEMIC RESEARCH

I am a student at Jomo Kenyatta University of Agriculture & Technology (JKUAT) pursuing PhD in Business Administration. I am required to undertake a thesis entitled ***"Effect of government regulations on the relationship between residential mortgage financing practices and performance of real estate firms in Kenya"*** in partial fulfillment for the award of the doctoral degree. I am kindly requesting for your assistance in making my research a success by granting permission to collect relevant data of your organization. I want to assure your office that all the data collected will be treated with utmost confidentiality and will be used exclusively for the purposes of this academic research.

I am looking forward to your kind consideration.

Yours sincerely

Peter Githae
PhD BA student

APPENDIX III

SURVEY QUESTIONNAIRE

Dear Respondent,

This questionnaire is designed to study the effect of government regulations on the relationship between mortgage financing practices and the performance of real estate firms in Kenya. Due to your knowledge and information on mortgage practices and real estate, you have been randomly selected to participate in the study. The questions are meant for research and academic purposes only and confidentiality of information will be maintained. **Please do not write your name.**

SECTION 1: BACKGROUND INFORMATION

(i) How long have you worked in this organization?

☐ 0-1 ☐ 1-5 ☐ 6-10 ☐ Over 10 years

(ii) How many employees does your organization have?

☐ 0-9 ☐ 10 – 49 ☐ 50 – 250

iii) How long (years) has your firm been in operation?

Years	0-1 years	1-5 years	6-10 years	Over 10 years
Tick				

iv) What is the average annual turnover of the firm in Ksh "000,000"s

☐ 0-5 ☐ 51-100 ☐ 101-200 ☐ 201-1,000

SECTION 2

This section consists of statements regarding mortgage financing practices, government regulations and performance of real estate firms.

Please respond appropriately by a tick, (√), using the scale provided.
Scale: 1= strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

Part A. Borrower's Characteristics (BC)

NO	STATEMENT	SD 1	D 2	N 3	A 4	SA 5
BC1	Does your organization find mortgage loans affordable in Kenya					
BC2	In your organization growth in income is significant making real estate managers feel more confident to borrow loans for building more residential houses.					
BC3	Only real estate firms with high cash flow afford mortgages					
BC4	Does your organization manage monthly loan repayments easily.					
BC5	Your organization is able repay its loan with interest at the agreed time without failure					
	Financial literacy					
BC6	Are Profitable investment decisions in your organization made after wide consultations with financial experts					
BC7	Do employees in your finance department regularly attend training workshops to sharpen					

	their skills?					
BC8	Does top management in your organization allocate sufficient resources for creating financial awareness among employees?					
	Attitude towards risk					
BC9	Does your organization fear mortgage loans					
BC10	Your firm agree that risk of losing mortgaged property due to default in payment is high					

What could be the major determinants of low mortgage uptake in Kenya?

……
……

Part B. Mortgage Distribution Channels (MDC)

NO	STATEMENT	SD 1	D 2	N 3	A 4	SA 5
MDC1	**Depository system** The more the savings the cheaper the loan borrowed					
MDC2	Mortgage financing require borrowers to put in some savings to finance part of the cost of property by making a down payment					
	Specialized mortgage lending					
MDC3	Mortgage institutions have made a remarkable positive impact in the area of real estate financing and development					
MDC4	The operations of mortgage institutions have improved considerably over the years.					
MDC5	Mortgage institutions are fair in rendering their services for the interest of all Kenyans.					

	Secondary market					
MDC6	Selling mortgaged houses to other users is a strategy used by real estate investors to raise funds					
MDC7	Secondary market is the most preferred channel of distributing long term funds					
MDC8 **MDC9**	Secondary market is well developed in Kenya Do lenders finance the secondary market easily in Kenya					
MDC10	To buy a house in a secondary market is every expensive in Kenya					

In your view, what are the preferred channels of distributing mortgages in Kenya?

……
…….

