MORTGAGE FINANCING AND THE PERFORMANCE OF AFFORDABLE HOUSING GOVERNMENT PROJECTS IN NAIROBI COUNTY

By

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MASTER OF BUSINESS ADMINISTRATION (CORPORATE MANAGEMENT)

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JANUARY, 2026

DECLARATION

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

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I do hereby confirm that I have examined the Master's dissertation of;

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And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

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ABSTRACT

The study sought to establish mortgage financing in relation to the performance of affordable government housing projects in Nairobi County. The study aimed to determine how the cost of capital for the targeted group, limited access to capital, lending products tailored to the segment's borrowers, and borrowers' profiles impact mortgage financing for government-affordable housing projects. The study adopted a descriptive research design where the purposive sampling method, focusing on a specific category of respondents and was employed to select 84 units of the population that was determined through the Cochran sample determinant formula. The population comprised Operation and Credit Managers from leading commercial banks in terms of assets and customer base, microfinance institutions, and Ministry of Lands and Housing officers. A structured questionnaire was employed to gather quantitative data, while quantitative data was collected using interview guides. Quantitative and qualitative data analysis methods were used and included descriptive & inferential methods and thematic analysis based on study objectives, respectively. The study established that there is a statistically significant relationship between mortgage financing factors (cost of capital, limited access to capital, lending products alignment to the segment, and borrowers' profile) and the performance of affordable housing government projects in Nairobi County.The study recommended that there is need for the government to pay insurance to the financial institution to ensure security for mortgage financing for low income earners who are considered high risk by the lenders, there is also need of considering targeted housing support services and public-private partnerships which is also essential for supplying the required funding; financial institutions should develop customized products like micro-mortgages and income-based repayment plans, use alternative credit scoring techniques that take non- traditional income sources, and align lending products to low-income earners' mortgage financing unique challenges. Finally, there is a need to encourage the low-income earners to pay their debts that they take from financial institutions in order to build a good credit history that will make it easier to access credit in the future from financial institutions.

Key Words: Mortgage Financing , Affordable Government Housing , Cost Of Capital, Limited Access To Capital, Lending Products , Borrowers' Profile

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ABBREVIATIONS AND ACRONYMS

FHA	Federal Housing Administration
FRBNY	Federal Reserve Bank of New York's
IRPEF	Personal Income Tax
KIPPRA	Kenya Institute for Public Policy Research and Analysis
MEF	Ministry of Economy and Finance
NACOSTI	National Commission for Science, Technology and Innovation
PMLs	Primary Mortgage Lenders
USA	United States of America

OPERATIONAL DEFINITION OF TERMS

Affordable Housing	Houses built under the program that target low-cost houses for citizens who have low earnings (KIPPRA,2024).
Access to Capital	The ability of individuals, businesses, and communities to secure funds or financial resources (Kenyanya,2023).
Borrowers' Profile	Creditworthiness of Lendees (Kakooza, 2024).
Loan Products	An offering given by an NBFC or a Bank to its borrowers (Suryanto *et al*, 2023).
Government Affordable Housing Project	Government Initiative of Houses built under the government's affordable housing program for low-income earners (KIPPRA,2024).
Mortgage	is a type of financing utilized to buy or sustain a residence, parcel of land, or other properties (Petrus,2024).
Mortgage Financing	Finances that support financing utilized to buy or sustain a residence, parcel of land, or other properties (Petrus,2024).
Performance	Ability to deliver (Castillo,2024)

CHAPTER ONE

INTRODUCTION OF THE STUDY

1.1 Background of the Study

Mortgage financing refers to borrowing money from a lender to purchase residential property or alternative real estate. Mortgage financing is a long-term loan, secured by a property such as a house or land, with the property serving as collateral (Castillo,2024). Mortgage enables one to purchase a home without paying the total price upfront, as mortgage lenders, as financial institutions, provide housing loans with tenors of up to 20 years at significantly lower interest rates (Ika and Nasution, 2023). Raising only a small percentage, such as 10%-30% has made housing highly cost-effective to purchase a home with a mortgage today compared to six years ago. Mortgage financing has enabled possible homeowners to get the benefits of a longer-term loan of 15-20 years from commercial and mortgage banks (Petrus,2024).

While there are initiatives globally on mortgage financing for government housing projects, there is a need to assess the performance of such initiatives. Zhen and Rhen (2022) defined the performance of affordable government housing projects as how well these projects are able to achieve their goals of providing accessible and affordable housing for low to moderate-income households, in addition to meeting broader societal and economic objectives. This includes how timely they completed, how they adhered to the budget, and their overall satisfaction of the targeted beneficiaries. Government affordable housing projects leverage mortgage finance through relevant entities in order to provide long-term, affordable loans to potential homeowners, which allows for wider access to homeownership, particularly for individuals with low and middle incomes (GoK,2023).

In the USA, organizations such as HUD and the Federal Housing Administration (FHA) offer homeownership initiatives for low-income families. In addition to federal programs, there are also state and U.S. territory programs that provide loans with minimal down payment requirements (U.S. Department of Housing and Urban Development, 2021; US Government, 2024). While affordable housing investment has increased to almost 78% in regions such as 73% in the Sun Belt and 66% in the Northwest, the U.S. continues to face a significant affordability crisis in housing, with increased mortgage finance targeting low-income households seen as the solution to this challenge (CBRE,2023). In Europe, despite increased housing initiatives in most parts of Europe, where 42% of individuals with low-income mortgages were allocating over 40% of their earnings towards mortgage payments, affordable housing performance in most European countries is struggling due to rising housing costs outpacing income growth, particularly in urban areas (Yordanova,2025).

On the other hand, as housing continue to be considered as critical the low income citizen in Africa as many players including the private sector through cheaper models that consider the levels of poverty in most countries especially in South Sahara, the local governments do not only lack capacity to provide financial support to this segment, but have failed to play their critical roles providing land to support initiatives private sectors and especially the Non- Governmental organizations supporting low-income housing(Mitlin,2024). Noticeably, while the international funding agencies would achieve a significantly higher development return on their investments if they partnered with the government to support such initiatives and extend cheaper mortgage financing to the low-income majority, the government has not optimized such opportunities that could be the solution to housing challenges in many African countries (Somsook,2024). In highlighting the performance of affordable housing in continents, where affordable housing initiatives in the continent face significant challenges, with a substantial shortfall in meeting the continent's housing needs. While some progress has been made, the scale of the problem, in addition to factors such as economic constraints and lack of robust financing, hinders widespread success (African Development Bank,2023).

In Nigeria, Sabo and Bello (2024) stressed the possibility of utilizing and formalizing traditional methods of housing finance in order to enhance access to finance for housing development in low-income urban areas in developing countries, while in Uganda, Nakiwala, Mukiibi, and Kiggundu (2022) established that the eligibility criteria set by financial institutions greatly restrict access to urban housing via mortgage financing, especially for low-income earners, and therefore the set the issue require examination to align with the informal context of developing nations that includes Uganda. On the other hand, Madzingira (2023) feared that the country experiences a housing shortage of approximately 2.4 million units, and the private sector, the primary driver of housing development, hasn't been able to fully address this demand, particularly in the affordable housing segment. The Kenyan mortgage market, on the other hand, the entity has been facing sluggish growth even in light of the significant increase in housing prices over the past few years, with all financial institutions offering mortgage finance, though the uptake is still low, especially among the low-income earners, with only a small percentage of Kenyans using mortgage financing (Kenyanya,2023).

Although Kenya's mortgage market is expanding, it is primarily controlled by large banks, suggesting that there are significant barriers to entry or elevated risks for medium and smaller banks. Furthermore, while the average mortgage loan size has been consistently increasing, it remains predominantly focused on the higher-end clientele within Kenya's mortgage market, particularly in the Nairobi region. This situation highlights that the Kenyan mortgage market has not yet penetrated the medium-to-low-income segment. Additionally, as a remarkable performance in terms of policy and actual implementation, these government efforts in the affordable housing program, the country still struggles to meet the growing housing demand (Cyton,2024).

Affordable housing is one of the flagship projects of the current administration, and therefore, its performance is critical. The affordable housing government project by the Kenyan government was meant to increase the accessibility of better and decent housing for low-income earners at an affordable cost. While numerous factors influence the success of such initiatives, mortgage financing remains a critical determinant for this project that targets low-income earners in a city that also has the highest population of slum-dwellers in Africa. Nairobi County also remains the county with the highest number of these affordable housing projects. However, while there are studies on mortgage financing, these studies have not focused on the cost of capital for the targeted group, access to capital, loan products, and borrowers' profiles. Additionally, these studies have not focused on how these factors affect the performance of these affordable housing government projects in Nairobi County.

1.1.1 Mortgage Finance

A mortgage loan enables the buyer to acquire a home. Mortgages are provided by banks, building societies, or other lending institutions and are frequently secured against the property. Typically, a mortgage loan features a lower interest rate and a longer repayment period compared to consumer credit (Petrus,2024). Nevertheless, should an individual neglect to meet their repayment responsibilities and the mortgage is secured against their property, lenders have the authority to take possession of and sell the home in order to recover the outstanding loan. Affordable Housing Financing is a government project that was meant to provide regular individuals with the chance to attain homeownership (Petrus,2024). The mortgage industry is a large and complex financial sector, playing a crucial role in homeownership and the economy.

Across many countries in Europe mortgage Finance sectors is characterized by different credit forms, in addition to fixed and adjustable-rate mortgages, as well as government-backed options. The sectors have been impacted by factors such as interest rates, economic conditions, and government policies. At the conclusion of the fourth quarter, China's exceptional property loans experienced a decrease of 0.2%, which is an improvement compared to the 1% drop recorded in the previous year, as reported by central bank data. This suggests that the government's initiatives to support the market are starting to yield positive results (Reuters, 2025). The mortgage industry in Ghana is challenging, especially when considering the purchase of a home in Ghana. The process of obtaining a mortgage can be quite challenging, despite the numerous mortgage providers available in the country to select from (Addae,2023). The Kenya Mortgage Refinance Company (KMRC) is a non-deposit-taking financial institution established in 2018 under the Companies Act 2015. Its mission is to supply long-term financing to primary mortgage lenders (PMLs) in order to enhance the accessibility of affordable home loans for Kenyans (Cyton,2024).

1.2.2 Performance of Affordable Housing Initiatives

Affordable housing initiatives' performance refers to how well affordable housing programs are achieving their goals, measured by factors like the number of units built, occupancy rates, and the financial sustainability of projects. Performance also considers the social impact of affordable housing on residents, including improved access to services, education, and employment. Affordable housing performance in the US shows a significant disparity between demand and supply, with low vacancy rates in affordable housing despite inventory growth, and a growing number of households struggling with housing affordability (Castillo,2024).

India's Affordable Housing Market has been in an upward performance trajectory, with the sector projected to be valued at USD 3.17 billion in 2024 and is anticipated to grow to USD 9.46 billion by 2030, reflecting a compound annual growth rate (CAGR) of 19.80% during the forecast period. Government initiatives have been pivotal in stimulating the India Affordable Housing Market (Ochieng',2023). In South Africa, the government-subsidized affordable housing program, including initiatives like the Reconstruction and Development Programme (RDP) and Breaking New Ground (BNG), has significantly expanded housing access for low-income households, particularly since 1994. However, a considerable backlog remains, and challenges persist in ensuring quality housing and equitable access (Rust,2023).

The performance of affordable housing in Uganda has been faced with various challenges that include high mortgage interest rates, limited access to financing, and the high cost of construction materials. The sector has not performed as expected, and currently, there is a shortage of approximately 2.4 million units and a substantial portion of the population living in substandard housing (Kakooza, 2024). Affordable housing initiatives in Kenya as a whole have faced performance challenges, falling short of initial targets. While the goal was to deliver a large number of units, progress has been slow, with delays and cost overruns common, and these challenges are attributed to factors like inadequate funding, lengthy approval processes, and various standards and regulations (Ochieng,2023).

The increase of mortgage financing in Kenya may have been influenced by factors changing mortgage climate, sustained economic growth, cross-selling potential, profitability and market penetration, and liberalizations of the market. While the value of Kenya's mortgage market was KES. 281.5 billion in 2023, with an average loan size of KES. 9.4 million and an average interest rate of 14.3%, there is still low uptake of mortgage financing among the low-income earners in Kenya (Cheruiyot and Makhandia,2024).

1.1.3 Government Affordable Project in Kenya

The Programme is a key initiative of the government aimed at promoting the creation of decent, safe, and affordable housing for the citizens of Kenya. The system, through the Boma Yangu initiative, the system allows potential homeowners to register, save, and own a unit, and the platform features include a wallet for payments towards the deposit. The system allows organized groups to participate and off-take available units in bulk on behalf of their members, which include: Employers (companies/businesses), Saccos, Chamas, and any such groups duly registered in Kenya. Through this ambitious program, the government intends to bridge the housing gap by enabling the construction of 250,000 homes annually (KIPPRA,2024)

In addition to serving home applicants, the program integrates supply and demand while fostering a supportive environment through policy interventions. The initiative consists of two elements: social housing and affordable housing, aimed at guaranteeing that all Kenyans gain from the program. Individuals with low incomes will be charged an interest rate as low as 3 percent per annum, in contrast to the market rate of 18 percent annually (Office of the President,2024). In relation to mortgage financing, the system allows financial institutions to support the Affordable Housing Programme either by offering mortgages to homeowners or construction financing to developers, a system that was meant to not only enable mortgage financing for individuals with low income but also enable the majority of the poor to own homes.

1.1.4 Performance of Affordable Housing

The population of Kenya has grown significantly over the years, and a large number of people have moved from rural to urban areas in pursuit of better prospects. As a result, the need for housing has been rising gradually, which has led to significant real estate market investment. A great chance for the mortgage business to grow and prosper has been created by the spike in real estate investments and property acquisitions (Cytonn, 2024). Kenya's mortgage market has experienced a rising trajectory throughout the years due to the country's growing population and urbanization, as more individuals move from rural to urban areas in pursuit of work or income-generating possibilities. As a result, there is a greater need for housing, and more Kenyans are choosing to take out mortgages to assist in paying for their home purchases or home development projects(Kiritu,2024).

A World Bank analysis states that, with mortgage assets equal to 2.5% of Kenya's GDP, the mortgage market is the third most developed in Sub-Saharan Africa. Only South Africa and Namibia are ranked higher. This merely demonstrates that while the Kenyan mortgage market offers numerous prospects, there are also undoubtedly a few obstacles to overcome (KMRC,2024). Targeting low and middle-income people, the government launched the Affordable Housing Program in an effort to encourage home ownership and assist in meeting the rising demand for housing. In addition, the Kenya Mortgage Refinance Company (KMRC) was founded to provide main mortgage lenders with long-term financing, increasing the number of reasonably priced house loans available to Kenyans. By making low-cost mortgages under Kshs 10,000 available, the government hopes to increase the number of mortgages from less than 30,000 to over 1,000,000 every year (Onyango,2025).

1.2 Statement of the Problem

There is a greater need for housing, and more Kenyans are choosing to take out mortgages to assist in paying for their home purchases or home development projects(Kiritu,2024). However, there is still low uptake of mortgage financing among the low-income earners in Kenya (Cheruiyot and Makhandia,2024). Globally, mortgage loans continue to provide a convenient path to early homeownership for potential homeowners. Unfortunately, the rising mortgage rates and the cost-of-living crisis disproportionately impact low-income households, leading to increased financial hardship and potentially pushing some into poverty.

Mortgage financing has been successfully applied to address housing problems in developed countries in the USA, Europe, Australia, among other developed countries (Castillo,2024). While mortgage financing modeled for low-income earners could have been a solution to housing challenges for this segment, the lack of such products and high mortgage interest payments have exacerbated the situation (Daphne, 2024). In the UK, a study by Navarrete (2023) highlighted that low-income households face challenges in accessing mortgage finance due to affordability constraints, high interest rates, and difficulty in demonstrating responsible financial management. Additionally, lenders perceive the low-income borrowers as higher risk, leading to higher interest rates or outright denial of loans.

In a bid to solve the housing challenges among the low-income in Thailand, Mitlin (2024), while evaluating the finances for low-income housing and community development, noticed that existing initiatives are less concerned with direct provision of housing to low-income earners, thereby not enabling greater choice for this market segment. Another study by Sabo and Bello (2024) pointed out that in a bid to meet the increasing demand for mortgage financing and home ownership among the low-income earners in Africa, the findings of the study established that microfinance for housing continues to be a substantial portion of the microfinance lending opportunities portfolio, although this is still out of reach for many of the citizens from low-income countries, calling for a more affordable arrangement. While initially the government aimed for 500,000 affordable homes by 2022, it fell short, delivering less than

10% of the intended units, with limited mortgage finance among others cited as the main challenges (Cyton, 2024).

The value of Kenya's mortgage market was KES. 281.5 billion in 2023, with an average loan size of KES. 9.4 million and an average interest rate of 14.3%; however, there is still low uptake of mortgage financing among the low-income earners in Kenya (Cheruiyot and Makhandia,2024). Additionally, while the government's affordable housing project in Kenya was meant to increase uptake for housing mortgages for low-income earners and enable them to own homes, even with the targeted buyers not having to pay the entire house purchase price before moving into the home, challenges in the mortgage financing for this segment continue to be faced. This has affected the performance of the affordable housing government project that was hyped to provide a solution to housing challenges, especially among low-income households. Additionally, as much as there have been studies on mortgage financing by houses developed by private developers, including financial institutions, there are no adequate studies on mortgage financing targeting government-affordable housing. Therefore, this study seeks to establish how mortgage financing affects the performance of affordable housing government projects in Nairobi County.

1.3 Objectives of the Study

3.1 General Objectives

The study seeks to establish the mortgage financing and the performance of affordable housing government projects in Nairobi County.

Specific Objective

1. To establish how the cost of capital for the targeted group affects the performance of affordable housing government projects in Nairobi County.

2. To evaluate how access to capital affects the performance of affordable housing government projects in Nairobi County.
3. To assess how loan products affect the performance of affordable housing government projects in Nairobi County.
4. To evaluate how borrowers' profiles affect the performance of affordable housing government projects in Nairobi County.

1.4 Research Question

a) How does the cost of capital for the targeted group affect the performance of affordable housing government projects in Nairobi County?

b) How does access to capital affect mortgage financing for government-affordable housing Projects in Nairobi County?

c) How do loan products affect the performance of affordable housing government projects in Nairobi County?

d) How does the borrowers' profile affect the performance of affordable housing government projects in Nairobi County?

1.5 Study Hypothesis

H1: Cost of capital for the targeted group does not affect the performance of affordable housing government projects in Nairobi County.

H2: Access to capital does not affect mortgage financing for government-affordable housing Projects in Nairobi County.

H3: Loan products do not affect the performance of affordable housing government projects in Nairobi County.

H4: Borrowers' profile does not affect the performance of affordable housing government projects in Nairobi County.

1.6 Rationale and Significance

Mortgage loans continue to provide a convenient path to early homeownership for potential homeowners. Unfortunately, the rising mortgage rates and the cost-of-living crisis disproportionately impact low-income households that wish to own houses. Additionally, while mortgage financing modeled for low-income earners could have been a solution to housing challenges for this segment, the lack of such products and high mortgage interest payments have exacerbated the situation (Daphne, 2024).

In Kenya, while the effective performance of the government's affordable housing project in Kenya was meant to increase uptake for housing mortgages for low-income earners and enable them to own homes, even with the targeted buyers not having to pay the entire house purchase price before moving into the home, challenges in the mortgage financing for this segment continue to be faced. Additionally, as much as there have been studies on mortgage financing by houses developed by private developers, including financial institutions, there are no studies on the connection between mortgage financing and the effectiveness of government-affordable housing; therefore, this study seeks to establish the mortgage financing and the performance of affordable housing government projects in Nairobi County.

The study is significant to the policy makers as the recommendations may help the policy makers develop policies including Ministry of Lands Housing to put in place measures to address the hindrance to the uptake of housing mortgages for low-income earners, the management of affordable housing project increase the uptake of this initiative by addressing the hinderances and assist the government in meeting its goals and object of providing 250,000 houses annually, especially to low-income earners. Additionally, the study serves as a foundation for additional studies regarding the connection between mortgage financing and the uptake of government-affordable projects in Nairobi County.

1.7 Scope of the Study

The study was limited to how mortgage financing contributes to the performance of affordable housing government projects in Nairobi County. The study targeted respondents drawn from the areas around the ongoing Government Affordable Housing Projects in Nairobi that include Bahati, Woodley, Kibera, Mukuru Kwa Njenga, Ngara, and Kariako. Additionally, the study targeted key informants drawn from the Ministry of Lands and Housing and four leading commercial banks in assets and customer base (Kenya Commercial Bank, Cooperative Bank of Kenya, Equity Bank, and Family Bank). 2 micro-financial institutions (Kenya Women Micro Finance and Rafiki Micro Finance) who are possible lenders to micro-enterprises that most of the targeted homeowners save with. The study was carried out between August and September 2025.

1.8 Assumption of the Study

At the time of the study, mortgage finance was still a challenge that affected the performance of affordable housing government projects in Nairobi County.

The state of the financing of affordable housing was still there, therefore the population targeted for this study was inclined to furnish the pertinent information requested by the researcher in connection with this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter seeks to assess and consider opinions, knowledge, attributes, and results of different research conducted before by different scholars and institutions to analyze the mortgage financing in Government Affordable Housing Projects in Nairobi County. This chapter evaluates past relevant literature by various researchers to explain the mortgage financing in government-affordable housing Projects in Nairobi County. The chapter discusses the theoretical framework, an empirical review of the factors influencing admission policies, the conceptual framework, and a summary of the chapter.

