

**FACTORS INFLUENCING THE PROVISION OF AFFORDABLE
HOUSING IN NAKURU CITY, KENYA**

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DECLARATION AND APPROVAL

I certify that this project is my original research and has never been presented in learning Institutions for any academic award.

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DEDICATION

My children, Kim Adrian and Christian Benjamin, who have been my constant supporters, and my husband, Lucy Adhiambo, are the reasons behind this project's dedication.



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ABSTRACT

The primary driver of urbanization is housing, and access to decent, reasonably priced housing is crucial in all cultures. In Nakuru, as in most developing countries, there is a significant gap between supply and demand for housing. Similar to the majority of developing-nation cities, Nakuru has a housing shortage due to a high demand for houses. The purpose of this study was to investigate factors influencing the provision of affordable housing in Nakuru City, Kenya. The study objectives were to establish how the building materials influence the provision of affordable housing; To examine how the cost of land influence the provision of affordable housing; To establish how the availability of land influences the provision of affordable housing; To find out how infrastructure development influences provision of affordable housing in Nakuru city, Kenya. The survey design used in the study was descriptive. The study's target population consisted of Nakuru City, Kenya's property development entities. Simple random sampling was used to select a sample size of 112 from the target population. The principal tool for gathering data was a questionnaire. At Narok Town, a pilot test was conducted to evaluate the reliability and validity of the findings. The replies were processed and tabulated using the Statistical Package for Social Science (SPSS) to enable grouping into different categories. The data were analyzed using descriptive statistics like means, standard deviation, and frequency distribution. Regression analysis and inferential statistics were used to determine the degree to which the factors affect the availability of cheap housing solutions in Nakuru City, Kenya ($r = 0.487$; $p < 0.05$). The study indicated a moderate positive and statistically significant correlation between land cost and affordable housing provision in Nakuru City, Kenya ($r = 0.507$; $p < 0.05$). A moderate positive and statistically significant correlation existed between land availability and affordable housing provision ($r = 0.571$; $p < 0.05$). There was a moderate positive and statistically significant correlation between infrastructure development and the provision of affordable housing ($r = 0.563$; $p < 0.05$). According to these findings, there was an 80.2% influence from the four independent variables—building materials, land availability, land cost, and infrastructure development—on the supply of affordable housing in Nakuru city. The study recommends that housing companies seek alternative building materials, land pricing should be regulated to ensure more land is acquired, and the availability of land should be made more accessible by digitalizing land acquisition procedures. Finally, the study recommends that the government develop more infrastructures to attract more investors to housing units in Nakuru City, Kenya. Moreover, there is a need to study green building technology to overcome the problem of land cost and availability, considering the high population in need of affordable housing in Nakuru and other cities in Kenya.

ABBREVIATIONS/ACRONYMS

MDGs	-	Millennium Development Goals
NHC	-	National Housing Corporation
UN	-	United Nations
UNCHS	-	United Nations Cultural Housing System
WHO	-	World Health Organization
NGOs – Non	-	Govern mental Organizations



CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

A global perspective on affordable housing

In its forty-third session, the United Nations General Assembly adopted the Global Shelter Strategy in 2020. The strategy's main objective was to facilitate adequate shelter for all by the year 2020, focusing on improving the situation of the disadvantaged and poor. Governments were responsible for developing appropriate institutional frameworks for strategy implementation, developing administrative, institutional, and legislative tasks (dealing with land legislation and construction), developing and implementing measures for national shelter policies, and creating an enabling environment for other sector players. Governments were also required to establish arrangements for continuously monitoring, reviewing, and revising the strategy. Governments in Third World countries need more resources to meet the urban population's housing demands, leading to serious housing gaps (Erguden, 2021).

Regional perspective on housing

Africa has experienced unprecedented urban growth, with the most pronounced growth occurring in Sub-Saharan Africa. The metropolitan population is currently estimated at 40% of the total population and is poised to rise and surpass 50% by 2030. The sizeable migration flows from rural areas present daunting challenges for development regarding access to housing, infrastructure, and essential services. Due to the rapidly rising population, Africa faces enormous development challenges in urban areas manifested in the proliferation of unplanned housing, low access to basic services, rising insecurity, and growing poverty. Housing policies have

focused on slum upgrading and the provision of serviced plots for the urban poor. (Erguden, 2021).

Local Perspective on Affordable Housing

Three pillars support Kenya's Vision 2030: political, social, and economic. Within its social pillar, the government provides programs for citizens to live in suitable and inexpensive housing. One of the most important necessities for humans, housing is ranked in the top three. In every nation, having enough housing is essential since it boosts the economy (Erguden, 2021).

A significant amount of a nation's wealth is comprised of permanent assets, such as housing, on which households spend a large percentage of their earnings. Since the beginning of urban civilization, housing has been a problem for people, families, organizations, and governments.

This issue has frequently been connected to issues with land acquisition, low personal income, high building material costs, statutory restrictions, and the underutilization of readily available, reasonably priced alternative building materials in the area. Shelter provision is one of the biggest issues facing the globe today (Golland, 2016). Kenya is seeing a rapid increase in its urban population as a result of constrained land supply and slow economic growth. More people are renting since fewer people can afford to own their own homes. In Kenyan towns, rental housing has historically been linked to lower-class households, but it is now also the primary source of housing for middle-class people (Ichangai, 2018). Like the majority of developing-nation cities, Nakuru has a housing shortage due to a high demand for housing.

In Nakuru, middle-class and lower-class residents have not been able to get inexpensive housing thanks to the low-house market providers. Nowadays, 150,000 additional housing units are needed annually in metropolitan areas; only 23% of this demand is being satisfied.

Since they make up 48% of the needed new housing stock, low- and middle-class households are particularly affected by the supply and demand imbalance. As a result of inadequate housing, informal settlements like slums have grown in number. Many are compelled to live in cramped spaces or are abandoned completely. More than 60% of people in Nakuru City, according to some studies, live in slums. Many Kenyans' existing living conditions have led to inadequate infrastructure, low health standards, and a lack of facilities and deterioration of the ecosystem. When one lacks the security of a safe home, it is challenging to maintain employment, go to school, take care of a family, and ensure mental and physical health. An outstanding and affordable place to live has a significant impact on the social, economic, and physical well-being of a household and community. Ichangai (2018) .

Kenya still has to address the appalling housing circumstances of its people, despite some initiatives to provide suitable housing for Kenyans. In the past, governments have tended to focus on providing a small number of living quarters for its deserving officials, leaving this crucial sector nearly exclusively to private sector work. Due in large part to the efforts of private sector home developers—who have been an essential source of housing, especially in (Hassanali, 2019).

Nonetheless, the market for low-cost, accessible housing is small, and it doesn't appear that other private sector home builders would be very interested in entering it. In the middle-class and upper-class home markets, these private developers have

found success. This suggests that they possess the ability and knowledge necessary to provide the low-income housing needed to lessen the nation's housing shortage (Hassanali, 2019). But mostly because the profit margins are smaller than in other home developments, they have avoided the low-income sector

1.1.1 Affordable Housing Market Players

Affordable housing is being built by a number of developers for lower- and middle-class workers in the larger Nakuru Metropolitan Area. The private sector started building homes in 2017 for a total of Kshs 11.9 billion, an increase of 6.9% from the year before (Statistical Abstract, 2018). Nevertheless, these private developers have mostly focused on the medium and upper portions of the market, paying very little attention to the low-income market, despite the intense private sector activity. Less than 30% of private construction projects are low-income housing units, however this is the market sector with the greatest need (Otiso, 2019).

Planning, land distribution, development, and upkeep of housing estates were all under government control in the past thanks to the National Housing Corporation (NHC). Through tenant purchase, mortgages, rentals, and rural housing loan programs, the NHC offers subsidized housing and carries out government housing policies and programs (NHC, 2019). Although this should have been possible in theory, there is currently a serious issue because central government spending on housing has been steadily declining due to parastatal activities, price controls, inappropriate building codes and regulations, and a lack of critical planning and service provision (Otiso, 2019).

In order to bridge the gap caused by the housing crisis, particularly for low-income households, NGOs have had to step in.

The Humanitarian Habitat Low-income families with less than 500 housing units have received minimal project-based housing assistance from Kenya and the K-Rep Development Agency. A few other development organizations have also surfaced in an effort to solve the issue of impoverished city people. The deposit-taking microfinance firm Jamii Bora Bank offers a variety of services to those who are struggling with poverty. It is currently working on a project to construct low-cost, affordable housing for its members, offering the participating families housing microfinance loans. Hassanali (2019).

Housing is a process as well as a product. As a product, it gives the housing fabric security, privacy, and dignity. The Kenya National Housing Policy (2004) states that it also keeps societal dissatisfaction and instability at bay. In order to develop sustainable human settlements, it is also a procedure that provides all socioeconomic classes with enough housing and a wholesome, supporting atmosphere. A decent place to live and housing are recognized as human rights in the 1948 Universal Declaration of Human Rights. Merely 2% of the global populace lived in cities in 1800. By 1950, this had increased to 30%, by 2000 to 47%, and by 2008 to above 50%. 60% of people on the planet will reside in cities by 2030. Habitat (UNCHS), 2016. One estimate puts the daily rise in urban population at 180,000. According to UN-Habitat (2000), over 750 million of the approximately one billion impoverished people on the planet are thought to reside in metropolitan areas without access to sufficient housing and basic amenities.

According to the 2019 Kenyan Constitution, the government of Kenya formally acknowledges housing as a fundamental human right. In an effort to improve the housing situation in the nation, the government created Sessional Paper No. 5 in 1966–1967 and Sessional Paper No. 3 of 2004 on National Housing Policy for

Kenya. When Sessional Paper No. 5 was created, there were around nine million people living in Kenya and 7,600 units of housing were needed annually in metropolitan areas. According to the policy, the government had to give the greatest number of people access to a healthy environment and suitable housing at the lowest feasible cost. Habitat (UNCHS) (2016). Up to 2019, the National Housing Policy (Sessional Paper No. 3 of 2018) served as a roadmap for housing sector development.

The goal of the strategy was to stop the worsening housing conditions and fill the gap in the housing stock caused by demand, which was much higher than supply. In the time of policy development, the nation's yearly requirement for urban housing was 150,000 units. By contrast, the market could only produce 30,000 units, resulting in a 120,000 unit shortfall. Both in absolute terms and as a percentage of the country's total population, Kenya's urban population has been growing. UN-Habitat (2019). In 2019, the United Nations Population Division calculated that 9.1 million people lived in urban areas, out of an estimated 40.9 million people overall.

22.24 percent of the nation's total population lived in urban areas, up from 20.2% in 2005 (UN-Habitat, 2019). The same source projects that by 2015, Kenya's urban population will have grown by 24.1%, and by 2020, it will have increased by 26.6%. The population of the town increased from 307,990 in 2019 to 517,780 in 2019, based on the Kenya National Bureau of Statistics data abstract of 2019 and the Nakuru District Development Plan (2008-2012). By 2019, it was expected to increase to 395,291. This shows a 71% increase in population over the previous 23 years. As per UN-Habitat (2019), Nakuru's population is increasing at a pace of 13% per year, making it the fastest-growing town in Africa. These statistics are based on the 2019 census.

To date, the housing provision in Nakuru remains minimal and sporadic, with demand outstripping supply. The problem of high urbanization rates has been compounded by increasing poverty and escalating housing provision costs.

1.2 Statement of the Problem

Beginning as a railroad outpost along the Mombasa, Nairobi, and Kisumu Railway line, Nakuru City was founded in 1904. The 1929 zoning plan for Nakuru was designed based on the then-applicable "principle of functional zoning," which included an industrial zone, residential areas for different social categories, a handy location for a hospital and cemetery, recreational centers, an airport, etc. Since most of Nakuru's urban population is made up of low- and middle-class income earners, suitable, affordable, and quality housing has become increasingly rare due to the city's rapid urbanization. Kenya's fast urbanization has outpaced the availability of housing, and urban planning has not been able to keep up.

Currently, 180,000 additional housing units are needed annually in metropolitan areas; only 28% of this demand is being satisfied. Since they make up 48% of the needed new housing stock, low- and middle-class households are particularly affected by the supply and demand imbalance. In an ideal world, more people living in cities would present developers with a wealth of opportunities due to rising housing demand; in reality, things are not so simple. Less than 35% of private construction projects are low-income housing units, however this is the market segment with the greatest need (Otiso, 2019).