Part C. Mortgage Marketing Practices (MMP)

NO	**STATEMENT**	**SD 1**	**D 2**	**N 3**	**A 4**	**SA 5**
MMP1	**Brokers/agents** Our organization use Mortgage agents/brokers who provide relevant facts about mortgage contract					
MMP2	Our organization find that mortgages borrowed through an agent/broker to be cheaper and convenient					
MMP3	Our organization considers it difficult to get a					

	good mortgage deal without using a broker					
	Online pricing guides					
MMP4	Our organization find sufficient information about mortgages online					
MMP5	Our organization find good mortgage deals in the internet					
MMP6	Our organization can get the latest information on mortgages published on the websites					
	Social Marketing					
MMP7	Your organization maintains an effective referral system					
MMP8	Your organization normally use social media to market its products					
MMP9	Your organization agree that increase in social capital will improve its performance					

In your view, to what extent do marketing practices determine the housing units sold in a given year?

……
……

Part D. Mortgage Contract Terms (MCT)

NO	STATEMENT	SD 1	D 2	N 3	A 4	SA 5
MCT1	**Adjustable rate mortgages** Most organizations prefer variable rates in Kenya					
	Fixed rate mortgages					
MCT2	Most organizations prefer mortgage rates that remain constant for the whole period.					
MCT3	Most mortgage finance providers prefer organizations that opt for fixed rates					
	Complex mortgages					
MCT4	Does your organization note that different banks charge different rates of interest?					
MCT5	Organizations find it hard to distinguish between variable rates and fixed rates.					
MCT6	Your organization finds loan agreement content unclear.					
MCT7	Your organization agrees that loan agreement take a long time to write.					
MCT8	Most organizations find loan terms are difficult to understand					
MCT9	The loan agreement needs to use a more easily understood language					

MCT10	Most organizations largely depend on the instructions given by underwriters to fill up the loan agreement form					

In your view, are mortgage terms favorable to people applying for mortgage finance in Kenya.

Part E. Underwriting Criteria (UC)

NO	**STATEMENT**	**SD 1**	**D 2**	**N 3**	**A 4**	**SA 5**
UC1	**Capacity** The current financial status of an organization determines its ability to qualify for a mortgage loan					
UC2	The loan prequalification process is long, expensive and tedious					
UC3	The value of the security for a loan determines the amount of loan to be borrowed					
	Credit History					
UC4	For an organization to qualify for a mortgage loan in Kenya today, clearance from a credit reference bureau is a must					
UC5	If an organization has a poor credit rating getting a mortgage is difficult					

Part F. Government Regulations (GR)

NO	STATEMENT	SD 1	D 2	N 3	A 4	SA 5
	Physical Planning System					
GR1	Housing plans must be approved by county governments					
GR2	It takes a long period of time to approve a house plan					
GR3	The process of approving house plans is long, tedious and expensive					
GR4	Physical planners are readily available to advise real estate investors					
	Monetary Policy					
GR5	Higher interest rates increases the cost of mortgages in the Kenyan market					
	Efficient Legal System					
GR6	The process of acquiring a title deed in Kenya is long and costly					
GR7	Changing land use from agricultural to residential is not an easy process in Kenya					

Section 3: Performance of Real Estate Firms (PRE)

Kindly indicate the average growth for the indicators of performance in your firm, from 2013 to 2015. If an indicator experienced a growth of, say, 15% in a particular year, indicate 115%. If it declined with a certain percentage, for instance, 20%, indicate 80%.

Performance indicators	**2013**	**2014**	**2015**
Average pre-tax profits			
Return on equity (ROE)			
Return on Assets(ROA)			
Employment Growth			
Sales Turnover			
Market Share			

APPENDIX IV

LIST OF REAL ESTATE FIRMS

1. Active Homes
2. Afriland Agencies
3. Ark Consultants Ltd
4. Barloworld Logistics (Kenya) Ltd
5. Betterdayz Estates
6. British American Asset Managers
7. Canaan Properties
8. Capital City Limited
9. CB Richard Ellis
10. Colburns Holdings Ltd
11. Coral Property Consultants Ltd
12. Country Homes and Properties
13. Crown Homes Management
14. Crystal Valuers Limited
15. Daykio Plantations Limited
16. Double K Information Agents
17. Dream Properties
18. Dunhlill Consulting Ltd