2.2 Theoretical Framework

This is the theoretical foundation of the research. This section discusses pertinent theories that underpin the research. Specific parts of the section include the Mortgage Value Theory, Lien Theory, and Title Theory, used to illustrate the importance of admission in attaining quality education in universities in Kenya. The three theories of Mortgage Value Theory, Lien Theory, and Title Theory are selected for this study due to their appropriateness and relevance to this study.

2.2.1 *Mortgage Value Theory*

The study was anchored on the Mortgage Value Theory, which argues that the application of mortgage financing should only be considered when a financial institution aims to maximize profits. Greenblatt (1989) proposed the Mortgage Value Theory, which argues that the application of mortgage financing should only be considered when a financial institution or lender aims to maximize profits. The theory states that financial firms use mortgage financing as a key strategy to maximize their wealth. The theory also states that a bank's aim is to capitalize on anticipated profits while also considering liquidity, soundness, reputation, and legality (Wapwera, Parsa, and Egbu, 2020).

The theory can be applied to the study as it covers the critical considerations (cost of capital for targeted group, limitation to access to low-income borrowers, fitness of the available products to low-income segment) that lenders of mortgage finance consider when lending to low-income earners, such as the ones that are targeted by the Affordable Housing Project. These considerations form part of the study's independent variables, which include the cost of capital for the targeted group, risk associated with low-income segment borrowers that limit their access to capital, and alignment of the available products to the low-income borrowers' segment that are targeted by affordable housing projects. This shows that for affordable housing to meet the desired performance, there is a need to address this aspect of mortgage finance.

However, the theory has been criticized for the fact that it can lead to unsustainable practices and financial instability, particularly for microfinance institutions (MFIs) and individuals. The theory links mortgage financing to real profitability; therefore, sometimes lending to low-income earners is not worthwhile for the financial institutions. Additionally, the theory's applicability is impossible. It is prone to instability in times of crisis due to the theory's failure to take borrower behavior into consideration. The "inert applicant" assumption, which holds that borrowers have no control over their financial circumstances, and the shortcomings of models that do not take into consideration the intricate options included in mortgages, such as prepayment and default, are two other criticisms (Smith and Yezer,2025).

In conclusion, the theory highlights how financial firms use mortgage financing as a key strategy to maximize their wealth and therefore explains why, in most cases, the cost of mortgage, which is one of the areas of focus of the study critical. In relation to Kenya, the cost of capital for mortgages continues to be a hindrance to mortgage financing, especially among the low-income earners who, in most cases, find it very high and cannot afford it. Affordable housing projects require a deposit of minimum deposit before houses are allocated to the buyers; however, this amount is not affordable to most home buyers in this category.

2.2.2 *Lien theory*

The other theory that the study focused on was the Lien Theory, which originated in 1791, when attorneys in South Carolina effectively argued that a foreclosure process is necessary for a lender to obtain title, thereby establishing the lien theory. Since that time, twenty states have embraced the lien theory, with Oregon being a modern example of a lien theory state, where the lender never holds the title. This theory states that a mortgage represents an encumbrance on the property, indicating that the lender possesses only a lien on the property. The Lien Theory assumes the borrower holds title during repayment unlike the other. The lendee possesses equitable in addition to legal titles, and the lender can foreclose on the property if the borrower defaults. The individual borrowing the funds possesses the title to the property. Rather than a deed of trust, a mortgage is documented in the public records and serves as a lien on the property until the outstanding debt is fully settled, which sometimes, when not paid by the borrower, it is never transferred to the borrower, especially if they default, which charges are very high among the low-income earners (Purnamasari, 2021).

The theory is relevant to the research given that in mortgage financing the borrower holds both equitable and legal titles, and the lender can foreclose on the asset in the event that the borrower fails to meet their obligations. In most circumstances, the lender stays with the legal titles and co-owns the title until all the mortgage has been fully paid. While the market segment that is targeted by the affordable projects may not in most cases have the collateral to place on for the money they are borrowing from the financial institutions and that they are highly considered for possible default and therefore classified a risky for the lenders, but in mortgage financing, the borrower possesses both equitable and legal titles, and the lender can foreclose on the property if the borrower defaults as provided for by Lien Theory.

Based on the theory and application in this study, where in mortgage financing the borrower holds both equitable and legal titles, and the lender has the authority to initiate foreclosure proceedings on the property if the borrower defaults, as provided for by the Lien Theory can help the institutions in developing appropriate lending products that are aligned to the profile of the borrowers in this segment. Therefore, this theory can help address three independent variables (borrowers' profile affects borrowers' ability to be lent money, limited access to capital due to their risk profiling, and lending products not aligned to the segment borrowers who are low-income earners). Additionally, effective application of the theory will contribute to the performance of affordable housing government projects that target low-income earners.

Critics of this theory state that regardless of whether the so-called title theory or lien theory is dominant, numerous inconsistencies arise in the application of both doctrines, complicating the subject as a general issue of jurisprudence. However, from a practical standpoint, the discrepancies tend to result in less harm than one might expect, due to the nature of mortgage questions typically being local in scope, resolved by empirical rules that are generally well understood, if not entirely comprehended, by the local conveyancer. Additionally, when using the Lien Theory, certain legal professionals have identified difficulties and contradictions, particularly with relation to the treatment of equitable interests.

The legal difference between the lender's interest as a "mere lien" and the borrower's complete ownership, according to critics, might raise difficult legal issues, such as in bankruptcy or inheritance cases (Wiese,2021).

To conclude, the Lien Theory assumes the borrower holds title during repayment, unlike the Title that the lender only holds the title after complete payment. Under the Lien Theory, the lendee possesses equitable in addition to legal titles, and the lender can foreclose on the property if the borrower defaults. The theory is applicable in the local affordable housing project, which highlights the ownership between the government, who are the owners of the project, and the lendee, who are the targeted beneficiaries from low-income earners.

2.2.3 Title Theory

Lastly, the study focuses on the Title Theory which just like the Lien Theory that originated in 1791 where the attorneys in South Carolina contended that a foreclosure process was necessary for a lender to obtain title, and the Act of 1791 established that a mortgage created a lien against the title, making South Carolina the first state to subscribe to a lien theory This theory states that the lender transfers the legal title of the property to the lender until the borrower pays off the mortgage. Unlike in Lien Theory, in Title Theory, the lender holds title until full repayment, and therefore the lendee acquires the legal title upon fulfilling the conditions of the mortgage. The title theory of mortgages is a real estate financing arrangement where the lender retains legal title to the property as security for the loan, while the borrower has equitable title. The ownership is only fully transferred to the borrower when the amount is fully paid and not before (Sabo and Bello,2024). Unfortunately, most of the low-income earners do not get to complete their payments and end up losing their houses to the lenders.

Critics say that by the lender, not the borrower, holding the legal title to the property while the mortgage is in place creates a power imbalance, as the lender can potentially seize the property without judicial proceedings if the borrower defaults, potentially leading to unfair foreclosure practices. Additionally, the lender can initiate foreclosure proceedings without court intervention, which some argue can lead to quicker, less transparent, and potentially unfair outcomes for borrowers and that the theory gives lenders excessive control over the property, potentially leading to situations where lenders can make decisions that negatively impact the borrower's interests. The title theory of mortgages has also been criticized for its historical foundations and for failing to capture the contemporary landscape of real estate ownership and financing. Finally, detractors contend that the idea is no longer relevant because of contemporary finance's reliance on debt rather than ownership transfer for security. The more popular lien theory is thought to be a more up-to-date and realistic representation of the mortgage arrangement, in which the borrower keeps ownership and the lender simply has a lien(xxx).

In application to this study, when one takes a mortgage, it is viewed as a conveyance of title, meaning the lender holds the legal title until the debt is paid. This means that borrowers can only have the full ownership of the houses in the affordable housing project after paying the full debt. This theory just like the Lien Theory can help address the three independent variables (borrowers' profile that may work negatively for borrowers, limited access to capital due to their risk profiling and lending products not aligned to the segment borrowers who are low-income earners). Moreover, application of the theory helps in addressing the issues of the independent variables (borrowers' profile that may work negatively for borrowers, limited access to capital due to their risk profiling and lending products not aligned to the segment borrowers who are low-income earners) and this will contribute to the performance of affordable housing government projects that target low-income earners which is the dependent variable.

To conclude the theory and to highlight the application of the two almost similar theories, in Title Theory, the lender transfers the legal title of the property to the lender until the borrower pays off the mortgage. Unlike in Lien Theory, in Title Theory, the lender holds title until full repayment and therefore the lendee acquires the legal title upon fulfilling the conditions of the mortgage. In some cases, in Kenya depending on the agreement, the mortgage financing in Kenya the financial institutions who is the lender is the only one that holds the title and only transfers the ownership to the buyer after complete payment. Additionally, even in affordable housing project, the ownership of the houses are fully transferred to the owner once they buyers are through with payment.

2.3 Empirical Review

2.3.1 Cost of capital for low-income earners

Cost of capital refers to the pricing that a lending company places on the principal amount given to borrowers as loans (Lewis,2023). High cost of capital for low-income earners continue to hinder this segment from owning houses. PMorgan Chase and Company (2024) conducted a study on hidden costs of homeownership: Race, income, and lender differences in loan closing costs. The study used the 2021 and 2022 vintages of the public HMDA data matched to the “Avery File” lender classification file to assess the relationship between loan closing costs and originator model. The regression framework comprised three broad levels of controls: borrower, loan, and neighborhood. The correlation between credit capital and financial insufficiency suggests that the cost of housing has been exacerbated by unaffordable cost capital making homeownership increasingly inaccessible in areas facing high credit cost.

Widyastutik et al. (2023) conducted a study on the Housing Financing Policy and Its Effects on Low-Income Communities and the Indonesian Economy. The study used descriptive research design and targeted low-income earners in UK in order to ensure that all owned homes despite their income levels. Quantitative and qualitative data collection methods were employed in order to gather relevant data on the cost of capital for low-income earners. The findings of the study indicated that the financing for individuals with low incomes have the potential to enhance the growth and development of housing among the segment if the cost of capital is developed and made affordable.

Heckman, Ichimura, and Todd (2024) Cost of Mortgage and Uptake among Low-Income Earners in Mongolia. The study, through econometric evaluation estimation, evaluated the relationship of cost of mortgage and uptake among low-income earners. The results of the study indicated that the high cost of capital for low-income earners continues to remain a challenge to mortgage financing in Mongolia, with many of these segments unable to access mortgage financing to acquire houses of their own. Additionally, the study's findings indicated that due to the absence of formal financing options, low-income households often resorted to obtaining short-term loans from informal sources like money lenders, which incurred significantly high costs, though little for mortgage financing.

Kuusaana, Timo de Vries and Gavu (2023) analyzed the housing finance approaches utilized by low-income families in Kumasi, Ghana, and proposed alternative strategies for informal tenure. The study adopted mixed method approaches, utilizing a survey conducted among randomly chosen households and semi-structured interviews with financial institutions. The study, through both qualitative and quantitative methods, established that economically disadvantaged families are priced way beyond the affordability of lowest-income earners, coupled with limited access to capital, and issues with customary land titles hinder affordability and access to formal mortgage markets.

Another study by Okello (2024) assessed the drivers of mortgage uptake among primary mortgage lenders under the affordable mortgage scheme in Kenya. The study sought to identify the determinants of mortgage uptake under the scheme. The study targeted commercial banks and SACCOs in Nairobi. The study used structured questionnaires were administered to 60 respondents; with 3 from each of the 20 registered Primary Mortgage Lenders (PMLs). The results indicated that only 12 institutions (7 banks and 5 SACCOs) were actively lending affordable mortgages targeting low-income earners. Further, affordable housing supply, incidental mortgage costs, consumer awareness, high cost of lending to low-income segment significantly influenced mortgage uptake for both financial institutions and customers (low-income earners) at large.

Andele and Obange (2024) examined the effect of cost of mortgage loans related to property values in Kenya. The study used correlational research design was utilized along with a secondary data set in the form of a time series for quarter one of 2020 to quarter four of 2023. This research revealed that, over the long term, the expense of mortgage loans (ß3 = 0.133144, p=0.0) exerted a positive and significant influence on residential property prices in Kenya. The study also highlighted that a high cost of capital, leading to higher mortgage rates, have had a downward effect on real estate market. Additionally, the reduced demand for mortgages financing among low-income earners due to higher interest rates, high number of monthly payments among others that have contributed to low uptake of mortgage financing among low-income earners segment.

Most of the targeted buyers in Nairobi, just as in the other project areas across the country are from low income category and are not able to raise the required down payment of the affordable housing (Kalui ,2024). Additionally, the interest rates that are being charged for the available mortgage products remain high and out of reach for many in the targeted category. This has affected the overall performance of affordable housing government projects in Nairobi County. While the above studies covered the cost of mortgage loans and their affordability, the studies were not specific to mortgage financing in government affordable housing Projects in Nairobi County. The studies were not specific to Nairobi County and therefore limited in generalizability. Additionally, some of the studies did not specifically employ descriptive cross-sectional design as preferred research design, thereby depicting gaps in methodological approach with the proposed study.

2.3.2 *Access to capital*

The term 'access to capital' denotes the capacity of individuals, enterprises, and communities to obtain financial resources or funds. These resources may manifest in several forms, such as loans, grants, investments, or other financial instruments (Mitlin ,2024). Bricocoli and Peverini (2024) assessed the trends have been indexed and analyzed for the period from 2015 to 2022. The study relied on information gathered by the Ministry of Economy and Finance (MEF) regarding personal income tax (IRPEF) encompasses the income sources and the respective amounts for each individual taxpayer. Results indicated that increase in housing prices and existing limitations that has hindered access to capital especially income earners in Milan will many not able to afford decent housing. The study used Eurostat data to assess the effects of housing affordability for mortgaged homeowners. The findings of the study established that this challenge affected all low-income earners regardless of their location including the rural areas households.

A study by Neal and Pang, (2022) assessed How Higher Mortgage Interest Rates Can Widen Racial Gaps in Housing Wealth. The through related secondary data from the various secondary sources established that the rising prices and a high interest rate climate continue to move the target beyond reach for many aspiring homebuyers, especially those with low incomes struggling to save for or afford the costs of a mortgage in the USA.

A study by Bhellar, Kalwar, and Memon (2023) assessed the disparity between housing demand and supply that impacts housing affordability in Malasyia. The study evaluated theoretical literature review from across Malasyia and especially among the low-income earners who are facing housing challenges across the country. The findings established that the highest 30 percent of income earners experience no difficulties in obtaining a mortgage loan that fit their earning levels, unfortunately the challenge is with the low-income earners that have a problem in entering the mortgage market because of high transaction costs and the credit risks that the lenders associate them with.

A World Bank (2023) report on the Implementation Completion and Results Report, Low Income Housing Finance Project in India. The assessed secondary data from project implementation team, periodic project implementation reports and the stakeholder evaluation reports to establish extent to which low-income earners had benefited from the project. The report established that shortage of housing for low-income households was the result of both demand and supply side factors although lack of access to affordable housing finance was a key constraint to this segment. Additionally, the low-income segment of the population was not a commercial target for mainstream financial institutions.

A study by Sabo and Bello (2024) also assessed the level of housing mortgage financing accessibility to low-income earners in Zaria, Kaduna State. The research employed a quantitative methodology, and data were gathered via a questionnaire survey from level 1-6 staff who were randomly drawn from seven departments in the local government secretariat and structured questionnaires were distributed to the staff in the study area. Descriptive statistics employing mean ranking and inferential methods were utilized for data analysis. The research determined that the primary challenge regarding housing mortgage financing accessibility in the Zaria LGA secretariat was the level of affordability of mortgage financing.

Awuvafoge (2023) conducted a study on the available mortgage financing for affordable housing in urban areas in Ghana. The study used secondary data to establish the extent to which mortgage financing affected affordable housing financing in urban areas. The study collected relevant data from available secondary information on mortgage financing. The study established that hinderances to the access to mortgage financing include low access to capital especially among the low-income earners, high interest for the credit extended to the borrowers and the number of requirements.

Another study by Kalui (2024) evaluated factor hindering access to mortgage finance in Kenya. The study through census covered the four leading micro financial institutions in Kenya. Data analysis was conducted using a regression equation that examined the correlation between various factors and access to mortgage financing. The findings indicated that the primary factor influencing access to mortgage finance was credit risk, which significantly impacts lending decisions as banks exercise caution when providing loans. In terms of income level, a lower income level heightens the likelihood of defaulting on repayments and also influences the ability to afford monthly payments.

Access to financing capital remain one of the challenges to mortgage financing as the targeted beneficiaries to the affordable housing project by the government cannot access the required capital from financial institutions supporting mortgage financing in Nairobi (Olang ,2023). In order to enhance the performance of the housing projects for low income earners, there is need of ensuriong that the hindrances to access to capital are addressed effectively. While the above studies focused on access to capital for mortgage financing, the studies were not specific to mortgage financing in government affordable housing Projects in Nairobi County. The studies were not specific to Nairobi County and therefore limited in generalizability. Additionally, some of the studies did not specifically employ descriptive cross-sectional design as preferred research design, thereby depicting gaps in methodological approach with the proposed study.

2.3.3 Loan products and performance of affordable housing government projects

Loan Product refer to a commercial loan, either secured or unsecured, denominated in local currency, that is established between a financial institution and a prospective borrower, while excluding overdrafts, invoice financing, and asset financing agreements (Suryanto et al, 2023). Farrell, Bhagat and Zhao (2021) assessed the available loan products available for low income earners to purchase owner homes in the USA. The study used novel data from the Federal Reserve Bank of New York's (FRBNY) Credit Insecurity Index to situate the complex web of challenges within local credit economies. The study analysis results showed that a tight market compounds financial pressures and constrains borrowers' choices both in terms of the lenders they can turn to and the availability of affordably-priced products to choose from.

Bates and Lofstrom (2024) assessed the reasons why lending programs targeting disadvantaged low-income borrowers achieved so little success in the United States. The study used secondary data to assess lending programs that are crafted to remove obstacles for individuals with low net worth who have restricted borrowing options and access to mortgage. The study used track analysis for time nationally representative samples of adults. The study established that affordable products have been developed through lending programs targeting low-income earners to increase the rate of homeless population among the low-income earners in Puerto Rico, Louisiana, Mississippi, New Mexico, West Virginia, Kentucky, Oklahoma, Arkansas and Tennessee states.

A study by Desai (2023) evaluated the Funding Accessible Housing for Low-Income Individuals in Urban India. The study used both qualitative and quantitative that include both questionnaires and interviews that targeted both possible homeowners from low-income earners and financial services providers drawn from across selected urban areas in India. The study established that there was that was historically hesitant in exhibiting both public and private banks to assume a larger role in the housing sector, coupled with the consequent unmet demand for housing finance, has created a need for a specialized function for housing finance companies in order to develop mortgage products not aligned to the segment.

Another study in Brazil by Gerardi, Goette, and Meier (2023) evaluated whether numerical ability predicts mortgage default in Brazil. The study used secondary data and, through theoretical and literature review, established that numerous low-income families were barred from accessing the formal housing finance market because of the informal nature of their income and residences. Households engaged in the informal sector, earning informal income, required specialized financing solutions adapted to their specific situations. However, there was regrettably an absence of capability within housing finance institutions to create or execute such solutions.

Another survey by Sabo and Bello (2024) evaluated financing of low-income housing in Nigeria. The study covered 300 households in selected areas (low-income/informal) of Jos Metropolis, Nigeria. The study used questionnaire and interviews that assessed financing of low-income housing in Nigeria and included data from both low earners that cannot afford houses and public and private financial service players. The study established that in the lack of established institutional financing methods, enhancing the community-based social network via formalization and empowerment for housing finance, favorable products is vital for low-income earners in Nigeria.

Another study by Lunde (2023) on Mortgage Product Innovation for Low-income countries. The study that focused on mortgage finance providers that included commercial banks and MFIs in Zambia. The study through descriptive study design that used both quantitative and qualitative methods for data collection from the respondents drawn from the sector. The study established that there was a relationship between mortgage product range and mortgage uptake was positive, weak and statistically insignificant implying that the uptake of mortgage by customers is hardly determined by the availability of a variety of mortgage products in the market but by the levels of income.

Kenyanya (2023) while investigating the selected factors hindering access to mortgage finance in Kenya. The research encompassed a census survey of all 44 commercial banks located in Nairobi, as reported by the Central Bank of Kenya. It utilized descriptive research methods to gather primary data via questionnaires directed at credit analysts within these banks at their respective head offices in Nairobi. Credit analysts possess extensive knowledge regarding mortgage accessibility, as they play a crucial role in the appraisal of all applications prior to any approvals being granted. The study advised that the banks should revise the structure of mortgage offerings with reduced repayment options for low-income demographics, thereby facilitating their access to mortgage loans.

The current mortgage financing project are mostly focused on higher and middle income earners with most of the available products charging high interest that are not affordable to low income earners. Additionally, the available mortgage financing products target regular and salaried workers and not self-employed with irregular income (Okello ,2024). This has affected the overall performance of affordable housing government projects in Nairobi County. Although the above studies focused on the available loan products in mortgage financing, the studies were not specific to mortgage financing in government affordable housing Projects in Nairobi County. The studies were not specific to Nairobi County and therefore limited in generalizability. Additionally, some of the studies did not specifically employ descriptive cross-sectional design as preferred research design, thereby depicting gaps in methodological approach with the proposed study.