Based on statistical summaries from 2020 to 2023, the Kenya National Bureau of Statistics found that the country's population was changing at a faster rate than the number of residences. In Nakuru, the following number of new residential housing

units were built. Three thousand eighty-nine units were obtained in the following years: 2015 (90 units), 2016 (389 units), 2017 (63 units), 2018 (61 units), 2019 (65 units), 2020 (311 units), 2021 (27 units), 2022 (458 units), 2023 (487 units, derived from extrapolation), 2018 (516 units), 2019 (426 units), 2019 (435 units), and 2011, 435 units. Between 1999 and 2019, the populations increased by 76,728 while the number of dwelling units increased by 2,893.

The expanded housing stock could only accommodate 11,572 people at the rate of 4 people per home (Nakuru et al. Plan, 2019), meaning that 65,156 people, or 16,289 households, would remain without official accommodation. (Nabutola 2018).

The need for basic infrastructure and services, such as roads, water, sanitation, and housing, has increased due to the expanding population. The county council now finds it more challenging to meet the needs of the city's citizens as a result of the strain this has placed on already limited resources. Studies are still needed to determine the factors impacting the availability of inexpensive housing options from the perspective of current and potential home developers in this market sector, despite the constantly growing urban population.

1.3 Purpose of the Study

This study investigated the factors influencing the provision of affordable housing in Nakuru City, Kenya.

1.4 Objectives of the Study

- i. To establish how building materials influence the provision of affordable housing in Nakuru city, Kenya.

- ii. To examine the influence of the cost of land on the provision of affordable housing in Nakuru City, Kenya.
- iii. To assess how the availability of land influences the provision of affordable housing in Nakuru City, Kenya.
- iv. To determine whether infrastructure development influences the provision of affordable housing in Nakuru city, Kenya.

1.5 Research Questions

- i. How do building materials influence the provision of affordable housing in Nakuru City, Kenya?
- ii. To what extent does the land cost influence the provision of affordable housing in Nakuru City, Kenya?
- iii. Does the availability of land influence the provision of affordable housing in Nakuru City, Kenya?
- iv. How does infrastructure development influence the provision of affordable housing in Nakuru City, Kenya?

1.6 Significance of the Study

The results of this study will be crucial to many players in the building and real estate sectors. Real estate developers will be able to identify policies that will improve the supply of affordable homes in the County by gaining insight into the variables influencing the provision of affordable housing options. Prospective homeowners will discover the elements to take into account while selecting the best affordable home. The government will find the study valuable since it will provide insight into the obstacles that low-income housing development in the County and the nation faces, particularly for housing policymakers. This will make it possible

for decision-makers to create housing policies that will improve the supply and development of decent, affordable, and high-quality housing.

The study's conclusions will also be important to academics and researchers since they will increase our understanding of the variables affecting the availability of affordable housing options in cities. Additionally, the study will serve as the basis for additional field research.

1.7 Limitations of the Study

The study needed to be more extensive in identifying factors influencing the provision of affordable housing solutions in the Nakuru City County government of Nakuru, Kenya. The study did not cover other countries due to limited time and financial resources constrained in carrying out the study. The study received less than 100% of responses as planned, but the research received more than 80%, which is above the acceptable level.

1.8 Delimitation of the Study

The goal of the study was to determine the variables that affect the Nakuru City County government in Nakuru, Kenya's ability to provide solutions for affordable housing. The essential stakeholders in the housing business were consulted for the study, which was conducted in the Kenyan city of Nakuru. This study concentrated on the elements that affect the availability of affordable housing in Nakuru, Kenya. These factors include the cost of land, the availability of land, and the building materials used. Other factors that affect housing availability in Kenya were left out.

1.9 Assumptions of the Study

The research's underlying presumptions were that since the data came from senior employees of home development organizations, it was a fair representative of

Nakuru's whole housing market. In order to enable the research to be finished on time, the study also made the assumption that the respondents were truthful and timely in completing the questionnaires.



1.10 Operational Definition of Key Terms

Affordable Housing- A wide variety of low- to moderate-income households can find housing that meets their needs and is priced reasonably so they can still pay for their other necessary basic living expenses.

Low Income Earners- Individuals with low incomes can be categorized into two groups: those who do not have a paid job and those who work as junior employees in government and commercial organizations. They have the option of working for themselves.

The Urban Low-Cost- dwelling unit has at least two usable rooms, a cooking space, and sanitary facilities, and its gross floor area is at least 40 square meters.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on affordable housing. The chapter discusses theoretical and empirical review. A conceptual framework is demonstrated and recap of literature review.

2.2 Theoretical review

Housing studies have drawn from a variety of theoretical frameworks, including traditional economics, sociology, and politics. In the context of the market economy and socialism, a number of ideas about urban housing have emerged in recent decades (Mitullah, 2017).

2.3 Housing Adjustment Theory

The housing adjustment theory initially identified by Morris and Winter served as the foundation for this investigation. The theory addresses the thoughts and actions that households have when engaging in housing behavior (Morka, 2017). According to Morris and Winter's idea, a household that falls short of social norms is unhappy and tries to improve its circumstances. Housing rules and restrictions that limit the household's capacity to behave are the main ideas of the theory. Relocating to a new home and implementing household adaptation—a process in which the household makes adjustments including cutting back on requirements and eliminating restrictions—are two potential remedial actions that a household may take upon realizing a housing deficit (Sherman & Combs, 2017).

The linkages between particular variables that may have an impact on an individual's work and level of general life satisfaction are the main focus of the

theory of household adjustment. The limitations and home satisfaction of low-income earners and single-parent households have been studied frequently using this approach (Landman, 2020).

The typical urbanite is worn out from having too many options. According to Macoloo (2018), the majority of low-income workers require assistance getting a loan or other forms of support in order to build their own homes. Without a doubt, one of the main issues with housing the vast majority of low-income individuals is the issue of building requirements.

2.4 Housing Tenure Choice Economic Theory

Three methods can be widely distinguished within the theory of housing markets, which align with the historical history of the discipline. When it comes to localization, heterogeneity, durability, and housing taxation, the first one sticks to the premise of an ideal, frictionless, competitive market mechanism (Smith, 2016). In the mid-1980s, this field of study acquired a significant level of maturity. Our knowledge of metropolitan spatial structure, housing supply and demand factors, and the estimation of prices for diverse items have all significantly improved as a result. But with the premise of an ideal home distribution process, the welfare consequences remain banal. Housing markets seem efficient as long as all participants are rational and forward-thinking, perhaps with the exception of local externalities (NHC, 2019).

On both sides of the market, despite the vast number of agents, competition might be improved due to search and movement expenses. Subtle turnover externalities are produced by incomplete contracts, and search externalities lead to vacancy rates that diverge from first-best. The policy ramifications are usually more interesting,

which is not surprising. Although practically the same characteristics that prohibit the market from achieving first-best efficiency render the desirability of government involvement irrelevant, in theory efficiency can frequently be increased with suitable state action. More affordable housing is required by many households in developing nations. In emerging nations, the focus of urban housing reform has switched from a planned economy to more market-oriented housing initiatives that are managed by local governments.

However, housing reform has made houses more expensive, and a strong demand for affordable housing exists at the lower end of the market. According to Ichangai (2018), the population's affordability has significantly decreased as a result of the main housing reform program.

2.5 Empirical Review

2.5.1 Housing Requirements and the Market for Affordable Housing

Graphic replacement and vacancy features must be included in UN housing (Renaud, 2017). Stated differently, the need for housing is caused by factors such as population expansion, the creation of new households, overcrowding, and household spending above their means. Since one must attend to their fundamental requirements in order to satisfy instrumental housing needs, housing is regarded as an instrumental need (Renaud, 2017). According to Greene and Rojas (2018), land value accounts for a sizeable amount of the overall cost of funding the construction of additional homes. The procedure cannot be viable unless low-cost land is accessible. As previously said, the location and development possibilities of the land play a major role in determining land values. City growth is determined by the location factor, which is further impacted by the development of trunk infrastructure, which further specifies

Land use and building codes have an impact on a piece of land's development potential; they can restrict or increase the amount of land that is available for development. It makes logical that the only places in these cities with affordable land are their peripheries, where there is a shortage of infrastructure and other essential social services given the substantial influence that these two elements have on land prices, particularly in major metropolitan settings. This explains why there are numerous incremental house construction methods in urban areas. Incremental home construction in central places occurs very seldom and is primarily because public lands are being illegally occupied by those who are not paying the full cost of the land.

One of the most important elements in providing low-income housing for urban-income groups in emerging countries is population expansion and its effects on urban low-income housing and its surrounding population. Asiama (2020) consequently proposed that in Ghana, two persons in a room denoted congestion, whereas three or more people in a room denotes overcrowding. According to his research, around 44.5% of West African families are overcrowded. Long-term and short-term effects of this condition on unhealthy environments are significant. The capital city of Enugu's housing situation should be improved right now.

Income housing developments are located in places where high-density building permits are available and land costs are low, claims Hassanali (2019). This makes it possible to lower the land cost component of each residential unit, enabling lower sales costs. Developers have been forced to implement low-income housing projects on outskirts of cities where the proximity to cities is advantageous in their search for cheaper land. Nevertheless, land is far less expensive (Hassanali, 2019). Every housing program's effectiveness depends on embedded infrastructure, which

includes things like power, water, sewage, roads, social services, and security. It also plays a crucial role in the provision of housing given the expected size and location of any low-income housing construction.

2.6 Factors Influencing Provision of Affordable Housing

2.6.1 Building Materials and Affordable Housing

The single most important input in the construction of a home is building materials. Although Adedeji (2018) found that the cost of building materials accounts for roughly sixty percent of all housing expenditures, Arayela (2018) asserted that the cost of building materials makes up roughly sixty-five percent of the cost of construction. Building materials, according to Ogunsemi (2020), are the primary factors limiting the supply of housing and are responsible for between 50 and 60 percent of building costs. Therefore, Adedeji (2018) correctly noted that one major obstacle to Nigeria's realization of adequate housing is the expense of housing, as demonstrated by subsequent government initiatives.

He maintained that in the past, housing in nations like Nigeria was inexpensive since building materials could be obtained at a reasonable price from the nearby environment of humans. Bassey (2021). The unreasonably high cost of building materials has hindered efforts to deliver housing, but this problem cannot be rationally and consistently resolved by merely using locally available materials without considering the pertinent initiative, the cost of processing, and the sustainability of the local materials. Material efficiency is one of the most crucial elements of a sustainable building.

When picking building materials, it's important to take into account their entire life cycle, from birth to death, and to look for products that have the least negative effects on the environment.

For example, González and Navarro (2016) calculated that up to 30% less carbon dioxide (CO₂) emissions can be produced by using building materials with minimal environmental impact. Since a building's life cycle and its components can be closed, the use of recycled and renewable resources is strongly promoted (Chwieduk, 2018).

The choice of building materials is also influenced by building codes and standards. Building codes are a methodical compilation of laws that specify the standard of the environment with reference to building quality, material composition, and service quality, including acceptable levels of toxicity. Gichunge (2016) states that these specify the caliber of construction, kinds of materials, and proportions of rooms in a building.

Building standards are onerous because they drive up the cost of housing by mandating certain materials and construction methods, which typically go beyond what is required to guarantee a building's safe occupancy (Rubinowitz, 2017). Gichunge (2019) contends further that the specifications for the materials to be utilized prevent developers from utilizing locally accessible resources, which could drive up the cost of materials if they need to be imported from other regions.

When implementing housing initiatives, locals' opinions and abilities regarding housing—especially with regard to materials—are crucially important. Local communities possess a unique grasp of their surroundings, local building resources,

and the most effective ways to employ them. They also have considerable expertise with building materials.

Therefore, housing that is suitably ingrained in the socioeconomic, cultural, and environmental circumstances of the populace can only come from the communities themselves. Each tribal group has developed a distinctive style of housing that is responsive to its surroundings and the way of life of its people, despite the startling homogeneity and sameness evident in the numerous house designs throughout the nation (GOK, 2017).

Building materials should be inexpensive, low-toxicity, water-saving, logical in their use of natural resources, eliminate or reduce created waste, and provide the fewest threats to the environment and human health. The availability of construction materials can provide a building's owner with a number of advantages, including lower maintenance and replacement costs, energy conservation, enhanced productivity and health of occupants, less expense involved in rearranging space, and increased flexibility.

