EFFECT OF FINANCIAL FACTORS ON AFFORDABILITY OF HOUSING AMONG THE LOW-INCOME HOUSEHOLDS IN NAKURU EAST AND NAKURU WEST SUB-COUNTIES, KENYA

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A Thesis Submitted to the Institute of Postgraduate Studies of Kabarak University in Partial Fulfillment of the Requirements for the Award of Doctor of Philosophy in Business Administration (Finance)

KABARAK UNIVERSITY

OCTOBER, 2021

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ABSTRACT

Access to adequate and quality housing is considered as a key economic and social right to all humans. Affordable housing is associated with a number of outcomes including; social, health, development, financial and economic benefits. In Kenya, there is a high shortage of housing in the urban areas due to rapid urbanization resulting from natural population growth and the large scale rural-urban migration. Nakuru County being one of the major urban areas in Kenya has been recorded as experiencing housing shortage of 8,000 units per year due to the increased number of investors, entrepreneurs and governmental institutions which have encouraged an increased migration in search for employment in those sectors. The emerging situation has resulted to a concerted effort by the National and County government and other housing stakeholders in an attempt to understand the housing affordability challenges and recommending possible solutions to the challenge. This study analyzed the effect of financial factors on affordability of housing in Nakuru East and Nakuru West Sub-Counties. The study focused on household's home owners and renters in the lower income areas in the two sub counties with a view of understanding how the household income, cost of financing, house price and financial management skills affects housing affordability. The following theories guided the study; Modigliani's Life Cycle Theory of Savings and Consumption, Classical theory of Interest rates and the Housing Adjustment Theory. This study adopted a Positivist research philosophy and a cross-sectional descriptive research design. The target population for the study was 392,587 household heads and managers of 80 housing stakeholder institutions in the two sub counties. The study sampled 384 households' heads using stratified sampling technique and 12 stakeholders' institutions using purposive sampling. Structured questionnaire were constructed and used to collect data from the low-income households while interview schedules were used to collect data from the housing stakeholders. To ensure that the questionnaire helped collect reliable and valid data in the same contextual environment, a pilot study on 38 households who did not participate in the main study representing 10% of the sample size was drawn from Nakuru East and Nakuru West Sub-Counties in Nakuru County. Validity and Reliability tests were done and all items met the required set threshold. The data obtained was analyzed descriptively using frequencies, mean and standard deviation and inferentially using correlation and regression analysis. The study established a positive and statistically significant moderate effect of income of household and financial management skills on affordability of housing. On the other hand, the study revealed negative and statistically significant moderate effect of cost of house financing and house pricing on affordability of housing. The study further showed that household income had the greatest effect on housing affordability, followed by financial management skills, then cost of house financing and the least aspect was house price. The study recommends that Government develops strategies that will lead to increasing incomes to the low-income households through targeted financial funding of business in the informal sector within the locality, introduction of targeted financial literacy skills to the said group and also encouragement of key stakeholders to develop affordable housing loans.

Key Words: *Household income, Household savings, Cost of financing, House pricing, Financial Management skills, Housing Affordability*

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ABBREVIATIONS AND ACRONYMS

ADP	Automatic Data Processing
AHS	American Housing Survey
CBK	Central Bank of Kenya
EMI	Equated Monthly Installment
GDP	Gross Domestic Product
GH	Ghanaian Cedi
GoK	Government of Kenya
HBS	Household Budget Survey
ICESCR	International Covenant on Economic, Social and Cultural Rights
INR	Indian Rupees
KNBS	Kenya National Bureau of Statistics
KSH	Kenya shillings
LTV	Loan-to-Value
N	Naira
NACOSTI	National Commission of Science, Technology and Innovation
NCIDP	Nakuru County Integrated Development Plan
NHC	National Housing Corporation
NHDF	National Housing Development Fund
RM	Malaysian Ringgit

SPSS	Statistical Package for the Social Sciences
UDHR	Universal Declaration of Human Rights
UN-Habitat	United Nations Habitat
US	United States
USA	United States of America
USD	United States Dollars
WHC	Watumishi Housing Company

OPERATIONAL DEFINITION OF TERMS

Cost of financing - Njaramba, (2018) described cost of housing as expenses towards meeting housing repair needs, security needs for the housing, cost of servicing mortgage loans and land rates. This study adopted the same description and expanded on the cost of financing to include cost of building materials, land prices, cost of professional services associated with housing, transport costs associated to building, labour costs for building, government related charges on building, support services towards building such as water and electricity.

Density - Mugenda and Mugenda, (2009) viewed density as a measure of the concentration or crowding of populations within a defined geographical area giving example of a population density of an area measured by the number of persons per square unit of the area. The authors indicated that density affects sampling in research because areas of high density must be proportionately represented by a sample. This study adopted the same definition of density with the unit of measure for the population density as per kilometre square (Km^2).

Government Policy – This refers to all rules and principles that guides decisions, resulting in positive outcomes that enhance unity in diverse aspects (Torluccio & Dorakh, 2015). In this study government policy referred to all rules, procedures and guidelines in regard to housing aspects such as taxation, subsidiaries, and property rights.

Financial Management Skills - Financial management skills refers to the financial competencies necessary in organizing and controlling financial activities and resources (Citibank, 2019). In this study, financial management skills referred to the extent in which low income earners are able to organize and control their financial resources with an aim of purchasing, renting or constructing their

houses. Financial management skill on the other hand was measured by the level in which household members do their budgeting, financial planning, cash flow management, financial risk analysis, book keeping, control of expenditures, and their knowledge on financial obligations for loan and mortgages.

Household Income - Rowley and Ong (2012) described household income as a component of disposable income in the measurement of housing cost burden, and argued that it is the household's income after taxation that is used to contribute to housing cost. This study adopted the same description as above and analyzed the household income levels by determining the ability of the income to be stable over time, to support for mortgage repayments, to cater for most of the financial needs, to support the housing features that would be desired, to support housing commitments, being above the rest of household members, income levels improving over time and the presence of household members who were economically active in contributing to the household income. The income considered for the study was the combination of incomes for all people sharing a particular household or place of residence.

Housing Affordability Index – Asici, Yilmaz & Hepsen (2011) operationalised house affordability index as the ability of the consumers to be able to purchase a house with relatively constant quality consistent with economic level, given the financial and income structure. It is measured in terms of the ability to meet all costs related to basic housing needs such as construction, renting, transport, education, and medical services within the areas of housing within the available income, allowances and subsidies. The index is based on the amount of budget available to support housing in a given location and the number of households,

but it does not take into account other financial situations that the household is facing as a possible leverage. Therefore, the costs that are factored in the indexing include among other things includes the location factors, taxes in areas, land rates, waivers and tax credits. The study adopted the above definition in measuring housing affordability.

Housing Affordability - This refers to the ability of an individual to provide something and usually measured in financial terms (Bujang, 2015). The term housing affordability has been referred broadly to an individual's ability to make payment for their housing (O'Flynn, 2011). Housing affordability is both explained based on ownership and rented premise. This study sought to determine the level of affordability of housing in terms of the extent of the ability of households to pay for mortgage, pay for rent, meet building costs and the extent of the ability to purchase a house as opposed to basing it on the monetary terms since such data would not be easily availed by the households.

House Price – Achilles Kallergis et al. (2018) viewed house price as the average selling price of residential houses in major urban centers in Kenya. This study adopted the same definition of house price but expounded on price taking to consideration specific housing characteristics like the location of housing, accessibility to public facilities and services and the physical characteristic of the housing, access amenities like water services, electricity services, health services, school services, security services being cheap and house prices within the location with desirable neighbourhood. Housing is a noun referring to houses, apartments that people live in, especially used when referring to their type, price, or condition. The same definition is adopted in this study.

Low Income Earners - Defined by the Kenya National bureau of statistics as those earning a monthly income of less than Ksh. 23, 692(KNBS, 2010). The definition was adopted by this study.

Financial factors - These are factors that help to determine the competitiveness of the environment in which the firm operates and influences the investment value in the future (Mutisya, 2015). In this study the term was used to explain the level of household ability to afford housing without compromising on the other necessary expenditure. The key financial variables considered included households financial management skills, income factors, cost of financing and house prices.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter forms the background of the study capturing the global, regional, national and the specific area of study perspective on housing benefits to the households, as a fundamental human right and as a financial empowerment; acknowledging the challenges of affordability and their measurements.

1.2 Background to the Study

Housing is one of the key requirements for socio-economic growth of individuals and a fundamental human right. According to UN Habitat (2019), access to housing is a fundamental human right enshrined in article 25 of 1948's Universal Declaration of Human Rights (UDHR) and article 11 of 1966's International Covenant on Economic, Social and Cultural Rights (ICESCR). The right to housing is recognized by various countries in their constitutions across the world including; Gabon under article 1 of 1991 constitution (Ramparsad & Rust, 2016), South African under section 26 of the Constitution (Victor, 2014), Kenyan under article 43(1) of constitution (Ministry of Health Kenya, 2014) among others. The UDHR and ICESCR have also been ratified by the numerous countries across the globe indicating the universality of the housing as a key component of human life and basic social-economic indicator of the humans across the globe.

Housing affordability is one of the most important aspects of housing policies across the globe, with critical concerns on house rent, house allowances and subsidies, housing benefits and mortgage regulations (Anthony, 2018). It has been argued that housing unaffordability affects 2.6% of all households across the world and whereby

owner occupation unaffordability is only 1.2% with unaffordability in private renting was at 7.9% (Leng, Malek, & Yasin, 2017). While housing affordability is very critical, Sengupta (2014) alluded that the term "affordable housing" has been used interchangeably with "low cost housing" leading to lack of clarity on its meaning. There is therefore need for in-depth understanding of the concept of housing affordability.

While noting lack of a universally acceptable conceptualization of affordable housing, Kutama (2017) nevertheless viewed affordable housing as the capacity of an individual to purchase a housing unit without restricting demands for other financial resources. This viewpoint by Kutama (2017) is contextually similar to that of UN Habitat, (2019b) that also viewed affordability from the side of the purchaser. Kutama (2017) did set thresholds for affordable housing at not more than 30% of gross household income for low income households. This approach however does not provide meaning to the constituents of low income households. Sengupta (2014) on the other hand conceptualised affordable housing as access to adequate size house with basic amenities, at a cost not exceeding gross monthly income of 40%.

According to Sohaimi, Abdullah and Shuid (2017), affordability of housing depends on whether households are able to meet the cost of renting or purchasing a house supported by their level of income or external interventions. Therefore, according to the authors, affordable housing is that which costs amount of money that low income individuals can pay and have appropriate or decent housing suitable for the household needs without additional aid elsewhere. Similar argument is presented by Erdmann, Furth, & Hamilton (2019) that housing affordability considers the ability to save a

substantial amount of money to afford a house and other housing expenditures during working period of the households.

Other authors suggested that affordability could be measured on the ability of a person to continue meeting other expenses even after paying for housing expenditures (Chung *et al.*, 2019; Anacker, 2019; Anthony, 2018; Achilles Kallergis *et al*. 2018; Bujang, Shapeen, Zarin, & Ismail, 2017; Torluccio & Dorakh, 2015; Wong, Hui, To, & Chung, 2015). Based on this argument, if expenditure for housing exceeds 30% of the total income of a household, then it implies that the housing is costly and the household may not be able to meet other basic necessities such as costs of food, clothes, transport and cost for medical care for the members of the household. To emphasize on the presentation, Ahmad, Sapiri, Bakun, Hashim, & Halim, (2019) asserts that 30/40 housing affordability rule should be used as the affordability index. In fact, globally, most housing finance institutions do not allow individuals to take a loan that is more than 30% of their total income for housing (Ahmad et al., 2019).

According to Yap and Ng (2017), housing affordability can be conceptualized in terms of; income affordability, purchase affordability and repayment affordability. Whereby, purchase affordability is measured by considering whether a household is able to borrow sufficient money to purchase a house (Suhaida, Tawil, Hamzah, Che-Ani, & Tahir, 2010). Repayment affordability is concerned with the burden put on the household towards paying the mortgage (Regassa & Regassa, 2015) while income affordability refers to the measurement of the ratio of the price of the house compared to the income of the person purchasing the house (Ezennia & Hoskara, 2019b).

Despite being a necessity and fundamental right for individuals to access adequate housing, affordability of housing remains a challenge to households across the globe. According to UN Habitat (2019b), affordability of housing becomes a challenge if its cost threatens or compromises the occupants' enjoyment of other human rights. The challenge is more severe to low income households (Malaque, 2018; Haque, 2016; Barzegaran & Daroudi, 2015; Bredenoord, 2015; Jocson & Mcloyd, 2015; Buthani, Khoza et al., 2014). This creates the need to investigate factors that can influence or affect housing affordability.

Several approaches have been put forward as good practices to address housing challenges. The first approach is demolitionist approach that perceived spontaneous settlement as unpopular due to its potential of destroying the serenity and attractiveness of cities as a dwelling place. The second approach is the supportive approach that advocates for consideration of the needs of state as well as the low income households in addressing the housing challenge. The approach advocates for an inclusive approach where citizens are empowered by government by provision of the required infrastructure and amenities and sometimes initial funding towards housing initiatives (Yap & Ng, 2017).

The third approach is the World Bank approach. This approach focuses on cost recovery view point and the belief that affordable housing accelerates economic growth and development. Through this approach, the World Bank offer financing to support affordable housing programs. The fourth approach is the rod burgess radical approach that focuses on structural part of housing. This approach presents that political structural transformation is necessary to housing programs, especially in urban areas. The last approach is the collaborative approach. This approach

emphasizes on partnerships between players in the housing sector including the government, private developers, financial organizations and the potential home owners (Yap & Ng, 2017).

In his study, Njaramba (2018) argued that household income, cost of financing, housing price and financial management skills could be a potential determinant of affordability of housing. Kallergis *et al*. (2018) viewed household income as a component of disposable income in the measurement of housing cost burden, and argued that it is the household's income after taxation that is used to contribute to housing cost. The author further considered the cost of financing as expenses towards meeting housing repair needs, security needs for the housing, cost of servicing mortgage loans and land rates.

Housing price is on the other hand conceptualized as the average selling price of residential houses (Njaramba, 2018; Kallergis *et al.*, 2018). Lastly, Citibank (2019) understands financial management skills as financial competencies necessary in organizing and controlling financial activities and resources.

1.2.1 Global Perspective of Financial Factors on Affordability of Housing

Empirical literature shows that significant research has been done on housing affordability as well as the influencing factors. In Europe and United States context, Sastry, Puranik, Namburu, Sahoo, and Devs (2014) observed that for a housing program to be considered affordable, total housing costs should not exceed 40% of the disposable income. In Malaysia, Abdul-Rahman, Wang, Wood, and Khoo (2012) presents that affordable housing are those with a set selling price ranging from RM 25,000 to RM 42,000 (Approximately 0.5-1 million Kenya Shillings) based on the value of land developed.

Yin, Nee and Senadjki (2017) applied price index as threshold of affordability and recommended a price index of between 130 and 162, They further argued that housing affordability can only be realized that if gross domestic product growth is higher than the mortgage rate. Hertrich (2019) also argue that housing affordability revolve around price and therefore, the affordability indicator must be around price.

Housing affordability still remains a dream in many economies. Lim et al. (2018) established that 65% of Malaysians could not access the affordable houses due to their income levels. In Europe, Gibb and Hayton (2017) established that home owners had challenges making timely payments towards their homes, with mortgage arrears of 15% in Greece and 12% in Ireland 55% in Bulgaria and 60% in Hungary. In Germany, Hertrich (2019) indicates that house prices was one of the major financial factors leading to unaffordability houses, especially for low income earners with 19% of the home owners having mortgage arrears out of which 26% were in the low income segment.

1.2.2 Regional Perspective of Financial Factors on Affordability of Housing

In Africa, the challenge of house affordability is not new. Tipple and Alemayehu, (2014) indicates that in 2009, the construction cost of a three roomed house was ranging between $15,000- $20,000 (approximately Ksh 1.5-2 million shillings) which was unaffordable for a majority of the Ethiopians. In Ghana, the problem of housing affordability led the Ghanaian government to commit over GH¢30 million (approximately 540 million Kenya shillings) in the construction of 1500 affordable housing for the low-income households (Amoa-Abban, 2017; Boachie-Yiadom, 2015). According to Ogunkah (2015) the average price of a modest house in Nigeria

is N5 million (approximately Ksh 2.75 million shillings) causing them unaffordable for a majority of the low income households.

The problem of housing unaffordability is even more severe for the disadvantaged groups in the society. In Tanzania, persons living with disability are reported to experience acute affordable housing challenge. They were reported then as not only able to afford available housing options but also not able to find them user friendly (Nguluma & Magina, 2019). In South Africa, Neo (2017) observed that the low income households were disadvantaged in the access of the affordable housing facilities since most housing programs target individuals with formal income. Similar situation was reported in Zimbabwe, where affordability of housing remains a key challenge for the low income earners in the country (Aghimien, Aigbavboa & Ngwari, 2018).

High cost of land has been identified as one of the major challenges of housing affordability in many African Nations (Amoa-abban, 2017; Antoh, Mensah, Edusah, & Enu-Kwesi, 2015; Boamah, 2010; Kwabla et al., 2015; Luginaah, Arku, & Baiden, 2010; Ofori, Twumasi-Ampofo, Danquah, Osei-tutu, & Osei-tutu, 2017). In addition to the cost of land, Nilsson (2017) in his study based in Uganda identified professional services of various service providers as one of the factors leading to the unaffordability of the houses. The author noted that such services were costly, translating into high prices of available houses, hence making housing inaccessible to a majority of Ugandans. Similarly, Mukiibi (2015) reported that low income earners find it costly to develop houses due to high cost of materials as well as the transport costs. Other factors identified regionally as hindrance to affordable housing include

the level of income households earn and the level of application of the financial management skills (Citibank, 2019).

1.2.3 Kenyan Perspective on Financial Factors on Affordability of Housing

Article 43, (1), (b) of the constitution of Kenya guarantees right to adequate and affordable housing. However, Kenya like other African countries is still faced with the challenges of affordability of housing (Badawy, 2019; Njaramba, Gachanja, & Mugendi, 2018; Murithi, 2018; Ngigi, 2016; Ndikumagenge, 2014), especially among the low income earners (Gardner, Lockwood, Pienaar, & Maina, 2019). The Government of Kenya through Vision 2030 and Big Four Agenda recognized the challenges of affordability of housing for Kenyans (Government of Kenya., 2019; Government of Kenya, 2007). Through the big four agenda, the Government of Kenya seeks to create 500 000 affordable new housing units targeting the low income earners to be sold from the year 2022.

Applications of affordable housing approaches are evident, each in a unique way, the World Bank approach has been evident in slum upgrading low cost housing programs done by the government. The supportive approach is very evident, especially in the current 'boma yangu' initiative done by the government through the big four agenda. Lastly, the collaborative approach has also seen tremendous application with multiagency approach to housing now gaining momentum. There are several partnerships between national/county governments at national and county levels to enhance housing affordability, especially for the low income households (Yap & Ng, 2017).

According to the Government of Kenya (2019b), through the affordable housing program, the affordable houses are to be constructed at Park Road (Ngara), Shauri

Moyo Kisumu, Embu Civil Servants Housing, Machakos Civil Servants Housing, Mavoko Sustainable Housing Programme, Kibera Soweto East Zone B, and NHC Stoni Athi View amongst others. These houses are characterized with one bedroomed house having a plinth area of $30M^2$-$42M^2$, two bedroomed house having a plinth area of $40M^2$-$74M^2$, and three bedroomed house having a plinth area of $80M^2$-$90M^2$ (Government of Kenya., 2019b). The houses are scheduled to sell at Ksh 2,250,000 for a one bedroomed house, Ksh 3,750,000 for a two bedroomed house, and Ksh 5,400,000 for a three bedroomed house (Government of Kenya., 2019b).

However, even with the planned construction of more affordable houses, available empirical data indicate that housing is still out of reach for the low income earners due to their income level. The planned housing units would require a payment of approximately Ksh 8,760 and Ksh 17,520 per monthly respectively towards acquisition of the house (Gardner *et al.*, 2019). In Kenya the houses built are too expensive while mortgage rates are too high at an average of 14.5% (CBK, 2018). It is indicative that, most of the families in Kenya spend more than 30% of their income on housing. Families paying more than 30% of their income on housing end up being unable to afford other basic necessities such as food, medical care, transport and clothing among others (Greulich et al., 2004).

Report by Gardner *et al.* (2019) expounded that only 33.4% of Kenyans can access houses priced at Khs.500,000 while only 10.2% can access houses priced at Khs.1,000,000. While the Value Added Tax (Remission) order of 2008 identifies a low income earner in the context of government housing scheme as a person whose monthly gross earning amounts to thirty five thousand shillings or less, majority of the

houses in Kenya are priced at Ksh. 4,000,000 which has the effect of excluding over 90% of the households from formal housing market.

In a bid to enhance access to affordable housing, while making some meaningful returns from investment, report by FSD Kenya shows that the financial institutions are increasingly considering the housing sector as an investment. Housing as a sector has significant stimulating effects on the socio-economic development. First, it has effect on economic growth and development; secondly, it can positively affect the general likelihood of households hence contributing towards the strategic development goals. Lastly, organized affordable housing programs enhance efficiency in allocation and utilization of resources towards economic development (Government of Kenya., 2019a).