2.3.4 Borrowers profile

Borrower profile serves as a comprehensive overview of an individual's financial and personal details, utilized by lenders to evaluate creditworthiness and establish loan conditions. This profile aids lenders in assessing the borrower's capacity to repay a loan, thereby facilitating informed decisions regarding the extension of credit (Kakooza, 2024). Hi, Lin and Liu (2024) examined the effect of financial literacy on mortgage stress in Nicaragua. The study used data from the Panel Study of Income Dynamics (PSID). The study established that borrowers with high levels of financial literacy are over 60 percent less likely to suffer from mortgage stress than borrowers with low levels of financial literacy after controlling for observables. The findings of the study indicated that financial illiteracy has remained a challenge to mortgage financing especially for potential home owners from low-income segments. Moreover, the study established that the effect of financial literacy varies across different age groups of low-income borrowers. Further analysis reveals strong association between financial literacy and mortgage financing uptake among borrowers from low-income levels.

Doug and Deggendorf (2023) conducted a Consumer Mortgage Shopping survey. The National Housing Survey Perspective used HMDA data from all the major cities in United Sates of America. The study established that the absence of individual credit scores and other related data in the publicly available means, in most cases could be determines thereby affecting ways of establishing the individual creditworthiness despite having data from borrower-data such as their income levels.

Mikuš (2023) evaluated the New' but 'Squeezed': Middle and lower Class and Mortgaged Homeownership in Croatia. The study used time series to evaluate the genealogical developments in post-socialism in Croatia. The study established that the genealogy of low-income housing debt in Croatia reveals that in the post-socialist context, the everyday and unclear institutional procedures governing access to housing finance, including bank credit assessments and the distribution of state housing benefits, played a crucial role in guiding a middle class that emerged from socialism towards home ownership through mortgages. The study also indicated overtime while the connection between home ownership with a mortgage and the middle class mortgaged home-ownership was institutionalized, it was different for the low-income earners was not institutionalized with many low-income earners wishing to own houses having no formal records indicating their savings or credit profiles. Low income, lack of financial data and poor credit profile continue to be a major hindrance to credit in most African countries.

In Malawi, Manda, Nkhoma and Mitlin (2023) evaluated the pro-poor housing finance in Malawi. The study through document review from various secondary sources established that housing finance continues to be a significant barrier to home ownership in nations like Malawi, particularly for individuals with low incomes. Numerous individuals have criticized the inclination of commercial banks to require costly collateral and formal employment to facilitate the enforcement of payroll deductions in addition to poor profile and lack of savings history.

In Uganda, a qualitative study by Nakiwala et al. (2022) on mortgage financing: accessibility, understanding, perspectives, and obstacles encountered by urban housing developers, established that Housing Finance Bank is strategized to provide reasonably priced mortgages to the citizens of Uganda, although NDP III highlighted that the problem of housing financing is left to the individual borrowers who not only come from the low-income bracket but also do not have any financial history to help them in borrowing. Additionally, the study advised that although the central government cannot set up housing for all its citizens, it needs to set up favorable policies for mortgage financing targeting low-income earners who do not have financial history to enable them to qualify for mortgage financing.

Macharia (2019) conducted a study on the Determinants of Mortgage Uptake from Financial Institutions in Nakuru Town, Kenya. The study targeted employees from commercial banks and mortgage companies in Nakuru Town where a census was conducted. Structured questionnaires were administered. The study employed descriptive and inferential statistics to collect data from the respondents. The study established that overall cost of housing through mortgage arrangements deters many people from taking mortgages. The results indicated that mortgage costs (interest rates and associated costs) influence customer decision in taking up mortgages especially among low-income earners.

Olang (2023) assess the impact of mortgage market risk on the adoption of mortgages among the low- income lender. The objective of the study was to assess the impact of credit risk, interest rate risk, price risk, and liquidity risk on the uptake of mortgages by low-income borrowers in mortgage lending institutions in Kenya. The study through a causal research design was used to establish the effect of mortgage market risk on mortgage uptake among low-income earners in Kenya. Additionally, purposive sampling was employed to choose a sample size of 27 from a total of 37 mortgage lenders who had participated in mortgage lending. The study established that low mortgage uptake for low earners has been due to poor saving and credit history.

Lenders are particular on the borrowers' profile that includes, their business records, their savings with financial institutions, their levels of defaults, and their records with credit bureaus. Many of the borrowers that are targeted by the affordable housing projects do not have a good credit record, they do not keep good business records to attract borrowing and in most cases are high loan defaulters (Kalui ,2024). Therefore, understanding the effects of borrowers profile on the performance of the project is critical if the project is to meet its performance goals and objectives.

Additionally, as much as the above studies dwelt on the available loan products in mortgage financing, the studies were not specific to mortgage financing in government affordable housing Projects in Nairobi County. The studies were not specific to Nairobi County and therefore limited in generalizability. Additionally, some of the studies did not specifically employ descriptive cross-sectional design as preferred research design, thereby depicting gaps in methodological approach with the proposed study.

2.3.5 Performance of affordable housing government projects

A study by DeSilver (2024) evaluated the state of affordable housing in the U.S. The study through a desk review that analyzed the available secondary data from different sources including reports from a Census Bureau's American Community Survey while assessing the performance of affordable housing in the USA established that while the acceptable housing affordability is that no more than 30% of household income should go toward housing costs and that households that spend more than that are considered cost burdened by the U.S. Department of Housing and Urban Development, results indicate that 31.3% of American households were cost burdened in 2023 with 27.1% of households with a mortgage and 49.7% of households that rent,

Yordanova (2025) also conducted a study on the Europe's affordable housing revolution. The study used case studies from a number of European countries to show the performance of affordable housing and ho these countries were meeting their targets and solving the housing gaps especially among the low-income earners across Europe. The finding of the study indicated that although there has been increased housing initiative by the government in most part of Europe, affordable housing performance in in most European countries is struggling due to rising housing costs outpacing income growth, particularly in major cities.

In India, TechSci Research (2024) conducted a study on India Affordable Housing Market to establish the growth and the performance of the affordable housing that target low-income earners in the country. The study used market analysis techniques that included cost, demand and supply and the buying power of the targeted market. The results indicated that although affordable housing sector is experiencing significant growth, driven by rising urbanization and demographic shifts, the sector is facing challenges related to rising costs, limited supply, and the need for affordability.

Housing remain African main challenges especially in the urban areas as the major cities and town continue to see the influx in population and more and more people move to the urban areas in such of labor and employment opportunities. African Development Bank (2023) assessed the various countries initiatives in promoting affordable housing in African Cities. The study through empirical evidence from related literature across Africa established that despite affordable housing initiatives in the continent, there is substantial shortfall in meeting the continent's housing needs especially for individuals with limited financial resources with economic constraints and lack of robust financing cited as reasons for poor performance.

Nakiwala (2022) while assessing the performance of affordable housing in Uganda, evaluated access, knowledge, attitudes, and challenges faced by urban housing developers in Kampala, Uganda. The study through descriptive statistics that targeted developers, mortgage companies and financial institutions established that difficult lending terms for individuals with limited financial resources and eligibility criteria set out by financial institutions have negatively affected the performance of affordable housing initiatives in Uganda and therefore calling for a review of current approaches and terms if the performance levels is to be addressed.

Locally, Cyton (2024) assessed ways of enhancing the effectiveness of Kenya's Housing Fund. The study through market analysis of both private and government initiatives to establish the difficulties and the performance of affordable housing targeting individuals with limited financial resources across the two sectors. The results indicated that as much as remarkable performance in terms policy and actual implementation, these initiatives from both private and government in providing affordable housing program the country still struggles to meet the growing housing demand in the country.

2.4 Research Gaps in Literature

Mortgage loans continue to provide a convenient path to early homeownership for potential homeowners. Unfortunately, the rising mortgage rates and the cost-of-living crisis disproportionately impact low-income households that wish to own houses. Additionally, while mortgage financing modeled for low-income earners could have been a solution to housing challenges for this segment, lack of such products and high mortgage interest payments has exacerbated the situation with the initiative not attaining its optimum expectation and performance (Daphne, 2024).

Widyastutik et al. (2023) assessed Housing Financing Policy and Its Impacts on Low-Income Communities and the Indonesian Economy and established that The financing for low-income earners has the potential to enhance the growth and development of housing among the segment if the cost of capital for low income earners is made affordable while Bhellar et al (2023) in their study on the housing need and supply gap that affects housing affordability in Malasyia established that the challenge is with the low-income earners that have a problem In entering the mortgage market, one faces high transaction costs and the credit risks that lenders associate with them.

Locally, Okello (2024) also sought to establish the drivers of mortgage uptake among primary mortgage lenders under the affordable mortgage scheme in Kenya. And established that only 12 institutions (7 banks and 5 SACCOs) were actively lending affordable mortgages targeting low- income earners. On the other hand, Kalui (2024) while evaluating the factor hindering access to mortgage finance in Kenya and established that low-income level increases the chances of defaulting in repayment and also determines affordability to meet the monthly payments for mortgage financing. Although these studies provide valuable insights into the general aspects of mortgage finance and performance of government affordable housing project, their findings cannot be generalized to mortgage finance and its effects on the performance of government affordable housing project and are not exhaustively capture the contextual uniqueness mortgage finance and performance of government affordable housing project in Nairobi, Kenya.

Notably, despite the growing body of literature exploring mortgage finance and performance of government affordable housing project there is a noticeable research gap specific to the context of mortgage finance and performance of government affordable housing project. Limited empirical studies have investigated the direct relationship between mortgage finance and performance of government affordable housing project in the region. Additionally, there is no specific study on the relationship between mortgage financing and the performance of government affordable housing in Nairobi, Kenya where most of these projects are concentrated; therefore, this study seeks to establish the mortgage financing and the performance of affordable housing government projects in Nairobi County.

2.5 Summary of Literature Review and Research Gap

TABLE 1

Summary of Literature Review and Research Gap

Author	**Study**	**Methodology**	**Findings**	**Gaps**
Widyastutik et al. (2023)	Housing Financing Policy and Its Impacts on Low-Income Communities and the Indonesian Economy	descriptive research	The financing for low-income earners can potentially increase the growth and development of housing among the segment if the cost of capital for low income earners is made affordable	The study was conducted in Indonesia and therefore the findings cannot be generalized to Kenya
Okello (2024)	The drivers of mortgage uptake	structured questionnaires	Only 12 institutions (7 banks and 5 SACCOs) were actively	The study was not focused mortgage

	among primary mortgage lenders under the affordable mortgage scheme in Kenya.		lending affordable mortgages targeting low income earners	financing for government affordable housing Projects in Nairobi County
Bhellar, Kalwar, and Memon (2023)	the housing need and supply gap that affects housing affordability in Malasyia	Theoretical literature review	The challenge is with the low-income earners that have a problem in entering the mortgage market because of high transaction costs and the credit risks that the lenders associate them with.	The study was not focused on mortgage financing for government affordable housing Projects in Nairobi County
Kalui(2024)	Factor hindering access to mortgage finance in Kenya	census	Low income level increases the chances of defaulting in repayment and also determines affordability to meet the monthly payments for mortgage financing	Although the study was done in Kenya, the study was not specific to government affordable housing Projects in Nairobi County
Gerardi,, Goette and Meier (2023)	Numerical ability predicts mortgage default in Brazil	Theoretical and literature review	Many low-income households were excluded from the formal housing finance market due to the informality of their income and dwellings	The study was conducted in Brazil and therefore the findings cannot be generalized to Kenya
Sabo and Bello (2024)	Financing of low-income housing in Nigeria.	questionnaire and interviews	Strengthening the community-based social network through formalization and empowerment for housing finance is vital for low-income earners in Nigeria	The study was conducted in Nigeria and therefore the findings cannot be generalized to Kenya
Hi, Lin and Liu (2024)	Effect of financial literacy on mortgage stress in Nicaragua	Panel Study of Income Dynamics (PSID)	financial illiteracy has remained a challenge to mortgage financing especially for potential home owners from low income segments	The study was not specific to government affordable housing Projects in Nairobi County
Olang (2023)	effect of mortgage market risk on mortgage uptake among the low income lender	causal research design	Low mortgage uptake for low earners have been due to poor saving and credit history	The study as much as was conducted in Kenya, the study was not specific to mortgage financing for government

				affordable housing Projects in Nairobi County

2.6 Conceptual Framework

The cost of capital for low-income earners targeted by the Government Affordable Housing Project, borrower profiles, lending products not aligned to the low-income segment, and the limited access to capital for low-income borrowers continue to be a hindrance to mortgage financing for government affordable projects in Nairobi County. This includes unavailability of mortgages to the borrowers and mortgage uptake among the targeted segment of homeowners among the low-income earners.

This section shows the interrelation between the independents and dependent variables under investigation. Conceptual framework in figure 2.1 showed the interrelationship between variable under investigation. Donald (2006) stated that conceptual framework serves as a diagrammatic representation of both dependent and independent variables. A dependent variable is caused by the independent variable and indicates the influence arising from the effects of independent variables (Mugenda & Mugenda, 2003). The independent variable: mortgage finance factors and dependent variable: Performance of affordable housing government projects is linked in the following framework:

Independent Variables **Dependent Variables**

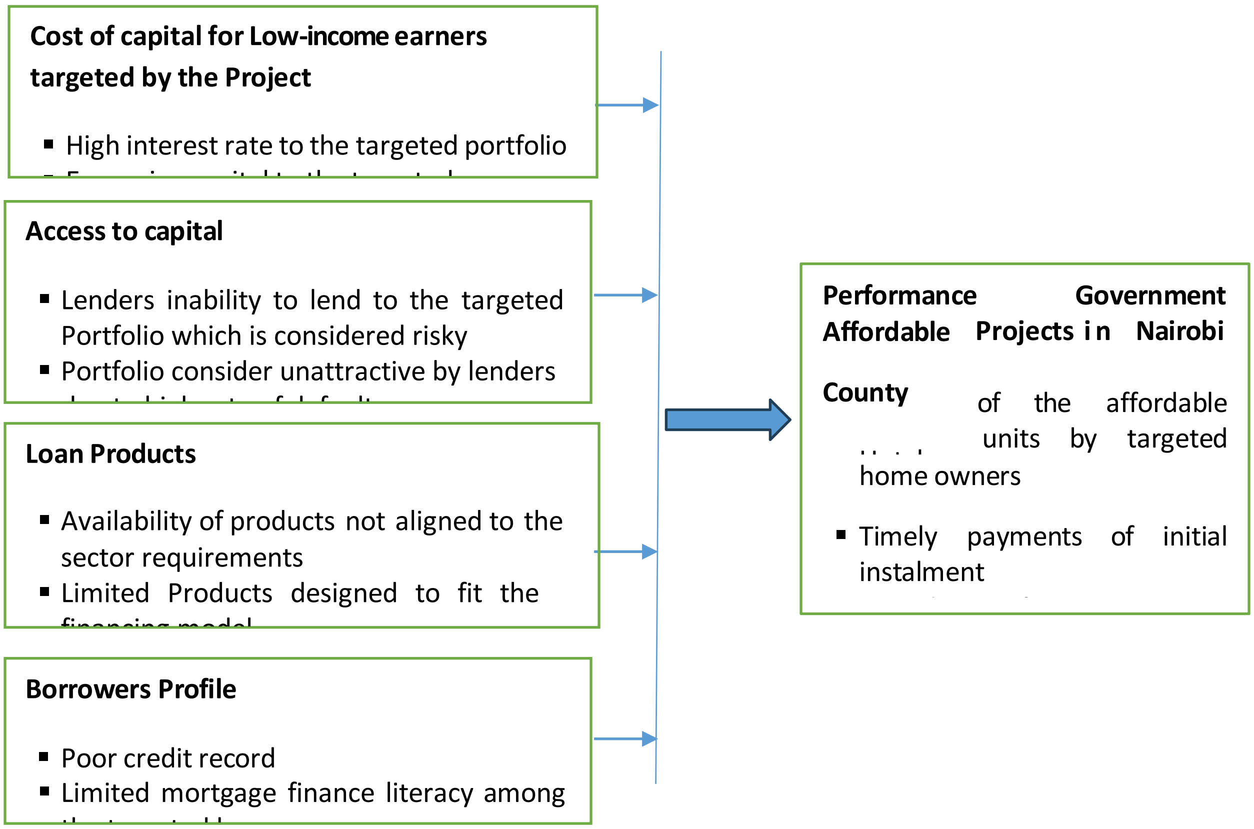


FIGURE 1

Conceptual Framework

2.7 Operationalization of Study Variable

Operationalization facilitates the reduction of abstract notion of constructs into observable characteristics so that they can be measured using indicators. A rating scale ranging from 1=strongly disagree to 5=strongly agree was used to measure both the dependent and independent variables. The indicators that was used in the study are summarized in the below table.

TABLE 2

Operationalization of the Variables

Variable	**Variable construct**	**Indicator**	**Analysis Method**
Mortgage Financing Factors (Independent Variables)	**Cost of capital for Low-income earners targeted by the Project**	High interest rate to the targeted portfolio	Descriptive Statistical Analysis (Mean & Standard Deviation)
		Expensive capital to the targeted group	
	Limited access to capital	Lender's inability to lend to the targeted Portfolio which is considered risky	Descriptive Statistical Analysis (Mean & Standard Deviation)
		Portfolio consider unattractive by lenders due to high rate of default	
	Loan Products	Availability of products not aligned to the sector requirements	Descriptive Statistical Analysis (Mean & Standard Deviation)
		Limited Products designed to fit the financing model	
	Borrowers Profile	Poor credit record	Descriptive Statistical Analysis (Mean & Standard Deviation)
		Limited mortgage finance literacy among the targeted borrowers	
Performance Government Affordable Projects (Dependent Variable)	**Performance Government Affordable Projects**	Uptake of the affordable housing units by targeted home owners, Timely payments of initial instalment, Completion of payments	Inferential Statistics (Pearson Correlation, Linear Regression Analysis)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodological approaches that the study used, the instruments to gather data to ascertain the sample size of the participants, select the participants, evaluate the validity and reliability of the research tool, and analyze the data.

3.2 Research design

This study adopted a descriptive research design because it facilitates systematic collection and analysis of data that describes the characteristics of mortgage financing and its relationship with affordable housing project performance (Creswell & Creswell, 2018). The method helped investigate one or more variables. The method allowed the descriptive statistics such as Likert scale measurements to describe the relationship between two or more variables. It is suitable for studies aiming to describe the 'what' rather than the 'why' of a phenomenon. The design has been employed in similar studies by different researchers, including Owino et al (2014), Adede (2017), and Onyango (2021) and therefore the study meets the criterion related validity requirement.

3.3 Target population

The study population was 110 that comprised a complete set of individuals, events, or objects that exhibit the typically observable characteristics. It constitutes the totality of all elements that conform to a specific standard. The study targeted respondents drawn from the targeted Commercial Banks and Sub-County Lands and Housing offices in the areas where there are ongoing Government Affordable Housing Projects in Nairobi that include Bahati, Woodley, Kibera, Mukuru Kwa Njenga, Ngara, and Kariako. Therefore, the study targeted branches of the four leading commercial banks in assets and customer base (Kenya Commercial Bank, Cooperative Bank of Kenya, Equity Bank, and Family Bank) and 2 micro-financial institutions (Kenya Women Micro Finance and Rafiki Micro Finance) who are possible lenders to micro-enterprises that most of the targeted homeowners save with in the specific project areas. These selected banks and MFIs are appropriate given that these are leading institutions that support mortgage financing. Additionally, the study targeted 2 key informants drawn from the Ministry of Lands and Housing sub-county offices in the Government Affordable Housing Project areas (Macharia,2019). Therefore, the unit of analysis was Operation Manager and Credit Manager in the targeted branches of the targeted Bank and MFI Branches in the Targeted areas that have implemented affordable government housing in Nairobi County.

3.4 Sample Size and Sampling Method

Purposive sampling method was used to select respondents from the targeted categories in the Government Affordable Housing Project areas from the four leading commercial banks in assets and customer base (Kenya Commercial Bank, Cooperative Bank of Kenya, Equity Bank, and Family Bank) and 2 micro-financial institutions (Kenya Women Micro Finance and Rafiki Micro Finance) who are possible lenders to micro-enterprises that most of the targeted homeowners save with in these project areas. Additionally, the sampling method was used to select key informants drawn from the Ministry of Lands and Housing officers in Government Affordable Housing Project areas. The sampling method is appropriate as it allows for the selection of respondents with special information.

TABLE 3

Sample Size

Area	**Commercial Banks**		**(1 Operation manager & 1 Credit Manager)**	**MFI**		**(1 Operation manager & 1 Credit Manager)**	**Sub-county land and Housing Officers**	**Total**
	Bank	**Branch**		**MFI**	**Branch**			
Bahati	KCB	1	2	Kenya Women Trust	1	2	2	16
	Co-op Bank	2	4					
	Equity	1	2	Rafiki Microfinance	1	2		
	Family	1	2					
Woodley	KCB	1	2	Kenya Women Trust	1	2	2	34
	Co-op Bank	2	4					
	Equity	1	2	Rafiki Microfinance	1	2		
	Family	1	2					
Kibera	KCB	0	0	Kenya Women Trust	1	2		
	Co-op Bank	1	2					
	Equity	3	6	Rafiki Microfinance	1	2		
	Family	1	2					
Mukuru Kwa Njenga	KCB	1	2	Kenya Women Trust	1	2	2	22
	Co-op Bank	3	6					
	Equity	3	6	Rafiki Microfinance	1	2		
	Family	1	2					
Ngara	KCB	2	4	Kenya Women Trust	1	2	2	50
	Co-op Bank	3	6					
	Equity	2	4	Rafiki Microfinance	0	2		
	Family	1	2					
Kariako	KCB	3	6	Kenya Women Trust	1	2		
	Co-op Bank	5	10					
	Equity	3	6	Rafiki Microfinance	1	2		
	Family	2	4					
Total		**44**	**88**		**11**	**22**	**8**	**118**

Source: Researcher (2025)

3.5 Research instruments

The study used primary data and included Structured Questionnaires that was used to collect data from the sampled respondents drawn from Bahati, Woodley, Kibera, Mukuru Kwa Njenga, Ngara, and Kariako that are targeted by the study. The structured questionnaire included a five-point likert scale response. Mugenda and Mugenda (2003) points out that a structured questionnaire is relatively cheap and easy to administer and easier to analyze. This helped to assess the respondent's degree of agreement on various statement guided by the study objectives. (1- Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, 5 - Strongly Agree). The structured questions was exhaustive and mutually exclusive.