2.6.2 Availability of Land and Affordable Housing

A large portion of the overall cost of building a home is made up of land. The feasibility of the phased house building process depends on the availability of reasonably priced land. The amount of land that is accessible for building homes for all income levels depends on its availability. Land ownership is a prerequisite, and ownership is entwined with historical, cultural, legal, and economic elements that shape people's attitudes and actions. The location, kind, and distribution of transportation hubs, work centers, and other public infrastructure services are all included (KOR, 2017). Land for housing need to be accessible to people of all

income levels. Making ensuring impoverished households have access to land in appropriate areas is the first step in finding solutions to housing issues.

In order to access property, one must be a landowner. Additionally, land ownership is influenced by historical, cultural, legal, and economic factors that influence people's beliefs and behavior.

The location, kind, and distribution of transportation hubs, work centers, and other public infrastructure services are all included (KOR, 2017). Local governments employ the fiscal zoning scheme to increase property taxes. "Fiscal zoning, like zoning, requires its participants to reject uses that do not pay their fair share of taxes and to encourage uses that raise property taxes or local taxes that demand affordable public services." Explained the US National Commission on Urban Issues. (Rubinowitz, 2017) Due to local governments' preference for commercial and industrial usage over low-income housing and their desire to preserve housing affordability, there is a severe land shortage for affordable housing (Nabutola, 2018). The majority of residential land is sold through the market and comes with a variety of long-term urban planning techniques that guarantee 20–25 years. Coordinated planning at all levels of government, working with commercial interests and civil society, is necessary to provide land for new home construction in many high-growth locations. This is a response to the growing land shortage for affordable housing (Otiso, 2019). In an effort to improve the amount of land available for inexpensive (social) housing, Numerous regional and local administrations have conducted trials pertaining to dense housing, zoning, land trusts, and land lease arrangements.

2.6.2 Land Cost on Affordable Housing

When it comes to production, land is essential. Having access to land is essential for building affordable housing (UN, 2018). Land is extremely rare since it is minimally available and necessary for the construction of cheap dwellings. As a result, there is an expanding group of landless people, and it is getting harder for them to get land and shelter on a daily basis. This is a noteworthy statistic because, in most situations, land was no longer properly supplied or allocated for low-income housing in the past. According to Nabutola (2018), the state and municipalities are the primary owners of land in metropolitan areas, which is highly valued. Landowners other than speculators seeking rapid profits are nonexistent.

Because of this, most people who need land the most are unable to obtain it or cannot afford it. The location, closeness to commercial, academic, and health facilities, as well as the availability of public transportation, all have an impact on land prices. The price of land is expected to decrease with distance from the city center. Land costs in metropolitan peripheries might be low enough for impoverished populations to afford. Unfortunately, many locations lack or offer insufficient amenities and services. When comparing the land market's performance in Colombia with the country's agrarian reform, (Renaud, 2017) discovered that the land market's rental and sales sector distributed land more efficiently to productive farmers than it did to low-income producers.

There may be opportunity to enhance the way the land market operates and to provide better access to land, given that the land purchases were all short-term and that not much land was moved from major landowners to small landowners or landless individuals under the least favorable circumstance. This made it easier to examine the variables that contributed to a sample of large land users' land transfers

to smaller users. Renaud (2017) noted that this approach helped identify the important political components of both interactions in a knowledgeable manner. One of the biggest barriers to resolving housing issues in emerging nations is the absence of a reliable credit market. The majority of families view their home as their most significant financial investment, and they require financing to make this purchase.

But the majority of people in developing nations struggle to obtain financing, which puts an end to their hopes of owning good homes. While the urban poor live in unstable or temporary housing, traditional mortgages frequently need complete legal title as collateral (UN-HABITAT, 2019). Incentives for financial institutions to lend to the impoverished are needed. Innovations that would benefit the urban poor are impeded by small loan amounts, high transaction costs, and additional credit checks. Furthermore, there aren't enough resources available to the government to finance homes. This made it extremely difficult to build decent homes, particularly in underdeveloped nations. The majority of developing nations lack public sector financial institutions that can provide the necessary capital as essential building materials.

The growth of the financial institutions that finance housing purchases and construction is intimately tied to the overall intricacy of the nation's financial system. The latter is likewise very dependent on how the global economy develops. Government regulations, like those that restrict lending to specific industries, impede the expansion of housing finance companies. All socioeconomic classes should have access to land for the construction of homes. Making ensuring impoverished households have access to land in appropriate areas is the first step in finding solutions to housing issues. According to Greene and Rojas (2020), land

acquisition enables low-income families to construct homes in metropolitan areas and gain access to other essential services and employment prospects.

It speaks to the placement, kind, and dispersion of transportation hubs as well as other public infrastructure services (Payne, 2020). According to Payne, extremely impoverished urban households prioritize obtaining land where they can make the most of their incomes. These regions are typically urban, where there is intense competition for land and high land costs. Payne goes on to say that established impoverished households choose to build their homes in less central urban places because they can afford the transportation costs, and housing that makes this possible has a significant role in service availability and acknowledgment. Land use control regulates development in metropolitan areas. The majority of nations have given local governments the power to control how land is used.

The latter employ their regulatory authority to stop the development of housing for the impoverished. Fiscal zoning and zoning laws are the most significant land use regulations in terms of their exclusionary effect. Policies that control land use, population density, and land use intensity are known as zoning ordinances. They establish minimal requirements for each region and divide the property into areas according to different land use types, such as residential, commercial, or industrial. Multiple houses and minimal lot sizes control population density (Morris, 2018). Local governments typically control development in ways that result in remote places because they make decisions about land use policy without the oversight or involvement of other governing bodies.

A system of zoning laws and policies known as "exclusionary zoning" keeps affordable homes out of the reach of the underprivileged. Land that can be used for

housing is restricted by zoning laws (Gichunge, 2021). Local governments employ the fiscal zoning scheme to increase property taxes. "The rules of the tax eligibility game state that participants, such as qualifying jurisdictions, must draw in uses that increase local taxes or property taxes to cover the cost of expensive public services and weed out uses that don't provide something back. ," stated the US National Commission on Urban Problems in their description of the procedure. Local governments oppose uses like low-income housing in favor of commercial and industrial applications, including luxury homes.

This is because low-income housing has a smaller share of property taxes collected because of their low assessed value. Thus, we discover that low-cost housing—both official and informal—is frequently located on a city's periphery. Low-income developments can be more affordably situated in the suburbs. The subsidy falls short of covering the cost of land in underdeveloped nations. Usually single-use communities, these buildings are located distant from places of employment, commerce, housing, and transit. The repercussions for this region include time spent traveling to and from opportunities, time spent away from home, and the associated financial consequences (Hancock, 2018).

The disproportionate expenses that authorities bear when delivering mass services to remote areas, the onerous travel costs and lengthy travel durations that impoverish low-income households must bear, and the substantial environmental expenses linked to excessive transportation and inefficient land use practices (Hassanali, 2019). For those who are underprivileged, location often matters more than housing quality since it directly impacts their access to metropolitan opportunities and fosters social networks that are necessary for survival.

(Nabutola, 2020). Low-income housing is encouraged on the outskirts of cities since residential zones are still segregated based on social class or position. Aside from that, the acquisition of land in the Western Cape of South Africa has presented obstacles to the creation of low-income housing and the realization of physically and functionally integrated human settlements, where the poor and vulnerable are situated on land that improves access to opportunities.

In addition to having an impact on housing affordability, the unstoppable trends of urbanization and the concentration of poverty in some places have left a significant land scarcity for reasonably priced homes (Nabutola, 2019). While the market provides the majority of the land for housing, many high-growth zones need coordinated planning by all levels of government in conjunction with civil society and long-term urban planning projects in order to provide a 20–25 year supply of land for new dwellings. Land trusts, inclusionary zoning, density housing, and land lease agreements are some of the strategies that a number of regional and local governments have tried to increase the quantity of land available for affordable (social) housing.

Local governments in South Africa were only allowed to provide housing land acquisition, in part due to a disconnect between housing policies and spatial plans, thus they lacked uniform methods for acquiring land for low-income housing. (Local Government and Housing Department, 2018). Acquiring public land can be challenging due to several factors, including the fact that state land at the federal and provincial levels is assigned to specific government departments, market forces influence state land disposal, additionally, parastatals like Transnet currently possess a sizable chunk of public land (Department of Local Government and Housing, 2018).

The core of housing is real estate and land management. The laws pertaining to land and property in Kenya are a holdover from the colonial era and comprise a multifaceted, intricate administration mechanism. Customary law managed property ownership in general and could differ according on cultural practices, prevalent land usage, or ethnicity (Maailmapank, 2021).

2.6.3 Infrastructure Development and Affordable Housing

Proper housing components include the installation of services, water supply, sanitation, drainage, and other facilities. Installing these services requires a significant amount of capital, and the longer the distance these services must go, the more expensive they become. The city lacks the financial means to provide services to the entire state, particularly to low-income people. The majority of impoverished homes are situated on unfavorable land, which can make installing utilities quite expensive. Thus, the price of constructing infrastructure is strongly correlated with the accessibility and availability of the land that has to be protected. Such services are exceedingly costly for impoverished households to obtain. There is no denying that the city's wealthy neighborhoods have superior infrastructure than its less wealthy ones.

Nevertheless, many regions still have poor road upkeep, insufficient water and sewage systems, and power shortages. In addition to causing inefficiencies that hampered potential for economic expansion, Kampala's inadequate infrastructure also evidently had an impact on land values in the city and its suburbs. The distribution of urban property ownership patterns has a significant impact on Kampala's basic housing infrastructure distribution; large metropolitan areas have very restricted access to paved roads, power, and water and sanitation systems.

Essential infrastructure provides far superior service to city centers and upscale residential areas that the Kampala City Council (KCC) has historically leased to private firms.

2.7 Conceptual Framework

According to Creswell (2019), it is a schematic presentation outlining the link between the independent and dependent variables.



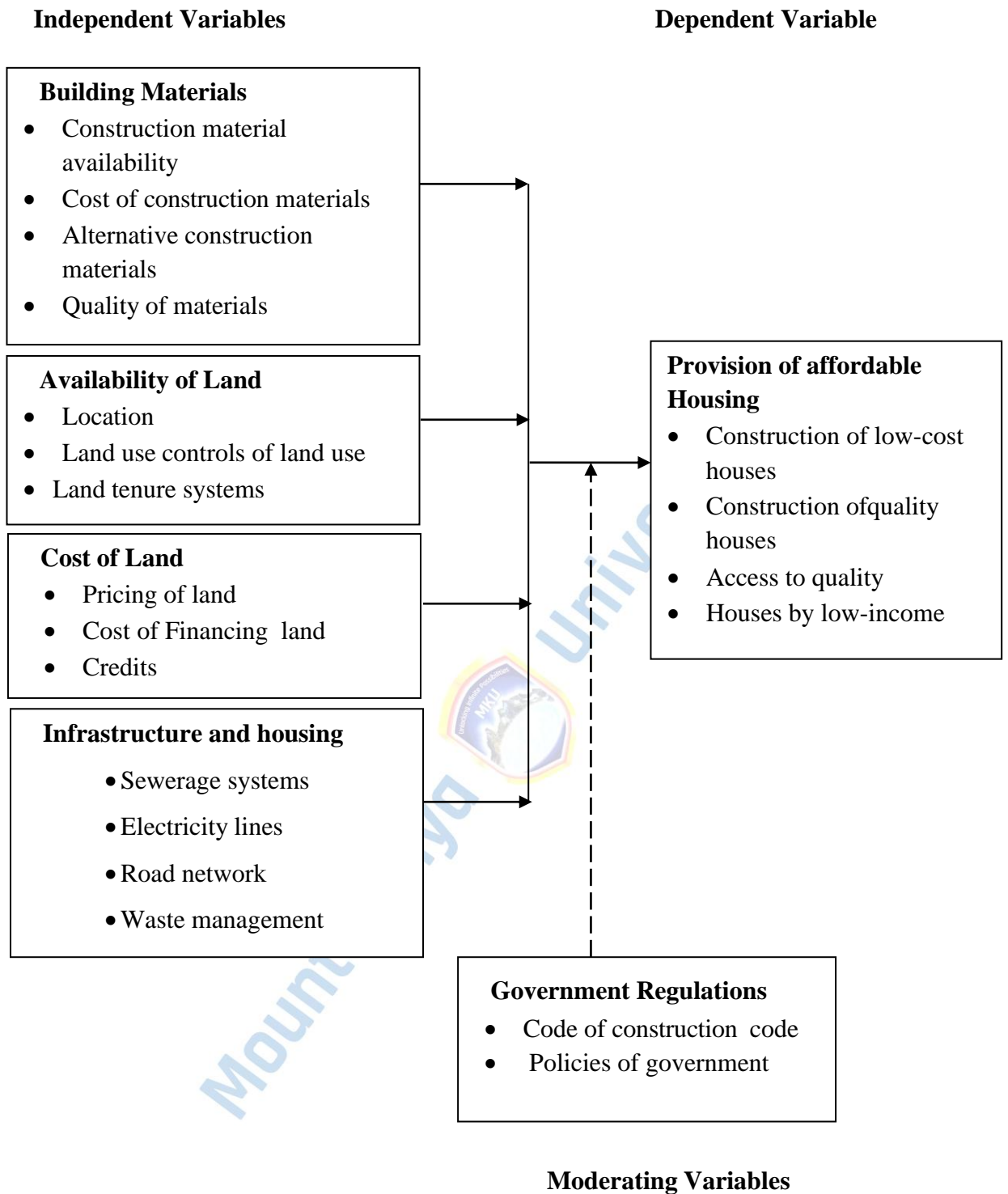


Figure 1: Conceptual Framework

(Source, researcher 2024)