While efforts have been made by several stakeholders, including the government towards affordable housing, there are numerous challenges that continue to deter such efforts. Land ownership has been identified as one of the key hindrances towards affordable housing initiatives, especially in urban areas. Most lands in the urban areas are owned privately and as such, may not be forcefully used for affordable housing. Secondly, some urban areas do not have properly demarcated areas for residence hence hindering efficient management of housing programs. Thirdly, most private developers view housing as an investment, as such, the main focus is on the return they get from such investments rather than the value they give to clients in terms of affordability. Another challenge faced by stakeholders in their efforts to develop affordable houses is financing. While most housing investments require huge amounts, most financial institutions only give housing financing where they are almost sure of returns. In order to reduce risk of default, most lenders prefer to offer

financial support to individuals in formal employment or with stable and consistent income. These challenges make it very difficult for low income households to afford decent housing.

From the preliminary literature reviewed in this study, while the housing challenge is evident to all levels of income, the low income earners seem to be the most affected. Most low income earners live in very indecent environments, with undesirable conditions. Empirically, many factors have been identified as critical determinants of affordable housing, including; level of income, house prices, and cost of housing, financial skills among other factors. It is on this background that the current study focused on the effect of level of income, house prices, and cost of housing, financial skills on housing affordability in Nakuru Town East and Nakuru Town West Sub-Counties.

1.2.4 Nakuru East and Nakuru West Sub Counties

Nakuru East and Nakuru West Sub counties exists are key administrative center within the broad Nakuru County and harbors the headquarters of the county. The area coverage of the two sub counties is small comparatively but has been observed to have had an increasing population in the recent past. The population was 363,000 in 2018, then 373,000 in 2019 (an increase of 2.75%), then 383,000 in 2020 (an increase of 2.68%), then 395,000 in 2021 (an increase of 3.13%). Nakuru East had a high population of 193,926 people and a population density of 840 per square kilometer. According to 2019 Kenya Population and Housing Census (2019), Nakuru West had a population of 198,661 people and a population density of 2,764 per square kilometer.

The implication of high population densities is the increased in the demand of housing in both Nakuru East and Nakuru West against a probable lack of employment among

majority of the residents. Nakuru County and specifically Nakuru East and Nakuru West sub counties, has a shortage of 2,000 housing units every year due to an ever increasing housing demand of 10,000 housing units annually as per 2019. More specifically, the metropolitan area population of Nakuru County where Nakuru West and Nakuru East are situated has been captured to have experienced a significant increase in population from 363,000 people in 2018 to 395,000 in 2021.

In addition, the two sub counties have high population densities per square kilometers of 804 and 2,764 respectively. This has resulted to high demand of houses and hence high prices of houses in the two sub counties. As a result, the two sub counties have realized an increasing number of slums as a consequence of high population growth, increased demand of housing units and increased housing prices (Kenya Population and Housing Census, 2019). In fact, a report by Kenya National Bureau of Statistics revealed that close to 80% of households in Nakuru East and Nakuru West Sub counties live in rented houses, majority of the rented houses are in informal settlements and slum environments where living conditions are pathetic. It was on this basis that the current study focused on Nakuru East and Nakuru West Sub counties.

Increased demand of housing has resulted to increase house prices, cost of financing, housing and thus reducing the affordability of housing among the low-income residents in Nakuru East and Nakuru West Sub counties. The average price for a three bedroomed house in Nakuru East and Nakuru West Sub counties is currently between Kenya shillings six and eight million while four bedroomed house bungalows is sold for between ten and fourteen million. For apartments, three bedrooms house is sold for between four million to eight million while four bedrooms between seven million and ten million. These prices are considered so high form the middle and low income

earners within Nakuru East and Nakuru West Sub counties. With majorly of the low income lacking financial management skills, the challenge of accessing affordable housing options is even worsened. This study therefore sought to understand the effect of household income, cost of financing, house price and financial management skills on housing affordability of households living within Nakuru East and Nakuru West sub-counties.

1.3 Statement of the Problem

According to Comprehensive Poverty Report by the Kenya National Bureau of Statistics (KNBS) in the year 2020, the population of Kenya was found to have been growing steadily. Consequently, demand for housing was reported to be on the rise especially in urban areas where there has been influx of people due rural urban migration. According the same report, Nakuru East and Nakuru West sub-counties has been experiencing a demand for housing of 10,000 per year, a realization that has caused the stakeholders in the housing sector to devise ways of solving the housing challenge.

Nationally, the growing demand for housing has compelled the government to set up, within the big four agenda, affordable housing program. This has been supported by the key stakeholders in the housing industry including the housing co-operatives societies and other housing investment organizations. Through the affordable housing program, the government targets to construct 500,000 affordable houses by 2022, with the first batch of affordable housing units being rolled out from Nairobi County. The interested buyers are expected to deposit Ksh.187, 500 for one bedroom house and a deposit of Ksh. 250,000 for a two-bedroom house

While there are efforts to offer more housing options, report by KNBS indicated that as at 2020, about 15.9 million out of 44.2 million Kenyans were living below poverty line with adults earning of less than Shs 3,252 monthly in rural areas and Shs 5,995 monthly in urban areas, representing about 36% of the population. In Nakuru East and Nakuru West sub-counties, this situation could be worse given that majority of residents of the two counties live in informal settlements. There is a general concern that, the housing options on offer by the affordable housing program are beyond the reach for many residents, especially in the lower income brackets. This led to the need for the study to analyze the financial aspects of the households in the study area.

Household income, house prices, cost of house financing and financial management skills among other factors have been identified empirically as the key determinants of housing affordability. Empirically, studies already conducted focused on real estate development and mortgage financing targeting middle-income and high-income households and thus no focus on the low-income households. In addition, most of the studies done in the developed countries on housing affordability measured housing affordability in terms of financial ratio of income spent on housing as compared to other expenditures with a threshold of (between 30%-40%) representing affordable housing. Relevant financial information may not be available in the developing countries like Kenya and specifically in the area of study, thus there is general research gap on determinants of housing affordability, especially among the low income earners.

The current study sought to fill this research gap by determining the effects of financial factors such as household income, cost of financing, housing price, and

financial management skills on the level affordability of housing among the low-income households in Nakuru East and Nakuru West Sub-Counties.

1.4 Research Objectives

1.4.1 General Objective of the Study

The study sought to determine the effects of financial factors on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County, Kenya.

1.4.2 Specific Objectives

i) To evaluate the effect of household income on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County, Kenya.

ii) To analyse the effect of the cost of financing on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County, Kenya

iii) To determine the effect of house price on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County, Kenya.

iv) To examine the effect of financial management skills on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County, Kenya

1.5 Research Hypotheses

$H0_1$: Household income has no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County.

$H0_2$: Cost of financing has no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County.

$H0_3$: House Price has no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru county.

$H0_4$: Financial management skills have no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Nakuru County.

1.6 Justification of the study

Housing is a basic need to the households because it helps in improving their welfare in terms of maintaining the health and well-being of individuals, improving the academic performance of households' children and in enhancing security. Affordability of housing is therefore an important aspect for the society towards promoting a good living standard even for the low income dwellers. Nakuru East and Nakuru West Sub-Counties though occupying a small area each compared to the others were selected for this study due to the following reasons; the sub-counties has high population densities, many low income earners, acute shortage of housing and high prices of houses (KNBS, 2018). This prompted the study to establish linkages between financial factors of low income households and level of housing affordability. This would in the long run solve the problem of housing unaffordability and the future possible menace of slums in Nakuru East and Nakuru West Sub-Counties.

1.7 Significance of the Study

The finding of this study adds to an existing pool of knowledge on housing affordability. The findings of this study are essential to different housing stakeholders especially those who seek to provide affordable housing to low-income earners. The study identified the key financial factors affecting low-income earners on housing affordability in Kenya. These may assist the Government in implementing the amended National Housing Policy on improvement of supply of housing to the low-

income earners. Further, the study findings may assist the Kenyan government in understanding the housing affordability challenges by household in urban areas in Kenya and help in implementing relevant policies towards fostering affordable housing since the housing sector is a boaster to the overall economic growth.

The knowledge of the significant affordability determinants may be useful to policy makers and economic planners in housing policy formulation towards achieving immediate and sustained housing affordability which is necessary towards the realization of the 'big four' and the achievement of Kenya Vision 2030. The findings emanating from this research may help economic planners and policy makers to design appropriate and more focused housing policies considering the factors found significant in explaining affordability of housing in Kenya. The findings also helped in providing information necessary to guide general economic policy formulation and intervention programmes affecting the housing sector of the economy. The findings from this research are of interest to researchers, academicians, households and policy makers. Researchers and housing experts may benefit in understanding keenly how each identified selected variable does affect the affordability of housing in the Kenyan urban area.

1.8 Scope of the Study

The study examined the effect of household income, cost of financing, house price, and financial management as the independent variables on affordability of housing being the dependent variable. The study was carried out in Nakuru East and Nakuru West Sub-Counties, Nakuru County where housing demand is high and with a high density of population and thus the geographical scope of the study. The study focused on the low-income households in Nakuru East and Nakuru West Sub-Counties,

Nakuru County. Household heads and stakeholders in the stakeholders in the housing sector in Nakuru County were targeted as respondents.

1.9 Limitation and Delimitations

Nakuru County has a cosmopolitan population from diverse tribes, ethnicity and from different countries spread in the two Sub Counties targeted for the study, and thus language barrier proved to be a major challenge when collecting the required data. To counter this, the researcher engaged an interpreter to help translate the questionnaire where necessary in order to address the issue of language barrier. Secondly, some of the respondents were unwilling to respond to the questionnaire based on their individual reasons since most of the questions touched on sensitive matters relating to their housing conditions. This was dealt with by the researcher not asking direct questions that touched on their financial health but sough to measure the extent of households being able to afford housing. Trained research assistants were engaged to help distribute the questionnaires and to professionally guide the respondents in areas they where they require explaining to them that confidentiality was maintained and that the research is being carried out for academic purpose.

1.10 Assumptions of the Study

A regression model was the main tool of analysis in this study; therefore, it was assumed that all the important financial variables affecting housing affordability had been included in the model and that the number of observations in the sample were greater than the regressors or the independent variables and thus more degrees of freedom, hence sufficiently explaining for the dependent variable. The key assumptions of a multiple regression model were taken into consideration in this study including linearity, homoscedasticity or constant variance, normality through

diagnostic analysis. This study assumed that households who were asked to respond to the questionnaire were accessible and willing to create time in answering the already prepared questionnaire. This helped the research get feedback that informed the study.

Another assumption was that the questionnaire took care of all ethical issues and that no respondent felt threated as they responded to the questionnaire. The factors being studied were believed to have an effect on household level of affordability of housing. Another assumption made by this research was that the sample size identified through scientific methods captured the broad perceptions of the all the households dwelling in Nakuru County with respect to their satisfaction of the dwelling units, the neighborhood facilities and services and the social environment. The findings of the research were thus validated and generalized and particularly considered to be representative of all the views of the residents of Nakuru county and for low-income urban residents in general.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter covers theoretical literature review, empirical literature review, conceptual framework, critique of existing literature and the research gap. Empirical literature is organised based on the research variables.

2.2 Theoretical Review

The available theoretical literature on housing affordability provides various approaches and theories which govern housing affordability. The theories used in this study were; Modigliani's Life Cycle Theory of Savings and Consumption, the Housing Adjustment Theory, Classical Theory of Interest Rates, and the Housing Cycle Theory.

2.2.1 Life Cycle Theory of Household Saving and Consumption

The life-cycle theories of household saving and consumption was developed by Modigliani and Brumberg in 1954 and further advanced by Modigliani and Ando in 1957 and Ando and Modigliani (1963). The theory states that the level of consumption of individuals at different stages of their lifetime vary based on available resources at their disposal vary at each stage. In respect to this, the theory states that individuals make intelligent choices about how much they want to spend at a particular state in their life.

The theory assumes that in their decision making, individuals seek to maximize their utility as they balance between income and available recurring expenditures. The theory observed that there is always an imbalance between income and consumption needs over lifetime of individuals or households. The theory asserts that young people

who are newly employed have low earnings and their expenditures tend to be more than their income revolving around education and housing. The middle aged individuals on the other hand have higher income, high savings and that they are able to pay off their earlier accumulated debts (Ando & Modigliani, 1963).

This theory is useful in the larger economy making economic predictions with the assumption that national savings depends on the amount of national income and its growth. Simply put, the level of saving depends on the level of income of households and the citizens of the given country. With increase in expenditure towards housing, the level of household consumption also increases and thus resulting to low savings. This trend is only even out when incomes increase encouraging households to smooth out their consumption spending, leading to increased savings and reduction of debts (Ando & Modigliani, 1963).

Based on the arguments of the theory, housing can serve collateral for loans and appreciate in value when prices increase. With increase in price of houses, home-owners have increased wealth as well as collateral. However, for renters, there is inverse relationship between price of houses and wealth, resulting from higher rent. Higher house prices enhance the borrowing capacity of household. Increase in house prices also has a negative effect on prospective buyers whereby they have to save for a longer time to acquire the desired housing. The implication is that there is gain of housing wealth by homeowners through increase of house prices while renter experience reduction of wealth through the increase of prices. The younger generation and those not yet born are the potential losers as result of the rising house prices since they are yet to earn an income. Based on this analogy asymmetry exists between those who gain and those who lose. The question arising is, ‘which of the

two dominates the market? This can give a causal linkage between house prices and credit demand through the effects on wealth, consumption and collateral (Modigliani, 1986).

According to the theory, the loan to value ratio is affected by the house prices; higher house prices result to a higher loan to value ratio when housing is acting as collateral. An increase in house prices may be brought about by a change in credit supply, which might be as a result of liberations in the financial sector. When credit availability increases, demand of housing also increases because households can easily access loans. However, because housing supply take time to delivery, the increased demand always causing house price to increase (Modigliani, 2001).

This theory faced criticism, since the early 1980s for a number of reasons. The theory states that the level of wealth increases as age increases and that the young tend to be less wealthy; but the theory does not take into account the transfer of wealth from the older generation to younger generation and their inter-generational relationships. The theory also asserts that the culture of savings for the younger generation is poor; which assertion has been challenged by the higher number of savings among the elite young population with increase in financial literacy. This is in contrasts to what the theory states in its original version for the life-cycle theory (Modigliani, 1986; Modigliani, 2001).

In the current study, the theory sequentially considered most of the variables under study. In relation to the low-income households, experiencing scarcity of resources, the theory presents that, intelligent choices can be made on expenditures at different ages as the individuals seek to maximize utility by balancing between income and available recurring expenditures to as to have some investment in the long run. The

theory is useful in explaining the relationship between variables being studied including; income, cost of financing, pricing and the need for financial literacy in financial management. It will help in establishing the effect of household level of income, cost of financing, house price and financial management skills on the affordability of housing.

2.2.1 Classical Theory of Interest Rate

Classical theory was proposed by Fisher (1930) and advanced further by several other scholars including (Neely, 2001; Mishkin, 1997; Bullard, 1991; Keynes, 1936). The theory attempts to explain risk-free interest rate and pure risk interest rate and their potential influence in investments. It states that the rate of interest rate is influenced by savings from households and conceptualizes savings as the difference between the income and the expenditures (Neely, 2001). The theory adds that level of savings depend on current and long term income level, target of savings, and desired savings proportion income (Mishkin, 1997). This therefore implies that families and individuals with higher levels of income have higher capability to save and consume a less proportion of their income on daily expenditures compared to families and individuals with low amounts of income (Bullard, 1991).

The classical theory of interest rates asserts that between the amount to save for future use and the amount to consume now is based on the amount of interest rates offered for the savings (Mishkin, 1997). Interest is therefore considered as reward for postponing expenditures and consumption for future time with expectation of much more expenditures in the future. High interest rates make savings more attractive for households and individuals and enhancing willingness to postpone present consumptions and needs for future rewards while low interest rates make present

consumption attractive than future consumptions after saving for some time (Bullard, 1991). This is referred to as substitution effect and is positively related to the amount of savings and interest rates (Marquis, 2002).

In the current study, the theory explains the effect of interest rates on savings and by extension the ability to acquire loans from financial institutions by the individual households which in the long run determines the affordability of housing. It identifies interest as critical factor in financial market as they affect the savings which in turn effects investment. Interests influence cost of loans and savings patterns; cheaper financing and low interest rates increases the amount of money held by households to spend on housing in a more affordable way and vice versa. It is therefore evident that interest rates have influence on household savings and consumption and consequently, access to affordable housing.

2.2.3 Housing Adjustment Theory

The proponents of the theory were Morris and Winter (1975). The theory explains how households attempt to maintain some level of equilibrium in respect to housing satisfaction and the possible causes and consequences of lack of such equilibrium. According to the theory a state of equilibrium refers to a situation in which the current housing meets the cultural and societal norms and values as well as preferences of the households such as space, quality, cost and neighbourhood among others (Morris & Winter, 1975).

The theory states that households undergo a housing adjustment process as needs increase and decrease. The adjustment process many include; housing adaptability, housing mobility and household family adoptability in order to obtain satisfaction in the current dwelling. Keller, Farr, Kirby, and Rusco (1997) in support of the theory,

indicated that norms, cultures, values and community backgrounds shapes the level of satisfaction and preferences in housing and can initiate adjustments towards adoptability.

The theory explains the process in which households seek to maintain some level of equilibrium, possible causes of lack of equilibrium and the consequences that result from lack of equilibrium in respect to housing satisfaction (Morris & Winter, 1975). Where one is not able to meet the norms and preferences in the current housing, then housing deficit is recognise, leading to chronic dissatisfaction leads to behavioural change of the in form of adaptation, adjustment or regeneration (Morris & Winter 1996).

Krofta, Morris, and Franklin (1994) used the theory to affirm that the process of decision making for housing requirements are to some extent based on some cultural beliefs and norms. Similar application is seen in study by Bruin and Cook (1997) who reported that level of satisfaction with housing is influenced by some set cultural norms that act as constrains to housing affordability. In the event that one of these norms and preferences is not met in the current housing, housing deficit is deemed to exist and the households experiences some level of dissatisfaction and in which case, chronic dissatisfaction leads to behavioural change of the in form of adaptation, adjustment or regeneration (Morris & Winter 1996).

The propositions of this theory could be related to Maslow (1943)'s argument that humans are driven by desire to fulfil own needs to the best of their knowledge, abilities, and skills. He however presents that achievement of such needs follows pyramidal criterion dictated by different levels of needs. The basic needs being shelter, clothing and food, other needs in between include safety, security, sense of

belonging and self-esteem or identity respectively (Deci & Ryan, 2008). The Housing adjustment theory together with the Maslow theory considers that households have burning desire to fulfil their own needs in an informed manner while balancing the situation. The theory asserts that households are faced with many options which need to be balanced out against limited resources. The household felt needs should be evaluated based on the current dwelling situation relating to residential mobility, housing satisfaction, housing decisions and housing preferences.

The theory has some weaknesses due to the fact that it involves balancing between the cultural norms and unsatisfactory situations; it fails to explain the power of some of the cultural norms rated against unsatisfactory life situations. In addition, the theory assumes that the dissatisfaction of the current housing is solely due to mismatch between housing characteristics and the norms of the society which might not be the cases often times. It is assumed that lack of housing equilibrium may be caused by multiple factors including the individual responses, presumed consequences and perceived deficit among others. Furthermore, the theory fails to explain the reason why people adjust or fail to adjust to various housing deficits. In respect to this, the theory fails to predict the cause of action for different people when housing deficit set in. However, the theory has increased utility in aspects of housing and satisfaction of housing needs (Deci & Ryan, 2008).

This theory is relevant in this study as it explains deliberate efforts by the lower- and middle-class urban Kenyan to fulfil dwelling needs that can be considered to be almost physiological. The theory enhances understanding of disparities between housing needs amongst the urban middle class as well as their determinants. Consequently, the different levels of income, finance costs and other challenges can

be used to evaluate the fulfilment a family or and an individual gain from affordably owning a home. These challenges and enablers are thus the motivating and de-motivating factors that the middle class urban Kenyan encounters in a bid to own a dwelling place (Lerner, 2013).

2.2.4 Neo-classical Economic Theory

Neo-classical Economic Theory was proposed by Smith (2011) who focused on the house prices dynamics. The theory was further expounded by Marsh and Gibb (2011) who in addition to house prices, focused on housing characteristics and residential mobility. The authors propose a psychological approach in understanding housing market models and house prices. This led to a search for answers to key questions relating to the housing markets including the considerations taken into account by households when formulating their preferences for housing, the market intermediaries' influence on the household's options, price expectation influence on decision process, identifying the characteristics of decisions making from the perspective of behavioural economics (Rosen, 1974).

Neo-classical Economic Theory is based on hedonic model. According to the model, pricing could be arrived at by taking the sum of prices of individual characteristics of the good creating utility. In respect to this, the author asserted that the prices could be determined by performing a regression between the individual characteristics of the item to determine the individual contribution of each characteristic and how it influences the price of a good. This formed the nonlinear pricing structure of the model which rested upon several assumptions when applied in housing market.

The first assumption is that there are homogeneous housing products in the market. The second assumption is that there is perfect completion market where many buyers

and sellers can freely enter or exit the market. In addition, the Hedonic model assumes that both the buyers and sellers possess perfect knowledge of the market, products and prices of commodities. The last assumption is that there are no interrelationships between the prices of different characteristics of the goods. Major weakness of the model is the over specification and under specifications leading to biased model coefficients which further result to model inconsistencies. Over specification refers to a situation where the model contains more irrelevant independent predictor variables in form of product attributes while under specification is a situation where the model omits key and influential predictors of the product price (Rosen, 1974).