The questionnaires targeted Operation Manager and Credit Manager from four leading banks four leading commercial banks in assets and customer base (Kenya Commercial Bank, Cooperative Bank of Kenya, Equity Bank, and Family Bank). 2 micro-financial institutions (Kenya Women Micro Finance and Rafiki Micro Finance) that most of the targeted homeowners save with in order to get a deeper insight on the effect mortgage financing factors influencing mortgage financing for government affordable housing Projects in Nairobi County

The question included three sections, where Section A includde the general information of the respondents, Section B included the questions on the four mortgage financing factors independent variable (cost of capital for targeted group, limited access to capital, lending products alignment to the segment borrowers and borrowers profile) while section C included questions on the dependent variable (mortgage financing for government affordable housing Projects in Nairobi County).

Additionally, Key Interview was also be conducted through key interview guides that targeted key informants drawn from the sub - county land and Housing Officers in the targeted areas that the government affordable housing Projects are being carried in Nairobi County.

3.6 Pilot Study

The pilot test was conducted using questionnaires that was administered to 9 respondents from the targeted Banks. All the 9 respondents participated in the study and they included the following respondents (1. Respondent from Kenya Commercial Bank, 1. Respondent from Cooperative Bank of Kenya, 1. Respondent from Respondent from Equity Bank, and 1. Respondent from Family Bank) and micro-financial institutions (1. Respondent from Kenya Women Micro Finance and 1. Respondent from Rafiki Micro Finance) in Thika Town Kiambu county. The study also included key interview that included county land and housing staff at the subcounty level. Thika Sub- County has two government affordable projects that include Thika Bustani and Thika Depot AHP Projects. The pilot study allowed for pretest of the data collection instrument.

3.7 Validity and Reliability of Research Instrument

3.7.1 Validity of Research Instrument

Validity can be defined as the degree to which an instrument accurately measures its intended target and functions as it is designed to do (Kerlinger, 2006). It is also the degree to which the outcomes derived from the data analysis illustrate the phenomenon being examined (Loebet al., 2017). The researcher worked with the allocated supervisor in enhancing the validity of the study instruments and the recommendations put forth was integrated into the final instruments that utilized with the participants in the research.

TABLE 4

Validity of research instruments

Construct validity	The researchers used expert's opinion on whether the instrument's scores are meaningful, useful, and consistent with hypotheses.
Content validity	The study sought the experts or academicians' views on whether the instrument includes all relevant items and excludes unnecessary ones. Suggestions from the supervisor was incorporated in the revised tools.
Criterion validity	The study ensured how well the instrument predicts an outcome, such as a behavior or performance.

3.7 Reliability of research instruments

Reliability denotes the extent of consistency and stability in a measurement tool (Kumar, 2010). The assessment of reliability was conducted utilizing the Cronbach's Alpha coefficient. According to George and Mallery (2003), the following guidelines are recommended for interpreting the outcomes of the Cronbach's alpha test: "_ > .9 – Excellent, _ > .8 – Good, _ > .7 – Acceptable, _ > .6 – Questionable, _ > .5 – Poor, and _ < .5 – Unacceptable". As noted by Cooper and Schindler (2006), a Cronbach's alpha coefficient that lies between 0.7 and 0.9 is regarded as satisfactory. Gliem and Gliem (2003) recommend a Cronbach's value of 0.7, while Asikhia (2009) suggests a reliability threshold of 0.6. Bagozzi and Yi (2012) indicated that a value of 0.5 is considered reliable. The closer Cronbach's alpha coefficient was to 1, the higher the internal consistency reliability of a questionnaire was reliability of less than 0.6 is poor; that in the range of 0.7 is acceptable while over 0.8 is good (Sekaran, 2003).

TABLE 5

Reliability Results

Variables	Number of items	Cronbach's Alpha	Comments
Cost of capital	10	0.839	Accepted
Access to capital	10	0.842	Accepted
Lending products alignment to the segment borrowers	10	0.835	Accepted
Borrowers' Profile	10	0.841	Accepted
Performance of affordable housing government projects	8	0.827	Accepted

Results of reliability test in Table 3.3 revealed that access to capital as measured by 10 items had a Cronbach's Alpha of 0.839. This implied that the scale used was reliable and that all the items were correlated and measured the same thing. The results further showed that access to capital as measured by 10 items had a Cronbach's Alpha of 0.842 which was above the threshold of 0.7 adopted for this study. Similarly, other variables of lending products alignment to the segment borrowers, borrowers' profile and performance of affordable housing government projects had Cronbach's Alphas of 0.835, 0.841 and 0.827 respectively which were above the threshold of 0.7 adopted for this study. These results implied that the scale used in this study was reliable and it was adequate for data collection.

3.8 Data collecting procedures

The study sought permission from KCA University Ethical Clearance Committee before collecting the required data. Drop-pick method was used for data collection. Trained research assistants was used in data collection in order to improve the response rate and quicken the data collection process.

3.9 Data analysis techniques

The process of data processing entails converting raw data into valuable and actionable information, enabling researchers to reach conclusions and make well-informed decisions. This usually involves various steps such as editing, coding, classifying, tabulating, and analyzing the data. The objective is to derive pertinent insights and tackle research questions by structuring and condensing the data into a more manageable format (Nardi,2018).

The research employed quantitative data analysis techniques. Descriptive and inferential statistics used to analyze the data. Descriptive statistical analysis included percentages, mean, and standard deviation to establish the extent to which independent variables influenced the dependent variable. The inferential statistics was utilized to establish the nature of the relationship between the variables under investigation and included regression analysis and Pearson correlation. This helped in drawing conclusions on the connections among variables and the characteristics of the relationship, determined at a 95% confidence level. SPSS version 26 aided in the analysis of the quantitative data, and the results was presented using various statistical tools such as tables, percentages, and charts with the help of the Microsoft Excel package.

Additionally, linear regression model $MF = \beta 0 + \beta 1COC + \beta 2AC + \beta 3\ LPA + \beta 4BP + \varepsilon$ This was utilized to examine the relationship between independent and dependent variables. The significance level was established at a critical threshold of $P < 0.05$, corresponding to a confidence level of 95%. ANOVA was employed to evaluate the hypothesis, where a P value of less than .05 resulted in the rejection of the null hypothesis and the acceptance of the alternative hypothesis, whereas a P value greater than .05 would lead to the acceptance of the null hypothesis and the rejection of the alternative hypothesis.

$Y = PGAH = \beta 0 + \beta 1COC + \beta 2AC + \beta 3\ LPA + \beta 4BP + \varepsilon$

Where: -

PGAH= Performance of Government Affordable Housing Projects in Nairobi County

$\beta 0$=intercept

$\beta 1$, $\beta 2$, $\beta 3$ $\beta 4$, = regression coefficients COC= Cost of Capital for Targeted Group AC= Access to Capital

LPA= Lending Products Alignment to The Segment Borrowers BP= Borrowers Profile

ε=Error Term

TABLE 6

Summary of Regression Analysis

Objective	**Hypothesis**	**Analytical Model**	**Hypothesis Test**
Objective 1: To establish the effects of cost of capital for targeted group on the performance of affordable housing government projects in Nairobi County	**Hypothesis 1:** The cost of capital for targeted group has no significant effect on the performance of affordable housing government projects in Nairobi County	$Y= \beta 0 + \beta 1COC+\varepsilon$ Where: Y= Performance of Government Affordable Housing Projects $\beta 0$= intercept $\beta 1$ = Coefficient for COC COC = cost of capital for targeted group ε = Error term	If the P-Value is ≤ 0.05,**H_{01}** is rejected and **H_1** is accepted.
Objective 2: To establish the effect of access to capital on the performance of affordable housing government projects in Nairobi County	**Hypothesis 2:** The limited access to capital has no significant effect on the performance of affordable housing government projects in Nairobi County	$Y= \beta 0 + \beta 2AC+\varepsilon$ Where: Y= Performance of Government Affordable Housing Projects $\beta 0$= intercept $\beta 2$ = Coefficient for AC AC = Access to Capital ε = Error term	If the P-Value is ≤ 0.05,H_{02} is rejected and H_2 is accepted.

Objective 3: To determine the effects of lending products alignment to the segment borrowers on the performance of affordable housing government projects in Nairobi County	**Hypothesis 3:** The lending products alignment to the segment borrowers has no significant effect on the performance of affordable housing government projects in Nairobi County	$Y = \beta 0 + \beta 3LPA + \varepsilon$ Where: Y= Performance of Government Affordable Housing Projects $\beta 0$= intercept $\beta 3$ = Coefficient for LPA LPA = Lending products alignment to the segment borrowers ε = Error term	If the P-Value is $\leq$ 0.05,H03 is rejected and H3 is accepted.
Objective 4: To find out the effects of borrowers' profile on the performance of affordable housing government projects in Nairobi County	**Hypothesis 4:** The borrowers' profile has no significant effect on the performance of affordable housing government projects in Nairobi County	$Y = \beta 0 + \beta 4COC + \varepsilon$ Where: Y= Performance of Government Affordable Housing Projects $\beta 0$= intercept $\beta 4$ = Coefficient for BP BP = Borrowers Profile ε = Error term	If the P-Value is $\leq$ 0.05,H04 is rejected and H4 is accepted.

3.9.1 Correlation Analysis

The Pearson moment correlation and linear regression was employed as inferential methods in conjunction with regression analysis. The Pearson correlation provided insights into the relationship between the study variables. A correlation coefficient of 1 signifies that every positive correlation lead to a proportional positive increase in one variable, which corresponded to a fixed proportional increase in the other variable; conversely, a correlation coefficient of -1 indicates that every positive increase in one variable resulted in a proportional negative decrease in the other variable. In conclusion, correlation analysis was utilized in research to assess the strength of the linear relationship between two variables and to calculate their association.

Additionally, it helped to determine the association between independent variables (cost of capital for targeted group, access to capital, lending products alignment to the segment borrowers and borrowers profile) and the dependent variable (the performance of affordable housing government projects in Nairobi County).

3.10 Diagnostic Tests

To enable effective regression analysis, the study undertook an examination of normality, multicollinearity, and heteroscedasticity.

3.10.1 Multicollinearity Test

Multicollinearity tests in research assess the correlation between independent variables in a regression model to ensure reliable and accurate results. The study used variance inflation factors (VIF) are utilized to confirm the absence of linear relationships among the predictor variables in this research. A VIF value of 1 signifies no correlation between the predictor variables, whereas a value exceeding 5 indicates a strong correlation among them (Frost, 2020). This approach also guarantees that the regression coefficient estimates derived from all the variables employed in the study are not inflated as a result of collinearity.

3.10.2 Normality Test

A normality test assesses if sample data originates from a normally distributed population, allowing for a certain margin of error. The outcomes of the test guide the decision to either reject or not reject the null hypothesis, which posits that the data is from a normally distributed population (Sekaran, 2003). The Shapiro-Wilk Test employed for this purpose; a p-value exceeding 0.05 indicates that there is insufficient evidence to dismiss the null hypothesis of normality, while a p-value less than 0.01 indicates a significant deviation from normal distribution.

3.10.3 Heteroskedasticity

The research performed a Heteroscedasticity test to determine if the variance of the residuals is inconsistent across a spectrum of measured values. Should heteroskedasticity be present, it indicates that the population utilized in the regression has unequal variance, potentially rendering the analysis results invalid. The Heteroscedasticity test is essential for assessing whether the variance of the error term in a statistical model remains constant across all levels of the independent variables. This assessment is vital, as non-constant error variance, such as in the case of heteroscedasticity, can result in biased and unreliable conclusions regarding the model's parameters and their statistical significance (Loebet al., 2017).

Consequently, a low p-value (generally under 0.05) in a heteroscedasticity test signifies that the error term's variance is not uniform, indicating the presence of heteroscedasticity. This condition can result in erroneous standard errors and confidence intervals, thereby affecting the dependability of inferences drawn from the regression model (Zerihun, 2018). Conversely, a high p-value suggests that the error term's variance is stable, indicating homoscedasticity, which implies that the model's inferences are likely to be trustworthy.

3.10.4 Test of Outliers

This is a statistical method used to identify data points that deviate significantly from the rest of a dataset. These tests help determine if extreme values are true outliers or simply represent natural variation within the data or natural variability within the data itself. The study used Block Chart and Histogram in order to ascertain if were there any outliers in the data used. Addressing outliers is crucial because outliers can heavily influence statistical analyses and potentially lead to inaccurate conclusions (Nardi,2018).

3.11 Ethical considerations

The researcher ensured confidentiality, informed consent, and the originality of the research throughout the execution of this study. Confidentiality was further strengthened by employing random letters to identify participants instead of using their names or descriptions. The opinions expressed by the participants and their departmental identities were not shared with unauthorized person but was used discreetly to affect the execution of policies of ways to deal with pandemic disruptions in the public sector and for academic purposes as specified by the study. Informed consent was sought from the respondents, and one may withdraw from the study at any point while answering the questions in the questionnaire. Coerced or forced participation were not have been utilized by the study.

Sampled participants was given an opportunity to willingly take part in the study. Given that the integrity of research is paramount, the researcher refrained from and not partake in any type of dishonesty, fabrication, plagiarism, or any other unethical behavior throughout the research process, and when required, consent was obtained. Last but not least, the researcher obtained approval for ethical clearance to carry out the study from the KCA University and also seek permission from the National Commission for Science, Technology, and Innovation (NACOSTI) prior to initiating the process of data collection.

CHAPTER FOUR

RESEARCH FINDINGS, ANALYSIS AND PRESENTATION

4.1 Introduction

The purpose of this study was to find out the effect of mortgage financing on the performance of affordable housing government projects in Nairobi County. This chapter therefore presents results and discussions of the study from the data collected through the questionnaires in which the researcher sorted views and opinions on the effect of mortgage financing on the performance of affordable housing government projects in Nairobi County. The chapter is divided into five sections that include the response rate, the general information of the respondents; the descriptive statistics of the variables under investigation; and the diagnostic analysis and the inferential statistical analysis of the data collected.

4.2. General Information

The study targeted 110 respondents that included Operation Managers and Credit Managers from four leading commercial banks in assets and customer base (Kenya Commercial Bank, Cooperative Bank of Kenya, Equity Bank, and Family Bank) and 2 micro-financial institutions (Kenya Women Micro Finance and Rafiki Micro Finance) who are lenders to micro-enterprises that most of the targeted homeowners save with in these project areas.

4.2.1 Response Rate

TABLE 7

Response Rate

Category	**Sampled**	**Responded**	**Did not Respond**	**Response Rate**
Bank	**88**	82	6	93.2
MFI	**22**	21	1	95.4
Total	**110**	**103**	**7**	**93.6**

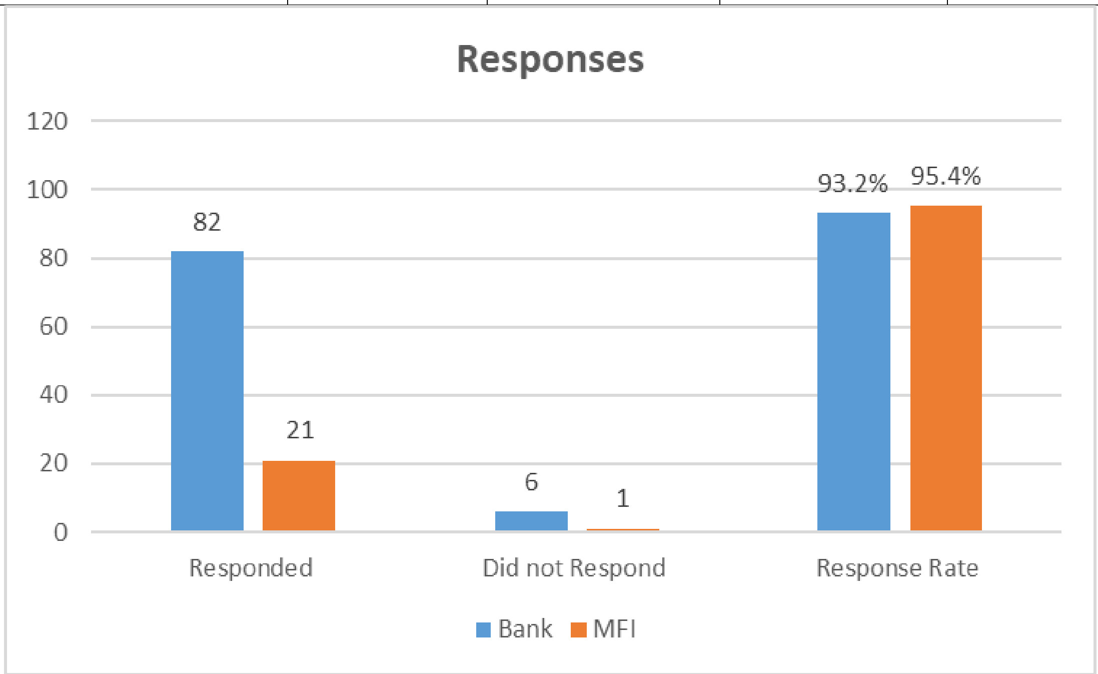


FIGURE 2

Responses

The results indicated a response rate of 93.2% for the respondents were from the Banks and 95.4% came from the Micro-Finance Institutions (MFI) that are the financial institutions in the area and potential lenders to affordable homes borrowers in the project area. The average rate was 93.6% was considered very adequate. Arora, (2003), stated that a questionnaire-based study that produces above 65% response, is rated as a well participated study.

TABLE 8
Demographic Information

Description	**N(%)**
Gender of the Respondents	
Male	56(54.4)
Female	47(45.6)
Total	**103(100.0)**
Age of the Respondents	
18-30 Years	22(21.4)
31-40	46(44.7)
41-50	25(24.3)
Above 50	10(9.7)
Total	**103(100.0)**
Education Level	
College	17(16.5)
Undergraduate Degree	59(57.3)
Masters	22(21.4)
PhD	5(4.9)
Total	**103(100.0)**
Location	
Bahati	14(13.6)
Woodley	13(12.6)
Kibera	14(13.6)
Mukuru Kwa Njenga	14(13.6)
Ngara	20(19.4)
Kariakor	28(27.2)
Total	**103(100.0)**
Length of time in your current Position	
Less than 2 years	12(11.7)
2-5 Years	51(49.5)
Over 5 years	40(38.8)
Total	**103(100.0)**
Financial Institutions	
Bank	82(79.6)
MFI	21(20.4)
Total	**103(100.0)**

The results also indicated that 54.4 % of the respondents were male while 45.6% were female which showed that there were more males employed in the banks and the financial institutions covered by the study. Response in terms of the age of the respondents indicated that 21.4% of the respondents were aged between 18-30 years old, 44.7% aged between 31-40 years old, then 24.3% were aged between 41-50 years old and 9.7% aged above 50 years old. This indicated that most of the staff in the financial institutions covered in the study were aged between 31-40 years. The study also showed that 16.5% of the respondents had college certificate level of education in areas that were not specified, 57.3% had an Undergraduate or Bachelors Degree, 21.4% had a Graduate or Masters Degree, while 4.9% had achieved a PhD level of education. This indicated that most of the respondents had either a Bachelors or Masters Degree across a number of areas and therefore understood the subject that was under investigation.

The study covered the areas that affordable housing project were being constructed in Nairobi county where the results showed that 13.6% of the respondents were from Bahati area, 12.6% were from Woodley, 13.6% were from the Kibera region, and 13.6% were from Mukuru Kwa Njenga. The results also indicated that 19.4% were from Ngara, while 27.2% were from the Kariakor locality. This showed that the study was adequately represented in the targeted communities.

Equally, as indicated by the study results, 11.7% of the respondents had been in their current positions for less than 2 years, 49.5% of the respondents had worked in their current work places for between 2-5 years, while another 38.8% had been in their current work stations for over five years. This indicated that most of the respondents had worked in their current positions for a longer time and therefore understood the issues under investigation. Lastly, the study showed that 79.6% of the respondents were from the Banks, while 20.4% came from the Micro-Finance Institutions (MFI). This strongly shows that the study subject matter was well understood from the financial and lending side.

4.3 Descriptive Analysis

Descriptive statistics is a summary statistic that quantitatively describes or summarizes features of a collection of information (Mann, 1995). Descriptive statistics is distinguished from inferential statistics or inductive statistics, in that descriptive statistics aims to summarize a sample, rather than use the data to learn about the population that the sample of data is thought to represent. This generally means that descriptive statistics, unlike inferential statistics, is not developed on the basis of probability theory, and are frequently nonparametric statistics (Trochim, 2006).