2.7 Recap of Literature Review

Despite the fact that people and various governments emphasize the provision of housing; this basic human need is still neglected by many. Governments have struggled to provide adequate housing for poor people in developing countries such as Nigeria. However, studies have shown that this household category must be better exploited. In fact, in many developing countries, the provision of protection, especially for poor people, needs to be improved. Despite asylum programs, projects and other government actions in many countries, the asylum problem is increasingly prevalent. State participation in the refugee camp varies from the provision of ready-made apartments to various support measures. A review of the report reveals that the production cost of a government house is almost doubles that of an individual. The report also identified issues with low-income housing that were brought about by the outright building of mass housing as well as the subdivision of lots and service lots. Plans meant for these affordable housing developments are met with opposition from land speculators and necessitate protracted, costly bureaucratic processes before they can be implemented, pushing the impoverished to seek alternative housing options on the black market rather than through the official government land distribution system. Legislation, planning, design, funding, construction, and upkeep of housing must all be done through a lengthier, more intricate procedure that eliminates needless bureaucratic bottlenecks. The difficulties of insufficient coverage, beneficiary affordability, reproducibility, and, to a lesser extent, social acceptability and poor housing supply can be summed up as the inadequate and occasionally detrimental influence of public sector participation on the asylum delivery process.

For low-income households, there is a dearth of suitable, cheap, and acceptable housing. There is a need for more housing operators, and there is little desire on the part of other private housing developers to provide affordable homes. According to the literature study, the majority of research addressed the difficulties and solutions put out to address the issue of substandard housing in developing nations. The assessment of the literature reveals that no studies have been conducted on the variables influencing affordable housing in Nakuru, Kenya. Thus, by identifying the factors impacting the provision of affordable housing in Nakuru, Kenya, this study seeks to close the current research gap.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The findings of this study are presented in this chapter. The target population, sampling strategy, data sources, research design, and different data collection instruments and methods are all included in this. Additionally, data processing, analysis, and reporting methodologies are covered in this chapter.

3.2 Design of the study

The study employed a descriptive survey approach with the aim of obtaining respondents' thoughts or experiences on a certain subject in a pre-planned, structured manner. Kothari (2018) states that in order to gather the needed information, descriptive design entails planning, organizing, collecting, and analyzing data. Since the primary goal of the study was to evaluate the factors influencing affordable housing in Nakuru, Kenya, the design seemed acceptable.

3.3 Target Population

According to Bryman (2016), a population is a collection of human components, occasions, and problem groups under study. The 120 property development units specified by the Kenya Property Developers Association (KPDA) were the study's target population. There was uniformity in the study population.

3.4 Sampling Procedure

Using basic random sampling, a sample of 25% of the target population was obtained. Thirty managers of the property building units in Nakuru Township were among them, and four managers were chosen from each property developer. A representative sample, as defined by Mugenda & Mugenda (2018), should comprise

at least 10% or 30% of the population; hence, 25% was deemed representative of the research. A total of 120 project managers from real estate development companies participated in the study, providing information. Because they were involved in ongoing choices about housing building, project managers were deemed respondents because they could better supply the information required to address the research questions.

3.5 Data Collection Tool

The primary instrument for gathering data was a closed questionnaire. The survey's objective was to provide a quick overview of the variables affecting the availability of reasonably priced housing in Nakuru, Kenya. The drop and choose approach was used to distribute the questions to the responders

3.6 Pilot test

To evaluate the instrument's reliability and validity, a pilot study was carried out. To help the researcher become acquainted with the study and its administrative processes and to pinpoint areas that needed improvement, a pilot study was carried out in Narok, Narok County.

3.7 Validity of the Instruments

The degree to which data obtained with a specific instrument represents a particular domain or content of a certain idea was measured, and content validity was adopted for this study. In order to validate the validity of the research tool, the investigator consulted specialists in the field, particularly the investigator's supervisor. This made it possible for the research instrument to receive the appropriate adjustments.

3.7.1 Reliability of the Instruments

The identical responders were sent the questionnaire twice. Karl Pearson's product-moment correlation coefficient (r) was used to generate an estimated coefficient of reliability based on the correlation between the scores on the two sets of measurements. A high reliability coefficient for the instrument under use was defined as one with a r value of 0.7 or above.

3.8 Data Analysis

Both qualitative and quantitative approaches were used to analyze the data. The completed surveys were edited and sorted for consistency and completeness before being subjected to analysis. Data was coded and tabulated using the Statistical Package for Social Sciences (SPSS edition 26), which resulted in the classification of responses into many categories (Kumar, R. (2023).

Tanui (2021) states that inferential statistics, regression analysis, and correlation were employed to ascertain the extent of factors influencing the availability of affordable housing options in Nakuru. The linear equation below was used to illustrate the relationship equation for a multivariate regression model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Y = Provision of Affordable housing

α = Constant

μ = Error

β = Coefficient of the independent variables X_1 = Cost of land

X_2 = Availability of land

X₃= infrastructure development and housing X₄=Availability of Building materials

3.9 Ethical Consideration

In all phases of the research process, the researcher was sensitive to ethical aspects. Before conducting the study, permission was requested from the National Commission for Scientific Technology and Innovation (NACOSTI). In addition, relevant letters of authorization and approval were sought from the ERC and Mount Kenya University Graduate School. Consent was sought from the selected participants, who were informed of the objectives of the study before submitting their request to participate. Participants were assured of a high level of confidentiality and their true identity remains anonymous. The researcher was committed to unbiased reporting of quantitative and qualitative research findings.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

Data analysis, results presentation, and discussion of the findings are the main topics of this chapter. The main goal of the study was to look at the variables affecting the availability of affordable housing in Nakuru City, Kenya.

4.2 Pilot Test Results

The pilot study was conducted in Narok town in Narok County, with 30 respondents. This represented 30% of the sample size. The findings were as indicated in Table 1

Table 1: Reliability Test Results

Variable	N	Cronbach's Alpha Value
Building materials	30	.744
Price of the land	30	.739
The accessibility of land	30	.756
Building of infrastructure	30	.759
Affordable housing	30	.786

(Source field data, 2024)

Both the Cronbach's Alpha Test and the questionnaire coding were done. Table 1 displays Cronbach's Alpha threshold values for each of the five variables that were more than 0.7. The Cronbach Alpha values from the pilot research were 0.744, 0.739, 0.756, 0.759, and 0.786. In that order, building supplies, land availability, land cost, infrastructural development, and reasonably priced homes in Nakuru,

Kenya. The Cronbach values for each variable were more than 0.7. This suggests that the instruments were reliable.

4.3 Response Rate

One hundred and twenty questionnaires were collected throughout the survey. On the other hand, 112 forms were accurately completed and returned. This signified a response rate of 93% that was successful. It was also verified that the information provided to the respondents was confidential. According to Trex (2018), a response rate of 50% is sufficient, 60% is favorable, and 70% or above is the best for analysis. This indicates that 93% of the responses were sufficient for data analysis.

Table 2: Response Rate

Sampled No. of respondents	No. of Questionnaires Returned	Response Rate (%)
120	112	90

(Source field data, 2024)

4.4 Background Information

4.4.1 Gender of the Respondents

The gender of the respondents who took part in the study was a goal for the researcher. Table 3 presents the findings.

Table 3: Gender of the Respondents

Gender	Frequency	Percentage (%)
Male	49	44
Female	63	56
Total	112	100

(Source field data, 2024)

The data shows that forty-nine respondents (44%) were men, and 63 (56%) were women. This implies that men made up the majority of respondents. However, it was found that most people in Nakuru City were female due to gender diversity in inexpensive housing.

4.4.2 Category of the Company

The investigator attempted to ascertain the type of business that was a part of the investigation. The results are presented in Table 4.

Table 4: Category of the company

Category of the company	Frequency	Percentage (%)
Private company	53	47
Non-governmental	12	11
Government agency	47	42
Total	112	100.0

(Source field data,2024)

The findings show that 47% of the companies were private. This was followed by government agencies, at 42 %, and the minority were Non-governmental companies, at 11%. This implies that most of the respondents who participated in the study were in private companies, suggesting that most private companies are involved in affordable housing in Nakuru City, Kenya.

4.4.3 Duration of service in the organization

The investigator was interested in finding out how long the responders had been employed by the Nakuru City affordable housing company. Results are displayed in Table 5.

Table 5: Duration of service in the organization

Period	Frequency	Percentage (%)
1-3 Years	47	42
4-6 Years	38	34
7-10 Years	16	14
Above 10 Years	11	10
Total	112	100.0

(Source field data,2024)

The results on duration of service in the organization showed that 47 (42%) of the respondents have been with the organization for 1-3 years. Those who have served in the organization for 4-6 years were 38 (34%). Those who had been in the organization for 7-10 years were 16 (14%), whereas the minority had been there for more than ten years, consisting of 11 (10%). These results implied that all the respondents had experience working in affordable housing organizations and new affordable housing. This showed that the questionnaires contained the correct information required for the study.

4.4.4 Type of housing properties provided by the organization

The researcher intended to determine the types of housing properties the organizations included in the study gave. The findings are indicated in Table 6.

Table 6: Type of housing properties provided by the organization

Type of property	Frequency	Percentage (%)
Low-cost housing	38	34
housing for middle-class people	61	54
High-end residence	13	12
Total	112	100.0

(Source field data,2024)

The findings show that the majority of the housing organizations provided middle-income residential properties, comprising n=61(54%). This was followed by low-cost residential properties, n=38 (34 %), and the minority provided high-end residential properties, n=13 (12%). This implies that most housing organizations in Nakuru City, Kenya, provide affordable housing to middle-income residents. This could be attributed to the increasing population and the fast growth of the city, leading to a high demand for housing facilities.

4.4.5 Number of housing units provided by the organization in a single year

The researcher intended to determine how many housing units had been built in Nakuru within a year. Table 7 presents the findings.

Table 7: Number of housing units during the year by the organization

Number of housing units	Frequency	Percentage (%)
1-100	55	49
100-500	46	41
500-1000	7	6
More than 1000	4	4
Total	112	100.0

Source field data,2024)

4.5 Factors affecting the supply of affordable housing in Nakuru, Kenya

4.5.1 The amount of construction materials affects affordable housing

The goal of the study was to determine the impact that the company's ability to provide cheap housing has on the availability of building materials. Table 8 displays the findings.

Table 8: Extent of building materials influence on affordable housing

Extent	Frequency	Percentage (%)
extremely large degree	16	14
A great deal	19	17
To a moderate degree	37	33
Lower degree	36	32
Lower degree	4	4
Total	112	100.0

(Source field data,2024)

The research findings on the extent of building materials' influence on affordable housing revealed that most respondents, n=37(33%), agreed to a moderate extent that building materials influenced affordable housing. This was followed by those who agreed to a lesser extent, n=36(32%), that building materials influenced affordable housing. Those who agreed to a great extent that building materials had an influence on affordable housing were n =19(17%).

Those who agreed to a very great extent that building materials influenced affordable housing were n=16 (14%), while the minority comprising n=4(4%)agreed that building materials did not influence affordable housing. These results implied that building materials influenced affordable housing in Nakuru City, Kenya. This could affect the number of affordable housing units the organizations provide annually in Nakuru City, Kenya.

4.5.2 Fraction of building materials included in the apartment's overall cost

Finding out how much construction materials contributed to the overall cost of the flat was the study's main objective. Table 9 displays the results.