The strengths of the theory is that one needs only to know about the product attributes such as prices, composition and specification of relationships between the products attributes. This therefore leads to a straightforward estimation of pricing structure based on the model coefficients estimated. Through this, the estimators do not need to know the background information of buyers and sellers as well as their behaviours (Rosen, 1974). According to Rothenberg (1991) the power of the model lies in its ability to compress the many product characteristics in one dimension that leads to homogeneity assumption of the model. This therefore simplifies the model structure by avoiding complicated and multi-stage models with latent variables. Furthermore, the hedonic model assigns weights of each product attributes according to the prevailing market conditions and thus presenting better trade-offs between the suppliers and buyers according to individual preferences (Marsh & Gibb, 2011).

The housing cycle theory, proposed by Needleman (1965) is very consistent to the neoclassical model thinking. The theory presents that house prices are in cyclic nature from one stage to another, hence, there is a cyclic relationship between the house

prices and the available housing vacancies. The first stage of the cycle is that, the house prices tend to be low due to low number of households and high number of vacant housing units. This creates a surplus of housing. However, as the number of households increase, the number of vacant houses tends to reduce due to increased demands for housing. This consequently causes an increase in the house prices. This gives way to the second stage which is characterized by rising costs of housing and increased demand for housing leading to decreased number of vacant houses. In the third stage, the continued demand for housing units leads to very high prices of houses, more than building a house from start.

In the housing market, the housing cycle and the hedonic theories are applicable in the sense that there are so many factors that need to be considered when valuing real property of which price is the outcome. A combination of financial factors and the cyclical changes in the property market in the case of this study are the factors that are being considered to determine the contribution of each variable towards the price of housing and in effect the level of affordability of housing. These include low-income households' preferences for housing, the market intermediaries' influence on the household's options, price expectation influence on decision process, and identifying the characteristics of decisions making in the behavioural economics (Smith, 2011).

As a consequence of high prices, buyers delay the purchase houses as investors build more houses to take advantage of higher prices and enjoy higher profitability margins of housing. This causes high supply of houses in the sector. In the fourth stage, there is over supply of houses and thus leading to low house prices due to less demand of houses compared to the available vacant houses. In the first stage of the cycle, the

house prices are low and the vacancies are high signifying a housing surplus. This then leads to return to the first stage of housing cycle theory.

One of the critics to the theory is that the housing sector market may not have control over the forces of demand and supply. In addition, in the event of high demand of housing, the private investors may not have the technical and financial ability to respond effectively to the demand of created and thus the demand may be sustained without a respond to create more houses. Furthermore, the government can make interventions to increase more houses without there being shortage of houses for the purposes of economic growth of the county and the houses may be priced lower than the existing market prices and thus disturbing the housing cycle. The theory makes assumptions on the ability of the market to control the forces of demand and supply. However, the fact is even with rapid increase in demand, the private sector may not have the technical, equipment and capital capacity to respond effectively.

The other weakness with the theory is that it looks broadly at houses without appreciating the fact that there exists a high percentage of the population who, by virtue of their incomes, cannot afford the decent housing provided by the free market. The increased house prices are likely to push households to the periphery of slums and squatter settlements. The theory does not incorporate government interventions such as supportive housing policies including provision of subsidized housing. The theory would have been more encompassing if it had included explanations on how to handle supply and demand for housing targeting the low and middle income groups who are vulnerable to fluctuations of commodity prices.

In the housing market, the housing cycle is applicable in the sense that there are so many factors that need to be considered when valuing real property of which price is

the outcome. A combination of financial factors and the cyclical changes in the property market in the case of this study are the factors that are being considered to determine the contribution of each variable towards the price of housing and in effect the level of affordability of housing. These include low-income households' preferences for housing, the market intermediaries' influence on the household's options, price expectation influence on decision process, and identifying the characteristics of decisions making in the behavioural economics (Smith, 2011). In the housing market, the housing cycle theory is applicable as it brings forth the many factors that need to be considered when valuing real property of which price is the outcome.

In this study, neoclassical theory facilitated analysis of combination of financial factors and cyclical changes in the property market to determine the contribution of each variable towards the price of housing and in effect the level of affordability of housing. The two theories guided the current study in determining the factors that affect the price of housing. It provided a structural background and context within which the study variables and the relationship between them can be analysed.

2.3 Empirical Literature

Empirical literature is presented in thematic areas based in the sough relationships in the study.

2.3.1 Household Income and Housing Affordability

Study by Goodman, Li, and Zhu (2018) on housing affordability in USA from a local and national level perspectives examined the role of income amongst the mortgage borrowers and renters in relation to housing affordability. The study targeted mortgage borrowers and renters in the USA and relied on secondary data obtained

from administrative data research facility. The study established that in Washington DC, residents with an annual income not exceeding USD 20,000 did not have the capacity to borrow funds for housing and only 2% of the residents with income between USD 31,000 and 40,000 afforded to borrow from housing.

In related study in the same nation, Anacker (2019) collected primary data on affordability among the low, very low, and extremely low-income renters in the same nation using questionnaires and interviews. The study established that all the groups of the low income renters faced challenges in affordability of housing. Similarly, these groups had insufficient income to rent houses with desired conditions. Low incomes and low or unavailability of government subsidies were identified as main factors leading to high rent burdens, displacement of people and homelessness of among the residents. The study recommended that government considers developing houses in public lands zoned for multifamily development, building more units on areas dominated with single-family homes, developing more housing units in underutilized urban areas for household development, among other initiatives.

In Austria, Philipp (2015) conducted a comparative study to examine the role of household income on affordability of residential housing. The study used income tax, changes in gross income, and net income post tax as the indicators if household income while housing affordability was measured using dwelling price, maximum loan amount, down payment, and changes in the lifestyle as result of housing. The study found that declining household incomes influenced affordability of the housing. Zainon et al., (2017) on the other hand used rent-to-income ratio and house price-to-income ratio to assess income affordability. The study further found that the low income earners would be challenged in accessing the housing loan due to the high

interest rates and house pricing aspects. In related comparative analysis, focusing on role of house household between United States and Turkey, Friedman and Koc (2017) established that lower income households had significantly lower household ownership aspects while middle to high-income level families lived in bigger, newer houses with improved these features.

Study by Torluccio and Dorakh (2015) on affordability of housing among the low-income earners in Italy established that residents could not afford houses with the desired conditions and thus were dissatisfied with current housing. Some of the residents had hope on social housing or resettlement by the government to improve housing conditions. Similar findings were reported by Malaysia, Baqutayan (2016) in a study on income levels and housing affordability aspects. Using structured questionnaire, the study collected data from 122 respondents. Analysis of the research data revealed that middle and low-income families are constrained in affording housing, including the basic housing options with amenities that often start at RM 500, 000 in most locations. The study further reported cost households over 30% which is straining. Still in Malaysia, Zainon, Mohd-Rahim, Sulaiman, AbdKarim, and Hamzah (2017) in a study on factors influencing access to affordable housing amongst lowest income earners that used mixed methodology and collected data through a structured questionnaire found that the affordability of houses to the middle income households is negatively influenced by increasing prices.

In Philippines, Almaden (2015) studied housing affordability among middle-income earners in Cagayan de Oro City. The study sampled 101 respondents through stratified random sampling and collected using questionnaires and interviews. The study found that 33% of the household were not able to rent decent a house while

57% lived in a self-constructed house that did not comply with the housing standards. The study further revealed a significant positive relationship between income level and affordability of housing. Similar findings were reported by Czech et al. (2017) in their study on factors influencing disposable household income and quality of housing. The study reported positive relationship between income levels house affordability. The study further established that most low-income households spent most of their income housing and food thus becoming strained.

In another study focusing on income levels and housing affordability in Malaysia by Latimaha, Bahari, and Ismail (2019), cross sectional data was collected through structured questionnaires from 473 respondents. The study found that accelerating house prices makes them unaffordable to the low and middle-income level groups. The situation is worsened by the fact that low and middle income earners do not qualify for mortgage loans while the house prices are increasingly high. In separate other studies in Malaysia, Ismail, Bujang, Jiram, Zarin, and Jaafar (2015) examined the role of income, among other factors on the housing affordability aspects. The study sampled 90 respondents derived from residents of Johor Bahru and reported that income affects affordability of housing in three terms of income sufficient to buy, make loan repayments or construct of a house. The study reported that majority of the residents have insufficient income levels to be financed by financial institutions. Yap and Ng (2017) on the other qualitative study that adopted qualitative approach established that household income significantly influence housing affordability. The study established a median monthly income of RM 4,585 against affordability level of RM165,060 and house price of RM242,000 evidence of housing unaffordability to majority of low income earners.

Income was further identified by Ackley and Teeling (2018) as significant determinant of housing affordability in Nigeria. Their study collected data through interviews from fifty households in the Calabar region of Nigeria. Increased pricing, speculative activities, high rates of unemployment were also identified as determinants of housing affordability. The study recommended the need for sustainable and affordable housing for the low income earners to encourage affordability aspects.

In Kenya, Ochieng, Mbatha, and Syagga (2017) examined the factors affecting the accessibility to quality housing amongst the middle and low income earners. The study that administered sixty questionnaires to these housing experts in Nairobi, through correlation analysis reported that household income determined the affordability of housing. In a separate study in Nairobi by Mbuguah (2017), it was evident that income level affect housing affordability. The study found that the houses are unaffordable to the low income earners as they are unable to purchase adequate housing services. In addition, the study indicates that the households with short term affordability issues have the capacity over time to have sufficient income levels for housing affordability but face occasional income deficits or unaffordability aspects. This could be due to the means of income generating for the house holds that could be cyclic in nature.

Lastly, Mutisya (2015) carried out a study to establish the status of housing affordability among Nairobi urban dwellers. Utilizing questionnaires, the study sampled 353 households in Nairobi. The study found that income of household and the number of household members earning an income among other factors determined the affordability of housing of households. The study further revealed that income

level of household members was positively predicted for the affordability of housing among Nairobi urban dwellers. The study recommended the improvement in level of income among households through job creation opportunities by the government and the private sector.

2.3.2 Cost of Financing and Affordability of Housing

The cost of financing the construction or buying of a house is a key component of affordability of housing (Mosha, 2018; Ngigi, 2016; Mariadas, Selvanathan, & Hong, 2016; Woetzel *et al*., 2014). In Ghana, Boachie – Yiadom (2015) undertook to examine the role of mortgage financing for the purposes of housing construction through a study that used structured questionnaires administered to a sample size of 150 respondents drawn from Kumasi area. The study found that interest rates were high (average of 30%) leading to unaffordability of housing loans. The high interest rates were cited as major challenge for accessing affordable housing through mortgage financing. A similar study by Ismail *et al*. (2015) in Malaysia examined the role of financing on housing affordability. The study found that various factors influence housing affordability in the country including high interest rates, and monthly loan installment amounts. Similar to this findings, Baranoff (2016) found that increase in the interests rates of the mortgages that median income earners from San Francisco obtained also affected the affordability of housing. High interest rates increase the overall house prices and thus low affordability. The study recommended the reduction of the cost of housing by reducing the interest rates for mortgages.

In Italy, Torluccio and Dorakh (2015) investigated affordability of housing among low income earners. The survey established that cost of housing was high due to high interest rates on mortgages and cost of construction materials, hence confirming

significant negative relationship between cost of housing and the affordability of housing. The study recommended for lower interests and reduced taxation on construction materials in order to moderate the cost of housing. The role of construction costs and housing affordability is further explored by Mariadas et al. (2016) in a study conducted in Malaysia that collected data from 120 respondents through questionnaires. The study reported that construction costs impact on the affordability of housing through its influence on the house price. The study identified labour, materials, equipment, and transport costs as the main construction costs in housing projects.

In Hong Kong, Chung *et al*. (2019) examined the housing affordability challenges among the low income residents in the country. The study used questionnaires to gather data from the respondents and analyzed data through multivariate regression analysis. The study revealed that the cost of building or renting decent houses was 42% of the disposal income of the low-income residents. The study further identified cost of mortgages and the cost of land as key determinants of housing affordability and recommended for revision of housing policies targeting the low income residents in order to reduce the inequality problem of housing affordability between the rich and the poor.

In a separate study in Malaysia, Yusof, Wahab, Hamzah and Yeop (2017) carried out a study to examine how home financing affects the ownership of houses. The study collected secondary data on home financing and ownership of houses. From analysis, it was evident that there was significant relationship between the amount of home financing and ownership among citizens. The study further reported a significant negative correlation between level of interest rates on home financing and housing

affordability. In the loan interest, it was observed that Islamic banks offered lower interest rates compared to conventional banks, thus reducing promoting the affordability of housing in Malaysia.

In New Zealand, Squires and Webber (2019) conducted a qualitative study on mortgage rates and housing affordability. The study relied on financial quarterly reports for the period 2001-2017 and found no significant correlation between the mortgage rates and the affordability of houses. However, the study revealed that there was continuous increase in the mortgage rates over the years. The study further found that the affordability of housing reduced over the years as informal settlements continued to spring up. However, Ezennia and Hoskara, (2019b) in a separate qualitative study through meta-analysis to evaluate factors affecting affordability of housing Turkey reported that cost of housing affected the purchasing power of house among the households. It was further revealed that interest rates of mortgages and the cost of housing materials affected the cost of housing. In respect to this, high costs of housing reduced the affordability of housing. The study made recommendation that government should reduce cost of housing by reducing taxation on construction materials and giving subsidy to people constructing houses for renting out to the public.

The role of mortgage financing and interest rates on the affordability of housing was further examined by Udoka and Kpataene (2017) in Nigeria. The study found that aspects such as mortgage loan and associated interest rates had an influence on the housing accessibility aspects. The study further reported that high interest rates have the effect of discouraging interested homeowners from accessing the loan. Similar findings were reported in Rwanda by Iyandemye, Barayandema, and Gasheja (2018)

in their study on cost of mortgage financing and housing accessibility levels in Ruanda. The study that sampled 96 households convenience sampling established that reduction of the affordability of the mortgage facilities is proportionally associated with affordability of housing facilities.

In Kenyan, Mutisya (2015), in a study on housing affordability among urban households in Nairobi that collected data from a sample of 353 households through questionnaire identified interest on loan, construction cost, loan-to-value ratio, land value, type of mortgage instrument, loan term, and the rate of inflation as the main determinants of affordability of houses. The study revealed that higher interest rates for mortgage facilities increased the monthly repayments amounts and thus higher burden to urban dwellers. This was seen to discourage many from acquiring mortgages that thus low affordability of housing. The role of mortgage cost on cost of housing was further studied by Mbuloh and Oluoch (2019). Through regression analysis, the study showed that a unit increase in the mortgage interest rates led to decrease in the housing demand by 56 units leading to conclusion that mortgage interest is one of the greatest challenges to housing affordability in Kenya.

A study by Marissa (2019) for EOCD explored housing affordability among the middle income earners in Nairobi Kenya. The study revealed that most of the middle income earners in Nairobi were unable to afford the cost related to housing construction and mortgages rates and that overall effect was homelessness among city dwellers. The study further revealed that idea of house construction was not well formed among the young cohorts for middle income city dwellers with land cost and rates considered too high among for middle income residents. The study

recommended the Kenyan government should enhance the affordable housing projects for most middle income dwellers to own a decent housing.

To assess the uptake of mortgage, Macharia and Wanyoike (2016) examined the determinants of the mortgage uptake from financial institutions in Nakuru. The study targeted bank in Nakuru and collected data through structured questionnaires. Using descriptive research design, the study determined that mortgage fees and associated charges influenced mortgage uptake. The study further found that increasing mortgage interest rates and mortgage prices make it difficult for low-income earners to afford mortgage facilities and hence to own houses. Similarly, Kenyanya (2015) in a study that involved 44 banks established statistically significant negative correlation between mortgage cost and access to mortgage. The study further found a negative relationship between mortgage costs and housing affordability levels.

Lastly, Ngigi (2016) in a study on alternative construction technologies in achieving affordable housing in Nairobi in Kenya observed that reduction of construction costs leads to affordability of housing. The high construction costs of housing were found to be a major challenge to affordable housing through ease of access to reasonable standards of sanitation. The study further indicated that adoption of alternative building materials and technologies is key to enabling lower construction costs and hence affordability of housing.

2.3.3 House Price and Affordability of Housing

Pricing on houses both as rent and purchase terms are on the rise generally, in most developing countries, the average increase in pricing is around 5% annually. As the demand for housing increases significantly, the price for houses are likely to respond directly due to the law of demand and supply (Milwicz & Nowotarski, 2015). In

attempt to achieve housing affordability in most nations, pricing has been identified as one of the determinants of house affordability.

Empirical literature shows that house price is major determinant of the affordability of housing across the globe (Erdmann, Furth, & Hamilton, 2019; Leng, Malek, & Yasin, 2017; Kgobetsi, 2017; Milwicz & Nowotarski, 2015). In a study based in the United States, Erdmann et al. (2019) examined the role of house price on affordability of housing. While observing that prices in closed access cities in America with new housing development are closely regulated, the study revealed that high house price is a major challenge to the housing development within these closed access cities. Similarly, Achilles Kallergis *et al*. (2018) in a study that sampled 200 cities across the world to evaluate the affordability status of median income earners established that high house prices is the greatest barrier to owning houses with desired features. The study reported average house price to income ratio of between 4.9 and 6.3 implying low income level among most city dwellers. The study further found that informal settlements and public housing were affordable to majority of median income earners.

Related findings were reported by Anthony (2018) in their study on economic prosperity and housing affordability. Through a meta-analysis of housing and economic reports for 25 years, the study revealed acute shortage of reasonable price houses in many states in the country. The study established that over 35% of the residents paid more than 30% of their income for their housing costs. However, it was found that neither economic prosperity nor poverty alleviated the cost of house prices. Similarly, no significant differences in house affordability were reported between medium income and low income residents. The study recommended that policy makers and planers to formulate new policies to address the shortage of affordable

housing in America in an effective manner. Still in the USA, O'connor (2018) examine that 30% city dwellers in most states had lower than the median income while the rental prices were rising each years with an average rate of 17% per year. Among the sampled states in the USA, Florida was found to have the majority of the people who could not afford the rent for the housing units around. The sampled respondents indicate that housing vouchers, public housing, and project-based subsidies reduced the competition for housing among the extremely low-income population. Consequently, the study recommended for fast response by government in period of great recession of economy.

In their study on a variety of housing crisis in the major cities conducted in UK, Switzerland and the US, Hilber and Schhni (2016) reported that the house prices in the three counties were high beyond the reach of the majority residents. The income to price ratio of houses was low and thus reducing the purchasing power of houses for most of the residents. The study also found that the housing policies were unfavorable due to more housing permits and regulations thus increasing the price of the house. Still in the UK, Fingleton, Fuerst and Szumilo (2019) in a study on the impact of housing supply on affordability of housing revealed that supply of housing did not significantly affect the housing affordability as much as house prices affected. The study found that an upsurge in the house prices for houses with deserted features and localities, the affordability metrics reduced significantly. The study further showed that increase in wages and increase in employment did not affect the affordability of houses with constant or increasing prices.

In Malaysia, a number of studies have been conducted on price and housing affordability. Leng *et al*. (2017) examined housing affordability aspects within

Penang Island. The study examined existing secondary literature on affordability of housing within the island and established that increasing house prices as fueled by the declining stock of land leading to high land prices and consequently high house prices. The study also reported that limited supply of land was leading to high house prices more than the affordability levels of middle and lower income classes. It was evident that diverse affordability criteria can be utilized including income affordability, repayment affordability and purchase affordability. The study further showed that purchase affordability is depends on availability of sufficient funds, repayment affordability depends on the ability of the household to afford to make repayments installment towards a mortgage installment while income affordability looks at the rations between the income and the house prices.

Leng *et al.* (2017) found that between 2005 and 2010, house price in Penang houses had escalated by over 53.9% due to the land prices in the island. The house prices were thus found to be between 200%-800% in the island compared to the mainland in Malaysia. House prices have continually increased above the reach of most of the residents due to the stagnation in the income levels leading to a disproportionate ratio between house price and income ratios. The challenge of the house prices on the affordability of housing in Malaysia as documented by Leng *et al.* (2017) and *Saikah et al.* (2019) are consistent with the results of (Soffian, Ahmad, & Rahman, 2018; Ang, Olanrewaju, Chia, & Tan, 2017;Yap & Ng, 2017; Almi & Husin, 2017; Baqutayan, 2016; Ismail *et al*., 2015) amongst others that also identified price as significant determinant of housing affordability.

In a separate study, Yin *et al*. (2017) explored the problem of housing affordability in respect to house prices. The study used regression analysis to establish the influence

of house prices on the affordability of housing among the low income households in Malaysia. The study revealed that there was a significant influence of house pricing on the affordability of housing among the low income households in the country. In respect to this, the study revealed that an increase in house price led to a decrease in the uptake of houses built by the governments for its citizens. Still in Malaysia, Salleh, Yusof, Johari and Talib (2015) explored affordability of rent among low income earners in Ipoh City Council Public Housing. The study used stratified random sampling to select 350 respondents to participate in the study and used questionnaires to gather data for the study. The study revealed that high cost of rent for most houses reduced the affordability of the public houses among the residents. The study further found that financial standings of the residents also was significant predictors of house rent affordability. The study recommended the management of public housing to reduce the rent prices to allow more residents to afford a decent housing for their families.