19. East Gate Apartments Limited
20. Ebony Estates Limited
21. Economic Housing Group
22. Elgeyo Gardens Limited
23. Fairway Realtors and Precision Valuers
24. FriYads Real Estate
25. Greenspan Housing
26. Hajar Services Limited
27. Halifax Estate Agency Ltd.
28. Hass Consult
29. Hewton Limited
30. Homes and lifestyles
31. Housing Finance
32. Jimly Properties Ltd
33. Josekinyaga Enterprises Ltd
34. Karengata Property Managers
35. Kenya Prime Properties Ltd
36. Kenya Property Point
37. KilifiKonnection
38. Kiragu & Mwangi Limited
39. Kitengela Properties Limited

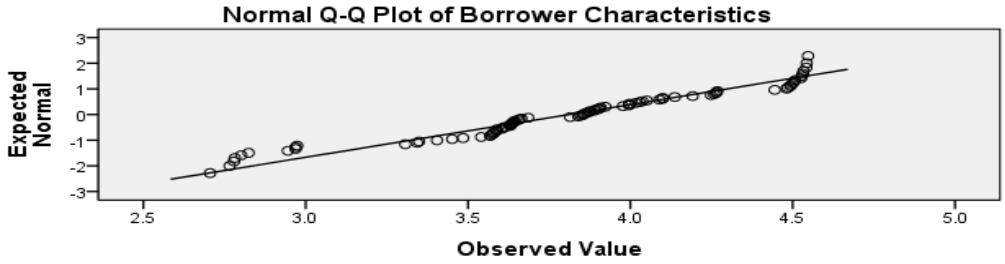
40. Knight Frank Limited
41. KusyombunguoLukenya
42. Land & Homes
43. Langata Link Estate Agents
44. Langata Link Ltd
45. Lantana Homes
46. Legend Management Ltd
47. Lloyd Masika Limited
48. MamukaValuers (M) Ltd
49. Mark Properties Ltd.
50. MarketPower Limited
51. Mentor Group Ltd
52. Merlik Agencies
53. Metrocosmo Ltd
54. Mombasa Beach Apartments
55. Monako Investment Ltd
56. Muigai Commercial Agencies Ltd.
57. Myspace Properties (K) Ltd.
58. N W Realite Ltd
59. Nairobi Real Estates
60. Neptune Shelters Ltd

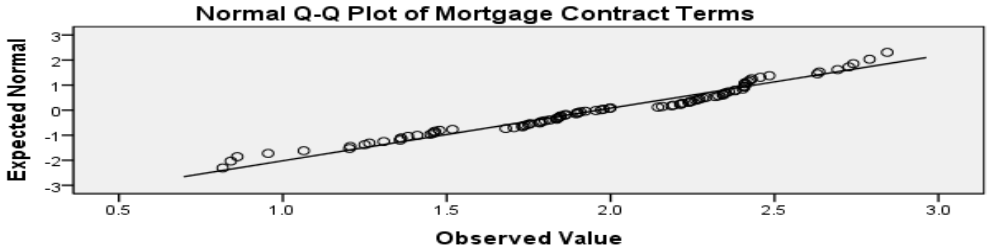
61. Oldman Properties Ltd
62. Oloip Properties
63. Ounga Commercial Agencies
64. Raju Estate Agency Limited (REAL)
65. Tysons Limited
66. Wainaina Real Estates Ltd
67. Wama Homes Holdings
68. Wathiomo K Co Ltd
69. Willmary Development

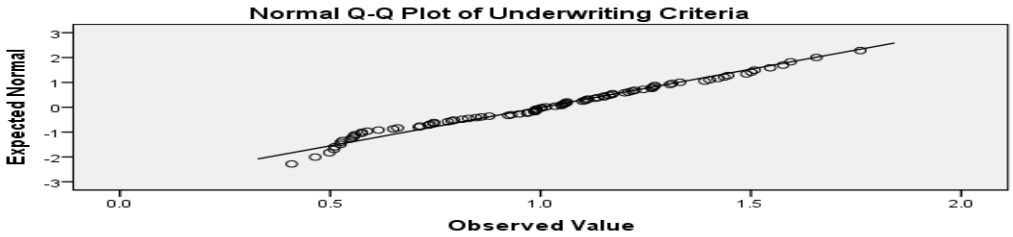
Source: Kenya Property Developers Association