Table 9: The percentage that building materials contribute to the overall cost of a dwelling unit

Percentage contribution	Frequency	Percentage (%)
10-20	0	0
20-40	19	17
40-60	30	27
60-80	46	41
80-100	17	
Total	112	100.0

(Source field data,2024)

Based on experience, the research results about the percentage that building materials contribute to the overall cost of housing units showed that the majority showed that building materials contributed between 60-80 % of the total cost. This was followed by those who reported that building materials contributed between 40-60% of the total cost of building materials. Others reported that building materials contributed between 20-40% of the total cost of the housing unit, while the minority reported that building materials contributed between 80-100% of the total cost. None reported that the building materials contributed between 0-20% of the total cost of the housing unit at 0%. These results implied that, on average, building materials contribute 40-80% of the total cost of housing units. Therefore, building materials should be considered a significant influence on affordable housing in Nakuru City, Kenya.

4.5.3 Alternative construction materials and solutions in housing projects

Finding substitute building supplies and methods for housing developments was the goal of the study. Table 10 displays the findings.

Table 10: Alternative construction materials and available solutions

Alternative building materials	Frequency	Percentage (%)
Yes	79	71
No	33	29
Total	112	100

(Source field data,2024)

The survey results revealed that the majority of respondents n= 79 (71%) stated that they have alternative building materials and solutions in housing projects. A small part of the respondents. In n = 33 (29%). This meant that most of the respondents were looking for alternative building materials in Nakuru, Kenya..

4.5.4 Cost saving on alternative construction materials in housing projects

The study sought to establish whether alternative construction g materials reduced costs in housing projects. The results are displayed in Table 11.

Table 11: Cost saving on alternative construction materials

Cost saving on alternative construction materials	Frequency	Percentage (%)
Yes	90	80
No	22	20-
Total	112	100

(Source field data,2024)

The study's conclusions showed that the majority of participants, or n = 90 (80%), stated that adopting alternative building materials in housing projects lowers costs. A minority of the respondents, n=22 (20%), reported that alternative construction materials do not lead to cost savings in housing units. This implies that most respondents saved building costs using alternative materials in Nakuru City, Kenya.

4.6 Effect of construction materials on the availability of reasonably priced housing in Nakuru, Kenya

The goal of the study was to determine how much building materials have an impact on the availability of reasonably priced flats with electricity. The following ratings were applied to statements regarding building materials and their effect on the availability of cheap housing in Nakuru: 1 represents no extent, 2 represents less, 3 represents moderate, 4 represents outstanding, and 5 represents extremely extensive. Table 12 presents the results.

Table 12: Influence of building materials on the provision of affordable

Statement	1 %	2 %	3 %	4 %	5 %
Not using local building materials affects the supply of affordable housing	6	10	21	40	35
The description of construction materials in the building regulations restricts builders from utilizing alternative and locally accessible building materials, which has an impact on the availability of reasonably priced homes.	0	1	10	39	50
People's choices for construction materials are influenced by their culture and beliefs, which in turn impacts the availability of building materials. reasonable housing	24	30	14	15	17
The lack or non-acceptance of affordable alternative building materials affects the supply of affordable housing	3	5	14	31	37

(Source field data,2024)

The results of the survey revealed that the majority of respondents (40%) largely agreed that not using locally available building materials affects the availability of affordable housing. 35% mostly agreed, 21% moderately and 10% disagreed to a

lesser extent. A minority disagreed, with 6% saying that the availability of inexpensive homes is impacted by not using locally accessible building materials. The availability of inexpensive housing in Nakuru, Kenya is impacted, according to these findings, by the non-use of locally accessible building materials. Building laws that specify building materials have the effect of preventing builders from using alternative and locally accessible building materials, which has an impact on the availability of cheap housing, showing that the majority mostly agreed with 50%. It was followed by 39% who decided to a large extent, while there were 10% who decided moderately. A minority agreed and not at all. These results indicated that the specification of building materials in the Building Regulations prevents builders from utilizing alternative and locally accessible building materials, which has an impact on the availability of reasonably priced housing in Nakuru, Kenya.

The majority of respondents to the study on the culture and beliefs that affect people's decisions about the materials to use for construction and, consequently, the availability of cheap housing, agreed, albeit to a lesser level, 30 percent of respondents and those who decided not at all were 24 percent. 17% mostly agreed, 15% mostly agreed, and a moderate minority. These results indicated that culture and beliefs did not greatly influence people's choices of construction materials for affordable housing in Nakuru, Kenya. Survey results on the lack or unacceptability of affordable alternative building materials affecting the supply of affordable housing showed that 37% majority agree and 31% overall. Of those who decided sensibly, 14% agreed, to a lesser extent 5%, and a minority did not choose at all, 3%. These findings suggested that the availability of cheap housing is impacted by the absence or rejection of inexpensive alternative building materials. The overall

results showed that all statements about building materials had an impact on affordable housing.

4.7. Availability of land for the provision of affordable housing in Nakuru city

The aim of the research was to determine the degree to which the availability of land influences the supply of affordable homes in Nakuru city. Table 13 presents the results.

Table 13: Extent availability of land influence on affordable housing

Extent	Frequency	Percentage (%)
extremely large degree	26	23
A great deal	39	35
To a moderate degree	29	26
Lower degree	16	14
Lower degree	2	1
Total	112	100.0

(Source field data,2024)

The study's conclusions regarding the degree to which land availability affects affordable housing showed that the majority of respondents—n=39 or 35%—agreed to a great extent with the statement. Those who concluded that the availability of land affected the provision of affordable housing to a moderate level (n = 29; 33%) came next. Those who agreed to a great extent that the availability of land influenced affordable housing were n =26 (23%). Those who agreed to a lesser extent that availability of land influenced affordable housing n=16 (14%), while the minority comprising n=2(1%) agreed that availability of land does not influence affordable housing in Nakuru city, Kenya. These results implied that the availability of land influenced affordable housing in Nakuru City, Kenya. This could affect the number of affordable housing units the companies provide in Nakuru City, Kenya.

4.7.1 Implications for affordable housing land availability in Nakuru City, Kenya

The aim of the research was to determine the degree to which the availability of land influences the development of affordable homes. Statements about land availability and its impact on the provision of affordable housing in Nakuru were rated as follows: (1=None, 2=Less, 3=Average, 4=Excellent and 5=Very extensive).

Table 14 displays the findings.

Table 14: Influence of availability of land on the provision of affordable housing in Nakuru City, Kenya

Statement	1	2	3	4	5
	%	%	%	%	%
Bureaucratic land acquisition procedures limit the availability of land for cheap, low-cost housing developers.	6	13	14	41	38
Inadequate special planning can limit the availability of land for affordable house development.	2	3	9	44	54
Inadequate zoning restrictions limit the availability of land for affordable house development.	5	8	17	32	47
Cultural ties to land restrict land availability.	2	2	23	42	38
Nakuru city's current land tenure arrangement makes it difficult to provide cheap houses.	8	12	19	34	39
Inadequate land allocation practices make it challenging to build affordable homes.	4	7	28	32	41
High competition for good land in Nakuru city limits development opportunities.	2	9	31	40	30
High urban population levels affect the availability of land.	3	4	22	30	38

(Source field data,2024)

The survey findings of the bureaucratic land acquisition processes that restrict the amount of land that older developers can purchase and low-cost housing developments showed that the majority agreed (41%) and the decision makers mostly agreed (32%). Of those who moderately (17%) agreed, 13% agreed to a

lesser extent and a minority disagreed (6%). These findings suggested that in Nakuru, Kenya, bureaucratic land acquisition procedures impede the availability of land for developers of reasonably priced and low-cost homes. Findings from studies on inefficient special planning have an impact on the amount of land available to developers of cheap homes.

Providing affordable housing showed that the majority strongly agreed with 54% and mostly agreed with 44%. Among those who moderately agreed, 9% agreed, to a lesser extent 3%, and a minority, 2%, strongly disagreed. These results indicated that ineffective specific planning affects the availability of sufficient land for affordable housing developers to provide affordable housing in Nakuru, Kenya. Poll results on ineffective zoning ordinances affecting the availability of sufficient land to provide affordable affordable housing showed a majority of 47% agree and a majority of 32% agree. . 17% moderately agreed, 8% in the minority and 5% in the minority not at all. These results showed that insufficient land availability for developers of affordable housing has an impact on the provision of affordable housing in Nakuru, Kenya due to inadequate zoning restrictions.

Poll results on cultural ties to land that prevent land from being available for affordable housing showed a majority strongly agreed at 38% and mostly agreed at 42%. Of those who moderately agreed, 23% agreed, 2% disagreed to a lesser extent, and a minority disagreed 2%. These results indicated that cultural ties to land hinder the availability of land for affordable housing in Nakuru, Kenya.

The survey results of Nakuru City's current land tenure systems hinder access to land to provide affordable and affordable housing showed that the majority agreed with 39 percent and those who mostly agreed. with 34 percent. Of those who

moderately agreed, 19% agreed, 12% somewhat agreed, while a minority disagreed at 8%. These results indicated that the current land tenure systems in Nakuru City hinder access to land to provide affordable and affordable housing in Nakuru City, Kenya. Results of the survey on weak land distribution systems that prevent access to land for affordable housing showed that a majority of 41% agreed and 32% largely decided. Of those who moderately agreed, 28% agreed to a lesser extent 7% and a minority disagreed 4%.

These results indicated that weak land distribution systems hinder the availability of land for affordable and affordable housing solutions in Nakuru, Kenya. Survey results on Nakuru City's existing stiff competition for suitable land, which makes the land more developable to provide affordable housing, showed that the majority agreed with a strong 40 percent and those who decided it was important were 30 percent. Of those who moderately agreed, 31% agreed, less strongly 9%, while a minority decided not at all, 2%. These results indicated that intense competition for suitable land in Nakuru City makes it difficult for the country to develop affordable housing supply in Nakuru City, Kenya. The results of the survey on Nakuru City's current stiff competition for suitable land has made it difficult to develop land to provide affordable housing, showed that most agreed with a strong 38% and those who strongly decided were 30%. Of the moderate 22% who agreed, 4% less agreed, while a minority decided not at all 3%.

These results indicated that intense competition for suitable land in Nakuru City makes it difficult for the country to develop affordable housing supply in Nakuru City, Kenya. Results of the survey on the effect of a large urban population on the availability of land to provide affordable housing showed a strong majority of 40%

who agreed, and 30% who decided it was important. Of those who moderately agreed, 31% agreed, less strongly 9%, while a minority decided not at all, 2%. These results indicated that intense competition for suitable land in Nakuru City makes it difficult for the country to develop affordable housing supply in Nakuru City, Kenya.

4.8 Land price for affordable housing in Nakuru city

The purpose of the study was to estimate the current land prices in Nakuru city for affordable housing in Nakuru town. The results are shown in Table 15..

Table 15: Rate of current land prices in Nakuru city on affordable housing

Rate	Frequency	Percentage (%)
Reasonably priced	62	55
Expensive	32	29
Very expensive	18	16
Total	112	100.0

(Source field data,2024)

Most respondents, or $n = 62$ (55%) of the research participants, agreed to a considerable extent that the price was appropriate when it came to the rate of current land prices for affordable housing in Nakuru City. After this, there were others who thought the rate of payment was high.

$n=32(29\%)$, influencing affordable housing. Those who agreed that the land price rate was costly were $n =18$ (16%). These results implied that the land cost in Nakuru City was reasonably priced, influencing affordable housing in Nakuru City, Kenya. This could increase the number of affordable housing units the companies provide in Nakuru City, Kenya.

4.8.1 Land prices on provision of affordable housing projects in Nakuru City, Kenya

The goal of the study was to determine how land prices in Nakuru City affected initiatives for affordable housing. The outcomes are displayed in Table 16.

Table 16: Land prices on the provision of affordable housing in Nakuru City, Kenya

	Frequency	Percentage (%)
Yes	88	79
No	24	21
Total	112	100

(Source field data,2024)

The results of the study showed that the majority of respondents , n=88 (79%), reported that land prices influence affordable housing. A minority of the respondents, n=24 (21%), reported that the land cost does not influence affordable housing. This implies that land cost influences affordable housing in Nakuru City, Kenya.