Lastly, Ahmad, Sapiri, Bakun, Hashim and Halim (2019) examined the dynamics of housing models in Malaysia and identified shortage of affordable houses by the residents, especially those with low income as a problem. It study established the ratio of income to house price was high for most individuals and thus implying that house prices exceeded 80% of the income levels of the residents. The study further revealed that informal housing was more attractive to the low income earners. The study recommended for reduction of house rents and prices through re-evaluation of the costs of most houses in respect to purchasing power of majority of the residents.

Focusing on the low income people in Bangaldesh, Haque and Aktar (2016) examined role of pricing on housing aspects. The study that relied on meta-analysis of empirical

literature found that high prices of land and land rates and costs of construction were pushing the houses pricing beyond the affordability limit of a large number of the low income persons. It was clear that the land to price ratio was very high leading to many years of income required for the land to be affordable. Similarly, in Netherlands, Dewilde (2018) examined the level of housing affordability among low-income private renters. In the study, affordability was measured as the ratio between income and the price of housing. The study found that 40% of the population could not afford to rent houses due to high prices of houses while most of house prices were more than 30% of the disposal income by the residents. The study further found that a unit increase in the house prices reduced house affordability by 0.740 units. It was recommended that reduction of house prices be worked on by private developers as well as construction affordable houses by the government.

A study to establish whether the house prices was a contributor to housing affordability among the average income earners in San Francisco by Baranoff (2016) revealed that house price is significant predictor of housing affordability. Increase in house prices reduced the ability of households to afford a house in the desired size and neighborhoods. Further, the study revealed the prices was affected by many factor factors such as the income level of the households and interest rates. The study recommended house prices to be reduced through reduction of contributors such as interest rates, land prices and cost of construction. In a related study in China, Clement, Cheng, and Hong (2018) identified high land prices as one of the factors that influenced the house prices, and speculative investment leading to high house pricing. Other challenges included the high house price to income ratio making most housing facilities that are available to be unaffordable. The study was a meta-analysis

that depended on the secondary literature for the analysis of the housing problem in China.

In Canada, Matheson (2018) examined the effect of house prices on the affordability of housing among the low income earners. The study found that high prices were attributed to unfavorable taxation policies in construction inputs, thus increasing the house prices and reducing affordability of housing to low income earners. Similar findings were reported by Sohaimi et al. (2017) in Malaysia where young professionals were not able to afford desired housing due to high house prices. Habitat for Communities reported that price still remains beyond reach for most households both in middle and low income bracket. The challenge is global and requires collective approach, if the dream of housing affordability is to be realized.

In Nigeria, Femi (2017) examined house price as one factor influencing housing affordability aspects in the country. The study collected data using structured questionnaire for the quantitative data. Findings of the study indicated that housing price influences housing affordability and that other factors influencing house affordability include; location of the housing, land prices, and provision of infrastructural facilities for the housing aspects. Similarly, Ahmed and Sipan (2019) still in Nigeria established that lack of reasonable housing financing options was a hindering factor to house affordability. These studies indicate that house prices in Nigeria increase significantly due to the challenges of financing amongst the developers leading to affordability challenges. Akinyode (2018) too in a study to examine consumer inclusion on the affordability of housing in Nigeria identified pricing as a challenge. These findings indicate serious need by government and other stakeholders to find sustainable ways of lowering house prices to affordable levels.

In Ethiopia, Dires (2015) investigated the level of affordability of housing of government built houses among the middle and low income households. Data for the study was collected from 550 respondents. A t-test indicated that reduction of initial payment and the installments increased the level of affordability and that installment rates for the Government built house acted was hindrance to house ownership among the middle and the low income households. The respondents indicated that if the initial down payment could be reduced and the periodic installments amounts lowered, they could be able to afford the houses built by the government. This therefore indicates that affordability of housing is low among the low income households.

In Kenyan perspective, Mutisya's (2015) established that house price is a factor determining housing affordability among the households and that house price is affected by interest rates of mortgages. The study recommended the reduction of house prices through government initiatives to cap the house prices by both public sector and the privates sector, and also through building of affordable houses. Reducing of interest by housing fiancé institutions was also recommended by the study in order to increase the affordability of housing among the households. Report by Citibank revealed that most Kenyans are unable to afford the houses on offer. In support of these findings, the high prices set by investors make it difficult even to access financial support and such high prices translate into expensive loans that require high repayment amounts that are not affordable to low income households.

2.3.4 Financial Management Skills and Housing Affordability

Financial management skills mean having financial competencies necessary in organizing and controlling financial activities and resources. Such skills are important

in the estimation of capital requirements, in the determination of capital composition and in the choosing of sources of funds (Citibank, 2019). However, empirical literature shows that the level of financial management skills among the low income group is still very low. Actually, the Habitat Africa recommends that campaigns and trainings need to be conducted among the low income groups to expose them to basic financial management skills that are important in planning finances, evaluating financial risks and making informed financial decisions, especially for long term investment like housing.

The Association of Chartered Certified Accountants (2019) stated that having the right financial management skills promotes housing affordability. Some studies have been conducted on financial management skills and housing affordability in various parts of the world. Study by, Gardner *et al.* (2019) on financial skills campaigns and education and household savings revealed that enhanced financial management skills increase tendency towards household savings. The study advocates that financial education training should be conducted in groups based on predetermined training needs. The study established that financial training program is more effective for participants with lower prior levels of general. Such trainings were shown to be very effective in transforming households approach towards saving for home ownership.

Study Oomen and Mcallister (2017) in Asian Pacific-region focused on the role of financial education in improved housing at the continental level. The study adopted comparative research methodology designs to understand the importance of having the right financial education in making housing decisions. The study found that individuals lacking the right financial education are likely to end up in more financial obligations like housing loans as they lack adequate information on loans and its

products especially the low income families. It was also found that most low-income earners lacked daily money management skills. Financial skills enhance financial decisions relating to time value of money, interest and cost capital, and various financing options with associated cost implications and risks. According to Mosha (2018), access to sound financial advise is halfway logical solution to problems of financial iliteracy. In housing related decisions, the decisions on where to get money, what house to rent or purchase, the location to consider or not cosider, the size of the house and how to plan finances to realise a housing dream all lies in the financial skills.

In a separate study on sustainable housing affordability among the low income earners in the UK, using questionnaire surveys for data collection, Mulliner (2017) found out that housing affordability is dependent on the financial management skills especially to the low-income earners. The study also reported that most of the low-income earners in the country lack financial saving skills that can explain the lack of proper housing. On the other hand, housing affordability meant acquisition of house at the preferred location, ideal size and a house with all the desired features, which only 65% of the individuals in UK had.

In Australia, Berry et al. (2016) examined the financial barriers to private investment in affordable housing as one of the objectives on their study on affordable housing among middle income dwellers. The study asserted recognized lower income ownership in the country than it was in 2015 and observed that low income earners could not sustain mortgage repayment due to lack of competency skills in financial management. It was evident that there are few financial management experts that would advise the Australians at the personal level. Consequently, most low income

dwellers lose their homes as they are unable to pay the full cost. The study concluded that mortgage financial skills are necessary in acquiring a house in Australia.

Focusing in Malaysia, Baqutaya, Ariffin, and Raji (2016) studied issues and challenges facing affordable housing in the country among middle-income earners group. The study sampled fifty respondents using housing issues questionnaires and found that housing loan and housing schemes policies are the main hindrance to affordable housing in the country. Housing loan was identified as the major issue facing the Malaysian citizens as the interest rate is high and there is low-income increment. The study concluded that the Malaysian citizens did not have adequate competencies on housing loans and its dynamics. The property news in the country added that most of middle income earners are unable to pay their housing loans in full which has resulted to the bank taking back the houses. There is low borrowing awareness when dealing with housing loans in the country.

In San Francisco, Hoffmann, Minnich, Galloway, and Nolte (2019) researched on the importance of financial education in promoting affordability of housing among the households with low income. The study drew its data from analysis of the existing secondary literature on the role of financial education and found that 41% of the adults in San Francisco struggled to master personal management skills as most were struggling with personal finances. It was evident that personal housing affordability can be realized only when an individual has the right financial management skills like saving, budgeting and credit and debit. Similar report is evident from the study by World Economic Forum (2019) conducted in Moscow, Brazil, Mexico, Argentina and Mozambique. According to the study, all the four countries had not achieved their housing affordability plan. There were still good number of people living in houses

without the desired features and not at the suitable locations. The study found that housing affordability has risen in all the four cities meaning one must have proper budgeting skills for them to get their preferred housing. The further showed that some cities like Brazil and Argentina have better housing than Mozambique and other African nations. This could be attributed by the long term budgeting skills in Brazil and Argentina. Additionally, non-profit organizations had equipped the people of Brazil and Argentina on better financial strategies that promote housing affordability.

In his study, Ojera (2019) focused on financial management practices in Africa, focusing on Northern Africa, Eastern Africa, Central Africa Western Africa and Southern Africa. The study relied on secondary data collected from previous literature, archival sources and library research covering. It was clear that indigenous financial management practices is Africa are inferior to some extent. Financial planning for example was considered as a onetime practice whereas it's supposed to be a day-to-day practice. Low and middle income earners need the daily saving practice for them to afford proper housing. The author concluded that Africa need to change on the indigenous financial practices for it to realize housing affordability.

In South Africa, Huisamen and Weyers (2016) assessed importance of teaching employees money management skills. From a sample of 400 experimental group and 120 control respondents selected using stratified random, the study found that most employees had poor financial behavior such as buying on credit and lack of control of expenditure. Due to lack of control of expenditure the employees could not investment in long term projects like housing. The study established that 20% of the South Africa citizens could not afford proper housing as they mainly invested in short term projects.

Survey by Olugbenga, Yusoff, Aziz, & Baba (2017) on unleashing the potentials of housing sector in Nigeria examined the potential in the housing sector and focused on financial management skills. The study found that to curb the 17 million units housing deficit, individuals must develop proper financial planning and saving skills. The study further revealed that there was a significant relationship between financial management skills and housing affordability. It was concluded that low income earners in the country needed to develop their financial skills especially on financial planning and saving skills to achieve housing affordability. Still in Nigeria, Ajibola, Sharafadeen, & Owolabi (2016) investigated the problems and prospects of housing delivery in the Osun state. Structured questionnaires were administered to the residents in Osun state. The study found out that huge cost of housing and lack of housing finance had contributed significantly to poor housing delivery. Although the Nigerian government have provided accommodation on credit where the citizens can repay the credit at a given rate and period, most citizens are unable to repay the credit at the scheduled timeframe.

In Uganda, Atuheire and Karyeija (2018) examined the influence of functions of financial firms in promoting affordable housing among middle income earners in urban areas. The study sampled 113 households using probability and non-probability sampling methods. The study revealed that book keeping financial skills are the basic skills taught in most of the financial institutions. Further, it was evident that having a proper house in terms of location and size is a long-term investment that needs proper planning.

In Kenya, Mutisya (2016) analyzed factors influencing housing affordability in Kenya using data collected 390 households using questionnaires. The study that focused on

home-ownership procedures through mortgage and loan acquisition established that there was linear relationship between housing affordability, loan acquisition and interest rates. According to the study most of the low-income individuals lack proper loan and mortgage skills that would have promoted acquisition of their own homes. The study concluded that lack of financial skills and the dynamic changes of mortgage and loans have influenced housing affordability in Nairobi.

Similarly, Gardner *et al.* (2019), reported that only 2.5% would of the individuals in the country would access the right amount of mortgage necessary for them to build or rent their preferred housing. Financial mortgage and loans skills were established to be are very low in the country that has translated to poor housing as housing affordability is a long-term investment. The study also found that most financing models are limited in scope and the financing models normally excluded the middle and low income households. This has resulted in poor financial skills especially on loans and mortgage that would otherwise promote housing affordability.

2.3.5 Housing Affordability

Housing affordability still remains a big challenge in most nations in the world, especially in the major cities. This is despite the concerted efforts made by governments, private investors, individual citizens and other stakeholders in the housing sector. Significant studies have been done on the subject of housing affordability and it is evident that more research still needs to be done to address the housing affordability problem.

Housing affordability in most developing nations is a dream. This is because in most of these nations, the social-economic development is just gaining momentum. Secondly, most developing nations are just moving away from the traditional housing

approaches. According to Mosha (2018), the acceptable percentage of income to be spent on housing should be between 30-35 per cent. However, in most developing nations, the amount is so high, sometimes upto 70% of income is spent in housing, especially in overpopulated urban areas.

The concern of affordable housing is real across nations of the world. In the United States, the government had to form the Government Sponsored Enterprises to facilitate acquisition of construction of homes through mortgages. The establishment of Government Sponsored Enterprises has seen tremendous achievement with significant number of households benefiting. In Kenya, the government through the big four agenda has in place the 'boma yangu' initiative, a program that will allow Kenya's to contribute into a pool, small monthly contributions towards home ownership in various urban areas in the country. The amount of contribution is kept as low as possible to widen the bracket to cover the low income earners.

Sastry *et al.* (2014) affirmed that challenges of housing affordability are evident in India. The desire is that house with a carpet area of 300-500 square feet, priced less than four times the gross household annual income or a rent less than 30% of the gross monthly income of the buyer. Further, house price to annual income needs to be less than 5:1 ratio for it to be affordable for the low income earners. Reserve Bank of India categorized families with an annual family income of less than INR 120,000 Indian Rupees (approximately Ksh 170,000) to be considered as low income households.

In Europe and United States, Sastry *et al*. (2014) indicate observed that total housing costs shouldn't exceed 40% of the disposable income for the house to be considered affordable. Since housing costs are described to consist of mortgage payments, rent

payments and utilities such as water and electricity, and maintenance fees, affordability of housing must start with the basic amenities (Kakkar, 2017). Further, Kethineni and Aravindan (2019) notes that the cost of land is major component of housing cost and affordability that needs to be focused on.

The challenge of the affordability of housing is also documented in Malaysia. Abdul-Rahman, Wang, Wood, and Khoo (2012) observed that affordable housing is a challenge for the low income households in the country. In the country, affordable housing is conceptualised as those whose price ranged from RM 25,000 to RM 42,000 (Approximately 0.5-1 million Kenya Shillings) based on the value of land developed (Abdul-Rahman et al., 2012).

Lim *et al*. (2018) indicated that going by the median annual income in the country in 2016 of RM 5,720 (Approximately Ksh 139,000 per month) then the affordable housing would cost about RM 205,920 (Approximately five million Kenya shillings). However, many households are not able to afford housing due to increase in housing prices. Rapid growth in areas such as Kuala Lumpur and Selango in Malaysia has also led to the extremely high increase in prices leading to lack of affordability for the low income earners (Manaf, Said, Al, & Adenan, 2019).

In attempt to measure housing affordability, Yin, Nee and Senadjki (2017) sets the threshold of affordability index as 130, below which housing is generally considered not affordable. Using instrumental variable regression, Yin, Nee and Senadjki (2017) indicated that the condition whereby the housing affordability index dips below 130, housing affordability problem will set in, which condition will most likely occur when house price index reaches 162, gross domestic product growth at 5.32% and mortgage rate 5.57%.

Measuring affordability of the housing through its costs relative to gross household income that has been partially adopted by Kutama (2017) and Sengupta (2014), is further elaborated by Chohan et al. (2015) who noted that the costs of acquisition of the house including the housing expenses should not exceed 30% of the household monthly income. Affordable housing has been proved to be a challenge to the low income households (Barzegaran & Daroudi, 2015; Bredenoord, 2015; Jocson & Mcloyd, 2015).

According to Sohaimi, Abdullah and Shuid (2017) affordability of housing depends on whether households are able to meet the cost of renting or purchasing a house supported by their level of income or external interventions. Therefor affordable housing is that which costs amount of money that low income individuals can be able to pay and have appropriate or decent housing without additional aid elsewhere. Another aspect of housing affordability is the ability to save a substantial amount of money to afford a house and other housing expenditures during working period (Erdmann, Furth, & Hamilton, 2019).

Studies by Anacker (2019) and Chung *et al*. (2019) recommend affordability to be measured on the ability of a person to continue meeting other expenses even after paying for housing expenditures. They assert that if expenditure for housing exceed 30% of the total income of a household, then it implies that the housing is costly and the household may not be able to meet other basic necessities such as costs of food, clothes, transport and cost for medical care for the members of the household. Ahmad, Sapiri, Bakun, Hashim, & Halim, (2019) asserts that 30/40 affordability rule aligns with other available housing affordability index measures that it is easy to use for

applicability purpose. Globally, most housing finance institutions do not allow individuals to take a loan that is more than 30% of their total income and thus this formula is widely used (Achilles Kallergis *et al*., 2018; Bujang *et al*., 2017; Torluccio & Dorakh, 2015; Wong *et al*., 2015).

According to Yap and Ng (2017), housing affordability is measurable in terms of income affordability, purchase affordability and repayment affordability. Purchase affordability is measured by considering whether a household is able to borrow sufficient money to purchase a house (Suhaida, Tawil, Hamzah, Che-Ani, & Tahir, 2010). Repayment affordability on the other hand is concerned with the burden put on the household towards paying the mortgage (Regassa & Regassa, 2015). Income affordability refers to the measurement of the ratio of the price of the house and the income of the person purchasing the house (Ezennia & Hoskara, 2019b). Purchasing and repayment affordability are based on the cost-to-income ratio. One's income should be able to comfortably service the credit facilities used to financing the house for affordability to be realized.

Affordability of rental housing can be assessed in terms of rent-to-income ratio. This is an economic indicator that checks the household rent vis-à-vis income. For owned houses, the affordability is assessed in terms of interest paid financing the house, considering other factors such as tax and tax relies, depreciation or appreciation among other factors. Using the interest approach, the notion of rent-to-income is converted to cost-to-income, which is ideally the same thing. Economic approach to housing affordability emphasizes on consideration of opportunity-cost in assessment of housing affordability. For instance, a household cannot purport to be comfortable if pays for the house at the expense of basic items like food. Housing affordability can

only be realised when a household is able to take care of housing cost after all non-housing basic needs have been taken care of (Gibb & Hayton, 2017).

Household income, cost of financing, house price and financial management skills could be potential threats to affordability of housing in diverse contexts. Household income has been defined as a component of disposable income in the measurement of housing cost burden, and argued that it is the household's income after taxation that is used to contribute to housing cost. Cost of financing refers to expenses towards meeting housing repair needs, security needs for the housing, cost of servicing mortgage loans and land rates (Njaramba, 2018). Achilles Kallergis *et al*. (2018) defined house price as the average selling price of residential houses in major urban centers in Kenya. According to Citibank (2019) financial management skills on the other hand refers to having financial competencies necessary in organizing and controlling financial activities and resources.

In Europe, Gibb and Hayton (2017) traces the challenges of affordable housing due to various challenges. Gibb and Hayton (2017) indicate that the financial crashes of 2008 have continued to make the affordability of housing for the low income households and first time home buyers a challenge due to the tightening financial conditions. In respect to the income levels in Europe, Gibb and Hayton (2017) indicates that the houses are affordable if the occupants are able to have residual income from housing expenses to meet other non-housing related expenses. Gibb and Hayton (2017) in further detailing the challenges of housing affordability traced the percentages of the home owners with mortgage arrears in European countries which stood at Greece (15%) and Ireland (12%) with high arrears in Bulgaria (55%) Hungary (60%) and Greece (70%). In Germany, Hertrich (2019) indicates that the

house prices is one of the major socio financial factors leading to unaffordability of the houses for low income earners. In this context, Hertrich (2019) documented that 19% of the home owners had mortgage payment arrears in which 26% of them were in the low income segment.

In Ghana, affordability of the housing is a major challenge. This had led the Ghanaian government to commit over GH¢30 million (approximately 540 million Kenya shillings) in the construction of 1500 affordable housing for the low-income households (Amoa-Abban, 2017). The high cost of housing is a major barrier to the affordability of housing. The cost of semi-detached house had a price between $30,000 and $90,000, (approximately three to nine million Kenya shillings) while detached self-contained houses cost ranged from $50,000 to $110,000 (approximately five to eleven million Kenya shillings) (Boachie-Yiadom, 2015). These costs are deemed expensive, especially for low income earners worsening the problem of housing affordability.

Similar to Ghana and other African countries, Tanzanians also face affordable housing challenges (Nguluma & Magina, 2019; Mosha, 2018; Nguluma, 2016; Sanga & Lucian, 2016). Persons living with disability are key victims of this vice, they can't find affordable housing facilities suitable for their use (Nguluma & Magina, 2019). Similalrly, Neo (2017) observed that the low income households are disadvantaged in the access of the affordable housing facilities. According to Nguluma (2016), escalating house prices is a challenge to housing affordability in the country.

Nigeria equally faces challenges of housing affordability amongst its citizens (Abdulkareem, 2016; Daniel et al., 2015; Mari, Kura, & Idris, 2014). In acknowledging the problem of the housing affordability, Mari *et al*. (2014) observed

that various low cost housing projects that have been initiated across the country including housing schemes by state and federal government that are lowly priced as well as other low cost housing scheme such as Dikwa, Shagari, Pompomari estate, Gombole housing estate, Dalori quarters, and Molai quarters amongst others. According to Ogunkah (2015) the average price of a modest house in Nigeria is N5 million (approximately Ksh 2.75 million shillings) making them unaffordable for a majority of the low income households. Ogunkah (2015) further notes that the house-price-to-income multiple for Nigeria to stand at 20.45 which is 600% from the acceptable benchmark of 3.2.