This study utilized a 5-point likert scale (where 1= Strongly Disagree and 5= Strongly Agree) to analyze the primary data collected. The data analysis generated means and standard deviations from data collected from the respondents. The interpretation of the mean was that 1-1.8 represents strongly disagree, 1.9-2.6 represents disagree, 2.7-3.4 was interpreted as somehow agree, 3.5-4.2 was agree and finally 4.3-5 was strongly agree (Wandili, 2022).

4.3.1 Cost of Capital

The first objective of the study was to establish the cost of capital on the mortgage financing in government affordable Projects in Nairobi County and the response was as follows.

TABLE 9

Effects of cost of capital on the mortgage financing in government affordable Projects in Nairobi County

Cost of capital	**N**	**Mean**	**Standard Deviation**
Cost of capital for low-income earners targeted by the Project is still high	103	4.30	1.101
Many low-income earners cannot afford to pay monthly instalments	103	4.61	.645
Many targeted low earners category do not meet the eligibility criteria	103	3.41	1.004
The high interest rate is not favorable to the targeted mortgagees	103	4.42	.945
The lenders do not have special interest for the low-income mortgage seekers	103	3.49	.999
The initial payment is still expensive for the targeted group	103	4.27	1.095
The mortgage financiers are not willing to lend the initial payment that is still expensive for the borrowers	103	4.42	.945
Many lenders are not willing to support borrower in paying their monthly payments	103	3.74	1.057
Lenders willing to support monthly mortgage financing are expensive to the targeted segment	103	3.48	1.136
The cost of capital is made high because of insurance cost give the high risk of the targeted segment	103	4.68	.931

The results indicated that the respondents strongly felt that cost of capital for low-income earners targeted by the Project is still high (Mean=4.30; Std. Deviation=1.101), many low-income earners cannot afford to pay monthly installments (Mean=4.61; Std. Deviation=.645) and that the many targeted low earners category do not meet the eligibility criteria (Mean=3.41; Std. Deviation=1.004). The high interest rate is not favorable to the targeted mortgagees (Mean=4.42; Std. Deviation=.945). Respondents strongly felt that the lenders do not have special interest for the low-income mortgage seekers (Mean=3.49; Std. Deviation=.999), and the initial payment is still expensive for the targeted group (Mean=4.27; Std. Deviation=1.095).

Additionally, the mortgage financiers are not willing to lend the initial payment that is still expensive for the borrowers (Mean=4.42; Std. Deviation=.945). Respondents strongly agreed that many lenders are not willing to support borrower in paying their monthly payments (Mean=3.74; Std. Deviation=1.057), while lenders willing to support monthly mortgage financing are expensive to the targeted segment (Mean=3.48; Std. Deviation=1.136). Lastly, results showed that respondents strongly agreed that the cost of capital is made high because of insurance cost give the high risk of the targeted segment (Mean=4.68; Std. Deviation=.931).

These shows that the cost of capital for low-income earners targeted by the Project is still high and cannot be afforded by many of the targeted segments. Cost of capital has been made higher because of insurance cost given the high risk of the targeted segment. Many of these low-income earners do not meet the eligibility criteria and neither can afford to pay the monthly installments required by the project. The initial payment is still expensive for the targeted group. Unfortunately, where the lenders agree to lend to them, the high interest rate are not favorable to the targeted mortgagees with many fearing to take up mortgages from the financial institutions in the area.

Notably, many mortgage financiers are not willing to lend the initial payment to secure the houses for later installment payments as they consider them still expensive for the borrowers, many lenders are not willing to support borrower in paying their monthly payments and lenders are not only unwilling to support monthly mortgage financing, but the borrower consider the monthly payments expensive.

4.3.2 Limited Access to Capital

The second objective of the study was to establish the limited access to capital on the mortgage financing in government affordable Projects in Nairobi County and the response was as follows.

TABLE 10

Effects of limited access to capital on the mortgage financing in government affordable Projects in Nairobi County

Limited access to capital	**N**	**Mean**	**Standard Deviation**
There is access to capital for low-income earners to finance their mortgage	103	2.18	.968
The Lenders fear to lend to the targeted Portfolio which is considered risky	103	4.41	.944
The banks fear to finance mortgage for the low-income earners because of high rate of default	103	3.80	1.123
Portfolio is considered unattractive by lenders due to high unpredictability	103	4.41	1.141
The segment do not have other property that can be placed as collateral and therefore cannot access the required finances	103	4.41	.944
Lack of collateral is the biggest impediment to borrowing by targeted low-income earners	103	3.78	1.111
Lack of stable income makes the targeted segment not able to access capital	103	3.75	1.144
Inability to get reliable guarantor presents another challenge in accessing capital for the borrowers targeted by the project	103	4.01	1.325
The government needs to find another strategy to make capital available to this targeted segment	103	3.99	1.096
The project is modeled in such away that the targeted borrowers can easily access capital.	103	3.95	1.271

The results indicated that the respondents felt that there is low access to capital for low-income earners to finance their mortgage (Mean=2.18; Std. Deviation=.968), also results showed the lenders fear to lend to the targeted Portfolio which is considered risky (Mean=4.41; Std. Deviation=.944). The banks fear to finance mortgage for the low-income earners because of high rate of default (Mean=3.80; Std. Deviation=1.123), as the Portfolio is considered unattractive by lenders due to high unpredictability (Mean=4.41; Std. Deviation=1.141). Respondents strongly agreed that the segment do not have other property that can be placed as collateral and therefore cannot access the required finances (Mean=4.41; Std. Deviation=.944), and lack of collateral is the biggest impediment to borrowing by targeted low-income earners (Mean=3.78; Std. Deviation=1.111).

The results also indicated that the respondents strongly agreed that the lack of stable income makes the targeted segment not able to access capital (Mean=3.75; Std. Deviation=1.144), and inability to get reliable guarantor presents another challenge in accessing capital for the borrowers targeted by the project (Mean=4.01; Std. Deviation=1.325). Respondents strongly felt that the government needs to find another strategy to make capital available to this targeted segment (Mean=3.99; Std. Deviation=1.096). Lastly, the results showed that the project is modeled in such a way that the targeted borrowers can easily access capital (Mean=3.95; Std. Deviation=1.271).

This shows that there is low access to capital for low-income earners to finance their mortgage as the potential lenders fear to lend to the targeted portfolio which the banks and the MFIs considered risky. Especially, the banks that are more risk cautious fear to finance mortgage for the low-income earners because of high rate of default and the possibility of running in to bad debt and therefore the portfolio remain unattractive to lenders due to high unpredictability. Not having other properties that can be placed as collateral for these the targeted low income earners and inability to get reliable guarantor is also a hindrance to accessing the required finances.

While monthly instalments for mortgage require consistency payments lack of stable income makes the targeted segment not able to access capital. Therefore, in order to increase access to capital for this segment, the government needs to find another strategy to make capital available to this targeted segment given that the project is modeled in such a way that the targeted borrowers cannot easily access capital.

4.3.3 Lending products not aligned to the segment

The third objective of the study was to establish the effect of lending products not aligned to the segment on the mortgage financing in government affordable Projects in Nairobi County and the response was as follows.

TABLE 11

Effects of lending products not aligned to the segment on the mortgage financing in government affordable Projects in Nairobi County

Lending Products not aligned to the segment	N	Mean	Standard Deviation
Lending Products available in the market are not aligned to the segment	103	3.82	1.135
The products that are provided by the lenders do not meet the affordable housing requirements	103	4.08	1.258
There are few products designed to fit the financing model sought by the mortgage financing required for affordable housing	103	3.43	1.072
Many lenders are avoiding mortgage financing for these products due to possible bureaucracy	103	4.08	1.202
There is need for collaboration with the lenders to develop products that can support low income borrowers that are targeted by this type of project	103	4.03	1.240
The project is not modeled in alignment with the current available products in the market	103	3.83	1.483
The lenders fear that the ownership structure may present a challenge to reposes the property incase of default	103	4.63	.610
The lack of details pertaining the project alignment to exiting financial system present fears among lenders	103	3.39	1.002
Lenders fear that there is possibility of loss of business based on the possible bureaucracy involving government projects and therefore have not considered any products targeting the segment	103	4.41	.975
The government needs to work with the financial institutions in developing products aligned to the project	103	3.56	.957

The results showed that respondents strongly felt that the lending products available in the market are not aligned to the segment (Mean=3.82; Std. Deviation=1.135). Again, results strongly showed that the products that are provided by the lenders do not meet the affordable housing requirements (Mean=4.08; Std. Deviation=1.258). There are few products designed to fit the financing model sought by the mortgage financing required for affordable housing (Mean=3.43; Std. Deviation=1.072). Respondents strongly agreed that many lenders are avoiding mortgage financing for these products due to possible bureaucracy (Mean=4.08; Std. Deviation=1.202). Again, results strongly showed that there is need for collaboration with the lenders to develop products that can support low income borrowers that are targeted by this type of project (Mean=4.03; Std. Deviation=1.240).

Additionally, the results also indicated that most respondents strongly felt that the project is not modeled in alignment with the current available products in the market (Mean=3.83; Std. Deviation=1.483), the lenders strongly fear that the ownership structure may present a challenge to repossess the property in case of default (Mean=4.63; Std. Deviation=.610). Results showed that respondents agreed that the lack of details pertaining the project alignment to exiting financial system present fears among lenders (Mean=3.39; Std. Deviation=1.002). Respondents strongly agreed that lenders fear that there is possibility of loss of business based on the possible bureaucracy involving government projects and therefore have not considered any products targeting the segment (Mean=4.41; Std. Deviation=.975). Lastly, results strongly showed that the government needs to work with the financial institutions in developing products aligned to the project (Mean=3.56; Std. Deviation=.957).

This shows that the lending products provided for by most financial institutions in the market are not aligned to the segment, is not modeled in alignment with the current available products in the market and do not meet the affordable housing requirements with only few products in market having designed to fit the financing model for affordable housing. Notably, many lenders are avoiding mortgage financing for these products due to possible bureaucracy.

Additionally, the ownership structure presents a challenge to repossess the property in case of default further increasing the fears by possible lenders to aspiring home owners seeking finance from the financial institutions. The lenders fear that there is possibility of loss of business based on the possible bureaucracy involving government projects and therefore have not considered any products targeting the segment. Therefore, there is the government needs to work with the financial institutions in developing products aligned to the project. The government should collaborate with the lenders to develop products that can support low income borrowers that are targeted by this type of project.

4.3.4 Borrowers profile

The fourth objective of the study was to establish the effect of borrowers' profile on the mortgage financing in government affordable Projects in Nairobi County and the response was as follows.

TABLE 12

Effects of Borrowers Profile to the segment on the mortgage financing in government affordable Projects in Nairobi County

Borrowers Profile	N	Mean	Standard Deviation
The low earners do not have a good and attractive profile for lending	103	4.20	1.132
The poor credit record by low-income earners have been an hindrance to mortgage financing	103	4.41	.975
Many of the possible borrowers are listed in the CRB and therefore cannot access credit anywhere	103	3.77	1.077
The tedious process of clearance from CRB discourage many from seeking landings	103	3.50	1.065
Many of the targeted segment are not aware on how to clear themselves from CRB	103	4.65	.967

Limited mortgage finance literacy among the targeted borrowers is also an hindrance mortgage financing	103	4.17	.981
Many of the low-income borrowers do not know where to seek mortgage financing	103	4.35	.967
Many of the low-income borrowers do not save and therefore not eligible for mortgage financing	103	3.79	1.177
Irregular income by low-income earners make it difficult for lenders to calculate their financial strength and how much should be lent to them	103	4.42	1.142
Low-income earners that are targeted by the affordable housing projects are high risk and therefore, avoided by lenders	103	4.35	.967

The results from respondents strongly showed that the low earners do not have a good and attractive profile for lending (Mean=4.20; Std. Deviation=1.132). Again, they strongly that indicated the poor credit record by low-income earners have been a hindrance to mortgage financing (Mean=4.41; Std. Deviation=.975). Many of the possible borrowers are listed in the CRB and therefore cannot access credit anywhere (Mean=3.77; Std. Deviation=1.077). Respondents strongly felt the tedious process of clearance from CRB discourages many from seeking landings (Mean=3.50; Std. Deviation=1.065), and results also strongly indicated that many of the targeted segment are not aware on how to clear themselves from CRB (Mean=4.65; Std. Deviation=.967).

Most respondents strongly agreed that limited mortgage finance literacy among the targeted borrowers is also a hindrance mortgage financing (Mean=4.17; Std. Deviation=.981), and many of the low-income borrowers do not save and therefore not eligible for mortgage financing (Mean=3.79; Std. Deviation=1.177). Respondents strongly confirmed that irregular income by low-income earners make it difficult for lenders to calculate their financial strength and how much should be lent to them (Mean=4.42; Std. Deviation=1.142). Lastly, results strongly showed that the low-income earners that are targeted by the affordable housing projects are high risk and therefore, avoided by lenders (Mean=4.35; Std Deviation=.967).

This shows that low earners do not have a good and attractive profile for lending, the poor credit record by low-income earners have been a hindrance to mortgage financing and that the borrowers are listed in the CRB and therefore cannot access credit anywhere. Additionally, the tedious process of clearance from CRB discourages deter many from seeking landing from financial institution in addition to where many of the targeted segment are not aware on how to clear themselves from CRB.

The limited mortgage finance literacy among the targeted borrowers is also a hindrance mortgage financing, many of the low-income borrowers do not save and therefore not eligible for mortgage financing while irregular income by low-income earners make it difficult for lenders to calculate their financial strength and how much should be lent to them. Finally, the low-income earners that are targeted by the affordable housing projects are high risk and therefore, avoided by lenders.

TABLE 13

Mortgage financing and government affordable housing Project

Mortgage financing and government affordable housing Project	N	Mean	Standard Deviation
Uptake of the affordable housing units by targeted home owners			
The low earners cannot access capital to acquire the houses because of their low income	103	3.74	1.146
There is low uptake of the government affordable housing in the area	103	3.62	1.130
The reason for this low uptake is lack of capital for down payment	103	3.93	1.316
The government needs to work closely with the financial institutions if the government in to increase the uptake	103	3.39	1.131
Timely payments of initial instalment			

Inability to access capital to affects timely acquisition of houses by low-income earners	103	3.91	1.337
The home owners are not able to pay timely monthly installment	103	3.79	1.177
The untimely payment has affected the performance of affordable housing in Kenya	103	4.01	1.287
The untimely payment of installments may contribute to the failure of the entire project	103	3.35	1.082

On the uptake of affordable housing by the targeted home owners, the results from respondents indicated a strong feeling that the low earners cannot access capital to acquire the houses because of their low income (Mean=3.74; Std. Deviation=1.146). There is a low uptake of the government affordable housing in the area (Mean=3.62; Std. Deviation=1.130), strong results showing the reason for this low uptake is lack of capital for down payment (Mean=3.93; Std. Deviation=1.316). Most respondents agreed the government needs to work closely with the financial institutions if the government in to increase the uptake (Mean=3.39; Std. Deviation=1.131).

Results from timely payment of initial installments indicate respondents strongly agreed that the inability to access capital to affects timely acquisition of houses by low-income earners (Mean=3.91; Std. Deviation=1.337). Many strongly confirmed that the home owners are not able to pay timely monthly installment (Mean=3.79; Std. Deviation=1.177). Results strongly affirmed, the untimely payment has affected the performance of affordable housing in Kenya (Mean=4.01; Std. Deviation=1.287). Hence, the solid agreement that the untimely payment of installments may contribute to the failure of the entire project (Mean=3.35; Std. Deviation=1.082).

The reason for this low uptake is lack of capital for down payment as the low earners targeted by the project cannot access capital to acquire the houses because of their low income. The inability to access capital to affects timely acquisition of houses by low-income earners have affected the performance of affordable housing in Kenya. Lastly, the government needs to work closely with the financial institutions if the government in to increase the uptake

4.4 Diagnostic Analysis

The study also carried out a diagnostic test before carrying out the regression tests. This was conducted to ensure that the model assumptions are met. The study utilized the collinearity tests, 4.6 as described below.

4.4.1 Multi Collinearity Test

TABLE 14

Multi Collinearity Test

Model		Collinearity Statistics	
		Tolerance	**VIF**
1	(Constant)		
	Cost of capital	.432	2.775
	Access to capital	.521	1.981
	Lending products alignment to the segment borrowers	.487	2.561
	Borrowers' Profile	.391	2.782

The study used Variance Inflation Factors (VIF) to ensure that there is no linear relationship between predictor variables in this study. A VIF value that is equal to 1 indicates lack of correlation among predictor variables while a value that is more than 5 indicates a high correlation among predictor variables (Frost, 2020). From Table 4.8 above, cost of capital, access to capital, lending products alignment to the segment borrowers and borrowers' profile have a VIF of 2.775, 1.981, 2.561 and 2.782 respectively. This implies that there is no correlation among the independent variables hence the data could be subjected to regression analysis. Additionally, the estimated regression coefficient indicated by all the variables that are less than 5 are not inflated due to collinearity.

4.4.2 Normality Test Results

The study used Shapiro-Wilk to test the normality of the set of data and determine whether sample data has been drawn from a normally distributed population.

TABLE 15

Cost of capital and Performance of affordable housing government projects normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Cost of capital	.367	5	.086	.684	5	.086
a. Lilliefors Significance Correction						

The findings of the normality test established a sig. value of .086 of the Shapiro-Wilk test, and that is greater than 0.05, indicating that the data is normal. The results indicate that the data was normally distributed, and therefore the data set for cost of capital was fit for analysis.

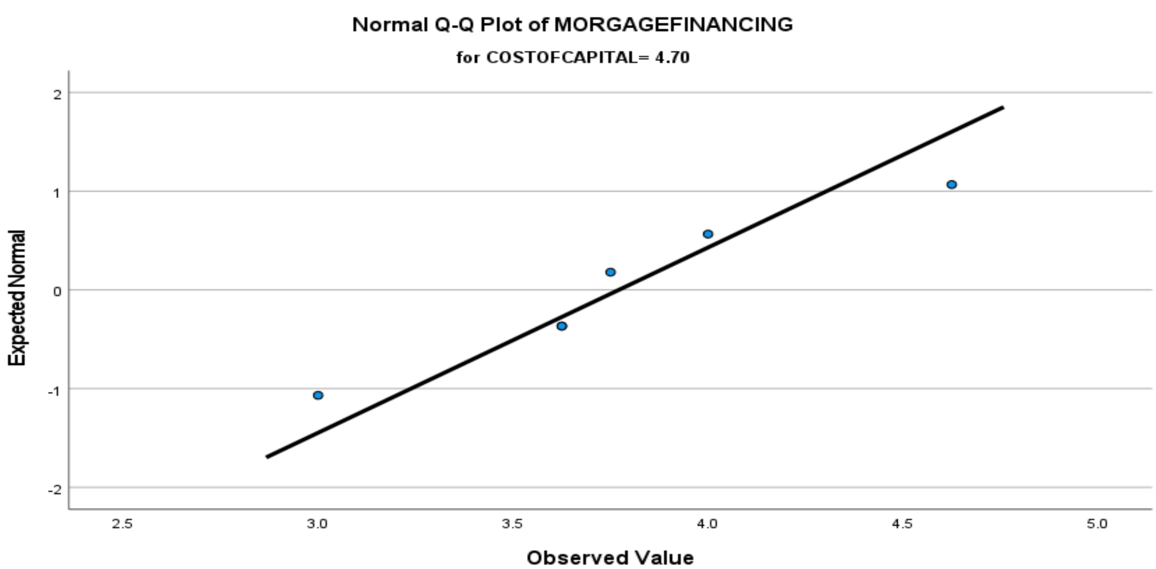


FIGURE 3

Cost of capital and Performance of affordable housing government projects normality Test

The findings of the study in Figure 4.1 above indicate that although Q-Q plots do not all fall closely along the straight line and the points in the normal probability plot have not completely followed the fitted line well, the distribution cannot be considered unfit. The normal distribution of cost of capital, and is highly good fit to the data, is within the acceptable distribution margins.

TABLE 16

Access to capital and Performance of affordable housing government projects normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Access to capital	.294	7	.068	.761	7	.092
a. Lilliefors Significance Correction						

The findings of the normality test established a sig. value of .092 of the Shapiro-Wilk tests, and that is greater than 0.05, indicating that the data is normal. The results indicate that the data was normally distributed, and therefore the data set for access to capital was fit for analysis and its effects on performance of affordable housing government projects.