4.8.2 An analysis of how land costs affect the availability of reasonably priced housing in Nakuru City, Kenya.

The aim of the research was to determine the degree to which land prices impact the availability of reasonably priced housing. Statements about land availability and its impact on the provision of affordable housing in Nakuru were rated as follows (1 = no extent, 2 = less, 3 = moderate extent, 4 = large amount, and 5 = very large amount). The results are shown in Table 17.

Table 17: Influence of cost of land on the provision of affordable housing in Nakuru City

Statement	1	2	3	4	5
	%	%	%	%	%
High demand for growth that is appropriate A piece of land influences its cost.	2	6	24	32	36
The price of land in Nakuru City is impacted by the lack of adequate development land.	8	12	20	31	29
Nakuru city's bureaucratic acquisition procedures affect the price of land	6	19	21	25	29
High land costs affect land prices in Nakuru	13	17	21	23	26
Cultural ties to land affect land prices	9	15	24	35	17
unregulated market in Nakuru affects land price	5	10	23	32	30
High land fees and charges affect land prices in Nakuru	3	8	19	33	37

(Source field data,2024)

According to the poll, the state's expense of building affordable homes is impacted by the strong demand for suitable construction site., with a majority agreeing significantly, at 36 percent, and deciding mostly at 32 percent. . A moderate portion of 24% agreed to a lesser extent with 6%, while a minority of 2% strongly disagreed. The price of reasonably priced residential land in Nakuru, Kenya is influenced by the high demand for suitable development site, according to these findings. Survey findings on the scarcity of suitable development land in Nakuru City will affect land prices. Providing affordable housing showed that a majority of 29% agreed and 29% strongly decided. Of those who moderately agreed with 20%, 12% agreed to a lesser extent and a minority of 8%. These results indicated that the scarcity of suitable development land in Nakuru City affects the price of land in providing affordable housing in Nakuru City, Kenya. Results of a survey on Nakuru City's bureaucratic land acquisition procedures, which affect the cost of land in

providing affordable housing, showed a majority of 29% agreed and a majority decided 25%. Of those who moderately agreed, 21% agreed to a lesser extent 19% and a minority disagreed 6%. These results indicated that bureaucratic land purchase procedures in Nakuru City affect the price of land for affordable housing in Nakuru City, Kenya. A poll on the high cost of land transfer affecting land prices to provide affordable housing in Nakuru town showed a majority of 26% and a majority decided at 23%. Among those who made a moderate choice, 21% agreed with the minority, 17% and the minority did not choose at all, 13%. These results indicated that high land transfer costs affect land prices in Nakuru City, providing affordable housing in Nakuru City, Kenya.

Poll results on cultural ties to the state affecting the state's cost of providing affordable housing showed a majority of 35% agreed and 17% strongly decided. 24% moderately agreed and 15% to a lesser extent, the minority disagreed 9%. These results showed that cultural ties to the country affect the country's cost of providing affordable housing in Nakuru, Kenya. The deregulated real estate survey results of Nakuru City, which affected the country's prices in providing affordable housing, showed a majority of 30% and 32% strongly agreed. Among those who moderately agreed, 23% and 10% agreed to a lesser extent, while a minority disagreed at 5%. These results indicated that the unregulated real estate market in Nakuru City affects land prices and the supply of affordable and affordable housing solutions in Nakuru City, Kenya.

Research findings have shown that high land fees and charges affect land prices in Nakuru town; the majority strongly agreed at 37% and those who were mostly decided were 33%. Of those who moderately agreed, 19% agreed to a lesser extent 8% and a minority disagreed 3%. These results indicated that high land fees and

charges affect the price of land in Nakuru City and the provision of affordable and affordable housing solutions in Nakuru City, Kenya.

4.9 Development of infrastructure in the provision of affordable housing in Nakuru

The goal of the research was to determine the degree to which affordable housing availability in Nakuru is impacted by infrastructure development. Table 18 displays the results.

Table 18: Extent of the Impact of Infrastructure Development on Affordable Housing

Extent	Frequency	Percentage (%)
Very large	29	26
Large amount	40	37
Moderately extent	26	23
Smaller	15	13
None	2	1
Total	112	100.0

(Source field data,2024)

The study's conclusions about the degree of infrastructure development available for affordable housing showed that the majority of respondents—n=40, or 37%—agreed to a large degree. After this, people who made the majority of the decisions were with n=29(26%), that the availability of infrastructure development influenced affordable housing. Those who agreed to a moderate extent that infrastructure development influenced affordable housing were =26 (23%). Those who agreed to a lesser extent that availability of land had an influence on affordable housing n= 15(13%), while the minority comprising of n=2(1%) agreed to no extent that infrastructure development influences affordable housing in Nakuru city, Kenya.

These results implied that the availability of infrastructure development influenced affordable housing in Nakuru City, Kenya. This could affect the number of affordable housing units provided by the housing companies in areas with poor infrastructure development in Nakuru City, Kenya.

4.9.1 The impact of infrastructure development on housing projects in Nakuru, Kenya.

The aim of the research was to ascertain the degree to which the supply of affordable housing is influenced by the availability of infrastructural development. The following ratings were given to statements on the availability of infrastructure development and how it affects the supply of affordable housing in Nakuru: 1 = No, 2 = Less, 3 = Average, 4 = Excellent, and 5 = Very Excellent extent. Table 19 displays the outcomes.

Table 19: The impact of infrastructure development on the provision of affordable housing in the city of Nakuru, Kenya

Remark	1	2	3	4	5
The supply of cheap housing is impacted by the availability of electricity.	1	2	22	34	41
Availability of roads affects the supply of affordable housing	1	1	19	41	38
Sewage network the availability affects the supply of affordable and affordable housing	4	7	17	39	30
The availability of water affects the availability of affordable and affordable housing	4	6	18	30	42
Accessible solid waste management techniques have an impact on the availability of	6	8	27	28	31
In Nakuru City, the cost of delivering infrastructural services is highly expensive.	4	10	23	28	35

(Source field data, 2024)

The survey results on the availability of electricity affecting the provision of affordable housing showed that the majority agreed, 41% and 34%. 22% moderately agreed, 2% somewhat agreed, and a minority of 1% decided not at all. These results indicated that access to electricity affects the provision of affordable and affordable housing in Nakuru, Kenya. Results of a survey on how road access affects the provision of affordable and affordable housing showed that 38% of majorities mostly agreed and 38% strongly decided. Of those who moderately agreed, 19% agreed to a lesser extent, and a minority disagreed, 1%. These results indicated that road availability affects the provision of affordable and affordable housing in Nakuru, Kenya.

Results of the survey on the impact of sewer system availability on the provision of affordable housing showed a majority of 39% strongly agree and 30% strongly agree. Of those who moderately agreed, 17% and 7% to a lesser extent, a minority of 4% disagreed. These results indicated that the presence of a sewage system affects the provision of affordable and affordable housing in Nakuru, Kenya. The availability of water affects the supply of affordable housing survey results revealed that the majority agreed with 42% and the majority with 30%. Among those who moderately agreed, 18%, 6% agreed to a lesser extent, and a minority of 4%. These results indicated that water availability affects the provision of affordable and affordable housing in Nakuru, Kenya.

Results of the survey on the availability of solid waste management systems affecting the provision of affordable and affordable housing showed that the majority strongly agreed (31%) and strongly agreed (28%). 27% moderately agreed, 8% less agreed and a minority not at all, 6%. These results indicated that the availability of solid waste management systems affects the provision of affordable

and affordable housing in Nakuru, Kenya. Research findings on the cost of providing infrastructure services is very high in Nakuru City, which affects housing supply, showing that the majority strongly agreed, 35%, and those who strongly agreed, 28%. Of those who moderately agreed, 28% agreed to a lesser extent 10% and a minority disagreed 4%. These results showed that the cost of providing infrastructure services is very high in Nakuru, which affects the provision of affordable and affordable housing solutions in Nakuru, Kenya. The results showed that infrastructure development affects affordable and affordable housing solutions in Nakuru, Kenya.

4.10 Diagnostic Test

4.10.1 Autocorrelation Assumption Test

The relationship a variable has with itself over time is known as autocorrelation. Table 20 below displays the outcomes of the test of the autocorrelation hypothesis.

Table 20: Results of the Autocorrelation Assumption Test

Variable	Durbin-Watson
Construction materials	2.312
Land price	2.135
Land availability	2.148
Infrastructure development	2.139
Provision of affordable housing	2.128

(Source, field 2024)

As shown in Table 20, the results revealed that the Durbin-Watson statistical value for building materials was 2.312. In addition, the Durbin-Watson land price statistical value was 2.135. In addition, the results showed that the Durbin-Watson statistical value for land availability was 2.148 and infrastructure development was 2.139, while the affordable housing supply score was 2.628 in Nakuru, Kenya. This

means that the study variables were independent of error because they meet a Durbin-Watson threshold between 0 and 4. The Durbin-Watson test yields a test statistic between 0 and 4, where 0 and 2.5 indicate the absence of autocorrelation. As a result, the data collection tools can be utilized to gather data for the primary study because it can be concluded that they were valid and dependable.

4.10.2 Test of Assumptions of Normality

To find out if the study's data are regularly distributed, a normality test was applied.

Table 21 provides the results of the normalcy test.

Table 21: Results of the Normality Assumption Test

Variable	Kolmogorov- Smirnov	Sig
Construction materials	.321	.543
Land price	.322	.654
Land availability	.214	.785
Infrastructure development	.212	.676
Provision of affordable housing	.347	.729

(Source, field 2024)

The results of the normality test in Table 21 indicated that the data are normally distributed because the Kolmogorov-Smirnov significance values were greater than 0.05. The research results showed that the Kolmogorov-Smirnov significance value of building materials was $p=.543 > 0.05$ and the Kolmogorov-Smirnov significance value of land costs was $p=.654 > 0.05$. The Kolmogorov-Smirnov significance value of land availability was $p=.785 > 0.05$. The Kolmogorov-Smirnov significance value of infrastructure development was $p=.676 > 0.05$. The Kolmogorov-Smirnov significant value for affordable housing was $p=.729 > 0.05$. It can be concluded that the data was normally distributed because the p-values were greater than the significance level of 0.05.

4.10.3 Multicollinearity Test

When two or more independent variables have a high correlation with one another, multicollinearity arises. When a regression model contains multicollinearity, it might be challenging to identify the distinct impact of every independent variable on results. Table 22 presents the findings of the research.

Table 22: Multicollinearity Assumption Test Results

Variables	Tolerance	VIF
Construction materials	.443	1.667
Land price	.519	1.694
Land availability	.580	1.395
Infrastructure development	.671	1.320
Provision of affordable housing	.674	1.317

(Source, field 2024)

The values of tolerance and variance inflation coefficient of building materials (tolerance = 0.443 and VIF = 1.667), (cost of land = 0.519 and VIF = 1.694), (tolerance = 0.580 and VIF = 1.395), according to availability. I; (tolerance=0.671 and VIF=1.320) for developing infrastructure and providing affordable housing (tolerance=0.674 and VIF=1.317). The research results show that the tolerance values of all five variables under study were above 0.10 and the VIF values were below 10, which means that there was no multicollinearity in the data used.

4.10.4 Homoscedasticity Test Results

The homogeneity of disturbance across the independent variable values between the dependent and independent variables is referred to as homoscedasticity. It expresses residual terms that are constant across observations. On the other hand, heteroscedasticity issues result from unequal errors. The presence of heteroscedasticity leads to inaccurate confidence intervals and ineffective parameter

estimations. The error term should not change significantly when the dependent variable's value changes. The p-value for homoscedastic data is greater than 0.05. Results of the homoscedasticity test are displayed in Table 23.

Table 23: Results of the Homoscedasticity Test

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	.054	.261		.131	.849
Construction materials	.038	.059	.043	-.137	.825
Land price	.074	.085	.265	1.001	.641
Land availability	.073	.072	.068	.248	.831
Infrastructure development	.082	.047	.094	-.338	.724

a. Dependent Variable: affordable Housing

The p-values for infrastructure development, building materials, land availability, and land cost were 0.724, 0.641, 0.831, and 0.825 respectively, according to Table 19's results. Since each of these values is greater than 0.05, there was no heteroscedasticity issue with the data, indicating that they were homoscedastic. The significance of linear regression analysis was validated by the researcher with the aid of the results.

4.10.5 Linearity Test Results

Linearity tests were used to determine the linearity of building materials, land cost, land availability and infrastructure development. The results are shown in Tables 24, 25, 26 and 27.