In Zimbabwe, Aghimien, Aigbavboa, and Ngwari (2018) observed that affordability of housing remains a key challenge for the low income earners, just like in Uganda (Nilsson , 2017). The factors leading to the unaffordability of the houses and high prices of available houses are the high cost professional services of various service providers, for instance the cost of valuers whose average value is USD 470 (Approximately Ksh 47,000) making it inaccessible to a majority of Ugandans. In addition, lack of alternative building materials has been cited as a challenge. Mukiibi (2015) noted that low income earners in Uganda find it too expensive to develop houses due to the need to transport materials over long distances to the construction sites.

The situation in Ethiopia is not different, housing affordability challenge is evident (Petersson & Ström, 2015). In 2009, the construction cost of a three roomed house was ranging between $15,000- $20,000 (approximately Ksh 1.5-2 million shillings) which was unaffordable for a majority of Ethiopians (Regassa & Regassa, 2015; Tipple & Alemayehu, 2014). Petersson and Ström (2015) further attributes the high

cost partly to rapid urbanization that has the effect of pushing the prices of houses out of reach of a majority of Ethiopians.

In Kenya, Kongoro and Owino (2016) asserted that the available housing supply units in the Kenyan market are not able to satisfy the market demands hence leading to high house prices. Muiga and Rukwaro (2016) asserts that housing is not affordable in Kenya as only an estimated 20% of the Kenyans live in the houses that they own. On the other hand, Badawy (2019) indicates that challenges of housing affordability in Kenya is high among low income earners especially within urban areas. In this context, Badawy (2019) argues that only about 11% of the Kenyans earn sufficient salary to support mortgage payments which is often a requisite for the purchase of the entry level housing.

Gardner et al. (2019) observed that in the urban areas that 70% of the resident's rent houses with only 30% of the residents owning their houses due to affordability challenges. It was estimated that 53% of people renting houses in urban areas pay less than KES2 000 per month for rent, 26% pay rent ranging from Ksh2 000 to Ksh 4 000, 16% pay rent between Ksh 4 000 and Ksh10 000 and only 5.5% above Ksh10 000 (Gardner *et al*., 2019).

In order to satisfy the housing need for the low income group of the society, there is need to understand the low income housing market. In every market, the forces of demand and supply are very important indicators for loan term decisions. In most developing nations where markets are free, productivity and innovation are controlled by economic laws of demand and supply. For low income housing market, whichever options are available, whether rented or owned, affordability can only be achieved up to for 50% of the population. Report by Habitat shows that majority of households,

who more into urban centers in search of source of livelihoods settle in slums, making such slums to sprout extremely fast. Interestingly for these groups, once they settle, the main focus shifts to search for money, and money used as received without proper savings or investment plan (Regassa & Regassa, 2015).

Housing low income households require deliberate and targeted to areas of low land cost and high density building permissibility. This is the only way development costs can be contained to maintain house prices at minimum. As such, targeted housing efforts should focus on developing low income housing schemes, specifically in locations that are peripheral to urban centres. While such locations may have challenges of accessibility, security and access to power and other social amenities, through appropriate government intervention and partnerships with stakeholders, it is easier to develop high capacity, low income housing schemes, than when individuals are left to strive on their own (Muiga & Rukwaro, 2016).

Housing affordability is not just about the physical house. Housing affordability is associated with a whole range of other benefits. According to Housing Finance (2019), housing affordability leads to improved economic power, since the households are left with more money to spend. Secondly, the reduced economic burden leads to better nutrition, health and general quality of life. The embedded infrastructure and amenities such as water, sewerage, roads, electricity, social services and security play a very big role in enhancing social status and enhancing social well-being of the households. In fact, access to affordability through enhanced socio-economic empowerment leads to enhanced productivity and eventually leads to enhances economic empowerment and consequently improved economic growth.

In Kenya, while affordability of housing is a priority to the government and its development partners, there are several factors that work against the deliberate efforts made. Lack of or inadequate financing is one of the main factors that remain to deter housing initiatives. The problem of financing is felt across all levels of initiatives, starting from government, to private developers to individuals. Secondly, the problem of controlled use of land has been identified, especially in urban areas. Locations demarcated for residential housing seem to be already strained or underutilized in major urban areas. The efforts to convert other lands into residential areas frequently end up in courts facing legal challenges, hindering such initiatives. Closely related to controlled land use problem is the problem of uncontrolled land pricing. Many investments companies have converted housing into a lucrative business. This makes price of land in areas considered attractive for home development shot significantly within a very short period (Housing Finance, 2019; Mutisya, 2017).

The third challenge experienced in urban areas is the building codes. The formal guidelines imposed on developers in urban areas to build in certain manner in certain areas have the effect of increasing cost of building hence affecting affordability of such developments. This problem is made worse when greedy investment organizations are involved in such codes. Other housing factors include cost on building materials and costs associated with complying with housing regulations and by laws. Interestingly, while the housing factors identified in this study tend to worsen day by day, the household income has generally stagnated, while in some unfortunate cases gone down as a result of job losses occasioned by tough economic times arising from the COVID pandemic among other factors.

Analysis of the Kenyan scenario shows significant evidence that housing affordability is far from realization. The number of households living in unhealthy conditions is on the rise, the level of expansion of slums is threatening, while the level of loss of livelihoods through job losses is also saddening. There is clear empirical evidence in support of more studies on the subject of housing affordability so as to build more literature and clarify grey areas as far as housing affordability is concerned.

2.4 Conceptual Framework

The study examined the effect of household income, cost of financing, house price, and financial management as the independent variables and affordability of housing as the dependent variable. Figure 2.1 shows the conceptual framework showing the effects of financial factors on the affordability of housing.

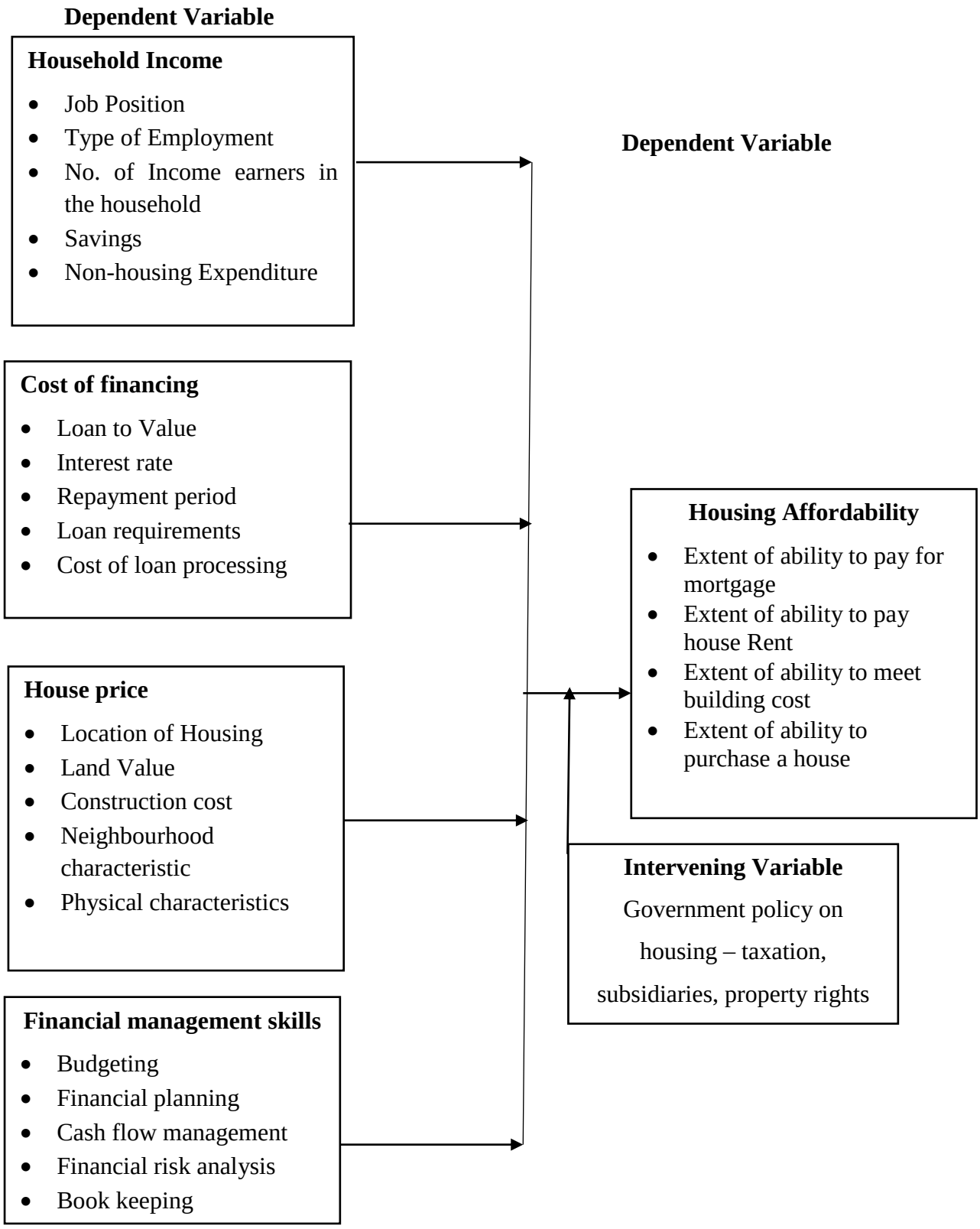

Figure 2.1: Relationship Between Financial Factors and Affordability of Housing

Source (Researcher, 2020)

2.4.1 Independent Variables

The financial factors affecting housing affordability are identified in this study including the household income, cost of financing, housing price and financial management skills are considered to influence affordability of housing. The household level of employment, type of employment, number of households earning Income, savings is expected to affect the level of household income and in turn ability to purchase a house. Mortgage loan amount is also a key factor in effecting housing affordability. A higher amount of loan borrowed by the household is likely to result into high repayment amounts and this could affect the affordability of the housing.

The Loan-to-value (LTV) ratio is conceptualized as the proportion of the value of the collateralized property that is taken as loan also determines the amount of loan deposit payable by the borrower. A higher LTV means that the borrower has less equity in the property, and it also increases the monthly mortgage repayment which eventually increases the probability of a borrower encountering repayment difficulties hence affecting affordability. Interest rate affects affordability directly because it determines borrower's repayment burden which impacts on the household's income. An increase in mortgage interest rate will increase the monthly loan repayment of households.

The mode of loan repayment is viewed as the mode or the method of repaying the mortgage loan whether variable or fixed. The period of loan repayment would generally affect affordability because it affects directly the monthly loan repayment amounts. Loans with shorter repayment periods are likely to attract higher monthly repayments placing a higher repayment burden on households as compared to loans with longer repayment periods. Loan processing charges, penalties and Mortgage insurance payments affect the affordability of housing.

Location of property in relation to other properties and to the facilities that serve the property such as roads, public transport and other complementary uses affect affordability. Land value is a function of its locational, physical. Construction cost is another factor referring to the cost of building or constructing a housing unit. This cost consists of the price or the cost of building materials, cost of labour, professional design fees and other incidental expenses incurred during the construction of a house neighbourhood characteristic of the property. Overall housing price and affordability is influenced by such property transfer costs such as the level of government stamp duty, lawyers' conveyance fees, registration and title charges as well as valuation and agency fees.

Inflation denotes a rise in the general level of price and impacts on household's purchasing power by reducing the real value of money (Mariadas et al., 2016). The impact of inflation is largely felt in the consumption of basic commodities like food, clothing and housing. Real GDP is the total market value of goods and services that a country produces for a period of one year adjusted for inflation. Unstable economy and high rates of unemployment leads to a reduction in real incomes of households, which further result to negative loan amortization and thus difficulties in repayment of loans. A high unemployment rate is thus considered to negatively affect housing affordability. The performance of alternative investment markets, for instance shares and bonds market, has an impact on housing prices, hence affordability.

Financial management skills on the other hand were measured by the level in which household members do their budgeting, financial planning, cash flow management, financial risk analysis, book keeping, control of expenditures, and their knowledge on financial obligations for loan and mortgages. Financial management skills are

important in the estimation of capital requirements, in the determination of capital composition and in the choosing of sources of funds. Having the right financial management skills promotes housing affordability.

2.4.2 Dependent Variable

Housing affordability is measured using the housing affordability index according to Asici, *et al*, (2011). House affordability index is the ability of the household to acquire a house without compromising on his/her socio-economic level and within the prevailing financial and income structure of the individual. The level of housing affordability was measured based on the amount of income that a family needed to spend on the housing needs as well as be able to cater for other basic needs such as medical services, transportation, and education among others without the intervention of government and availability of incentives and subsidies. This standard measure focuses on family budgeting approach in identifying the basic needs that a given family needs to satisfy without compromising on their living standards and socio-economic status or any other to circumstance that a family face. Therefore, the cost of basic needs differs from one family to another depending on the size of the family and its composition.

2.5 Research Gap

Most studies done on housing affordability globally have concentrated on the possible measures of housing affordability. However, the ratios that have been used in most studies done in the developed countries cannot be feasible in developing countries like Kenya where real statistics on incomes and expenditures for low income households are not readily available. Thus, creating a gap which this study attempted to fill by collecting data from the households with a view of measuring the level of

affordability of housing. In most of those studies' government plays a major role in the provision of housing to its citizens. Other studies have analysed demographic factors on affordability of housing without incorporating financial factors such as household income, cost of financing, housing price and financial management skills. This therefore warrants for a study to investigate whether affordability of housing could be improved through improving these financial factors of low income households.

In Kenya similar studies have been replicated but the focus has been on the factors affecting the supply of housing with a view of informing government policy. The main variable which has over time been studied in Kenya is the cost of mortgage and affordability of housing. This, therefore eliminated those who cannot access mortgage facilities from a study seeking to help low income households to afford to housing and thus a research gap. This study identified a number of variables on the demand side including household income, savings, cost of finance, financial management skills and housing price as affecting housing affordability. The study endeavored to consider the selected economic variables to be combined with a view of determining their effect on housing affordability. It incorporates location factors, taxes and tax credits and therefore contributing to new knowledge.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises of the research philosophy, research design, study location, population of study, sampling procedure, sample size, pilot study, validity and reliability of the study instruments, data collection procedures and the ethical considerations of the study.

3.2 Research Philosophy

The research philosophy is the belief on how data for a given research should be collected, analysed and utilized (Gathii *et al*., 2019). According to Saunders, Lewis, and Thornhill (2009), a research philosophy is important in providing important assumptions of the worldview which then underpins the research strategy that is pursued in the study. This study adopted the positivist research philosophy.

Neuman (2014) indicates that the positivism is a research philosophy that combines deductive logic and empirical observations in order to discover and predict general patterns of human activity as well as confirming empirical literature. According to Bhattacherjee (2012), the key characteristics of the positivism theory is that the theoretical understanding of a phenomenon can be verified through observations. The emphasis of the positivism philosophy is the verifiability of the theoretical understanding of the research phenomenon. Vogt, Vogt, Gardner, and Haeffele (2014) also noted that positivism philosophy leads to survey research and are aimed at hypothesis testing aspects. The positivism research therefore leads to the use of the quantitative data with the view of seeking generalized patterns for hypothesis testing (Bilgin, 2017).

In this, study, the positivism research philosophy was adopted since the study sought to undertake hypothesis testing in respect to the financial factors including household income, cost of financing, house prices and financial management skills as factors effecting the level affordability of housing among low-income households in Nakuru East and West Sub-County, Kenya. The study was dependent on the collection of quantitative data for the hypothesis testing and generalized the results to the low-income households in Nakuru County.

3.3 Research Design

A research design refers to the plan for the collection of information to address the research objectives of the study (Jenkins-smith, Copeland, Nowlin, Hughes, & Fister, 2017). This study utilized the correlational research design. According to Gathii *et al.* (2019), correlational research design seeks to describe and measure the degree of relationship. This comprises the strength, direction and significance of the relationship. This research design was applicable to this study as the study sought to examine the effect of financial factors (financial management skills, household income, cost of financing, and house prices) on the level affordability of housing.

3.4 Location of the Study

The study was carried out in Nakuru East and Nakuru West Sub-Counties which are administrative areas in Nakuru County amongst nine others. Nakuru County is third largest residential town after Nairobi and Mombasa and is one of the fastest developing town in sub-Saharan Africa. Nakuru County had a population of 2,162,202 according to 2019 population and housing census. The County population growth rate was 3.1% per annum compared to the National average growth which was 2.6%, implying that there was a high demand for real estate developments (KNBS,

2018). In respect to this, the population in Nakuru East and Nakuru West Sub-Counties in 2018 was 363,000 and in 2019 was 373,000, a 2.75% increase from 2018. In 2020, the population was 383,000, a 2.68% increase from 2019. In 2021, the population was 395,000, a 3.13% increase from 2020. Nakuru East had a population of 193,926 people and a population density of 840 per square kilometer.

According to 2019 Kenya Population and Housing Census (2019), Nakuru West the population of residents were 198,661 people and a population density of 2,764 per square kilometer. The high population density has resulted to high demand of houses and hence high prices of houses in the two sub counties. The two sub counties have a shortage of 2,000 housing units every year due to ever increasing housing demand of 10,000 housing units annually as per 2019. In addition, the study area, that is, Nakuru East and Nakuru West Sub-Counties is majorly composed of low-income households earning between Sh3,252 and Sh5,995 monthly. It was on this basis that the current study focused on Nauru East and Nakuru West Sub counties.

3.5 Population of the Study

The population of the study can be viewed as a specified group of subjects from which a study draws a sample and from which the results of the sample are generalized (Neuman, 2014). The target population for the study were 392,587 households from the lower income sector of Nakuru East and Nakuru West Sub-counties including those who rent housing and those who are home owners according to population and housing census of 2019. It was assumed that each household has one figure head making each household a unit of analysis. Table 3.1 presents the number of households in Nakuru Town West and Nakuru Town East Sub Counties

Table 3.1: Number of households in Nakuru Town West and Nakuru Town East Sub Counties

Sub County	Ward	Number of Households
Nakuru Town West	Barut	9,350
	London	27,037
	Kaptembwa	95,811
	Kapkures	12,099
	Rhonda	33,381
	Shaabab	20,983
	Total No. of Households	**198,661**
Nakuru Town East	Biashara	35,269
	Kivumbini	27,993
	Flamingo	42,628
	Menengai	41,813
	Nakuru East	46,224
	Total No. of Households	**193,926**
	Population Size	**392,587**

Source: KNBS 2019

The study also targeted housing stakeholders in mortgage financial institutions, housing cooperative societies and real estate developers and agents operating in Nakuru County. 80 stakeholder institutions in the two sub counties formed part of the target population. The list of the institutions is presented in appendix III.

3.6 Sample Size and Sampling Procedure

3.6.1 Sample Frame

A Sample frame is a list of records or individuals in a population that a researcher can actually select to be involved in the study (O'Gorman & MacIntosh, 2014). The sample frame for this study was the household heads in the two sub counties. Either male or female head of households in the specific wards in Nakuru East and West

Sub- County formed the sample frame. Therefore, the sample frame for household heads was 392,587 household heads (one household head per household) distributed per wards as presented in table 3.2.

Table 3.2: Number of Household Heads

Sub County	Ward	Number of Households
Nakuru Town West	Barut	9,350
	London	27,037
	Kaptembwa	95,811
	Kapkures	12,099
	Rhonda	33,381
	Shaabab	20,983
	No. of Households Heads	**198,661**
Nakuru Town East	Biashara	35,269
	Kivumbini	27,993
	Flamingo	42,628
	Menengai	41,813
	Nakuru East	46,224
	No. of Households Heads	**193,926**
	Sample Frame	**392,587**

The study also used key stakeholders including mortgage financial institutions, housing cooperative societies and real estate developers and agents operating in Nakuru County to provide information on the affordability of housing in relation to the level of income levels of households, house prices, cost of financing, and financial management skills of households. In this case, the study considered every institution as a unit of analysis. To avoid duplication of data, one official engaged in housing development was targeted by the study, giving a sample frame of 80 respondents as presented in table 3.3.

Table 3.3: Categories of Key Housing Stakeholders

Stakeholder Category	Number
Financing Companies	1
Housing Cooperatives	3
Commercial Agencies	70
Construction Companies	6

3.6.2 Sample Size

The sample size for household heads was selected using Cochran (1977) formula developed to calculate a representative sample for infinite population. The infinite population formula is as shown below;

$$SS = \frac{Z^2 \times (p) \times (1 - p)}{C^2}$$

$$= \frac{1.96^2 \times (0.5) \times (1-0.5)}{0.05^2}$$

$$=384.16$$

Where;

SS = Sample Size

Z = Z-value (1.96 for a 95 % confidence level)

P = Percentage of population picking a choice, expressed as decimal

C = Confidence interval, expressed as decimal (e.g., .05 = +/- 5 percentage points)

Therefore, a sample size of 384 was used for this study based on the formula above. The wards accommodate a population of residents by default conceptualized by the geographical locations; therefore, proportionate sampling was used to select the adequate size sample from each ward. Allocation formula for proportionate sampling $(\frac{x}{N}.n)$; where x-ward size, N-sub county population and n-sample size was applied for

all wards (Hall, 2015a). The sample size per ward was therefore obtained as presented in table 3.4 below

Table 3.4: Sample Size per Sub County Ward

Sub County	Ward	Sample Size
Nakuru Town West	Barut	9
	London	26
	Kaptembwa	94
	Kapkures	12
	Rhonda	33
	Shaabab	21
	Sample Size for Nakuru Town West	**195**
Nakuru Town East	Biashara	34
	Kivumbini	27
	Flamingo	42
	Menengai	41
	Nakuru East	45
	Sample Size for Nakuru Town East	**189**
	Total Sample Size	**384**

The sample size for the housing stakeholders was determined using purposive sampling where managers for the stakeholder companies that had been in operation for over 10 years were selected as follows; 1 manager for the financing company, 2 managers for housing co-operatives, 7 managers for commercial agencies and 2 managers for construction companies were selected. For commercial agencies that were the majority of stakeholder organizations, 10% of the companies were selected in the sample.