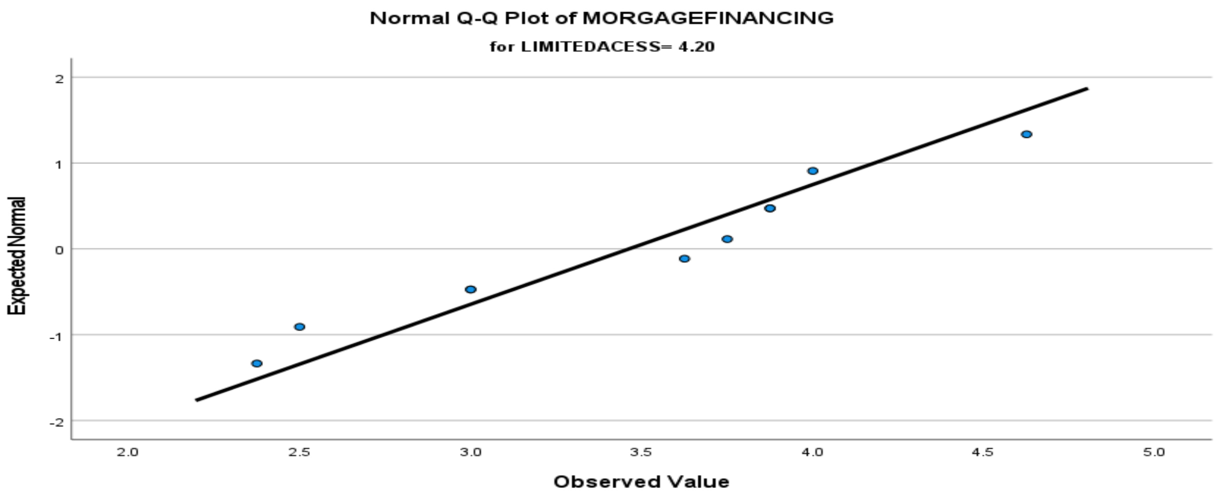


FIGURE 4

Access to capital and Performance of affordable housing government projects normality Test

The findings of the study in Figure 4.2 above indicate that although Q-Q plots do not all fall closely along the straight line and the points in the normal probability plot have not completely followed the fitted line well, the distribution cannot be considered unfit. The normal distribution of access to capital, and is highly good fit to the data, is within the acceptable distribution margins.

TABLE 17

Lending products alignment to the segment borrowers and Performance of affordable housing government projects normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Lending products alignment to the segment borrowers	.364	5	.086	.561	5	.145
a. Lilliefors Significance Correction						

The findings of the normality test established a sig. value of .146 of the Shapiro-Wilk tests, and that is greater than 0.05, indicating that the data is normal. The results indicate that the data was normally distributed, and therefore the data set for lending products alignment to the segment borrowers was fit for analysis and its effects on performance of affordable housing government projects.

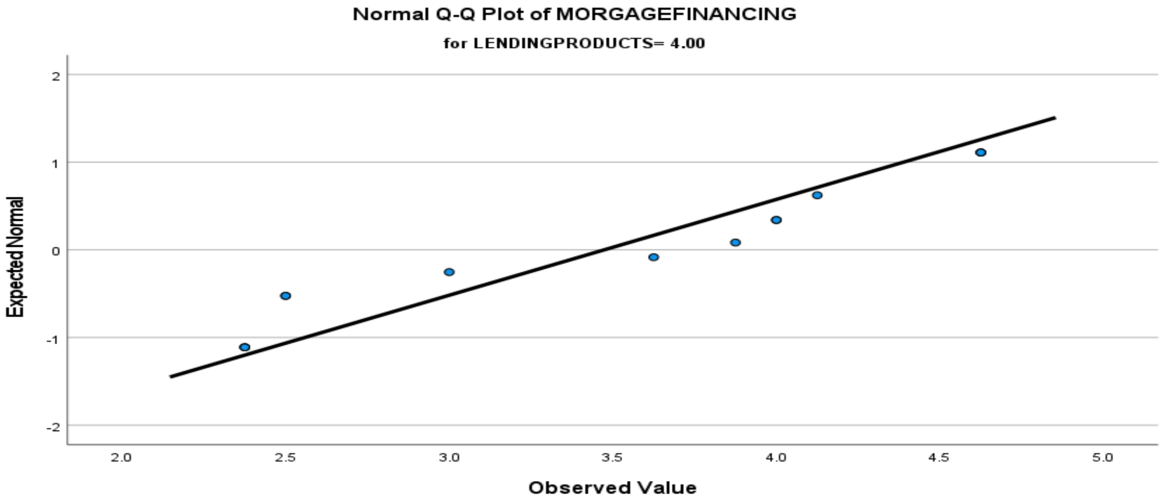


FIGURE 5

Lending products alignment to the segment borrowers and Performance of affordable housing government projects normality Test

The findings of the study in Figure 4.3 above indicate that although Q-Q plots do not all fall closely along the straight line and the points in the normal probability plot have not completely followed the fitted line well, the distribution cannot be considered unfit. The normal distribution of lending products alignment to the segment borrowers, and is highly good fit to the data, is within the acceptable distribution margins.

TABLE 18

Borrowers profile and Performance of affordable housing government projects normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Borrowers' Profile)	.334	5	.079	.523	5	.167
a. Lilliefors Significance Correction						

The findings of the normality test established a sig. value of .167 of the Shapiro-Wilk tests, and that is greater than 0.05, indicating that the data is normal. The results indicate that the data was normally distributed, and therefore the data set for borrowers' profile was fit for analysis and its effects on performance of affordable housing government projects

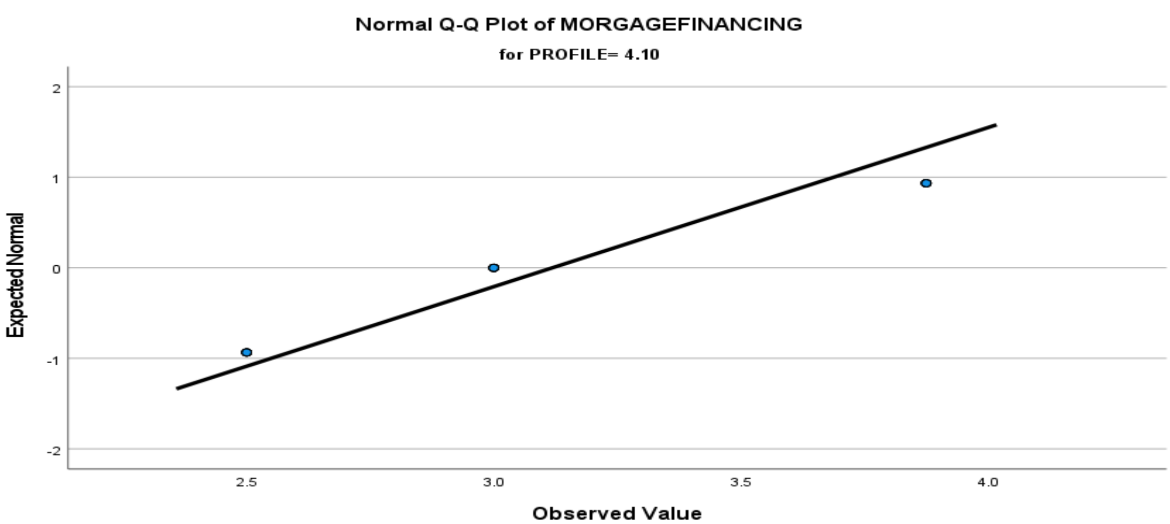


FIGURE 6

Borrowers profile and Performance of affordable housing government projects normality Test

The findings of the study in Figure 4.4 above indicate that although Q-Q plots do not all fall closely along the straight line and the points in the normal probability plot have not completely followed the fitted line well, the distribution cannot be considered unfit. The normal distribution of borrowers' profile, and is highly good fit to the data, is within the acceptable distribution margins.

4.4.3 Heteroskedasticity Results

TABLE 19

Heteroskedasticity Results

Category	Heteroskedasticity (Breusch-Pagan)		Verdict	Conclusion
	Classic Alpha Results	Clustering		
Cost of capital	.281	4.1342	*P>.05*	Reliable for regression analysis
Access to capital	.349	2.7192	*P>.05*	Reliable for regression analysis
Lending products alignment to the segment borrowers	.134	4.8945	*P>.05*	Reliable for regression analysis
Borrowers' Profile	.427	3.7823	*P>.05*	Reliable for regression analysis

The results indicated that the errors in the model are spread out evenly across all levels of the predictor variables (Cost of capital, Access to capital, Lending products alignment to the segment borrowers and Borrowers' Profile). The *P>.05 for* all the variables are all desirable condition for a reliable regression analysis between the mortgage financing factors and the performance of affordable housing government projects in Nairobi County.

4.4.4 Test of Outliers

The test of outliers was done in order to identify the isolated bars far from the main data cluster, which represent unusually high or low values which can indicate errors, unusual events, or valid extreme observations that skew the data. This was conducted for the four variables that included cost of capital, access to capital, lending products alignment to the segment borrowers and borrowers' profile.

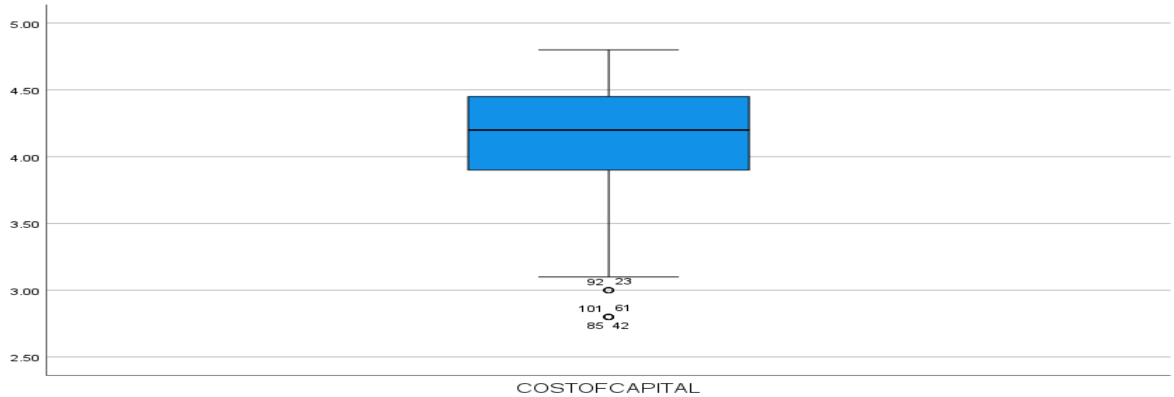
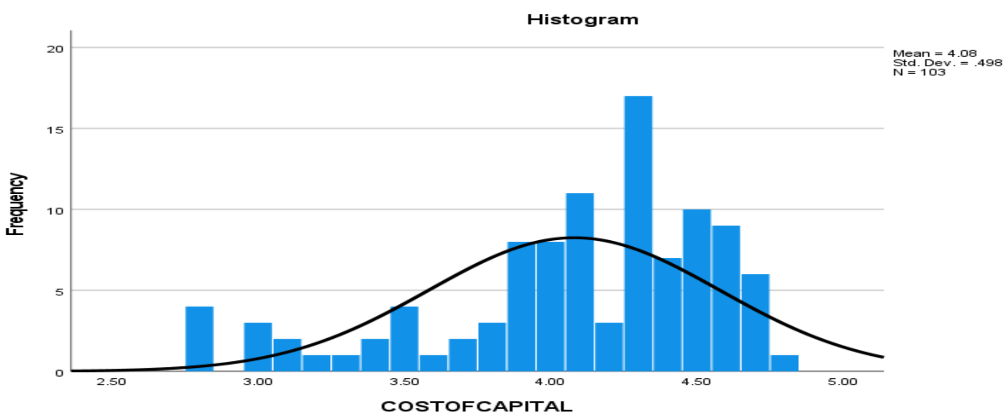


FIGURE 7

Cost of capital Bloc Bar

While results indicated that there were 6 cases with outliers they were not significant enough to distort statistical analyses which could lead to skewed results, biased estimates, and reduced statistical power. Additionally, the result cannot negatively influence incorrect



interpretations and conclusions from hypothesis tests and other analytical methods.

FIGURE 8

Cost of capital Histogram

In applying a 1.5 * IQR rule (1.5 times the interquartile range), the results do not present a significant problem to enable the flagging out of potential outliers for further inspection. Therefore, the results indicate no outliers to be flag out.

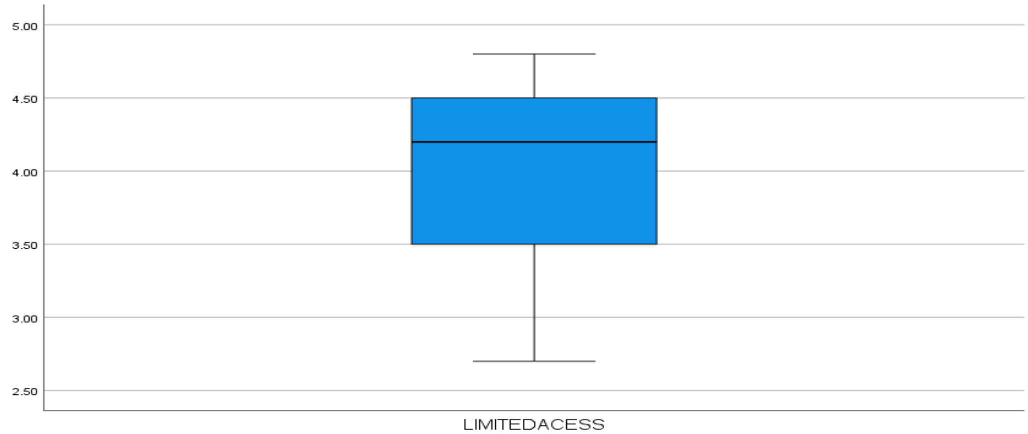


FIGURE 9

Access to capital Block Chart

The results indicated there were no cases with outliers they were not significant enough to distort statistical analyses which could lead to skewed results, biased estimates, and reduced statistical power. This results indicated that there were no outliers to negatively influence incorrect interpretations and conclusions from hypothesis tests and other analytical methods.

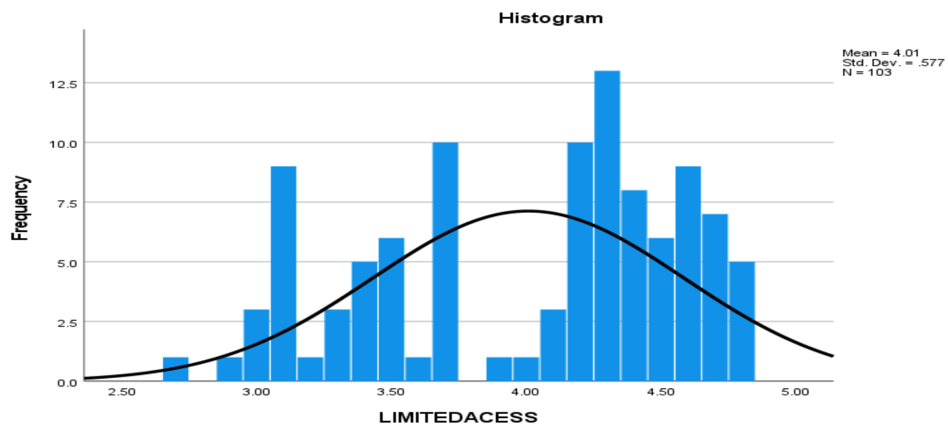


FIGURE 10

Access to capital Histogram

Additionally, while the applying a 1.5 * IQR rule (1.5 times the interquartile range), the results do not present a significant problem to enable the flagging out of potential outliers for further inspection. Therefore, the results indicate no outliers to be flag out.

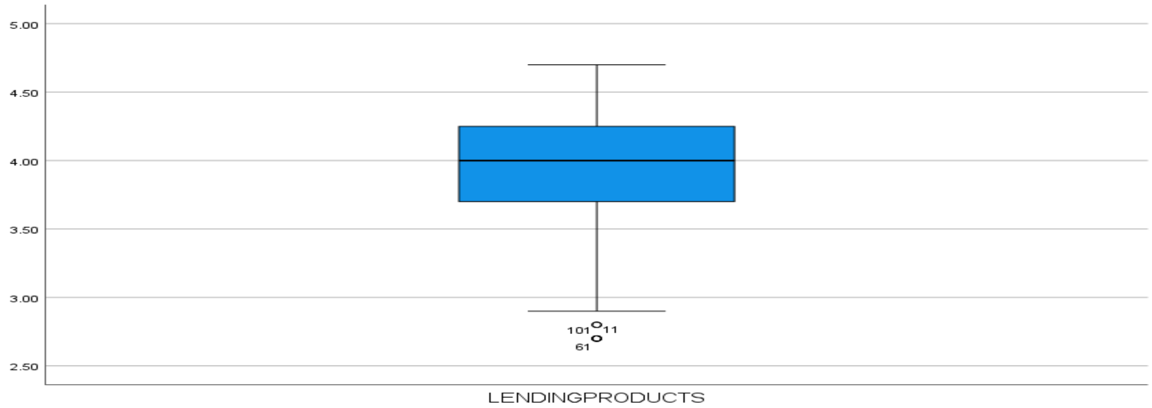


FIGURE 11

Access to capital Bloc Bar

The results also indicated that there were 3 cases with outliers although this was very minimal and therefore they were not significant enough to distort statistical analyses which could lead to skewed results, biased estimates, and reduced statistical power. Additionally, the result cannot negatively influence incorrect interpretations and conclusions from hypothesis tests and other analytical methods.

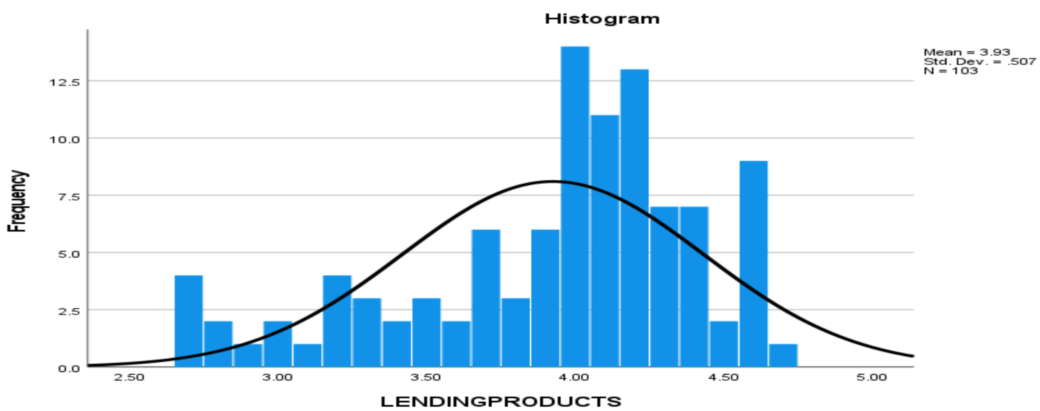


FIGURE 12

Access to capital Histogram

Based on the application of a 1.5 * IQR rule (1.5 times the interquartile range), the results do not present a significant statistical challenge to enable the flagging out of potential outliers for further inspection. Therefore, the results indicate no outliers to be flag out with all response (cases) appropriate for regression analysis.

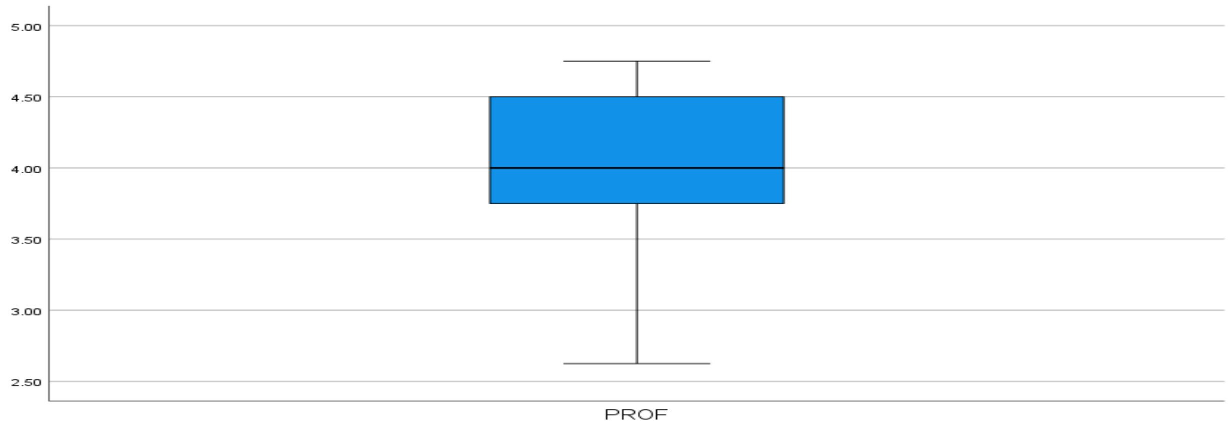


FIGURE 13

Borrow Profile Bloc Bar

Lastly, the results also indicated that there were no cases with outliers and therefore they would not have distorted statistical analyses which could lead to skewed results, biased estimates, and reduced statistical power. Therefore, these results would not negatively influence incorrect interpretations and conclusions from hypothesis tests and other analytical methods.

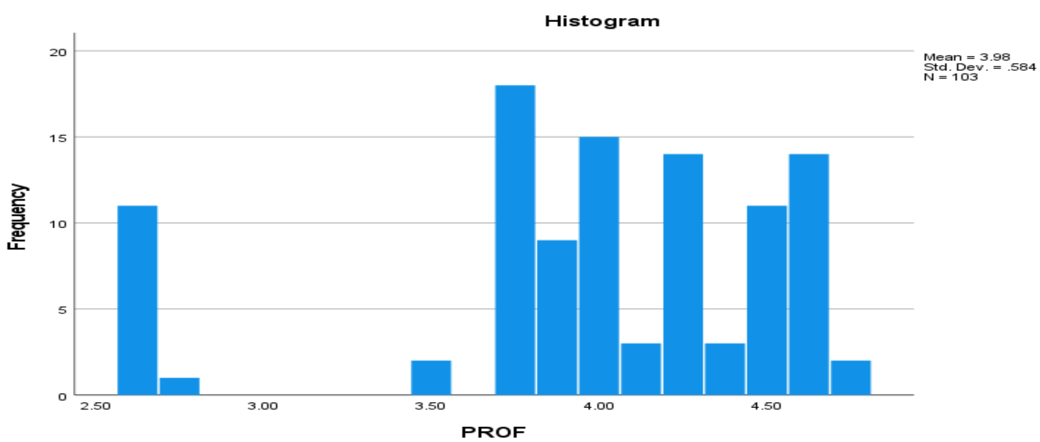


FIGURE 14

Borrow Profile Bloc Bar

Finally, while the application of a 1.5 * IQR rule (1.5 times the interquartile range), the results do not present a significant statistical challenge to enable the flagging out of potential outliers for further inspection. Therefore, the results indicate no outliers to be flag out with all response (cases) appropriate for regression analysis.