Table 24: Linearity between building materials and provision of affordable housing

			Sum of	df	Mean	F	Sig.	
			Squares		Square			
(Combined)			3.637	67	.347	3.421	.012	
Provision of affordable housing building materials	of	Between	Linearity	2.022	7	2.012	19.312	.001
		Groups	Deviation					
	*		from	1.616	61	.181	1.713	.142
			Linearity					
		Within Groups		1.554	67	.106		
		Total		5.220	112			

(Source, field 2024)

The p-value for the divergence from linearity was 0.142, according to the results. The divergence from linearity needs to be more than 0.05 in order for a linear relationship to exist. The relationship between building materials and the availability of affordable housing is suggested to be linear by $0.142 > 0.05$. In specifically, this linear relationship will help establish the causal relationship between building materials and the availability of affordable housing in Nakuru City, Kenya. This will facilitate inferential statistical analysis.

To determine the linearity of building materials, land costs, land availability, and infrastructure development, linearity experiments were conducted. Results are presented in Tables 24, 25, 26, and 27.

Table 25: Linearity between cost of land and provision of affordable housing

		Sum of	df	Mean	F	Sig.
		Squares		Square		
		(Combined)	3.647	67	.327	3.321 .021
Provision of affordable housing * cost of land	Between	Linearity	2.012	7	2.212	19.232 .001
	Groups	Deviation				
		from	1.515	61	.187	1.721 .157
		Linearity				
	Within Groups	1.545	67	.109		
	Total	5.130	112			

(Source, field 2024)

The results showed that the p-value for the deviation from linearity was 0.157. For there to be a linear relationship, the divergence from linearity must be greater than 0.05. The fact that $0.157 > 0.05$ suggests a linear link between land prices and the supply of affordable homes. This linear relationship will be useful for inferential statistical analysis, particularly in determining the cause-and-effect relationship between land prices and the supply of reasonably priced homes in Nakuru City, Kenya.

Table 26: Linearity between availability of land and provision of affordable housing

		Sum of	df	Mean	F	Sig.
		Squares		Square		
		(Combined)	3.646	67	.319	3.361 .026
Provision of affordable availability of land	Between	Linearity	2.013	7	2.315	19.223 .001
	* Groups	Deviation				
		from	1.618	61	.178	1.721 .175
		Linearity				
	Within Groups	1.552	67	.107		
	Total	5.240	112			

(Source, field 2024)

The p-value for the divergence from linearity was 0.175, according to the results. The divergence from linearity needs to be more than 0.05 in order for a linear relationship to exist. It is implied that there is a linear relationship between the availability of land and the supply of affordable homes ($0.175 > 0.05$). This linear relationship will help with inferential statistical analysis, especially with figuring out the cause-and-effect link between the supply of affordable housing and the availability of land in Nakuru, Kenya.

Table 27: Linearity between infrastructure development provision of affordable housing

		Sum of Squares	df	Mean Square	F	Sig.
(Combined)		3.646	67	.339	3.341	.034
Provision of Between affordable * Groups infrastructure development	Linearity	1.013	7	2.331	19.025	.001
	Deviation from Linearity	1.618	61	.138	1.721	.138
	Within Groups	1.522	67	.104		
	Total	4.210	112			

(Source, field 2024)

The p-value for the departure from linearity was 0.138, according to the results. The divergence from linearity must be more than 0.05 in order for a linear relationship to exist. The relationship between affordable housing supply and infrastructure development appears to be linear, as indicated by the value of $0.138 > 0.05$. This linear connection will help inferential statistical analysis, especially when figuring out the cause-and-effect relationship between affordable housing availability and infrastructural development in Kenya's Nakuru City.

4.11 Inferential Statistics

4.11.1 Correlation Analysis

4.11.1.1 Building materials and the provision of affordable housing

Finding out how construction materials and the availability of affordable housing in Nakuru, Kenya, relate to one another was the study's main goal.. Its results are shown in Table 28.

Table 28 :Building materials and provision of affordable housing

		Provision of affordable housing
Building materials	Pearson Correlation	.487**
	Sig. (2-tailed)	.000
	N	112

** . Correlation is significant at the 0.05 level (2-tailed).

The study's findings, which are displayed in Table 28, indicate a statistically significant and moderately favorable association ($r = 0.487$; $p < 0.05$) between the availability of inexpensive housing in Nakuru, Kenya and building materials. This implies that there will be more reasonably priced housing available in Nakuru, Kenya, as a result of inexpensive building materials.

4.11.1.2 Land cost and the supply of affordable housing

The study's objective was to ascertain how land prices and the availability of reasonably priced homes in Nakuru, Kenya, relate to one another. Table 29 presents the findings of the investigation.

Table 29: land cost and supply of affordable housing

		Provision of affordable housing
Cost of land	Pearson Correlation	.507**
	Sig. (2-tailed)	.000
	N	112

** . Correlation is significant at the 0.05 level (2-tailed).

The study demonstrates a somewhat positive and statistically significant association ($r = 0.507$; $p < 0.05$) between land price and the availability of affordable housing in Nakuru, Kenya, as indicated in Table 29. This indicates that there would be more reasonably priced housing available in Nakuru, Kenya, as a result of low land prices.

4.11.1.3 Land availability and provision of affordable housing

The aim of the study was to find out the relationship between land availability and provision of affordable housing in Nakuru, Kenya. The results of the survey are presented in Table 30.

Table 30: Availability of land and supply of affordable housing.

		Provision of affordable housing
Availability of land	Pearson Correlation	.571**
	Sig. (2-tailed)	.000
	N	112

** . Correlation is significant at the 0.05 level (2-tailed).

The findings of the study demonstrate a statistically significant and moderately favorable connection ($r = 0.571$; $p < 0.05$) between the availability of land and the provision of affordable housing in Nakuru City, Kenya, as presented in Table 30.

This suggests that the availability of land improves the supply of affordable housing in Nakuru City, Kenya.

4.11.1.4 Infrastructure development and the provision of affordable housing

The aim of the study was to find out the relationship between infrastructure development and the provision of affordable housing in Nakuru, Kenya. The results of the study are presented in Table 31.

Table 31: Infrastructure development and provision of affordable housing

		Provision of affordable housing
Infrastructure development	Pearson Correlation	.563**
	Sig. (2-tailed)	.000
	N	112

** . Correlation insignificant at the 0.05 level (2-tailed).

As shown in Table 31, the study shows a fairly positive and statistically significant correlation between infrastructure development and provision of affordable housing in Nakuru, Kenya ($r = 0.563$; $p < 0.05$). This means that infrastructure development will increase the supply of affordable housing in Nakuru, Kenya.

4.12 Regression Analysis

The provision of affordable housing was evaluated by the study using a regression analysis to examine the combined effects of building materials, land costs, land availability, and infrastructural development. Table 32 provides a summary of the models.

Table 32: Summary of the Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change
1	.896 ^a	.802	.812	.3253	.000

R-squared is the percentage of the dependent variable's variance that the independent variables can account for. This study's R-square, which stands for "building materials, land price, land availability, and infrastructure development," is 0.802. This means that 80.2% of the supply of affordable housing in Nakuru City, Kenya, can be explained by the four independent variables. 19.8% is explained by other factors.

Table 33: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	27.52	4	7.163	100.376	.000 ^b
1	Residual	8.441	108	.1008		
	Total	36.093	112			

a. Dependent Variable: provision of affordable housing in Nakuru city, Kenya

b. Forecasts: (Constant), building materials, land price, land availability, infrastructure development.

Analysis of variance was employed in this study to assess how well the model fit the data. Less than 0.05, or 0.000, was the p-value of the results. As a result, the model can forecast the effects of four independent factors on the supply of affordable housing in Nakuru, Kenya: building materials, land price, land availability, and infrastructure development. Furthermore, according to Ozili (2023), the model was appropriate for forecasting the impact of the independent factors on the dependent variable because of its F-value of 100.376.

Table 34: Regression Coefficients.

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	.087	.173		.270	.724
Building materials	.239	.187	.543	5.560	.017
Cost of land	.263	.055	.233	2.867	.005
1 Availability of land	.235	.184	.176	2.256	.083
Infrastructure development	.258	.156	.215	3.037	.007
Provision of affordable housing					

Table 34 shows the total labelled test results for the hypothesized research model.

The interpretations of the presented results follow the following regression model.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$ Therefore $Y = 0.087 + 0.239 X_1 + 0.263 X_2 + 0.235 X_3 + 0.258 X_4$, when the variables are independent (intercepts, affordable) the housing. was 0.087. Furthermore, holding all other independent variables constant, a unit increase in building materials would lead to a 0.239 improvement in the supply of affordable housing in Nakuru City.

Furthermore, holding other independent variables constant, an increase in unit price would lead to an improvement in the supply of affordable housing in Nakuru City by 0.263. Furthermore, holding all other variables constant, a unit increase in land availability would lead to a 0.235 improvement in the supply of affordable housing in Nakuru City. Finally, holding all other variables constant, a unit increase in infrastructure development would lead to an improvement in the supply of affordable housing in Nakuru by 0.258. From these findings, it can be concluded

that the provision of affordable housing in Nakuru was most influenced by land price, followed by infrastructure development, land availability and building materials



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter explores the ramifications of the study's major results and provides a thorough summary of them. Lastly, a few recommendations and ideas for future research topics are made. The objective was to identify the variables influencing the availability of reasonably priced housing in Nakuru, Kenya.

5.2 Summary of Major Findings

The purpose of the study was to summarize its critical significant findings, which were categorized into specific objectives. 5.2.1 Construction materials and provision of affordable housing in Nakuru city, Kenya Based on the analysis, the survey results revealed that construction materials account for an average of 40-80% of the total cost of housing. Therefore, it should be considered that building materials have a significant impact on affordable housing in Nakuru, Kenya. The survey results also showed that housing associations in Nakuru, Kenya are looking for alternative building materials as a means of saving money. The findings also shown how the availability of cheap housing in Nakuru, Kenya is impacted by the non-use of locally accessible building materials. It was also discovered that the Building Regulations' requirements for building materials prohibited developers from utilizing alternative and locally accessible building materials, which had an impact on Nakuru, Kenya's ability to provide cheap homes.

These research findings also showed that culture and beliefs did not greatly influence people's choices of construction materials for affordable housing in Nakuru, Kenya. These findings suggested that the availability of cheap housing is impacted by the absence or rejection of inexpensive alternative building materials.

The overall results showed that all statements related to building materials had an impact on affordable housing..

5.3 The price of land and the supply of affordable housing in Nakuru, Kenya

The study's objective was to determine the degree to which the availability of affordable housing is impacted by land prices. These study results demonstrated that land in Nakuru town, Kenya, was reasonably priced, which aided in the development of affordable homes in the community. These findings suggested that the price of reasonably priced residential land in Nakuru, Kenya, is influenced by the strong demand for suitable development site. According to the research findings, land prices in Nakuru City, Kenya, are impacted by the lack of suitable development land. This has an impact on the availability of affordable housing in the city. The findings demonstrated how Nakuru City's bureaucratic land acquisition processes impact the cost of land for reasonably priced homes in Nakuru City, Kenya.

These research results indicated that high land transfer costs affect the price of land in Nakuru City, providing affordable housing in Nakuru City, Kenya. It also found that cultural ties to the country affect the cost of land in providing affordable housing in Nakuru, Kenya. The results showed that the unregulated real estate market in Nakuru City affects land prices and the supply of affordable and affordable housing solutions in Nakuru City, Kenya. The results also showed that high land fees and charges affect the price of land in Nakuru City and the provision of affordable and affordable housing solutions in Nakuru City, Kenya. The overall results showed that all statements about the cost of affordable housing were affected in Nakuru, Kenya.

5.3.1 The availability of land and the construction of reasonably priced houses in Nakuru City, Kenya

The purpose of the study was to determine the extent to which land availability affects the provision of affordable housing in Nakuru City. Research results showed that land availability affected affordable housing in Nakuru, Kenya. Research findings indicated that bureaucratic land acquisition procedures hinder the availability of land for affordable housing developers to provide affordable housing in Nakuru, Kenya. The findings also shown how inadequate master planning limits the amount of land available to low-cost airlines in Nakuru, Kenya, so that they can build reasonably priced homes. The results also shown how cultural ties to the land limit the amount of land available in Nakuru, Kenya, for reasonably priced homes. It was also revealed that the current land tenure systems in Nakuru City hinder access to land to provide affordable and affordable housing in Nakuru City, Kenya. Findings indicated that weak land distribution systems hinder the availability of land for affordable and affordable housing in Nakuru, Kenya. The results indicated that high competition for suitable land in Nakuru makes it more difficult to develop land to provide affordable housing in Nakuru, Kenya. It was also revealed that stiff competition for suitable land in Nakuru City makes it more difficult to develop land to provide affordable housing in Nakuru City, Kenya. Overall results indicated that land availability affects the number of affordable housing units provided by housing cooperatives in Nakuru, Kenya..