3.6.3 Sampling Procedure

To obtain the actual sample elements, the specific households to be involved in the study were selected using systematic sampling. Ward administrators were requested

to provide an approximate list of households within their ward. The households were arranged in ascending order, based on the numbering given by the ward administrators, the first household was selected randomly after which, every pre-determined n^{th} households were selected. From each household selected, a household head was selected to respond to the questionnaire.

On the other hand, the study used purposive sampling to obtain a sample size of managers of mortgage financial institutions, housing cooperative societies and real estate developers and agents operating in Nakuru County. A list of all the housing stakeholders was obtained from the county offices which included the years of operation of the stakeholders. The study used purposive sampling to only include the housing stakeholders who have been in operation for at least ten years. The study assumed that understanding of the sector for more than years was adequate for a respondent to contribute to the study, thus this was the criteria for purposive sampling. Managers of the major mortgage financial institutions, housing cooperative societies and real estate developers and agents were selected based on the client base and period of operation in Nakuru County. The study selected 12 (seven from Nakuru East and five from Nakuru West, according to their distribution), such institutions such that they were in operation for over ten years.

3.7 Data Collection Instrument

The study utilized structured questionnaire and interview schedule for the data collection. According to Nayak and Singh (2016) a structured questionnaire consists of definite, concrete and directed questions. Kearney (2016) further indicates that the structured questionnaire contains close-ended questions in which the finite response options are provided for the respondents. The structured questionnaire was utilized in

this study due to the various advantages associated with them such as; ease of data analysis using SPSS software, high response rate from the respondents, efficiency in time and costs in the data collection process (Bilgin, 2017; Fitzgerald, 2015; Sloan & Quan-Haase, 2017). The questionnaire was divided into six sections; section I captured background questions about the respondents, section II –VI contained questions for the variables of the study. This study used categorical questions mostly for the background questions where the respondents were provided with options that denote factual and objective information about themselves. On the other hand, sections II-VI was designed with questions that were Likert based in nature.

According to Fitzgerald and Linda (2015) a Likert scale is a summated rating scale used for measuring attitudes. On the other hand, interview schedules were used to collect views of managers of mortgage financial institutions, housing cooperative societies and real estate developers and agents operating in Nakuru County. These housing stakeholders provided information on the affordability of housing from the point of income levels of households, house prices, cost of financing, and financial management skills of households.

3.8 Pilot Study

The study undertook a pilot study prior to the actual study. According to Hai-jew (2015) a pilot study is typically undertaken with a smaller number of the target populations in order to provide opportunities for modification of the final instrument before administration. On the other hand, Miller and Whicker (2017) observed that a pilot study relates to a small scale trial for the proposed procedures, materials and methods before the final study is undertaken. The pilot study is often undertaken within contextual similar environment to those of the final study.

Pilot study was conducted to ensure that the results of the pilot study aid in the strengthening the research instrument and process. Mugenda and Mugenda (2009) indicate that at least 10% of the sample size should be utilized for the study to form a pilot study sample. In respect to this, 10% of the sample size was considered to be sufficient to represent study sample characteristics (Creswell, 2014). Therefore, the sample size for the pilot study was 38 household heads. In respect to this, stratified and proportionate sampling was done to select the 38 respondents of the pilot study.

The pilot study was undertaken in Nakuru East and Nakuru West Sub-Counties. The households involved in the pilot test were noted and excluded from the main study to avoid data contamination. The sampled pilot was done using proportionate and systematic sampling similar to what was done for the sampled population. The pilot study was used for checking the relevance of the questions, the appropriateness of the set questions, language use in the questionnaire, and the logistical dynamics of distributing the questions as well as ways of analysing the questionnaire. The feedback from the pilot study was used to improve on the final questionnaire and the distribution processes.

3.8.1 Validity Analysis

The validity of the research instruments was measured in this study. According to Miller and Whicker (2017) validity relates to the accuracy as well as meaningfulness of the conclusions derived from the results obtained from the research instruments. Validity of the research instrument thus relates to weather the research instrument is able to measure what it is designed to measure. This study used content validity to measure the research validity. According to Hai-jew (2015) content validity relates to the use of experts to check on whether the research instrument items or contents is

representative of the research phenomenon that it is meant to measure. The researcher formulated the research instruments guided by the research objectives in order to ensure that the instrument items or contents were representative of the research phenomenon that was meant to be measured. The study used lecturers from the school of business and the research supervisors to rate the relevance of the research instruments and their feedback was used to improve on the validity of the study.

3.8.2 Reliability Analysis

The reliability of the research instrument refers to the research instrument yielding consistent results with repeated trials (Kearney, 2016). Reliability is key in measuring consistency of the achieved responses from the research instruments. The study used the Cronbach alpha coefficient in measuring the reliability of the study. According to Nayak and Singh (2016) the Cronbach alpha coefficient examines the manner in which the scores of items measuring a specific variable agree with each other. In this context, Bilgin (2017) notes that the Cronbach alpha coefficient is used for the multi item scales such as the ones used in this study. Neuendorf (2011) indicates that a Cronbach alpha coefficient of 0.7 and above should be sufficient for the study. A Cronbach alpha of 0.784 was achieved for this study an implication that the questionnaire was reliable for data collection.

3.9 Data Collection Procedure

The data collection procedure commenced after being issued with a letter of introduction from the Institute of Postgraduate Studies of Kabarak University. The permit for the research was obtained from the National Commission of Science, Technology and Innovation (NACOSTI) permit. Securing of the NACOSTI letter was critical in the researcher since it helped the researcher in proving to the households

that the research was done for academic purpose. This was key given the fact that the researcher was visiting individual homesteads and for security purposes, the residents were more accommodating on seeing that the research was sanctioned by the government.

The researcher used trained research assistants to be able to cover the desired areas. The research assistants were first made to acquaint themselves with the research instrument to ensure that they were well versed and conversant with the local dialect incase respondents needed any assistance. The questionnaire was administered through the 'Drop Off' and 'Pick Up Later' method. The method was used in this study due to its association with high response rates hence increased statistical validity of the results due to low non-coverage error. This method was also used to be enable get a high response rate because most of the household heads are normally out of their homes during the day and would not be found if other methods were to be used.

3.10 Data Analysis

Data from responses was systematically organized and validated through editing and coding in order to facilitate analysis (Neuendorf, 2011). The validation process determines the return rate of questionnaires. The instruments were coded and scrutinize to determine the extent to which they had been filled up for errors, inadequate responses or irrelevancies. Quantitative data was analysed with the aid of the Statistical Package for Social Sciences (SPSS).

Descriptive statistics including; mean, standard deviation and frequencies were used to summarise the research variables. Regressions and correlation were used for inferential analysis; correlation coefficient was used to establish the strength and direction of

relationship between the research variables in each objective while a regression model was used to determine the effect of each financial factor on the housing affordability as per research objectives. Then multiple regression model was used to determine the combined effect of financial factors on the housing affordability. The multiple regression analysis method was preferred due the existence of a several financial variables that affected housing affordability compared to simple linear regression that focuses on only one variable. Since no variable of factors exists in isolation, a multiple linear regression was more accurate for the current study. A 5% significance level was selected, since this is the universally accepted significance level. The model used was as explained below;

$$Y=\beta_0+ \beta_1X_1+ \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon \quad (1)$$

Where β_0 –is the constant or the Y intercept equivalent to the values of Y when X is equal to Zero

β_{1-n} - is the change in Y, given a unit change in X_i

Y -is the dependent variable, in this case representing Housing affordability

X_1 = Household income

X_2= Cost of Financing

X_3= House price

X_4= Financial Management skills

ε -is the error term, which indicates the precision of the model

In the above model, error term takes care of the differences in the predicted values and actual values of the variables. The research findings were presented using tables that were accompanied with relevant interpretation and discussion.

3.10.1 Diagnostic Tests

The study carried out diagnostics test in order to ensure that the data is in line with all assumptions of multiple linear regressions and that data is fit and adequate for such analysis lest the model misguide the interpretation. Therefore, the regression model obtained from the study was tested for linearity, Collinearity, autocorrelation and Homoscedasticity assumptions. The linearity assumption implies that there is a constant variance in scores between two variables across the range of scores of the variables. Linearity was tested by means of a P-P plot whereby the plotted points should match the diagonal line and also by means of a Scatter plot. Linear relationship is evidenced by equal distribution of values above and below x-axis.

The Collinearity assumption implies that the independent variables are not highly related. This results into inflation of model coefficients and thus hard to establish the individual effect of independent variables on the dependent variable (Creswell, 2014). Tolerance statistics and Variable Inflation Factor (VIF) were used to test the level of collinearity of the independent variables. The tolerance statistics should be more than 0.2 and less than 1.0 in order to be free from Multicollinearity (Creswell, 2014). The VIF values for all the predictors should be below 5 and more than 1.0 to indicate no evidence of Multicollinearity.

Autocorrelation refers to a situation where related objects in independent variables results in interrelationships between their values and thus lacking instance independence of variables. This serial correlation may imply a significant relationship between independent variables with the dependent variables while they are not. (Hall, 2015b). When there is autocorrelation in a data set, it implies one is not modelling data points well enough and thus resulting to misleading estimates of model

coefficients. Durbin-Watson statistic values range from 0 to 4 and whereby Durbin-Watson statistic value of 2 indicates absence of autocorrelation. On the other hand, a Durbin-Watson statistic between 1.5 and 2.5 indicate little or no autocorrelation and is acceptable in the regression analysis (Clements & Sarama, 2016).

The Homoscedasticity assumption implies that there is constant variance of errors terms over the values of dependent variable. Heteroscedasticity occurs when the error term is not independently and identically distributed (Latunde, 2017). This happens when the variance in the error term is different for all combinations of outcomes of the independent variables (Creswell, 2014). The variance of the disturbance term should not be dependent on the independent variables neither change with any of these variables. Heteroscedasticity invalidate statistical tests by giving false significance of variables when the statistical tests assume uniform error term and that are independent to the values of independent variables. Presence of Heteroscedasticity in the data was tested using the Breusch-Pagan/Cook-Weisberg Test for Heteroscedasticity. This tests the null hypothesis that there are constant variance variables. A p-value less than 0.05 imply heteroskedasticity while p-value is greater than 0.05 imply homoscedasticity.

3.11 Ethical Consideration

In conducting this study, the ethical consideration was undertaken. According to Gathii et al. (2019) the ethical considerations relates to the values, norms and institutional arrangements that govern research activities. Ethical issues were observed while carrying out this research by the researcher in ensuring that all information obtained from the field was treated with confidentiality, anonymity and always soliciting informed consents. The researcher explained the purpose of the

study and the benefits that would accrue from it without exaggerating or understating the benefits. When conducting research, respondents were told the truth.

The participants were allowed to take part in the study on voluntary basis. To ensure anonymity of the respondents, the researcher did not identify their names, and ethnic or cultural background of the respondents. The researcher assured the respondent that consent would be sought from them if there is need to reveal any information given by them. The researcher was careful not to ask embarrassing questions which would result to anxiety and fear. The researcher maintained and upheld a high level of objectivity in the entire process and acknowledging previous authors work by citation where such work was adopted. The articles which were used to extract secondary data from different sources was treated with utmost confidentiality. Data extracted was analysed on the natural setting of occurrence without alteration and falsification.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

The chapter presents the research findings and discussions from the data analysis. The chapter covers response rate obtained from collected data, reliability of research instruments, background information of respondents and both descriptive and inferential findings in regard to the research objectives.

4.2 Response Rate

The study targeted to collect data from 384 household heads from low-income households in Nakuru East and West Sub Counties. A total of 384 questionnaires were administered to respondents. In addition to questionnaires, the study also sought to collect data from twelve personnel working in Mortgage Financial Institutions, Housing Cooperative Societies and Real Estate Developers and Agents acting as key informants of the study through interviews guided by an interview schedule. Table 4.1 shows the response rate of the study.

Table 4.1: Response Rate

Branch	Sample	Response	Response Rate
Household Heads	384	333	86.7%
Key Informants	12	11	91.6%
Total	**395**	**345**	**87.3%**

As presented in table 4.1 above, from the 384 questionnaires distributed, 333 questionnaires were successfully filled and returned giving response rate of 86.7%. Out of the 12 key stakeholder's respondents targeted in the interviews, 11 respondents successfully participated giving response rate of 91.6%. According to Latunde (2016),

a response rate of at least 80% of the study sample is adequate for generalization of findings to study a targeted population. Therefore, the response rate achieved in this study was adequate for analysis of the study data and subsequence inference to the target population.

4.3 Reliability of the Research Instruments

To ensure reliability of the questionnaires, a pilot study was done using a sample of 38 household heads from Nakuru East and Nakuru West Sub-counties which represented 10% of the sample size of the study as recommended by Mugenda and Mugenda (2016). Cronbach's Alpha test was computed to test internal consistency and the results shown in Table 4.2 were obtained.

Table 4.2: Reliability Analysis

Variable	Number of Items	Cronbach's Alpha
Level of Income	8	0.752
Cost of Financing	8	0.856
House Pricing	8	0.776
Financial Management Skills	8	0.826
Housing Affordability	6	0.712
Overall Cronbach Coefficient	**38**	**0.784**

The Cronbach's Alpha reliability coefficient for the eight items for level of income was 0.752 while the 0.856 for reliability coefficient for the eight items for cost of housing was 0.856. On the other hand, the study achieved a reliability coefficient of 0.776 for the eight items relating to house pricing and 0.826 on items relating to financial management skills. The achieved Cronbach's Alpha reliability coefficient for the six items for housing affordability was 0.712. The overall reliability achieved for all the 38 items used in the questionnaire to measure the five variables of the study

was 0.784. Mugenda (2003) recommends a reliability coefficient of at least 0.7 for any instrument to be used for data collection. This implied that the reliability achieved for the questionnaire that was used in the current study met the required threshold for use in data collection, and could therefore give consistent findings.

4.4 Demographic Information of the Respondents

The study sought to understand the respondents' demographic information based on gender, marital status, highest level of education attained and employment details. These features helped in understanding the nature of the respondents and assessment of suitability of data given on the variables being studied. Findings on the demographics of the respondents are shown in Table 4.3

Table 4.3: Demographic Information of the Respondents

Aspect	Gender	Frequency	Percent
Gender	Male	215	64.6
	Female	118	35.4
Marital Status	Single	22	6.6
	Married	261	78.4
	Separated	28	8.4
	Widowed	6	1.8
	Divorced	16	4.8
Education Level	None	11	3.3
	Primary	58	17.4
	Secondary	112	33.6
	Certificate	73	21.9
	Diploma	57	17.1
	Graduate	19	5.7
	Postgraduate	3	0.9
Employment Status	Employed	80	24.0
	Unemployed	160	48.1
	Self-employed	93	27.9
Form of Employment	Skilled	41	12.3
	Semi-Skilled	51	15.3
	Unskilled	81	24.3
	None	160	48.0
Employment Position	Senior Staff	18	5.4
	Management Staff	25	7.6
	Junior Staff	88	26.4
	Casual	42	12.6
	None	160	48.0
	Total	**333**	**100.0**

From table 4.3, 64.6% and 35.4% of the respondents were male and females respectively. This implied that majority of the household heads were male which is in line with Kenyan cultures where the male are the head of households. The 35.4% of the female respondents represented cases where the husband was not available at the time of data collection, cases of separation, divorce, widows and those married ladies and were in charge of a household in the target study location and population. The obtained results implied the study obtained reliable information in regard to housing affordability of the households since male household heads are assumed to take up the responsibility of housing in African society (Dires, 2015). In respect to housing affordability, Chung *et al.* (2019) found that most male households had higher income compared to female households and thus were able to afford housing needs more than their female counterparts.

Majority of respondents (78.4%) were married, 8.4% had separated, 6.6% were single, 4.8% had divorced and 1.8% were widowed. This information helped in explaining the different factors affecting housing affordability in that one stream of income in a household would have a lower affordability capacity to housing compared to more than one stream of income in a household. In marriage, there could be a higher likelihood of more than one person working as compared to other categories of marital status. This is in line to the findings by Chung *et al*., (2019) who found that married individuals had higher level of income and higher affordability for housing compared to those living alone either single, separated, divorced or widowed.

Majority of the respondents (33.6%) had their highest level of education as secondary school level. Those who had obtained a certificate level of education represented 21.9% of the sample while 17.4% had only attained the primary level as their highest

level of education. From the study, it was further revealed that 17.7% of the respondents had attained a post-secondary level of education which was represented by a diploma while 5.7% of the respondents were graduates. The number of study respondents with no level and post graduate levels of study were very low at 3.3% and 0.9% respectively. Universally, higher level of education is associated with higher levels of income and therefore higher housing affordability; Goodman *et al*. (2018) reported positive correlation between education level and house affordability. In this study, further analyses affirm that level of education is significant of affordability of housing.

Majority (48.1%) of the respondents were unemployed. Only 24.0% were employed. The study also revealed that 27.9% of the sampled respondents were getting their earning through self-employment. The low employment level could be explained by the fact that most of the respondents did not have beyond secondary school education and therefore do have formal training required for formal jobs. The results therefore affirm the position that low-income earners face limitations that may hinder education access and subsequently, have lower access to job opportunities.

Majority (48.0%) of the respondents had no employment while unskilled and the semi-skilled employees accounted for 24.4% and 15.3% of the respondents respectively. Only 12.3% were those engaged in the skilled employment and were therefore likely to earn more income compared. From the interviews of housing stakeholders, one of the stakeholders indicated that;

> *"Skilled employment offers a better salary and the individuals can be able to save to acquire a house or even rent a house. Again, these individuals can obtain loan to build their own houses."*

Majority (48.0%) of the respondents did not have any job. The proportion of those in the management staff position was 12.6% while those in the casual position were 26.4%. The study further established the proportion in the junior staff and the senior staff positions as 7.5% and 5.4% respectively. Senior positions in employment are associated with high education, hence the low proportion. Similarly, senior positions come with high income and hence affordability capabilities of housing. From the interview, it was evident that;

> *"Higher positions in employment result to higher benefits such as allowances and higher remuneration and hence high affordability of housing"*

These results are in support of Almaden (2015) significant differences in the housing affordability between the various groups of job cadres. Higher job positions were associated with higher housing affordability.

4.5 Descriptive Statistics

The descriptive statistics used included frequencies in terms of counts and percentages, mean scores and standard deviation. The study used a five-point Likert scale where; 1-No Extent (NE), 2-Small Extent (SE), 3-Moderate Extent (ME), 4-Large Extent (LE), and 5-Very Large Extent (VLE). Using this Likert scale, a mean score range between 1 and 5 and therefore given a range of 4 points. The mean scores were computed by adding the corresponding values for a set of questions for a given variable and then dividing the sum with the number of questions. This yielded a mean score between 1 and 5. In respect to this, a mean score between 1.00 and 1.80 implied a tendency of no extent on average, and a mean score between 1.80 and 2.60 implied a tendency of small extent on average. Likewise, a mean score between 2.60 and 3.40 implied a tendency of moderate extent on average, and a mean score between 3.40 and 4.20 implying a tendency of large extent. Lastly, a mean score above 4.20 implied

that on average the respondents indicated to a very large extent, the corresponded aspect occurred to them (Rogelberg, 2014). On the other hand, a standard deviation of less than 1.000 implied a small spread of responses and thus presence of consensus among the respondents. A standard deviation of more than 1.000 indicates low consensus and a large spread of responses among the respondents (Creswell, 2014).

4.5.1 Household Income

The study sought to determine the level of income among households in Nakuru County. Questionnaire items on the variables were analyzed descriptively using mean and standard deviation. The following items were used to establish the level of income among the households; income levels are stable over a period of time, income levels can support for mortgage repayments, income levels can cater for most of the financial needs, income levels can support the housing features that would be desired, income levels can support housing commitments, income levels being above the rest of household members, income levels improving over time and the presence of household members who were economically inactive. Table 4.9 shows that descriptive statistics for household income.

Table 4.4: Descriptive Analysis of Household Income

Statement	NE	SE	ME	LE	VLE	Total	
	F %	F %	F %	F %	F %	Mean	Std. Dev
My income levels are stable over a period of time	67 20.1%	198 59.5%	43 12.9%	18 5.4%	7 2.1%	2.10	0.853
My income levels can support mortgage repayments	65 19.5%	195 58.6%	55 16.5%	6 1.8%	12 3.6%	2.11	0.864
My income levels can cater for most of my financial needs	72 21.6%	202 60.7%	41 12.3%	15 4.5%	3 0.9%	2.02	0.776
My income levels can support housing features that I would desire	41 12.3%	219 65.8%	33 9.9%	18 5.4%	22 6.6%	2.28	0.978
My income levels can support housing commitments	50 15.0%	224 67.3%	28 8.4%	30 9.0%	1 0.3%	2.12	0.780
My income level is above the rest of household members	76 22.8%	194 58.3%	49 14.7%	6 1.8%	8 2.4%	2.03	0.815
My income levels are improving	56 16.8%	208 62.5%	49 14.7%	11 3.3%	9 2.7%	2.13	0.823
I have household members who are economically inactive	17 5.1%	8 2.4%	51 15.3%	185 55.6%	72 21.6%	3.86	0.953
Composite Scores						**2.33**	**0.855**

From table 4.4, majority (79.6%) of respondents did not have stable income their income over a period of time. Only 7.5% of the respondents indicated that their income levels were stable. This was further evidenced by, a mean of 2.10 and standard deviation of 0.853 which was an indication that there was consensus among the respondents in regards to the stated metric. Matheson (2018) found that availability of stable income affects the affordability of housing among Canadian

residents. Goodman, Li, and Zhu (2018) also found that the residents without a steady annual income do not have the capacity to borrow funds for housing. In fact, the study specified that the residents with an annual income not exceeding 20,000 USD did not have the capacity to borrow funds for housing while only 2% of the residents with income range between 31,000-40,000 USD had sufficient income to do borrowing for the housing aspects.