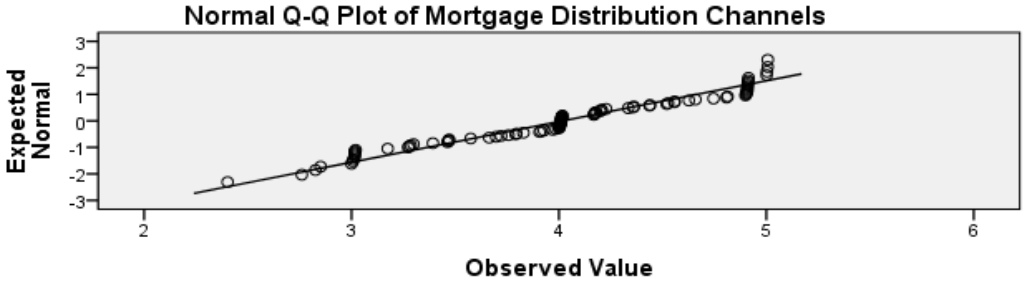
APPENDIX V

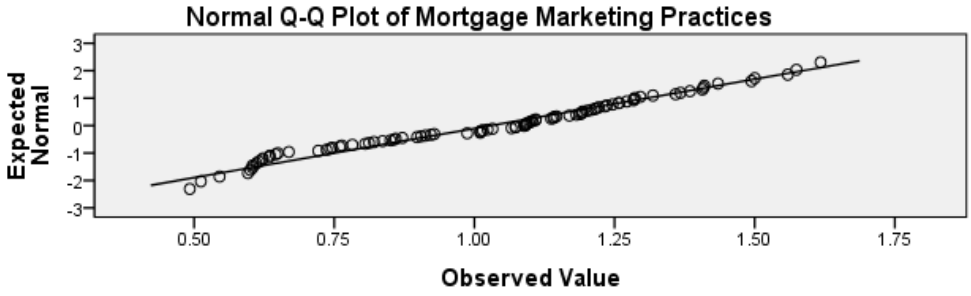
NORMAL Q-Q PLOTS SHOWING LINEARITY










Normal Q-Q Plot of Mortgage Marketing Practices
Expected Normal
3
2
1
0
-1
-2
-3
0.50
0.75
1.00
1.25
1.50
1.75
Observed Value

APPENDIX VI

TESTING FOR OUTLIERS

Observations farthest from the Centroid (Mahalanobis distance) (Group number 1)

Observation number	Mahalanobis d-squared	p1	p2
94	52.200	.002	.148
93	50.787	.003	.024
90	50.298	.003	.003
91	42.288	.023	.170
51	41.490	.028	.120
88	40.390	.036	.120
86	38.469	.055	.256
83	38.154	.059	.186
48	37.816	.063	.138
19	37.134	.073	.145
50	36.318	.086	.183
11	36.090	.090	.138
87	36.060	.091	.082
42	35.799	.095	.062
52	35.772	.096	.034
49	34.830	.115	.072
67	34.590	.121	.058
82	34.498	.123	.037
31	34.496	.123	.019
25	34.236	.129	.016
28	34.181	.131	.009
76	33.860	.139	.009
54	33.105	.159	.021
66	33.104	.159	.011
2	32.994	.162	.007
40	32.650	.172	.008
41	32.416	.180	.007
45	30.685	.240	.119
30	30.452	.249	.115

Observation number	Mahalanobis d-squared	p1	p2
85	30.412	.251	.082
8	29.025	.310	.375
22	28.664	.327	.425
53	28.333	.342	.467
16	28.045	.356	.495
68	27.698	.373	.548
18	27.586	.379	.508
38	27.430	.387	.487
89	27.363	.391	.431
27	27.303	.394	.373
12	27.300	.394	.298
15	26.753	.422	.432
4	25.994	.463	.664
17	25.578	.486	.747
5	25.543	.488	.690
23	25.253	.505	.728
74	25.062	.515	.729
65	25.036	.517	.667
14	24.989	.520	.609
71	24.891	.525	.572
69	24.676	.537	.584
20	24.638	.540	.519
46	24.392	.554	.545
84	24.347	.556	.483
92	23.479	.606	.767
47	23.288	.617	.770
39	22.080	.684	.973
29	21.870	.696	.975
21	21.768	.701	.969
13	21.425	.720	.980
33	21.359	.723	.972
44	20.894	.747	.988
1	20.870	.749	.980
63	20.867	.749	.967
43	20.584	.763	.974