4.5 Inferential Analysis

Estimates were derived and hypotheses tested with the use of inferential statistical analysis. The study made the assumption that a sample of the study population was used to create the observed data set. As a parametric statistical test, inferential statistics was employed to help make assumptions about the distributions and population characteristics from which the data originated. Analysis of Variance (ANOVA), Model Summary, and Regression Coefficient were among the regression and correlation analyses that were part of the methodology (Mwiti, 2022).

4.5.1 Correlation Analysis

The study employed correlation analysis, a statistical technique for calculating the link between two variables and gauging the strength of their linear relationship (Senthilnathan, 2019). The correlation analysis aided in determining the degree of change in the dependent variable, which was the performance of affordable housing government projects as a result of modifications to the independent variable: mortgage financing targeting low income earners

TABLE 20

Effect of Mortgage Financing on the performance of affordable housing government projects in Nairobi County

Correlations						
		The performance of affordable housing government projects	Cost of capital	Limited access to capital	Lending Products alignment to the segment	Borrowers Profile
Performance of affordable housing government projects	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	103				
Cost of capital	Pearson Correlation	.464**	1			
	Sig. (2-tailed)	.000				
	N	103	103			
Limited access to capital	Pearson Correlation	.614**	.621**	1		
	Sig. (2-tailed)	.000	.000			
	N	103	103	103		
Lending Products alignment to the segment	Pearson Correlation	.538**	.388**	.665**	1	
	Sig. (2-tailed)	.000	.002	.000		
	N	103	103	103	103	
Borrowers Profile	Pearson Correlation	.566**	.478**	.569**	.513**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	103	103	103	103	103
**. Correlation is significant at the 0.01 level (2-tailed).						

The outcomes of the correlation analysis revealed a moderate positive association between Cost of capital and the performance of affordable housing government projects in Nairobi County (r=.464); Cost of capital also indicated a significant relationship with the performance of affordable housing government projects in Nairobi County (Sig= .000<.05). The results of the correlation analysis also indicate a moderate positive association between limited access to capital and the performance of affordable housing government projects in Nairobi County (r=.614); limited access to capital also indicated a significant relationship with the performance of affordable housing government projects in Nairobi County (Sig= .000<.05).

Results also indicated a moderate positive association between lending products alignment to the segment and the performance of affordable housing government projects in Nairobi County (r=.538); lending products alignment to the segment also indicated a significant relationship with the performance of affordable housing government projects in Nairobi County (Sig= .000<.05). Additionally, Results also indicated a moderate positive association between borrowers' profile and the performance of affordable housing government projects in Nairobi County (r=.566); borrowers' profile also indicated a significant relationship with the performance of affordable housing government projects in Nairobi County (Sig= .000<.05).

4.5.2 Regression Analysis

One of the statistical techniques for demonstrating the link between two or more variables is regression analysis. Regression analysis tries to determine which factors are most important to that change, as changes in the independent variable or variables affect changes in the dependent variable or variables (Sarstedt and Mooi, 2014). The following were the outcomes of the linear regression analysis:

TABLE 21

Effect of cost of capital the performance of affordable housing government projects in Nairobi County

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635[a]	.428	.411	.78765

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.470	2	13.470	21.712	.000[b]
	Residual	47.150	100	.620		
	Total	60.620	102			

a. Dependent Variable: Performance of affordable housing government projects

b. Predictors: (Constant), Cost of capital

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.834	.645		1.222	.025
	Cost of capital	.734	.187	.481	4.620	.000

The of coefficient determination (R Squared) of .428 indicates that Cost of capital account for 42.8% of variations in the performance of affordable housing government projects in Nairobi, county. The remaining 57.2% is attributed to other factors other than cost of capital.

The Analysis of Variance (ANOVA) test was also used in the study to determine the statistical significance of the regression model. The results of the ANOVA test show a p-value of less than 0.05 (Sig=.000<.05), indicating that the model above is statistically significant in explaining the relationship between cost of capital and the performance of affordable housing government projects in Nairobi, county. Additionally, the model was statistically fit to test the link between cost of capital and variations in the performance of affordable housing government projects in Nairobi County (F=21.712; 2, 100).

Based on the coefficients in Table 4.11 above, the regression equation that is produced is:

Y= .834+ .734X1

The following is an interpretation of the equation above:

A change of .734 in cost capital will result into a unit change in the performance of affordable housing government projects in Nairobi County. Regression model (ß=.834) is also statistically significant (sig=.000<.05), according to the results. Additionally, the results demonstrate the statistical significance of cost of capital (Sig=.000<.05).

Therefore, the results indicated that cost of capital significantly affects the performance of affordable housing government projects in Nairobi County. Additionally, cost of capital account for 42.8% of variations in the performance of affordable housing government projects in Nairobi County.

TABLE 22

Effect of limited access to capital the performance of affordable housing government projects in Nairobi County

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.711[a]	.505	.499	.62808

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.639	2	30.639	66.268	.000[b]
	Residual	29.981	100	.394		
	Total	60.620	102			

a. Dependent Variable: Performance of affordable housing government projects

b. Predictors: (Constant), Limited access to capital

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.656	.578		1.260	.015
	Limited access to capital	1.147	.430	.781	8.813	.000

The of coefficient determination (R Squared) of .505 indicates that limited access to capital account for 50.5% of variations in the performance of affordable housing government projects in Nairobi, county. The remaining 49.5% is attributed to other factors other than limited access to capital.

The Analysis of Variance (ANOVA) test was also used in the study to determine the statistical significance of the regression model. The results of the ANOVA test show a p-value of less than 0.05 (Sig=.000<.05), indicating that the model above is statistically significant in explaining the relationship between limited access to capital and the performance of affordable housing government projects in Nairobi, county. Additionally, the model was statistically fit to test the link between limited access to capital and variations in the performance of affordable housing government projects in Nairobi County (F=66.268; 2, 100).

Based on the coefficients in Table 4.11 above, the regression equation that is produced is:

Y= .656+ 1.147X1

The following is an interpretation of the equation above:

A change of .656 in limited access to capital will result into a unit change in the performance of affordable housing government projects in Nairobi County. Regression model (ß=.656) is also statistically significant (sig=.000<.05), according to the results. Additionally, the results demonstrate the statistical significance of limited access to capital (Sig=.000<.05).

Therefore, the results indicated that limited access to capital significantly affects the performance of affordable housing government projects in Nairobi County. Additionally, limited access to capital account for 50.5% of variations in the performance of affordable housing government projects in Nairobi County.

TABLE 23

Effect of lending products alignment to the segment on the performance of affordable housing government projects in Nairobi County.

Model Summery				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.731[a]	.581	.589	.60253

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.029	2	76.029	90.332	.000[b]
	Residual	27.591	100	.363		
	Total	60.620	102			

a. Dependent Variable: Performance of affordable housing government projects

b. Predictors: (Constant), Lending Products alignment to the segment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.993	.589		1.972	.041
	Lending Products alignment to the segment	1.133	.452	.767	9.453	.000

The of coefficient determination (R Squared) of .581 indicates that lending products alignment to the segment account for 58.1% of variations in the performance of affordable housing government projects in Nairobi, county. The remaining 49.5% is attributed to other factors other than lending products alignment to the segment.

The Analysis of Variance (ANOVA) test was also used in the study to determine the statistical significance of the regression model. The results of the ANOVA test show a p-value of less than 0.05 (Sig=.000<.05), indicating that the model above is statistically significant in explaining the relationship between lending products alignment to the segment and the performance of affordable housing government projects in Nairobi, county. Additionally, the model was statistically fit to test the link between lending products alignment to the segment and variations in the performance of affordable housing government projects in Nairobi County (F=76.029; 2, 100).

Based on the coefficients in Table 4.11 above, the regression equation that is produced is:

Y= .993+ 1.133X1

The following is an interpretation of the equation above:

A change of .993 in lending products alignment to the segment will result into a unit change in the performance of affordable housing government projects in Nairobi County. Regression model (ß=.993) is also statistically significant (sig=.000<.05), according to the results. Additionally, the results demonstrate the statistical significance of lending products alignment to the segment (Sig=.000<.05). Therefore, the results indicated that lending products alignment to the segment significantly affects the performance of affordable housing government projects in Nairobi County. Additionally, lending products alignment to the segment account for 58.1% of variations in the performance of affordable housing government projects in Nairobi County.

TABLE 24
Effect of Borrowers Profile on the performance of affordable housing government projects in Nairobi County

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.673[a]	.461	.398	.4320

NOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.160	2	61.530	212.605	.000[b]
	Residual	14.460	100	.289		
	Total	60.620	102			

a. Dependent Variable: Performance of affordable housing government projects

b. Predictors: (Constant), Borrowers Profile

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.884	.287		1.751	.044
	Borrowers Profile	1.079	.069	.875	15.576	.000

The of coefficient determination (R Squared) of .461 indicates that borrowers profile account for 46.1% of variations in the performance of affordable housing government projects in Nairobi, county. The remaining 53.9% is attributed to other factors other than borrowers profile.

The Analysis of Variance (ANOVA) test was also used in the study to determine the statistical significance of the regression model. The results of the ANOVA test show a p-value of less than 0.05 (Sig=.000<.05), indicating that the model above is statistically significant in explaining the relationship between borrowers' profile and the performance of affordable housing government projects in Nairobi, county. Additionally, the model was statistically fit to test the link between borrowers' profile and variations in the performance of affordable housing government projects in Nairobi County (F=61.530; 2, 100).

Based on the coefficients in Table 4.11 above, the regression equation that is produced is:

Y= .884+ 1.079X1

The following is an interpretation of the equation above:

A change of .884 in borrowers' profile will result into a unit change in the performance of affordable housing government projects in Nairobi County. Regression model (ß=.884) is also statistically significant (sig=.000<.05), according to the results. Additionally, the results demonstrate the statistical significance of borrowers' profile (Sig=.000<.05).

Therefore, the results indicated that borrowers profile significantly affects the performance of affordable housing government projects in Nairobi County. Additionally, borrowers profile account for 53.9% of variations in the performance of affordable housing government projects in Nairobi County.

Table 25

Effect of mortgage financing on the performance of affordable housing government projects in Nairobi County

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.894[a]	.799	.786	.41088

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.465	5	9.875	67.495	.000[b]
	Residual	12.155	97	.345		
	Total	60.620	102			

a. Dependent Variable: Performance of affordable housing government projects

b. Predictors: (Constant), Cost of capital, Limited access to capital, Lending Products alignment to the segment, Borrowers Profile

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.132	.958		2.896	.028
	Cost of capital	.505	.185	.168	1.787	.032
	Limited access to capital	.661	.178	.187	2.439	.027
	Lending Products alignment to the segment	.561	.155	.354	.780	.020
	Borrowers Profile	.863	.186	.655	6.876	.000

The of coefficient determination (R Squared) of .799 indicates that mortgage financing factors account for 79.9% of variations in the performance of affordable housing government projects in Nairobi, county. The remaining 20.1% is attributed to other factors other than mortgage financing factors.

The Analysis of Variance (ANOVA) test was also used in the study to determine the statistical significance of the regression model. The results of the ANOVA test show a p-value of less than 0.05 (Sig=.000<.05), indicating that the model above is statistically significant in explaining the relationship between mortgage financing factors (cost of capital, limited access to capital, lending products alignment to the segment and borrowers profile) and the performance of affordable housing government projects in Nairobi, county. Additionally, the model was statistically fit to test the link between mortgage financing factors and variations in the performance of affordable housing government projects in Nairobi County ($F=61.530$; 2, 100). Based on the coefficients in Table 4.11 above, the regression equation that is produced is:

$Y= .884+.505X1+ .661X2+ .561X2+ .863X3+ 1.079X4$

The following is an interpretation of the equation above:

A change of .505 in cost of capital, .661 in limited access to capital, .863 in lending products alignment to the segment and change of 1.079 in borrowers' profile will result into change of 1.079 in the performance of affordable housing government projects in Nairobi County. Regression model (ß=.1.132) is also statistically significant (sig=.000<.05), according to the results. Additionally, the results demonstrate the statistical significance of borrowers' profile (Sig=.000<.05).

Therefore, the results indicated that mortgage financing factors significantly affects the performance of affordable housing government projects in Nairobi County. Additionally, mortgage financing factors account for 79.9% of variations in the performance of affordable housing government projects in Nairobi County.

4.6 Response from the interviews

4.6.1 Cost of Capital

Most of the cost of capital for low-income earners targeted by the project is still high, as many low-income earners cannot afford to pay monthly instalments, many targeted low earners category do not meet the eligibility criteria, that high interest rate is not favorable to the targeted mortgagees, the lenders do not have special interest for the low-income mortgage seekers and that the initial payment is still expensive for the targeted group. Many of the respondents felt that the initial payment that is still expensive for the borrowers Many lenders are not willing to support borrower in paying their monthly payments, the lenders willing to support monthly mortgage financing are expensive to the targeted segment and that the cost of capital is made high because of insurance cost give the high risk of the targeted segment.

> "…………….*the initial payment is still expensive for the targeted group*….." **Sub- county land and Housing Officers 1**
>
> …………………….*lenders willing to support monthly mortgage financing are expensive to the targeted segment*………" **Sub- county land and Housing Officer 2**

4.6.2 Access to capital

Most of the respondents felt that there is access to capital for low-income earners to finance their mortgage, the Lenders fear to lend to the targeted Portfolio which is considered risky, the banks fear to finance mortgage for the low-income earners because of high rate of default, portfolio is considered unattractive by lenders due to high unpredictability and the segment do not have other property that can be placed as collateral and therefore cannot access the required finances. Many of the respondent also highlighted that lack of collateral is the biggest impediment to borrowing by targeted low-income earners, lack of stable income makes the targeted segment not able to access capital while the inability to get reliable guarantor presents another challenge in accessing capital for the borrowers targeted by the project.

Additionally, most of the respondents also felt that he government needs to find another strategy to make capital available to this targeted segment and that the project is modeled in such a way that the targeted borrowers can easily access capital.

"…………..*segment do not have other property that can be placed as collateral and therefore cannot access the required finances*…………" Sub- county land and Housing Officer 3

"………………*lack of stable income makes the targeted segment not able to access capital*………" Sub- county land and Housing Officer 4

4.6.3 Lending Products

Most of the respondents that were interviewed felt that lending products available in the market are not aligned to the segment, the products that are provided by the lenders do not meet the affordable housing requirements, there are few products designed to fit the financing model sought by the mortgage financing required for affordable housing, many lenders are avoiding mortgage financing for these products due to possible bureaucracy There is need for collaboration with the lenders to develop products that can support low income borrowers that are targeted by this type of project and the project is not modeled in alignment with the current available products in the market. Additionally, most of the results also indicated that the lenders fear that the ownership structure may present a challenge to reposes the property in case of default, the lack of details pertaining the project alignment to exiting financial system present fears among lenders, lenders fear that there is possibility of loss of business based on the possible bureaucracy involving

government projects.

"……………..*the products that are provided by the lenders do not meet the affordable housing requirements*………………" Sub- county land and Housing Officer 5

"…………………*the lenders fear that the ownership structure may present a challenge to reposes the property in case of default*…………" Sub- county land and Housing Officer 6

4.6.4 Profile of the Borrowers

The results from the interviews also felt that many of the targeted segment are not aware on how to clear themselves from CRB, limited mortgage finance literacy among the targeted borrowers is also an hindrance mortgage financing, many of the low-income borrowers do not know where to seek mortgage financing, many of the low-income borrowers do not save and therefore not eligible for mortgage financing and that irregular income by low-income earners make it difficult for lenders to calculate their financial strength and how much should be lent to them. Finally, most of the interviewees felt that low-income earners that are targeted by the affordable housing projects are high risk and therefore, avoided by lenders

> "………………….*many of the low income earners are not mortgage finance literate* …………" Sub- county land and Housing Officer 7

> "…………………..*low-income borrowers do not save and therefore not eligible for mortgage financing*……………" Sub- county land and Housing Officer 8

4.7 Hypothesis Testing

TABLE 26

Hypothesis Testing

Objective	Hypothesis	Results (Sig)	Hypothesis Test
Objective 1: To establish the effects of cost of capital for targeted group on the performance of affordable housing government projects in Nairobi County	**Hypothesis 1:** The cost of capital for targeted group has no significant effect on the performance of affordable housing government projects in Nairobi County	$P < 0.05$	The cost of capital for targeted group has a significant effect on the performance of affordable housing government projects in Nairobi County
Objective 2: To establish the effect of access to capital on the performance of affordable housing government projects in Nairobi County	**Hypothesis 2:** The limited access to capital has no significant effect on the performance of affordable housing government projects in Nairobi County	$P < 0.05$	The limited access to capital has significant effect on the performance of affordable housing government projects in Nairobi County
Objective 3: To determine the effects of lending products alignment to the segment borrowers on the performance of affordable housing government projects in Nairobi County	**Hypothesis 3:** The lending products alignment to the segment borrowers has no significant effect on the performance of affordable housing government projects in Nairobi County	$P < 0.05$	The lending products alignment to the segment borrowers has significant effect on the performance of affordable housing government projects in Nairobi County
Objective 4: To find out the effects of borrowers' profile on the performance of affordable housing government projects in Nairobi County	**Hypothesis 4:** The borrowers' profile has no significant effect on the performance of affordable housing government projects in Nairobi County	$P < 0.05$	The borrowers' profile has no significant effect the performance of affordable housing government projects in Nairobi County

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter covers various sections including the discussions of the study findings, the conclusion, the recommendations of the study, the limitations of the study as well as suggestions for further research.

5.2 Summery of Findings

5.2.1 The effects of cost of capital on the mortgage financing in government affordable projects in Nairobi County

The findings of the study established that cost of capital had a significant effect on the mortgage financing in government affordable Projects in Nairobi County. The results also showed that cost of capital for low-income earners targeted by the Project is still high and cannot be afforded by many of the targeted segments. This is consistent with a study by Okello (2024) that pointed out that high cost of lending to low income segment significantly influenced mortgage uptake for both financial institutions and customers (low income earners) at large.

Cost of capital has been made higher because of insurance cost given the high risk of the targeted segment. Many of these low-income earners do not meet the eligibility criteria and neither can afford to pay the monthly installments required by the project. The initial payment is still expensive for the targeted group thereby negatively affecting the uptake mortgage financing to low income earners. This supports a study by Widyastutik et al. (2023) that if the cost of capital is developed and made affordable then the financing for low-income earners can potentially increase the growth and development of housing among the segment. Unfortunately, where the lenders agree to lend to them, the high interest rate are not favorable to the targeted mortgagees with many fearing to take up mortgages from the financial institutions in the area. This supports findings by a study by Andele and Obange (2024) that higher interest rates, high amount of monthly payments among others have contributed to low uptake of mortgage financing among low income earners segment.

Notably, many mortgage financiers are not willing to lend the initial payment to secure the houses for later installment payments as they consider them still expensive for the borrowers, many lenders are not willing to support borrower in paying their monthly payments and lenders are not only unwilling to support monthly mortgage financing, but the borrower consider the monthly payments expensive.

5.2.2 The effects of limited access to capital on the mortgage financing in government affordable projects in Nairobi County

The findings of the study established that limited access to capital had a significant effect on the mortgage financing in government affordable Projects in Nairobi County. Supporting a study by Kuusaana et al (2023) that pointed out that limited access to capital hinder affordability and access to formal mortgage markets. The study also indicated that there is low access to capital for low-income earners to finance their mortgage as the potential lenders fear to lend to the targeted portfolio which the banks and the MFIs considered risky. Especially, the banks that are more risk cautious fear to finance mortgage for the low-income earners because of high rate of default and the possibility of running in to bad debt and therefore the portfolio remain unattractive to lenders due to high unpredictability. These findings confirm earlier studies by World Bank (2023) lack of access to affordable housing finance was a key constraint to this segment and Kalui(2024) who established that credit risk which greatly affects access to mortgage finance as banks take caution when lending.

Not having other properties that can be placed as collateral for these the targeted low income earners and inability to get reliable guarantor is also a hindrance to accessing the required finances. While monthly instalments for mortgage require consistency payments lack of stable income makes the targeted segment not able to access capital. Therefore, in order to increase access to capital for this segment, the government needs to find another strategy to make capital available to this targeted segment given that the project is modeled in such a way that the targeted borrowers cannot easily access capital.

5.2.3 The effects of lending products not aligned to the segment on the mortgage financing in government affordable projects in Nairobi County

The findings of the study established that lending products not aligned to the segment had a significant effect on the mortgage financing in government affordable Projects in Nairobi County. The results depict a different situation in other developing countries such as Puerto Rico, Louisiana, Mississippi, New Mexico, West Virginia, Kentucky, Oklahoma, Arkansas and Tennessee states that pointed out by that Bates and Lofstrom (2024) affordable products have been developed through lending programs targeting low income earners to increase the rate of homeless population among the low income earners.