From the interviews, it was observed that it was also observed that income level for majority of low income earners was below one dollar. According to the stakeholders, such households may not readily fit in the available housing plans. It was further observed that;

> *"Constant income among individuals indicates that the individuals are able to have an appealing bank statement that can enable them to acquire much funds through loans and mortgages."*

The respondents' level of income could support mortgage payments as evidenced by mean of 2.11 and a standard deviation of 0.864. The mean value lies between 1.8 and 2.6 which was a suggestion that the respondents on average agreed that their income could support the mortgage payments to a small extent. Further, the obtained standard deviation (less than 1.000) was an indication of consensus among the respondents in regards to the statement. This was further supported by the response of the majority (77.1%) who indicated that to a small extent their income levels could enable them pay for mortgage and on the contrary 5.4% of the respondents who indicated that to a very large extent their income level could support their mortgage payment. This is consistent with what majority of the interviewed stakeholders indicated. From the interview, it was observed that;

"Most of low income earners are unable to obtain a mortgage since there income is too low to facilitate its repayments"

Hilber and Schhni (2016) established that majority of low income citizens cannot fully support the mortgage repayments. Similarly, Boachie-Yiadom (2015) established that the average interest rates for the mortgage stood at 30% making it a challenge to make the required monthly repayments for low income earners.

Income earned by the respondents could not cater for most of their financial needs as evidenced by mean of 2.02. This was further evidenced by majority response of (82.3%) that income levels could not cater for their financial needs while while only 5.4% contradicted the statement indicating that to a very large extent their income supported their financial needs. There standard deviation of 0.776 suggested that the opinions were not widely varied among the respondents. Interviewed stakeholder were in agreement with these assertions and it was observed that;

"Most of the individuals earning low income are unable even to meet the very basic needs such as food and health and therefore they cannot afford a good housing in expense of their very fundamental needs, for example food"

Bujang, Shapeen, Zarin, and Ismail (2017) established that most of the stressing issues in housing affordability related to the ability of the households to cater for their other varied financial needs. Philipp (2015) also found that declining household incomes contributed to challenges in the affordability of the housing especially with most of income being directed to other pressing financial needs for foods and clothing.

Majority (78.1%) of respondents indicated that their income levels would not fully support their desired housing features with only 11.9% of the respondent indicating to that to a very large extent their income could enable them to have a house with the desired features. This was further confirmed by a mean of 2.28 which is a value between 1.8 and 2.6 and standard deviation of 0.978 which is a value less than 1.000 showing that the respondents were in consensus with regards to extent in which their income levels supported desired housing features. Same assertions were held most of the stakeholders in the real estate and housing finance who indicated that;

> *"Most low income earners build or acquire simple structures with [out all the features they may desired. Oher obtain semi-permeant houses in a land they inherited from their parents"*

Ezennia and Hoskara (2019) found that desired features of housing come secondary to having a basic structure for housing. Similarly, Anacker (2019) revealed that the low income renters had insufficient income to rent houses with desired conditions due to low incomes, lack of government subsidies and incentives and thus leading to high rent burdens and on extreme end; displacement and homelessness of residents.

A mean score of 2.12 was evidence that income levels of households could not support housing commitments. This is further is further evidenced by a majority (82.3%) of the respondents who indicated that their income was only able to support the housing commitments to a small extent. Similarly, the respondents were in consensus on this metric as supported by a standard deviation of less than 1.00 (standard deviation =0.780). Inability to support housing commitments was still a theme that emerged from the interviews. In respect to this, the interviewed respondents observed that;

"Building a house requires substantial amount of money to cater for various materials and services that people with low income are unable to afford"

O'connor (2016) found that ability to support house commitments is an indicator of housing affordability which was very low extent in the current study. Similarly, Zainon et al. (2017) found that the low income earners would be challenged in accessing the housing loan due to the high house pricing aspects.

Majority (79.3%) of the respondents pointed that their income levels were not significantly above those of the rest of the family members. On the contrary, only 6% of the respondents indicated that their income levels were to a very large extent above those of the rest of the family members. A mean of 2.03 further affirmed that respondents had lower income lower than other household members. A standard deviation of 0.815 showed consensus among the respondents on having a lower income in comparison to other household members. Contrary to this the interviewed stakeholders found that despite the amount of income one earns compared to the rest of household members, determined individuals can always save for a desired housing in future. One of them indicated that;

"I do not think that income levels of a household member in respect to the rest of the members is anything to go by in the matters of building. It only takes determination and vision for an individual to save for a purpose of acquiring a house"

Baranoff (2016) indicated that presence of high household income among members of one family increases the probability of owning a house. Goodman *et al.* (2018) indicated that there was a moderate correlation between the number of persons working in a family and the level of housing affordability. The study revealed that

affordability of housing become easy with increase of the number of working members in a household. This is further in line to the findings by Chung *et al*. (2019) who found collective household income determined the level of affordability to housing needs of the particular household.

The study established that a majority (77.2%) of the respondents' income levels had only improved to a small extent. This position was supported by a mean of 2.13 which was between 1.8 and 2.6 suggesting that most respondents on average agreed to a small extent on improvement of their income levels. The standard deviation of 0.823 which is a value below 1.000 further evidenced small spread of responses in rating this metric. One stakeholder asserted that;

> *"Improving income is an indicator of future prospects of owning a house due to improvement of loan credibility with time"*

These findings are consistent with those of Ezennia and Hoskara (2019b) found that most low-income earners in Nigeria have constant low income for a very long time and this incapacitated them into owing a property and requires income levels. Friedman and Koc (2017) documented that lower income households consistently for long periods had significantly lower household ownership aspects.

The study further established that a majority (55.6%) low income households had household members who were economically inactive. This was in contrary to 5.1% of the respondents who proposed that they had household members who were economically active. Mean of 3.86 was a further affirmed the response. A standard deviation of 0.953 symbolized lower levels of divergent views hence there was a consensus among the respondents economically inactive household members. Most stakeholders did not fully support the idea of cumulative household income by

indicating that most of the times housing is a one-person initiative and not a group and loan are based on that.

Kallergis *et al*. (2018) found that there were many household members who were not working among the families from lower economic backgrounds hence concurring with the findings in the current study. The amount of household income is relative to the number of households who a actively working and hence associated to housing affordability (Marissa, 2019). The number of the household members that are economically active was also a major consideration for affordability of the housing aspect (Birčiaková *et al*., 2017).

Focusing on the composite scores, the study obtained a composite mean score of 2.33 and a composite standard deviation of 0.855. The composite mean score indicates that income was level among the households was low and could support housing needs and commitments to only a small extent. This was further evident by majority of the respondents indicating small extent to the statements measuring the level of income levels. The composite standard deviation achieved in this objective indicates that the households were in consensus in rating the various statements measuring the levels of households' income. This indicates that all the respondents had almost equal level of income, which was low and could only support housing needs and commitments to small extent.

Philipp (2015) found that declining household incomes contributed to challenges in the affordability of the housing especially with increasing house prices. Birčiaková, Antošová, and Balák (2017) found that income levels influenced the place of residence of the household. Ismail *et al*. (2015) study found that in Malaysia the income of the household determines the type of housing as well as the house prices

that households can afford. These findings are in agreement on various studies that indicated that housing challenges of low-come earners to be incapacity to afford housing related materials, infrastructure and services such as land, building materials, decent house to rent, mortgage facilities and labour costs for building among others due to their low income (Marissa, 2019; Ezennia & Hoskara, 2019b, 2019a; Kallergis *et al*., 2018; Bujang *et al*., 2017 O'connor, 2016; Baranoff, 2016).

4.5.2 Cost of Financing

The study sought to establish the cost of financing towards housing as perceived by the residents of Nakuru County. The respondents were requested to respond to the questionnaire items on cost of financing using a five point's Likert scale. The following items were used to gauge the cost of financing; cost of building materials, land prices, cost of professional services associated with housing, access to mortgage facilities, transport costs associated to building, labour costs for building, government related charges on building, support services towards building such as water and electricity. The frequencies, mean scores and standard deviations were used to summarize the findings as presented in table 4.5 below

Table 4.5: Descriptive Analysis of Cost of Financing

Statement	NE	SE	ME	LE	VLE	Total	
	F	F	F	F	F	Mean	Std.
	%	%	%	%	%		Dev
The cost of building materials is high for me	3	13	37	172	108	4.11	0.814
	0.9%	3.9%	11.1%	51.7%	32.4%		
Land prices are high for me	7	15	47	177	87	3.97	0.879
	2.1%	4.5%	14.1%	53.2%	26.1%		
The cost of professional services associated with housing are not within my reach	17	22	40	151	103	3.90	1.071
	5.1%	6.6%	12.0%	45.3%	30.9%		
I am unable to access mortgage facilities	15	9	27	180	102	4.04	0.950
	4.5%	2.7%	8.1%	54.1%	30.6%		
Transport costs associated to building are high for me	7	26	36	193	71	3.89	0.901
	2.1%	7.8%	10.8%	58.0%	21.3%		
I am unable to meet the labour costs for building	8	19	33	173	100	4.02	0.920
	2.4%	5.7%	9.9%	52.0%	30.0%		
Government related charges on building are unaffordable to me	13	8	44	186	82	3.95	0.909
	3.9%	2.4%	13.2%	55.9%	24.6%		
Support services towards building such as water and electricity are costly for me	0	23	43	193	74	3.95	0.792
	0.0%	6.9%	12.9%	58.0%	22.2%		
Composite Scores						**3.98**	**0.905**

From table 4.5, it is clear that cost of building materials were high as evidenced by majority agreement of 84.1%. Only 4.8% of the respondents found that the cost of building material was not high at all for them. This outcome is further supported by a mean of 4.11 and a standard deviation of 0.814. The mean score is an indication that the cost of building materials was high. The standard deviation was an indication that

there was consensus among the respondents that the cost of building materials was largely high. From the interview, it was observed that;

> *"Cost of materials for building are high and the prices keeps increasing each year and therefore no one single it was cheaper than today. Building a house a serious commitment"*

These findings concur with those by Chung *et al.* (2019) that the cost of building materials is unfordable to majority of low income earners, and Mariadas *et al*. (2016) that the major component of the construction costs is the price of the construction materials. No wonder Ngigi (2016) suggested that adoption of alternative building materials and technologies is key to enabling lower construction costs and hence affordability of housing.

Respondents generally felt that price of land was beyond reach, as evidenced by majority agreement (89.3%) that the prices of land was high. Only 6.6% of the respondents stated that the price of land was not a hindrance to housing affordability at all. This position was further affirmed by mean of 3.97 and standard deviation of 0.879 that further indicated that there was a high consensus among the respondents on the prices of land being high. However, some of the stakeholders were in partial disagreement with these assertions by noting that;

> *"Prices for land is high depending on where the land is located but this can't be a hindrance to building since the land will never be cheaper. In addition, there are loan facilities that can be issued to even the low income earners if they are patient enough to save for a longer time."*

These findings were consistent with those of Leng *et al.* (2017) that limited supply of land is leading to high house prices beyond the affordability of middle and lower

income classes. Haque and Aktar (2016) too observed that high cost of land is pushing the houses pricing beyond the affordability limit of a large number of the low income earning persons.

The cost of professional services associated with housing was beyond reach as revealed by majority (76.2%) confirmation. On the contrary opinion were only 11.7% of the respondents who stated that to no extent did they find the cost of housing associated professional services high. A mean of 3.90 further showed that the cost of professional housing services was generally high. The standard deviation (1.071), above 1.000 implying variance in respondents' views, evidence of low consensus among the respondents on the professional cost associated with housing. This further implied that there were portion of the respondents who had the opinion that the cost of professional services related to housing were beyond their reach and those who felt that the costs are within their reach. Some of the stakeholder interviewed indicated a contrary opinion in which one of them indicated that;

> *"Most mortgage financial institutions, housing cooperative societies and real estate developers and agents provide free professional services on housing. Low income earners just need to approach their preferred institutions for those professional services"*

The findings that cost of professional services related to housing were beyond their reach was similar are confirmed by Anacker (2019) who found that low income households could not manage to hire professional services in their housing which led to sub-standard housing structures. Similarly, Macharia and Wanyoike (2016) reported that various aspects influence the mortgage costs including mortgage fees and associated charges. Charges for professional services and advice on mortgage

terms made it difficult for low-income earners to afford mortgage facilities and hence to own houses. Though, Ngigi (2016) found out that there was low level of awareness among low income earners of free mortgage advisory for group approaches to mortgages.

Accessibility to mortgage was established to be a problem by majority of (84.7%) of the respondents. On the other hand, only 7.2% of the respondents felt that access to mortgage facilities was not difficult. This was further confirmed by mean of 4.04 and standard deviation of 0.950 which indicated a consensus among the respondents on the inability to access mortgage facilities. On the other hand, the stakeholder interviewed indicated that loans were available for every one as long as they adhere to the guidelines available of financing, with observation that;

> *"Loans are to a large extent available according to the financial capacity of individuals to repay the loans. For low income earners, they need to save for a long time to acquire a substantial loan to enable them meet their housing needs"*

These findings are in agreement with what of Ames and Wilson (2016) that identified lack of accessibility of mortgage facilities as main challenge in housing for low income households. Similarly, Boachie -Yiadom (2015) and Mbuloh and Oluoch (2019) noted that high interest rates present challenge for low income earners in accessing affordable housing through mortgage financing.

Transport cost associated with building is high to majority 79.3% of the low income households with only 9.9% of the respondents indicating that to no extent was the cost of transportation high. The mean established on the statement on whether the transport associated to building are high was 3.89, indicating that to a large extent, the

transport cost associated to building was high to the sampled respondents. Standard deviation of 0.901, which was less than 1.000, was an indication of less variance among the responses of the respondents in the study.

The current findings are in support of the findings of Neupane (2020) that low income households experience challenges of affordability of transportation of housing materials and other related items. However, Torluccio and Dorakh (2015) found that transportation of construction materials was not a major challenge to most of low income households; the major challenge was affordability of the construction materials.

The ability to meet the labor cost of building was a dream to the households as confirmed by majority (82.0%) of the respondents indicating high labour cost. Only 8.1% of the respondents were to no extent unable to meet labor cost for building. This was further evidenced by mean score of 4.02, and standard deviation of 0.920 showing that there was less variance in the response of the respondents. Similarly, government related charges on building very high to the low income households as evidenced by majority (80.3%) of the respondents' confirmation, with only 6.3% of the respondents stating that the charges unaffordable. This was further established by a mean of 3.95 with standard deviation of less than 1.000 (0.909) further indicating less variance among the respondents in rating the affordability of government related charges on building. On the other hand, the interviewed stakeholders seemed to partially agree with this in which observation that;

> *"Permits for construction and other related issues such as land rates, rent and stamp duties are expensive to most low income earners but most housing cooperative societies and some real estate developers assist their clients in*

ensuring they adhere to the regulations and requirements for avoidance of future problems."

These findings echo the findings by Ezennia and Hoskara (2019a) that affordability of housing was the major challenge of most of low income households due to the cost associated with licenses as well as permits for construction among other items. Similarly, Hilber and Schhni (2016) found that labor costs and the housing policies were unfavorable to house affordability. High costs of labor and compliance to most housing permits and regulations increased the housing costs and in return the price of the houses. According to Mariadas *et al*. (2016), the major component of the construction costs is the price of the construction materials. According to his study, general increase in the construction costs is associated with 0.310 increases in the house price.

Majority (80.2%) of the households stated that support services towards building such as water and electricity were costly for them and none indicated that these support services were not costly at all. This was further evidenced by mean of 3.95 and a standard deviation of 0.792, further showing less variance among responses by the households. Availability of social amenities attracts more house buyers and has the potential of pushing price upwards.

In support of these findings, Kethineni and Aravindan (2019) found that the cost of utilities such as water and electricity, and maintenance fees such as land rates and taxation increased the total costs of housing, even beyond 40% of their disposable income and thus the house was considered unaffordable to most low income households. Sellah *et al.* (2015) too observed that support services towards building were seen as a key determinant to housing affordability.

A composite mean score of 3.98 and composite standard deviation of 0.905 were achieved on statements evaluating the extent in which low income households in Nakuru County were unable to meet various costs of housing. These costs included mortgage facilities, transport costs, labour costs, government related charges on building, and support services such as water and electricity are costly. The composite mean scores indicate that on average the low income households in Nakuru County to a large extent were unable to meet various cost of housing with a composite standard deviation showing consensus in rating the metrics.

Mbuloh and Oluoch (2019) reported that general increase in interest rate for loans and mortgages has potentially led to house prices since most homes are built on loans. Such loans are either inaccessible or too expensive to low income households. Higher interest rates for mortgage facilities increased the monthly repayments amounts and thus higher burden to urban dwellers (Mutisya, 2015). Ajibola, Sharafadeen, & Owolabi (2016) attribute lack of proper housing to huge cost of housing and lack of housing finance.

The challenge of high interest is also enumerated by diverse researchers. Interest influences affordability of the mortgage facilities (Ezennia & Hoskara, 2019b). Iyandemye *et al*., (2018) found increasing interest rates on the mortgage loans becoming a challenge to mortgage accessibility aspects. High interest in the context of low income households affect the capacity of these groups of people to own a house or even to rent a decent house (Dewilde, 2018; Bujang *et al*., 2017; Salleh et al., 2015; Torluccio & Dorakh, 2015). High interest rates have the effect of discouraging interested homeowners from accessing the loan (Udoka and Kpataene, 2017). To cement these findings, Yusof *et al*. (2017) showed that in Malaysia where Islamic

banks offered lowest interest rates compared to conventional banks, houses were fairly affordable.

4.5.3 House Price

The study sought to assess the level of house price in Nakuru County. Research respondents were requested to respond to research items on house price using a five point's likert scale. The following items were used to establish the level of house pricing; house prices within the desired location, house prices within the location with adequate public transport, adequate access to water services, adequate access to electricity services, adequate access to health services, adequate access to school services, adequate access to security services being cheap and house prices within the location with desirable neighborhood attributes. The responses were as summarized in table 4.6 below

Table 4.6: Descriptive Analysis of House Price

Statement	NE F %	SE F %	ME F %	LE F %	VLE F %	Total Mean	 Std. Dev
The house prices within the location I desire are cheap	60 18.0%	185 55.6%	48 14.4%	18 5.4%	22 6.6%	2.27	1.032
House prices within the location with adequate public transport means are low	67 20.1%	202 60.7%	47 14.1%	7 2.1%	10 3.0%	2.07	0.833
House prices within the location with adequate access to water services are lowly priced	70 21.0%	195 58.6%	48 14.4%	18 5.4%	2 0.6%	2.06	0.789
House prices within the location with adequate access to electricity services are not costly	41 12.3%	214 64.3%	30 9.0%	19 5.7%	29 8.7%	2.34	1.054
House prices within the location with adequate access to health services are manageable	51 15.3%	222 66.7%	26 7.8%	31 9.3%	3 0.9%	2.14	0.817
House prices within the location with adequate access to school services are not high	56 16.8%	205 61.6%	48 14.4%	18 5.4%	6 1.8%	2.14	0.821
House prices within the location with adequate access to security services are cheap	52 15.6%	213 64.0%	45 13.5%	11 3.3%	12 3.6%	2.15	0.852
House prices within the location with desirable neighborhood attributes are inexpensive	45 13.5%	199 59.8%	59 17.7%	22 6.6%	8 2.4%	2.25	0.857
Composite Scores						**2.18**	**0.882**

According to Table 4.6, majority (73.6%) of the households stated that house prices within the location they desired were not cheap to them. Only 12% of the households agreed were of contrary opinion. The metric was supported by a mean score of 2.27 and a standard deviation of 1.302. The mean score obtained is an indication that the households found expensive, the houses on offer in their desired locations. The standard deviation was more than 1.000, indication that there was an enhanced variance among the respondents rating the house prices within the location they desired.

These sentiments were supported by the stakeholders and it was observed that locations considered to be ideal by most individuals tend to be highly priced. For low income earners, accessing desired therefore remains a dream. It was generally observed that;

> *"Houses in desired places and estates in Nakuru County are quite expensive and this would require high financing and which low income earns are not able to attain"*

From these findings, it is evident that the value of land in desired areas tends to increase in proportion to the level of attractiveness to dwellers. The more desirable a place is to home owners, the more likely the price of housing will be.

These findings are in line with the findings of Regassa and Regassa (2015) that most low income households are unable to afford houses in desired places due to high prices of the houses or the land. Similarly, Baqutayan (2016) established that most of the housing options are not affordable as the respondents are paying over 30% of their income levels and are considered to be housing stressed and that in Malaysia, the

probability of finding cheap housing is a challenge for the low and middle-income groups.