Observation number	Mahalanobis d-squared	p1	p2
70	20.399	.772	.974
56	19.837	.799	.991
34	19.764	.803	.987
7	19.730	.804	.979
37	19.644	.808	.971
9	19.212	.827	.985
26	18.813	.844	.991
60	18.761	.846	.986
3	18.687	.849	.979
59	18.623	.852	.967
77	17.922	.879	.992
6	17.560	.891	.994

APPENDIX VII

TESTING OF NORMALITY

Assessment of Normality (Group Number 1)

Variable	Min	max	skew	c.r.	kurtosis	c.r.
BC3	2.000	5.000	-.457	-1.811	-.468	-.926
BC5	2.000	5.000	-.330	-1.306	-.616	-1.220
BC2	2.000	5.000	-.478	-1.894	-.233	-.461
MCT9	2.000	5.000	-.501	-1.982	.692	1.370
MCT5	2.000	5.000	-.256	-1.015	.013	.026
MCT4	2.000	5.000	-.214	-.846	-.122	-.242
MCT3	2.000	5.000	-.410	-1.623	.689	1.363
MMP3	1.000	5.000	-1.336	-5.286	2.304	4.559
MMP6	1.000	5.000	-1.281	-5.072	2.350	4.651
GR6	2.000	5.000	-.363	-1.438	.511	1.012
GR1	2.000	5.000	-.419	-1.659	-.986	-1.951
GR5	2.000	5.000	-.435	-1.724	-.765	-1.513
GR3	2.000	5.000	-.392	-1.553	-.624	-1.235
GR2	2.000	5.000	-.236	-.934	-.647	-1.280
UC3	2.000	5.000	-.508	-2.010	-.220	-.435
UC4	2.000	5.000	-.705	-2.792	.193	.382
UC5	2.000	5.000	-.727	-2.877	.859	1.701
UC2	1.000	5.000	-1.078	-4.267	1.845	3.651
UC1	1.000	5.000	-.956	-3.783	1.115	2.207
PRE6	2.000	5.000	-.073	-.288	-1.032	-2.042
PRE2	3.000	5.000	.213	.841	-1.397	-2.764
PRE4	2.000	5.000	-.076	-.300	-.913	-1.807
PRE3	2.000	5.000	-.117	-.462	-1.010	-2.000
PRE5	2.000	5.000	-.021	-.083	-1.065	-2.107
MDC5	1.000	5.000	-.757	-2.997	-.052	-.103
MDC3	2.000	5.000	-.647	-2.561	-.011	-.022
MDC7	1.000	5.000	-.701	-2.774	-.509	-1.007
MDC2	2.000	5.000	-.554	-2.193	-.031	-.061
MDC4	1.000	5.000	-.931	-3.687	.235	.466
MDC6	1.000	5.000	-.959	-3.794	1.120	2.216

APPENDIX VIII

EXTRACTION COMMUNALITIES

Constructs		Items	Initial	Extraction
Performance of real estate (PRE)		PRE2	1	0.778
		PRE3	1	0.873
		PRE4	1	0.854
		PRE5	1	0.885
		PRE6	1	0.661
Government regulations (GR)		GR1	1	0.64
		GR2	1	0.794
		GR3	1	0.690
		GR5	1	0.661
		GR6	1	0.551
Mortgage underwriting criteria (UC)		UC1	1	0.777
		UC2	1	0.692
		UC3	1	0.578
		UC4	1	0.762
		UC5	1	0.687
Mortgage contract terms (MCT)		MCT3	1	0.694
		MCT4	1	0.656
		MCT5	1	0.722
		MCT9	1	0.597
Mortgage distribution channels (MDC)		MDC2	1	0.672
		MDC3	1	0.698
		MDC4	1	0.734
		MDC5	1	0.811
		MDC6	1	0.702
		MDC7	1	0.831
Mortgage Marketing practices (MMP)		MMP2	1	0.583
		MMP6	1	0.685
		MMP7	1	0.585
		MMP3	1	0.717
[illegible] r characteristics (BC)		BC2	1	0.763
		BC3	1	0.737