The study also indicated that the lending products provided for by most financial institutions in the market are not aligned to the segment, is not modeled in alignment with the current available products in the market and do not meet the affordable housing requirements with only few products in market having designed to fit the financing model for affordable housing. Notably, many lenders are avoiding mortgage financing for these products due to possible bureaucracy. The need for lending products that are aligned to the needs of the low-income borrowers as proposed by Gerardi, Goette, and Meier (2023) who advised on a customized financing instruments tailored to the circumstances of the low income borrowers while Kenyanya (2023) advised that the banks should change the design of mortgage products with low repayments for the low-income groups, which would enable them to access mortgages.

Additionally, the findings of the study indicated that the ownership structure presents also challenge to repossess the property in case of default further increasing the fears by possible lenders to aspiring home owners seeking finance from the financial institutions. Bhellar, Kalwar, and Memon (2023) the credit risks that the lenders associate them with hinder them from accessing mortgage financing.

The lenders fear that there is possibility of loss of business based on the possible bureaucracy involving government projects and therefore have not considered any products targeting the segment. Therefore, there is the government needs to work with the financial institutions in developing products aligned to the project. The government should collaborate with the lenders to develop products that can support low income borrowers that are targeted by this type of project.

5.2.4 The effects of borrowers' profile on the mortgage financing in government affordable projects in Nairobi County

The findings of the study established that borrowers' profile had a significant effect on the mortgage financing in government affordable Projects in Nairobi County. The study also indicated that low earners do not have a good and attractive profile for lending and the poor credit record by low-income earners continue to be a hindrance to mortgage financing. Lack of records as hindrance to credits was also pointed out by Mikuš (2023) that many low income earners wishing to own houses having no formal records indicating their savings or credit profiles. Results also indicated that borrowers are listed in the CRB and therefore cannot access credit anywhere. Additionally, the tedious process of clearance from CRB discourages deter many from seeking landing from financial institution in addition to where many of the targeted segment are not aware on how to clear themselves from CRB.

The limited mortgage finance literacy among the targeted borrowers is also a hindrance to mortgage financing as highlighted by Hi et al (2024) who also revealed a strong association between financial literacy and mortgage financing uptake among borrowers from low income levels. Additionally, the results also indicated that many of the low-income borrowers do not save and therefore not eligible for mortgage financing while irregular income by low-income earners make it difficult for lenders to calculate their financial strength and how much should be lent to them. Additionally, low income lenders do not have collateral to be placed as loan which is sometimes a requirement by banks before lending out money as pointed out by Manda, Nkhoma and Mitlin (2023) that commercial banks demand expensive collateral , records of formal employment for ease of enforcement of payroll deductions in addition to evidence of good profile and good savings history as a requisite for loan application. Finally, the low-income earners that are targeted by the affordable housing projects are high risk and therefore, avoided by lenders.

The reason for this low uptake is lack of capital for down payment as the low earners targeted by the project cannot access capital to acquire the houses because of their low income. The inability to access capital to affects timely acquisition of houses by low-income earners have affected the performance of affordable housing in Kenya. Lastly, the government needs to work closely with the financial institutions if the government in to increase the uptake.

5.3 Conclusions

The study established a statistical significant relationship between mortgage financing factors (cost of capital, limited access to capital, lending products alignment to the segment and borrowers profile) and the performance of affordable housing government projects in Nairobi, county.

5.3.1 Cost of capital

The cost of capital remains a challenge for low income earners that are targeted by the government affordable houses. Given the factors like higher risk perception by lenders, limited access to long-term funding, and higher operational costs for institutions lending to these groups, low-income mortgagees in Kenya frequently face higher cost of capital, which makes mortgages unaffordable for many. While there are initiatives such as the Kenya Mortgage Refinance Company (KMRC) that seek to reduce costs for this segment by providing longer-term and more affordable loans, the initiative has not been modeled in a manner that motivate lenders such as bank and MFIs in the project areas.

5.3.2 Limited access to capital

Limited access to capital continue to be a challenge for low income earners in getting house mortgage. This can be related to high interest rates and deposit requirements, the mismatch between short-term bank deposits and long-term mortgage loans, the lack of formal documentation and collateral from informal sector workers, high construction costs, and high risk perceptions on the part of lenders, low-income mortgagees in Kenya have limited access to capital. While solution to limited access includes establishing ways to support lender to offer long-term funding to lenders; however, this requires extensive policy reforms and creating greater access to the capital market necessary for creating a trues affordable and accessible housing finance for the low-income population.

5.3.3 Lending products not aligned to the segment

The results indicated that lending products not aligned to the segment had a significant effect on the mortgage financing in government affordable projects, lending products provided for by most financial institutions in the market are not aligned to the segment, is not modeled in alignment with the current available products in the market and do not meet the affordable housing requirements with only few products in market having designed to fit the financing model for affordable housing. Finally, the lenders fear that there is possibility of loss of business based on the possible bureaucracy involving government projects and therefore have not considered any products targeting the segment.

5.3.4 Borrowers' profile

Results indicated that low income earners do not have a good profile that is attractive to lenders in the market such as banks and the MFIs. This has been coupled with poor credit record by low-income earners that hinder them from mortgage financing. Many borrowers are listed in the CRB and therefore cannot access credit anywhere and many of the targeted segment too are not aware on how to clear themselves from CRB. Additionally, there was very high level of mortgage finance illiteracy which was a hindrance to mortgage financing. Lastly, irregular income by low-income earners make it difficult for lenders to calculate their financial strength and how much should be lent to them.

The findings support the theory to Mortgage Value Theory explaining how financial firms use mortgage financing as a key strategy to maximize their wealth and therefore explain why in most cases the cost of mortgage which is one of the areas of focus of the study critical.

The study also the borrower holds title during repayment unlike the Title that the lender only holds the title after complete payment. Under Lien Theory, the lendee possesses equitable in addition to legal titles, and the lender can foreclose on the property if the borrower defaults. Additionally, the findings of the also highlights Title Theory that states that the lender transfers the legal title of the property to the lender until the borrower pays off the mortgage.

5.4 Recommendations

5.4.1 Cost of capital

Subsidizing housing production and developer incentives, bolstering financial institutions to provide affordable products, encouraging alternative funding sources and crowdfunding, streamlining and digitizing procedures to lower risk, and improving borrower financial capacity through support services and customized loan products are some strategies to lower the cost of capital for financing low-income mortgages. Furthermore, platforms that aggregate contributions from several investors like Real Estate Investment Trusts (REITs) are necessary to promote alternative investments in affordable housing. There is need for the government to pay insurance to the financial institution to ensure security for mortgage financing for low income earners who are considered high risk by the lenders.

5.4.2 Limited access to capital

There is need of improving the necessary policies explore alternative credit scoring techniques, creative incremental housing loans and micro-mortgages, and strong legal and financial frameworks that promote openness and consumer protection, governments and financial institutions can establish inclusive systems that increase access. There is also need of considering targeted housing support services and public-private partnerships which is also essential for supplying the required funding and knowledge.

There is also need of increasing financial literacy, creating flexible and customized financial products (such as micro-mortgages or income-based repayment plans), and advocating for government-backed subsidies to de-risk the lending market are some ways to reduce the restricted capital access for low-income earners looking for mortgage financing. Additionally, there is need of considering the tactics include utilizing technology to facilitate effective credit scoring, applying data-driven methods to evaluate borrowers from the unorganized sector, and improving national housing regulations to foster an atmosphere that is conducive to inclusive finance.

5.3.3 Lending products not aligned to the segment

There is need of financial institutions to create customized products like micro-mortgages and income-based repayment plans, use alternative credit scoring techniques that take non-traditional income sources, and provide support services like technical assistance and construction supervision in order to align lending products for low-income earners' mortgage financing. Furthermore, government assistance in the form of regulations, tax breaks, and risk-sharing programs can reduce expenses and control risks for lenders, increasing the availability of mortgages. Finally, there is need for the financial institutions to design loan structures that adjust payments based on income, providing flexibility for low-income borrowers.

5.3.4 Borrowers' profile

There is need of encouraging low income earners to learn the art of saving with formal financial institutions such as banks, MFIs and SACCOs in order to build a good profile which can help them access loans in the future. Additionally, there is need of encouraging the low income earners to pay their debts that they take from financial institutions in order to build a good credit history that will make it easier to access credit in the future from financial institutions. Additionally, there is need of increase financial literacy on important topics such as savings and clearance from credit listing organization in order to ensure that the borrowers are cleared for credit when they need such mortgage financing for opportunities as affordable housing.

5.5 Suggestion for further studies

There is need of a study on how affordable housing mortgage financing can be aligned into current mortgage financing products in the market that are offered by banks and MFIs. Additionally, there is need of a study on the available mortgage financing models for low income earners such as the targeted segments.

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APPENDIX I: LETTER OF INTRODUCTION

Introduction

My name is **Maryanne Wanjiru Karumba** a student from KCA University undertaking a Masters Degree of Management in Corporate Management. I am conducting a research that seeks to determine *"Mortgage financing of government affordable Projects in Nairobi County"*. would like to ask your permission to participate in this study. I humbly request you to provide the required information to enable me to complete my study.

The study aims at finding out *Mortgage financing of government affordable Projects in Nairobi County*. The study results will help identifying ways of enhancing mortgage financing and government affordable Projects in Nairobi County.

The participation in this study is voluntary and one can opt to withdraw at any stage of the research if they feel they cannot continue to completion.

Your assistance will be highly appreciated

Regards

Maryanne Wanjiru Karumba

APPENDIX II: CONSENT FORM

Introduction

My name is **Maryanne Wanjiru Karumba,** a student from KCA University undertaking a Masters Degree of Management in Corporate Management studies. I am conducting research that seeks to determine *"Mortgage financing of government affordable Projects in Nairobi County"*. I wish to request for permission from you to participate in this study. I am humbly requesting you to provide the information requested to allow me complete the study.

Study purpose

The study aims at finding out the mortgage financing and government affordable Projects in Nairobi County. The study results will help in enhancing mortgage financing and government affordable Projects in Nairobi County.

Voluntary participation

You have the right to decline participation in this study as it is purely voluntary and thus optional. You may as well omit to respond to some questions and withdraw from the process at any time without any dire consequences.

Discomforts and risks

Some questions may be detailed and you might get tired underway. You may realize that a number of questions provoke your cultural and professional beliefs hence you may choose not to answer. This exercise may interfere with your daily work routine; however, I will be glad if you take your time to participate in the study.

Confidentiality

The interview will be held in private settings within the facility. The information you provide will be treated with utmost confidentiality. Your identity will not be revealed and the information will give in this study shall be kept confidential. I can also choose to withdraw from participating from the study at any one given time.

Sign…………………………………… Date…………………………………

Contact information

In case of any questions regarding this study, you may contact my supervisors.

Name of Supervisor: **Dr. Caroline Ntara**

Contacts: 0721 338 767

Email: c.ntara@kcau.ac.keor

or

KCA University Ethics and Review Committee

Participant's statement

The information concerning my involvement in this study has been clarified to me. I have been given an opportunity to ask questions and my concerns have been addressed adequately. Participation in this research is purely optional and voluntary. I understand that the information

Principal Investigator's statement

I, the undersigned, have explained to the volunteer in a language that she best understands the proceedings to be followed in the study and the risks and benefits involved.

Name: xxxxxxxxxxx

Contact: xxxxxxxxxx

Email: xxxxxxxxxxxxxx

Signature……………………………… Date…………………………......…

APPENDIX III: RESEARCH QUESTIONNAIRE

SECTION A : GENERAL INFORMATION

Dear Sir/ Madam

Please read carefully and provide appropriate answers by ticking [√] the appropriate boxes. The information obtained from this questionnaire will be treated with the utmost confidentiality.

1. Gender : Male ☐ Female ☐

2. Age : 18-30 years ☐ 31-40 years ☐
   41-50 years ☐ Over 50 years ☐

3. Highest Education level: Secondary Certificate ☐ College Certificate ☐
   Undergraduate Degree ☐ Master's Degree ☐
   PhD ☐

4. Category of the Respondents
   Operation Manager ☐ Credit Manager ☐

5 . Please indicate which Bank/MFI you work for

Bank/MFI	**Branch**
Kenya Commercial Bank	
Cooperative Bank of Kenya	
Equity Bank	
Family Bank	
Kenya Women Micro Finance	
Rafiki Micro Finance	
Others……………………………	………………………………………………………….

6.Indicate your location

Location	**Please Tick Appropriately [√]**
Bahati	
Woodley	

Kibera	
Mukuru Kwa Njenga	
Ngara	
Kariako	
Others……………………………	…………………………

8. How long have you lived your area?

Less than 2 years ☐ 2-5 Years ☐ Above 5 Years ☐

SECTION B: MORTGAGE FINANCING FACTORS AMONG LOW INCOME EARNERS

To what extent do you agree with the following statements on the mortgage financing and government affordable Projects in Nairobi County?

Key: 5 - Strongly Agree, 4 - Agree, 3 - Neutral, 2 - Disagree, 1 - Strongly Disagree

Mortgage Financing	**1**	**2**	**3**	**4**	**5**
Cost of capital					
Cost of capital for low-income earners targeted by the Project is still high					
Many low-income earners cannot afford to pay monthly instalments					
Many targeted low earners category do not meet the eligibility criteria					
The high interest rate is not favorable to the targeted mortgagees					
The lenders do not have special interest for the low-income mortgage seekers					
The initial payment is still expensive for the targeted group					
The mortgage financiers are not willing to lend the initial payment that is still expensive for the borrowers					
Many lenders are not willing to support borrower in paying their monthly payments					
Lenders willing to support monthly mortgage financing are expensive to the targeted segment					
The cost of capital is made high because of insurance cost give the high risk of the targeted segment					
Limited access to capital					
There is access to capital for low-income earners to finance their mortgage					

The Lenders fear to lend to the targeted Portfolio which is considered risky					
The bank fear to finance mortgage for the low income earners because of high rate of default					
Portfolio is considered unattractive by lenders due to high unpredictability					
The segment do not have other property that can be placed as collateral and therefore cannot access the required finances					
Lack of collateral is the biggest impediment to borrowing by targeted low-income earners					
Lack of stable income makes the targeted segment not able to access capital					
Inability to get reliable guarantor presents another challenge in accessing capital for the borrowers targeted by the project					
The government needs to find another strategy to make capital available to this targeted segment					
The project is modeled in such away that the targeted borrowers can easily access capital.					
Lending Products not aligned to the segment					
Lending Products available in the market are not aligned to the segment					
The products that are provided by the lenders do not meet the affordable housing requirements					
There are few products designed to fit the financing model sought by the mortgage financing required for affordable housing					
Many lenders are avoiding mortgage financing for these products due to possible bureaucracy					
There is need for collaboration with the lenders to develop products that can support low income borrowers that are targeted by this type of project					
The project is not modeled in alignment with the current available products in the market					
The lenders fear that the ownership structure may present a challenge to reposes the property incase of default					
The lack of details pertaining the project alignment to exiting financial system present fears among lenders					
Lenders fear that there is possibility of loss of business based on the possible bureaucracy involving government projects and therefore have not considered any products targeting the segment					

The government needs to work with the financial institutions in developing products aligned to the project					
Borrowers Profile					
The low earners do not have a good and attractive profile for lending					
The poor credit record by low-income earners have been an hindrance to mortgage financing					
Many of the possible borrowers are listed in the CRB and therefore cannot access credit anywhere					
The tedious process of clearance from CRB discourage many from seeking landings					
Many of the targeted segment are not aware on how to clear themselves from CRB					
Limited mortgage finance literacy among the targeted borrowers is also an hindrance mortgage financing					
Many of the low-income borrowers do not know where to seek mortgage financing					
Many of the low-income borrowers do not save and therefore not eligible for mortgage financing					
Irregular income by low-income earners make it difficult for lenders to calculate their financial strength and how much should be lent to them					
Low-income earners that are targeted by the affordable housing projects are high risk and therefore, avoided by lenders					

SECTION C: MORTGAGE FINANCING AND GOVERNMENT AFFORDABLE PROJECTS

To what extent do you agree with the following statements on the mortgage financing and government affordable Projects in Nairobi County?

Key: 5 - Strongly Agree, 4 - Agree, 3 - Neutral, 2 - Disagree, 1 - Strongly Disagree.

Mortgage financing and government affordable housing Project	**1**	**2**	**3**	**4**	**5**
Uptake of the affordable housing units by targeted home owners					
The low earners cannot access capital to acquire the houses because of their low income					
There is low uptake of the government affordable housing in the area					
The reason for this low uptake is lack of capital for down payment					

The government needs to work closely with the financial institutions if the government in to increase the uptake					
Timely payments of initial instalment					
Inability to access capital to affects timely acquisition of houses by low-income earners					
The home owners are not able to pay timely monthly installment					
The untimely payment has affected the performance of affordable housing in Kenya					
The untimely payment of instalments may contribute to the failure of the entire project					

THANK YOU FOR YOUR PARTICIPATION

APPENDIX IV: INTERVIEW GUIDE FOR MINISTRY OF LANDS AND HOUSING

AND TARGETED MICRO-FINANCIAL INSTITUTIONS STAFF

GENERAL INSTRUCTION

Purpose: This interview guide is to collect data on the mortgage financing of government affordable Projects in Nairobi County. Your participation will be treated with utmost confidentiality'

SECTION ONE: GENERAL INFORMATION

What is your category………………………………………………………………………

How long have you lived or worked in your current county…………………………………..

Cost of capital

SECTION TWO: MORTGAGE FINANCING FACTORS

In your opinion do you think that the cost of capital for low-income earners targeted by the Project is still high ………………………………………………………………………………

……………………………………………………………………………………………………

Do you feel that the lenders do not have special interest for the low-income mortgage seekers………………………………………………………………………………………………

Can you say that the initial payment is still expensive for the targeted group…………………………………………………………………………………

……………………………………………………………………………………………………..

Do you think that the mortgage financiers are not willing to lend the initial payment that is still expensive for the borrowers……………………………………………………………………..

Can you say that lenders willing to support monthly mortgage financing are expensive for the targeted segment……………………………………………………………………………………

……………………………………………………………………………………………………

Limited access to capital

Can you say that there is limited access to capital for low-income earners to finance their mortgage

Do you think the lenders fear to lend to the targeted Portfolio which is considered risky ………

…………………………………………………………………………………………………….

Do you feel that the banks fear to finance mortgage for the low-income earners because of high rate of default……………………………………………………………………………………

In your opinion can you say that the portfolio considers unattractive by lenders due to high unpredictability ………………………………………………………………………………….

Can you say that the segment does not have other property that can be placed as collateral and therefore cannot access the required finances…………………………………………………

Lending Products not aligned to the segment

In your opinion can you say that lending Products available in the market are not aligned to the segment…………………………………………………………………………………………

Can you say that the products that are provided by the lenders do not meet the affordable housing requirements……………………………………………………………………………….

Do you feel that there are few products designed to fit the financing model sought by the mortgage financing required for affordable housing ……………………………………………

……………………………………………………………………………………………………..

Can you say that many lenders are avoiding mortgage financing for these products due to possible bureaucracy……………………………………………………………………

In your opinion can you say that there is need for collaboration with the lenders to develop products that can support low income borrowers that are targeted by this type of project………...

……………………………………………………………………………………………………..

Borrowers Profile

Can you say that the low earners do not have a good and attractive profile for lending …………

………………………………………………………………………………………………………

Do you feel that the poor credit record by low-income earners have been an hindrance mortgage financing…………………………………………………………………………………………

In your opinion can you say that limited mortgage finance literacy among the targeted borrowers is also an hindrance mortgage financing ……………………………………………………..

………………………………………………………………………………………………………

Can you say that many of the low-income borrowers do not know where to seek mortgage financing…………………………………………………………………………………………

………………………………………………………………………………………………………

Can you say that many of the low-income borrowers do not save and therefore not eligible for mortgage financing……………………………………………………………………………….

………………………………………………………………………………………………….

THANK YOU FOR YOUR PARTICIPATION

APPENDIX V:ETHICAL APPROVAL

KCA UNIVERSITY

KCA UNIVERSITY SCIENTIFIC & ETHICS REVIEW COMMITTEE

REF: **KCAU/SERC/ SOB0210** **Date: 21ST JULY 2025**

TO: **MARYANNE WANJIRU KARUMBA (13/03811)**

Dear Sir/Madam,

RE: MORTGAGE FINANCING AND THE PERFORMANCE OF AFFORDABLE HOUSING GOVERNMENT PROJECTS IN NAIROBI COUNTY

This is to inform you that KCA University Scientific Ethics Review Committee (KCAUSERC) has reviewed and approved your above research proposal. Your application approval number is ***KCAUSERC/*SOB0210**. The approval period is ***21st July 2025 – 21st July, 2026.***

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used.

ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***KCAUSERC.***

iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KCAU*SERC* within 72 hours of notification

iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to ***KCAUSERC*** within 72 hours

v. Clearance for export of biological specimens must be obtained from relevant institutions.

vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.

vii. Submission of an executive summary report within 90 days upon completion of the study to ***KCAUSERC.***

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely

Dr. Caroline Ntara

Chairperson

KCA University Scientific & Ethics Review Committee

Advancing Knowledge, Driving Change

APPENDIX VI: NACOSTI RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 324638

Date of Issue: 16/September/2025

RESEARCH LICENSE

This is to Certify that Miss.. MARYANNE WANJIRU of KCA University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: MORTGAGE FINANCING AND THE PERFORMANCE OF AFFORDABLE HOUSING GOVERNMENT PROJECTS IN NAIROBI COUNTY for the period ending : 16/September/2026.

License No: NACOSTI/P/25/4179706

324638

Applicant Identification Number

Ag. Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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