5.3.2 Infrastructures development and provision of affordable housing in Nakuru city, Kenya

The goal of the research was to determine how Nakuru City's infrastructure development impacts the availability of affordable housing. The majority of

respondents, or n = 40 (37%), to the survey on the availability of affordable housing infrastructure development agreed, according to the results. After this, amazing decision-makers came. Hi, n=29 (26%), that the availability of infrastructure development affected affordable housing. Those who moderately agreed that infrastructure development affected affordable housing were n = 26 (23%). Those who less agreed that land availability affects affordable housing n = 15 (13%), while a minority consisting of n = 2 (1%) disagreed that infrastructure development affects affordable housing in Nakuru, Kenya. These results indicated that the availability of infrastructure development affected affordable housing in Nakuru, Kenya. This may affect the amount of affordable housing that housing associations provide in underdeveloped areas of Nakuru City, Kenya.

5.3.3 Impact of Infrastructure Development on Housing Projects in Nakuru City, Kenya.

The purpose of the study was to determine how much the availability of infrastructure development affects the supply of affordable housing. The results showed that the availability of electricity affects the supply of affordable and affordable housing in Nakuru, Kenya. In Nakuru, Kenya, the availability of roads has an impact on the supply of reasonably priced houses. In Nakuru, Kenya, the availability of roads has an impact on the supply of reasonably priced houses. In Nakuru, Kenya, the availability of sewage systems has an impact on the availability of reasonably priced houses. The findings also shown how affordable housing availability in Nakuru, Kenya is impacted by the presence of a solid waste management system. These findings demonstrated that Nakuru's high infrastructure service costs had an impact on the city's ability to offer reasonably priced housing options for residents of Nakuru, Kenya. The findings indicated that in Nakuru,

Kenya, inexpensive and affordable housing options are impacted by infrastructural development.

5.4 Conclusions

Based on the results, the study concluded that there was a moderate positive and statistically significant correlation ($r = 0.487$; $p < 0.05$) between supply of construction materials and affordable housing in Nakuru, Kenya. This means that affordable building materials will increase the supply of affordable housing in Nakuru, Kenya. According to the study, there is a statistically significant and somewhat favorable association ($r = 0.507$; $p < 0.05$) between the cost of land and affordable housing in Nakuru, Kenya. This implies that there will be more reasonably priced land available in Nakuru, Kenya, for housing. In Nakuru, Kenya, the analysis finds a statistically significant and somewhat positive association ($r = 0.571$; $p < 0.05$) between the availability of land and cheap housing. This indicates that there is a greater supply of reasonably priced housing in Nakuru, Kenya, due to the availability of land. According to the study, there is a statistically significant and moderately positive association ($r = 0.563$; $p < 0.05$) between the development of affordable housing and infrastructure in Nakuru, Kenya.

This means that infrastructure development will increase the supply of affordable housing in Nakuru, Kenya. They showed that four independent variables, building materials, land price, land availability and infrastructure development contributed 80.2% to the provision of affordable housing in Nakuru.

5.5 Recommendations

Based on the findings of the study, the researcher recommended that housing societies look for alternative building materials to increase the number of affordable

housing units in Nakuru, Kenya. The study also recommended that land pricing should be made affordable through regulated house prices and affordable land prices to ensure that more land is acquired thereby increasing the number of affordable housing in Nakuru, Kenya. The report also recommended facilitating land availability by digitizing land acquisition procedures, which makes it difficult for affordable and low-cost housing developers to access land. The study also recommends that the government develop more infrastructure to attract more investors to live in Nakuru, Kenya.

5.6 Recommendation for further research

Future studies will investigate alternative quality and cost-effective building materials to increase the number of residential houses. affordable housing in Nakuru, Kenya. In addition, there is a need to explore green building techniques to address the issue of land cost and availability, as Nakuru and other Kenyan cities have a large population in need of affordable housing.

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APPENDICES

Appendix I: Informed Consent Form

Dear Madam/Sir,

RE: REQUEST FOR YOUR CONSENT TO PARTICIPATE IN A RESEARCH

I'd like to invite you to participate in a research project. The study title is FACTORS INFLUENCING PROVISION OF AFFORDABLE HOUSING IN NAKURU CITY, KENYA.

The potential risks and discomforts of the study are minimal. This is because you will only be expected to participate in the questionnaire. Before filling out the questionnaire, all respondents will be reminded and requested to keep what is discussed confidential. There are no potential benefits for you as a person for participating. You are being asked to volunteer and share your opinions. No payment will be made for the information you give or the time you will spend with us. Confidentiality of any information that you provide will be maintained. The information will be applied to this study's purpose and destroyed when the findings are published.

PARTICIPATION IN THIS STUDY IS VOLUNTARY. YOU MAY REFUSE TO FILL OUT THE QUESTIONNAIRE AND WITHDRAW AT ANY STAGE IF YOU SO WISH.

If you accept to participate in this study, please append your signature below:

Signature of participant: Date:If you have any queries, please get in touch with the following: Mobile phone: 0724471435 or by email: lamokeyo@gmail.com

Sincerely,

Lameck Onyango Okeyo

RESEARCHER

CONSENT

I have carefully reviewed the provided details, comprehended the information, and had the chance to seek clarification. I acknowledge that my involvement in this study is entirely voluntary. I retain the freedom to withdraw at any point without the need to justify and without incurring any expenses. I am aware that I will receive a copy of this consent form. With complete understanding, I willingly consent to participate in this study.

Participant's signature _____ **Date** _____

Investigator's signature _____ **Date** _____



Appendix II: Questionnaire

Introduction

Greetings, Respondent Every piece of information you provide in this survey will be kept completely private. Write your responses in the designated fields and mark (□)

Section A: Background Information

1. Gender
 1. Male
 2. Female
2. In which category does your fall?
 - i. Private company
 - ii. Non-governmental
 - iii. State institution
3. Indicate position in the in situation
4. Indicate how long you have worked for your organization.
 - 1-3 years
 - 4-6 years
 - 7-10 years
5. Indicate the housing property your company provide
 - i. Affordable housing
 - ii. Moderate income residence
 - iii. High quality housing
6. What was the number of housing units put-up by your company in the last one year
 5. How many housing units has your company built in the last year?.
 - 1 – 100
 - 100 – 500
 - 500 – 1000
 - More than 1000

Section B: Factors impacting the Provision of Affordable Housing In Nakuru County Construction Materials

6. To what extent does the availability of building materials affect the provision of affordable housing in your company?

- i To a very large extent []
- ii. Large amount []
- iv. Moderate []
- v. Less scope []
- vi. No scope [].

7. To what extent does the availability of building materials influence your company's capacity to provide affordable housing.

8. To a very large extent []ii. A large amount []iii. Intermediate []iv. Less scope []v. No scope []..

- i.10 – 20 % []
- ii.20 – 40 % []
- iii.40 – 60 % []
- iv.60 – 80 % []
- v.80 – 100% []

9. Have you come across the use of alternative building materials and solutions in your projects?

- Yes [] No []

9. If you answered yes to question 9, have you saved money by employing alternative building materials?

- Yes [] No []

6. How much do you agree with the following statement about building materials and how they affect the availability of affordable homes in Nakuru? (1 = little extent; 2 = minor extent; 3 = moderate extent; 4 = great extent; and 5 = extremely extensive).

Statement	1	2	3	4	5
Not using local building materials affects the supply of affordable housing					
The specification of building materials in the Building Regulations prevents builders from using locally available and alter native building materials, which affects the provision of affordable ho using					
Culture and ideas influence people's choices concerning building materials and, hence, the provision of cheap housing.					
The shortage or unacceptability of affordable alternative building materials influences the availability of affordable homes.					

Land Availability

1. To what extent does land availability affect the provision of affordable housing in Nakuru?
 - i. To a very large extent []
 - ii. Large amount []
 - iii. Moderate []
 - iv. Less scope []
 - i. No scope []
2. How much do you agree with the following claims regarding land availability and how they impact Nakuru's capacity to provide affordable housing?
(1 = no extent, 2 = minor extent, 3 = moderate extent, 4 = large extent, and 5 = very extensive).

Statement	1	2	3	4	5
Bureaucratic land acquisition procedures hamper the land availability for low-cost airline construction.					
Improved special planning influences enough land availability for affordable housing.					
Inefficient zoning hinders cheap housing and sufficient land availability.					
Cultural relations with the land prevents the availability of land					
Current land tenure systems in Nakuru City prevent land from accessing affordable and affordable housing					
A weak land allocation system prevents land from being available to provide afford able and low-cost housing solutions					
The current high level of competition for suitable land in Nakuru town further changes land development more difficult					
High urban population affects land availability					

Land Costs

1. How would you rank the current land prices in Nakuru City?

i. Reasonably priced []

ii. Esteemed []

iii. Very expensive [].

2. Has the price of land affected the supply of affordable housing solutions

Yes []

No [].

3. How much do you agree with the statement on land costs and their impact on affordable housing in Nakuru? (1 = no extent, 2 = minor extent, 3 = moderate extent, 4 = great extent, and 5 = extremely widespread).

Statement	1	2	3	4	5
High demand for proper development. Land impacts land price					
Lack of suitable development land in Nakuru city affects land price.					
Nakuru City's bureaucratic land acquisition procedures affect land costs					
High land transfer costs are affecting land prices in Nakuru town					
Cultural relations with the country affect the price of land. Nakuru City's					
unregulated real estate market is affecting land prices					
High land fees and charges are affecting land prices in Nakuru town					

Infrastructure And Housing

1. To what degree does the availability of affordable housing depend on infrastructural development?

- i To a very large extent []
- ii. Large amount []
-]iii. Moderate []
- iv. Less scope []
- v. No scope [].

2. To what extent do you agree with the following assertions about infrastructural development and its impact on the availability of affordable housing in Nakuru?

(1 = no extent; 2 = minor extent; 3 = moderate extent; 4 = great extent; 5 = extremely extensive).

Remarks	1	2	3	4	5
The availability of energy influences the availability of inexpensive and affordable housing.					
The availability of roads has an impact on the provision of cheap housing					
The presence of sewage systems influences the availability of inexpensive and affordable housing.					
Water availability has an impact on the availability of affordable and affordable housing.					
The provision of affordable housing is impacted by the availability of solid waste management systems					
In Nakuru City, the cost of delivering infrastructural services is extremely expensive.					

Appendix III: Introductory Letter



DIRECTORATE OF GRADUATE STUDIES

MPAM/2017/75195

11th April, 2023

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki, Upper Kabete
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,


RE: LAMECK ONYANGO OKEYO - REGISTRATION NO. MPAM/2017/75195

The purpose of this letter is to introduce the above named student who is pursuing **Master of Arts in Public Administration and Management** in the **Department of Management** in the **School of Business and Economics**.

The title of the research is "**Factors Influencing Provision of Affordable Housing in Nakuru City, Kenya Lameck Onyango.**" It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **April, 2024 and June, 2023**.

Any assistance accorded to the student will be highly appreciated.

Thank you


Dr. Samuel M. Karenga, Ph.D.
Director, Graduate Studies

Mount Kenya University
P.O. Box 342 - 01000, THIKA
Office of the Director,
Graduate Studies

Enc.

Appendix IV: ERC Clearance Letter



DIRECTORATE OF GRADUATE STUDIES

MPAM/2017/75195

11th April, 2023

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki, Upper Kabete
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,


RE: LAMECK ONYANGO OKEYO - REGISTRATION NO. MPAM/2017/75195

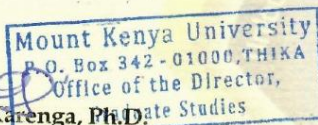
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Thank you


Dr. Samuel M. Karenga, Ph.D.
Director, Graduate Studies
Enc.



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Chartered and ISO 9001 : 2015 Certified Institution.
Unlocking Infinite Possibilities

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
 - i. Endanger national security
 - ii. Adversely affect the lives of Kenyans
 - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
 - iv. Result in exploitation of intellectual property rights of communities in Kenya
 - v. Adversely affect the environment
 - vi. Adversely affect the rights of communities
 - vii. Endanger public safety and national cohesion
 - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

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