BC5	1	0.763

APPENDIX IX

EXTRACTED COMPONENTS OBTAINED BY CONSTRAINING FACTORS

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.996	15.612	15.612	4.996	15.612	15.612
2	4.068	12.712	28.324	4.068	12.712	28.324
3	3.804	11.888	40.212	3.804	11.888	40.212
4	3.377	10.553	50.766	3.377	10.553	50.766
5	2.671	8.346	59.111	2.671	8.346	59.111
6	2.210	6.906	66.017	2.210	6.906	66.017
7	1.613	5.039	71.056	1.613	5.039	71.056
8	.923	2.884	73.940			
9	.893	2.792	76.732			
10	.791	2.473	79.204			
11	.709	2.214	81.418			
12	.623	1.948	83.366			
13	.570	1.782	85.148			
14	.528	1.651	86.800			
15	.472	1.474	88.273			
16	.447	1.397	89.670			
17	.398	1.244	90.914			
18	.371	1.159	92.074			
19	.326	1.019	93.093			
20	.308	.962	94.054			
21	.279	.871	94.925			
22	.240	.751	95.676			
23	.224	.699	96.375			

24	.198	.619	96.995
25	.190	.595	97.589
26	.143	.447	98.037
27	.141	.439	98.476
28	.128	.401	98.877
29	.104	.324	99.201
30	.097	.304	99.505
31	.096	.300	99.805
32	.062	.195	100.000

APPENDIX X

OVERALL CHRONBACH'S ALPHA COEFFICIENT OF THE VARIABLES

Constructs	Retained Items	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Overall Cronbach's Alpha
Performance of real estate (PRE)	PRE2	.798	.921	0.932
	PRE3	.878	.906	
	PRE4	.867	.908	
	PRE5	.888	.904	
	PRE6	.682	.943	
Government regulations (GR)	GR1	.656	.802	0.839
	GR2	.778	.766	
	GR3	.678	.796	
	GR5	.648	.805	
	GR6	.455	.850	
Mortgage underwriting criteria (UC)	UC1	.801	.830	0.879
	UC2	.705	.854	
	UC3	.613	.875	
	UC4	.757	.842	
	UC5	.693	.858	
Mortgage contract terms (MCT)	MCT3	.668	.752	0.815
	MCT4	.592	.788	
	MCT5	.669	.751	
	MCT9	.611	.778	
Mortgage distribution channels (MDC)	MDC2	.678	.895	0.903
	MDC3	.748	.885	
	MDC4	.765	.883	
	MDC5	.812	.874	
	MDC6	.594	.905	
	MDC7	.834	.870	
Mortgage Marketing practices (MMP)	MMP2	.501	.721	0.753
	MMP6	.655	.638	
	MMP7	.545	.698	
	MMP3	.504	.722	

Borrower characteristics (BC)	BC2	.690	.684	0.802
	BC3	.631	.747	
	BC5	.623	.755	

APPENDIX XI

NORMALITY TEST OF THE DEPENDENT VARIABLE

Factor		Statistic	SE (±)
PRE1	Mean	3.904	0.076
	Median	4.000	
	Std. Deviation	0.734	
	Range	4.000	
	Skewness	-0.514	0.249
	Kurtosis	1.000	0.493
PRE2	Mean	3.883	0.083
	Median	4.000	
	Std. Deviation	0.801	
	Range	2.000	
	Skewness	0.216	0.249
	Kurtosis	-1.000	0.493
PRE3	Mean	3.989	0.081
	Median	4.000	
	Std. Deviation	0.783	
	Range	3.000	
	Skewness	-0.119	0.249
	Kurtosis	-1.000	0.493
PRE4	Mean	3.904	0.083
	Median	4.000	
	Std. Deviation	0.804	
	Range	3.000	
	Skewness	-0.077	0.249
	Kurtosis	-0.897	0.493
PRE5	Mean	3.775	0.081
	Median	4.000	
	Std. Deviation	0.787	
	Range	3.000	
	Skewness	-0.021	0.249

	Kurtosis	-1.000	0.493
PRE6	Mean	3.746	0.085
	Median	4.000	
	Std. Deviation	0.825	
	Range	3.000	
	Skewness	-0.074	0.249
	Kurtosis	-1.000	0.493