Majority (80.8%) of the households observed that house prices within the location with adequate public transport means were high. On the other hand, there was a contrary opinion by (5.1%) of the respondents that to a very low extent they felt that house prices within adequate public transport areas were low. There mean of 2.07 further aligned to the majority statement by the respondents that on average they could not afford houses within the location with adequate public transport means while standard deviation of 0.833 was an indication of consensus among the subjects on house prices within adequate transport areas not being low. Similar to these findings, stakeholders indicated that accessibility to a location is majorly examined in terms of public transport. Access of a location through public transport is convenient, affordable and preferable to low income home owners, hence increasing price for houses located in such locations.

The findings concur with that of Salleh *et al*. (2015) that houses within the location with adequate public transport means are only affordable to the economically stable individuals. Erdmann *et al*. (2019) too established increase in prices of houses for closed access where new housing development is closely regulated. The high price is a major challenge to the housing development within these closed access cities (Femi, 2017).

House pricing of houses within locations with adequate access to water services was also established in this study was on the higher side. This is shown by majority (79.6%) of the respondents while only 6% of the respondents were of the contrary view. The mean of 2.06 supported of the statement that high pricing was experienced

in locations with adequate access to water services. The standard deviation of 0.789 implied that consensus among the respondents. From the stakeholders' point of view, power connectivity among other factors is a determinant of land and house value.

The findings concur with that by Iyandemye *et al*. (2018) which indicated that house prices within areas with adequate access to water services are highly expensive for low income households to purchase. According to Mishra (2019), Wei *et al*. (2016), and Mekawy (2014), availability water and sanitation services result to high prices that the low income earners could not afford.

Similarly, houses within the location with adequate access to electricity services were also costly at 77.6% and mean of 2.34 while a contrary opinion was observed among only 8.7% of the respondents. A standard deviation of 1.054 was an indication that there was a variance in the opinion of the respondents and a lack of consensus in relation to this metric. The direct relationship between power and house pricing could be attributed to the fact that electricity is the main source of power for most households living in urban areas.

From the interview, the respondents confirmed that areas with ready connection to electricity attract more investors and potential home owners. This leads to increased demand for land. Similarly, the price for houses constructed in such locations are relatively higher priced compared other areas with no connectivity. Some people associate power with security.

In agreement with these findings, Anthony (2018) reported that house located in places high good connectivity of electricity were expensive and being the reach of the low income households. Access to power is important to households in the current

society. Electricity is used in lighting, cooking and to power other domestic appliances (Ismail *et al*., 2015).

Health is a critical service. Price of the houses within localities with adequate access to health services were so high as evidenced by majority (76.6%) respondents who disputed the proposition that prices of houses within the location with access to health services were manageable. Only 14.4% of the respondents gave contrary view. A mean of 2.14 further affirmed the position while standard deviation of 0.817 was an indication that there was a common consensus among respondents. These findings were in agreement to those by Dewilde (2018) that house prices within areas that have health facilities within were a little bit expensive for low income earners to afford.

Just like health, house prices within the location with adequate access to school services were high as evidenced by majority response of 82.1%. Only 10.2% of the low income households gave contrary opinion. Mean of 2.14 was obtained implying that households felt that the prices of houses within location with adequate access to school services were high. Similarly, standard deviation of 0.821 was obtained, implying that there was varied opinion among the respondents of the study in relation to the stated metric.

These findings supported those by Erdmann *et al*. (2019) that schools attracted many dwellers and thus increasing the demand for house and consequently increase of house prices leading to low purchasing power by low income individuals. Availability of amenities such as schools enhances the value of land and attractiveness of allocation leading higher prices for houses.

Access to security was identified in this study as a potential price factor. Majority (80%) of the low income households agreed that house within locations with adequate access to security services were on the higher side. On the other hand, 6.9% of the population was of the opinion that houses in locations with adequate access to security were cheap to them. This was further evidenced by a mean score of 2.15 and standard deviation of 0.852. These findings are consistent with those of the study by Leng *et al*. (2017) that security is a key determinant of house prices and places with good security were expensive and vice versa.

Clement *et al* (2018) observes that house prices are highly dependent of the location, with fully developed locations enjoying security having more expensive prices that underdeveloped and insecure areas. High prices of land and land rates are pushing the houses pricing beyond the affordability limit of a large number of the low income persons (Haque & Aktar, 2016)

A majority (73.3%) of the respondents demonstrated that house prices within the location with desirable neighborhood attributes were expensive with only 6% of the respondents indicating they were inexpensive. A mean of 2.25 affirmed the position while standard deviation of 0.857 implied a small diversity of opinions among the respondents of the study in relation statement. Desirable neighborhood are some of the attributes desired by many dwellers and thus making prices of house within such localities expensive for low income households (Bujang *et al*., 2017).

The composite scores (mean of 2.18; standard deviation of 0.882) indicated that generally, the house prices within the desired location, house prices within the location with adequate public transport, adequate access to water services, adequate access to electricity services, adequate access to health services, adequate access to

school services, adequate access to security services being cheap and house prices within the location with desirable neighborhood attributes were high. These limited affordability of the houses by the low income households in Nakuru County.

In agreement to this, the stakeholders indicated that prices for houses have been on the rise. The possible determinants identified include, inflation that has increased price for most building materials, general increase in demand for housing as a result of growing population and rural urban migration and the general change in perception to consider a house as an investment. It was also noted that;

> *"House prices in prime lands are expensive since they are quite accessible due to proximity to schools, roads next to place work and that they are nearer to essentials facilities and amenities. These prime lands may be out of the reach to the low income earners on cost basis. However, some of the low income earners can only afford to rent but not to build in such places and in neighborhood with such attributes."*

Another one indicated that;

> *"Everyone desires to settle or to live in a place with the best services and accessible in terms of road network and availability of schools and health centers. However, not all can afford that and therefore this limits the affordability of housing in those places. Nevertheless, house prices in other areas are affordable thus not a limitation to anyone who wants to rent or build a house elsewhere"*

In support of these findings, Femi (2017) presents that house price influences housing affordability. Clement *et al*. (2018) argue that challenges in affordability of housing include high house price to income ratio making most housing facilities that are

available to be unaffordable. Price for housing generally increases with access to more amenities and services (Mutisya, 2015; Regassa & Regassa, 2015; Salleh et al., 2015; Squires & Webber, 2019).

According to Matheson (2018), house prices are high due to unfavourable taxation policies in construction inputs and thus increasing the house prices. Other factors include; location of the housing, land prices, and provision of infrastructural facilities (Yap & Ng, 2017). According to Ahmed and Sipan (2019), cases of escalating house prices due to lack of reasonable housing financing options. They observed that as a result of uncontrolled pricing, house prices have risen by up to 12.3% and 11.9% for 2 bedrooms and 3 bedrooms respectively. Similalry, land prices and speculative investment have also led to high house pricing (Clement *et al*., 2018).

4.5.4 Financial Management Skills

This study gathered data on financial management skills as one of the determinants of housing affordability. Using the five points Likert scale, the study collected data on various aspects of financial management skills. The following items were used to better understand the level of financial skills possessed by the low income households; skills on strategies of savings, skills on how to control expenditures, financial planning skills, knowledge on financial obligations towards acquiring a house, skills on book keeping, skills on examining the cash flows, preparation of budgets for the income, and skills on financial risk analysis. Frequencies, mean and standard deviation were used to summarize responses obtained from respondents as shown in Table 4.7

Table 4.7: Descriptive Analysis on Financial Management Skills

Statement	NE	SE	ME	LE	VLE	Total	
	F	F	F	F	F	Mean	Std.
	%	%	%	%	%		Dev
I do not have skills on strategies of savings	2 0.6%	9 2.7%	39 11.7%	189 56.8%	94 28.2%	4.09	0.745
I do not have skills on how to control expenditures	4 1.2%	13 3.9%	49 14.7%	177 53.2%	90 27.0%	4.01	0.827
I do not have financial planning skills	12 3.6%	27 8.1%	33 9.9%	179 53.8%	82 24.6%	3.88	0.991
I do not have knowledge on financial obligations towards acquiring a house	20 6.0%	9 2.7%	32 9.6%	181 54.4%	91 27.3%	3.94	1.009
I do not have skills on book keeping	12 3.6%	17 5.1%	36 10.8%	199 59.8%	69 20.7%	3.89	0.913
I do not examine my cash flows	5 1.5%	13 3.9%	30 9.0%	176 52.9%	109 32.7%	4.11	0.835
I do not prepare budgets for my income	15 4.5%	12 3.6%	53 15.9%	168 50.5%	85 25.5%	3.89	0.977
I do not have financial risk analysis skills	4 1.2%	19 5.7%	39 11.7%	198 59.5%	73 21.9%	3.95	0.820
Composite Scores						**3.97**	**0.890**

From table 4.7, the respondents generally admitted to not having adequate skills on savings strategies as evidenced by majority 85% response. Only 3.3% of the subjects of the study indicated that they could be considered to have no skills on saving strategies at all. The mean 4.09 was further proof to the position while the standard deviation of 0.745 was an indication that there was less variance in the responses and hence consensus that a majority on lack of savings skills. These findings reveal that most low income households do not have motivation to save. Some may feel that,

even if they were to make an effort, the income is low and may not take them far in the long run.

In support to this, interview with the stakeholders indicated that saving culture among the low income households is very low. They further observed that without savings, such groups may not access formal credit facility as that is the only sure way to build credit worthiness. It was evident that;

> *"Most of the low income earners have not yet embraced the saving culture and this has greatly affected their housing challenges. Saving enables them to obtain loans which can enable them afford a house"*

The Association of Chartered Certified Accountants (2019) indicates that saving culture among low income households is one of the key enablers to housing affordability with time, though such skills are generally lacking. According to Mulliner (2017), most of the low-income earners in the country lack financial saving skills that can explain the lack of proper housing. Similarly, Hoffmann at al. (2019) observed that most low-income earners lack basic knowledge for them to save and invest.

Expenditure control skills are generally low among the respondents as evidenced by high admission level of 74.2% with only 5.1% of the respondents indicating the contrary position. This is further evidenced by mean of 4.01 with a standard deviation of 0.991 implying commonality among the households' inadequate skills to control expenditures. This is a sentiment shared by interviewed respondents who indicated that most of low income earners spent their income without proper control and thus depleting everything and thus unable to afford housing. This condition is necessitated by the fact that the income level is so low to even take care of basic needs.

These results are in line with those of Oomen and Mcallister (2017) that most of low income dwellers do not know how to manage their expenditures and that they spent their income without any proper plan. This could be attributed to low education among this group of individuals and thus facing house challenges. According to Huisamen and Weyers (2016), lack of control of expenditure leads to low investment in long term projects like housing while Atuheire and Karyeija (2018) found that ability to control expenditure are important in the realization of affordable housing. Enhanced planning encourages savings and consequently, borrowing towards long term investments such as housing.

Financial planning skills generally lacked among majority of the households to a large as evidenced by a mean of 3.80 and a majority (78.4%) admission. The standard deviation obtained in the study was 0.991 was an indication of less variance among the respondents on the position that they lacked financial planning skills. The low level of financial planning skills could be explained by low education level among the low income groups. Similarly, it could be due to low level of investment ambitions among the individuals. Lastly, most low income individuals consider their income so low and feel that with or without planning, not much may change.

From the interviews, it was observed that financial planning skills lack among low income households. Most of them spend money as they get it without worrying about tomorrow. Actually the responses from the interview revealed that;

> *"Financial planning is one of the challenges that limit low income earners in owning a house and especially those who are not much educated"*

In concurrence to the findings of this study, Gardner et al. (2019), asserts that financial planning skills generally are low among low income individuals, partly due

to low education and informal income sources while Hoffmann et al. (2019) present that most low-income earners lacked the basic knowledge for them to plan for investment. Similarly, Oomen and Mcallister (2017) observed that most low-income earners lacked daily money management and planning skills. According to The Association of Chartered Certified Accountants (2019), while low income earners generally are unable to plan finances, having the right financial planning skills promotes housing affordability. Financial planning enhances management of financial obligations and consequently, performance of mortgage loans.

The household heads in Nakuru county generally lack knowledge on financial obligations towards acquiring a house, as evidenced by mean of 3.94 and majority admission of 81.7% with only 68.7 % indicating contrary position. In addition, the standard deviation of 1.009 was an indication that there was quite some variance on responses on the knowledge on financial obligation towards acquiring a house.

In support of the position, interview with stakeholders indicated that;

> *"Most of the low income earners do not really understand their financial obligations after taking a loan or mortgage and most of them end up having challenges in loan repayments."*

Most formal lenders prefer to lend to middle and high income individuals with formal employment or source of income. For such individuals, the level of exposure and financial knowledge is higher and the risk of default in credit is low. However, for low income individuals, lack of information on the ability to access formal loans keep detach them with happenings of formal housing sector, further worsening the lack of information.

Financial obligations towards acquiring a house such knowledge on loans, mortgage, prices of land, building materials, compliance to government regulations in building among other skills are low among low income earners (Karyeija, 2018). Consequently, the level of sustenance mortgage repayment is low and this occasionally result into low income dwellers lose homes as they are unable to pay the full cost (Berry et al., 2016). Mutisya (2016) and Baqutaya, Ariffin, and Raji (2016) too found that most of the low-income individuals lack proper loan and mortgage skills that would have promoted acquisition of their own homes.

Response on book keeping skills showed that the level of such skills was low. This is revealed by a majority confirmation of 80.5% with only 8.7% of the respondents giving contrary opinion. This further affirmed by a mean of 3.89 and a standard deviation of 0.913. The mean score value implied the majority of the respondents did not have skills on book keeping while the standard deviation achieved implied that there was less varied responses across the study subjects.

The low book keeping skills and tendencies could be attributed to the fact that most low income household earn peanuts and are not necessarily motivated to save. Majority of them consume a day's earning within the day, and therefore do not see the need for financial tracking. If anything, for most of the household, the day's earnings is never adequate for day's needs, and therefore, tracking or no tracking makes no significant difference.

These findings concur with the views of the stakeholders obtained through interview that;

"Most of small business people do not keep records of their sales and incomes and they cannot really tract their cash flow which leads to lack of financial controls

especially of their expenditures." From the financing stakeholders, cash records can be used to assess a lender. Therefore, lacking financial tracking skills is a disservice to the low income households. Actually, most of low income households cannot access formal credit facilities since it is difficult to assess their credit worthiness.

In support of these findings, Hoffmann et al. (2019) observed that while book keeping sills is generally low among the low income group, such skills are key skill for the self-employed individuals and those in business in order to track the inflow and outflow of cash and when a business owner does not have these skills, the individual may not be able to fully monitor the cash flows. Similarly, Dires (2015) presents that most low income households live from hand to mouth, spending in most cases all day's income within the day. This kind of cash flow does not necessitate financial tracking and recording.

A majority (85.6%) of the respondents admitted that they did not examine their cash flow with only 5.4% indicating otherwise. The mean of 4.11 was indication that on average low income households did not examine their cash flow. It was further established from the study a standard deviation of 0.977 which implied that there was less variance among the respondents of the study hence consensus on the aspect of not examining cash flow. These findings were supported by the response given by stakeholders interviewed in this study.

From the interviews with housing stakeholders, it was evident that cash control among low income earners was very low. It was observed that this could be a potential factor that has led to credibility issues among this group that has reduced their liability. House management firms had a general feeling that delayed of lack of

payment towards house installments or rent could largely as a result of poor cash management and not income passé.

The findings also concur with those by Olugbenga et al. (2017) that low income households did not fully monitor their income levels; an aspect that was attributed to low affordability of housing among this group of people. Huisamen and Weyers (2016) found that most junior employees have poor financial behavior such as buying on credit and lack of control of expenditure. Due to lack of control of expenditure the employees could not investment in long term projects like housing.

According to Oomen and Mcallister (2017), most low-income earners lacked daily money management skills. Poor control of cash flow may fuel uncontrolled spending and irresponsible borrowing that may end up in more financial obligations. Association of Chartered Certified Accountants (2019) recommends that financial planning should start with money flow management and budgeting. Such skills are important in the estimation of capital requirements, in the determination of capital composition and in the choosing of sources of funds.

The respondents generally did not operate on a budget as evidenced by majority admission of (76%) and lower proportion (8.1%) of contrary position. The mean of 3.89 was further indication of concurrence with the statement by the majority of the households. The standard deviation of less than 1.000 further implied that most of the respondents did not prepare budgets for their income.

From other studies, it is evident that housing is an aspect that needs budgeting and therefore lack of budgeting may lead to failure to meet housing needs of households (Mulliner, 2017). Hoffmann et al. (2019) asserted that personal housing affordability

can be realized only when an individual has the right financial management skills like budgeting among other skills. Lack of such skills among the low income population should therefore worry everyone in the society.

According to Ajibola (2016), poor budgeting skills have been identified as one of the main factors towards poor loan repayment. The study showed that where the citizens can repay the credit at a given rate and period, it is easier for financing organizations to offer financial support. However, most low earners lack such skills limiting them from accessing credit facilities towards housing. According to Mulliner (2017), risk management skills can be applied to avoid being victim of legitimate housing deals or being a victim of fraud.

Financial risk analysis skills is generally lacking among the respondents as established by mean of 3.95 and majority admission of 81.4% with only 6.9% of the households indicating contrary opinion. The standard deviation in relation to the statement was 0.820 which implied that there was less variance among the respondents and thus consensus in asserting that to a large extent that there was lack of financial risk analysis skills. Similarly, the interview with other stakeholders showed that risk analysis skills were generally lacking among the low income households. There was an observation that;

> *"Some of the low income individuals were not aware of the measures they could take to mitigate risks resulting to financial loss and adversities. The one with no formal education are worse of. Financial management skills are important in the housing sector and every prospective house owner needs to have such skills.*

Another observation was that;

"Possession of adequate financial risk management skills enables low income earners to manage their little income and also control their expenditures in order to save for their housing needs"

While Ojera (2019) asserts that financial risk analysis skills are essential in managing funds one has or earns and avoiding misappropriation of the funds and thus enabling households, especially those from low economic backgrounds own houses, Oomen and Mcallister (2017) found that individuals in the low income bracket are lacking the such skills and are likely to end up in more financial obligations and risks like housing loans as they lack adequate information on loans and its products especially among the low income families.

According to Olugbenga et al. (2017), long term investments in themselves are risky, and as such, need sound risk analysis. While the study recommend that low income earners in the country need to develop their financial skills especially on financial planning and saving skills to achieve housing affordability, they also acknowledge that the low level of such skills among the low income group may take a lot of personal imitative to be alleviated since there are no formal initiatives by governments and other formal organizations.

The study obtained a composite mean score of 3.97 and a composite standard deviation that of 0.890. This implied that the households were in consensus in their agreement that to a large extent household heads from low-come backgrounds did not have financial management skills on strategies of savings, skills on how to control expenditures, financial planning skills, knowledge on financial obligations towards acquiring a house, skills on book keeping, skills on examining the cash flows, preparation of budgets for the income, and skills on financial risk analysis.

Overall, these findings relate to Oomen and Mcallister (2017)'s findings that most low-income earners lack daily money management skills while financial management skills are essential to enable individual monitor, plan, control and manage their income and these skills have been associated with sound financial decisions and ownership of assets such as property (Baqutaya et al., 2016; Huisamen & Weyers, 2016; Ajibola et al., 2016; Mutisya, 2016).

From the interview with housing stakeholders, it was evident that financial management skills generally are lacking among the low income earners. Actually, some of the stakeholders, especially in the financing institutions recognized the have campaigns and trainings to enhance financial management skills among the long income earners, citing that, with enhanced skills, such individuals may improve on money management and consequently, financial trustworthiness, which is a requirement for many financing institutions. It was observed that when long term financing is given to a customer group that do not have the right skills, there is general tendency of laxity in payment, a situation that may lead to repulsion of houses.

While Hoffmann et al. (2019) acknowledged that the right financial management skills like saving, budgeting and credit and debit are instrumental towards home ownership, through are generally lacking among low income individuals, Berry et al. (2016) noted that lack of mortgage repayment skills and knowledge have seen most of low income dwellers lose their homes as they were unable to pay the full cost in Australia. The findings are further validated by the findings of World Economic Forum (2019) that established that housing affordability has raised in Moscow, Brazil,

Mexico, and Argentina as a result of roper budgeting skills and Ajibola et al. (2016) that high financial management skills lead to higher levels of house affordability.

4.5.6 Affordability of Housing

The study further sought to find out the level of affordability of housing in Nakuru County. Respondents were requested to respond to questionnaire items using 5 points likert scale. The following aspects were used in relation to the area of study; affording to build or rent a house a house with desired features, affording to build or rent a house that can accommodate family members, and affording to build or rent a house in a desired locality. The descriptive analysis of responses giver were as presented in table 4.8.

Table 4.8: Descriptive Analysis on Affordability of Housing

Statement	NE	SE	ME	LE	VLE	Total	
	F	F	F	F	F	Mean	Std.
	%	%	%	%	%		Dev
I cannot afford to build a house with desired features	7 2.1%	15 4.5%	31 9.3%	189 56.8%	91 27.3%	4.03	0.859
I cannot afford to rent a house with desired features	6 1.8%	11 3.3%	42 12.6%	173 52.0%	101 30.3%	4.06	0.850
I cannot afford to build a house that can accommodate my family members	14 4.2%	15 4.5%	41 12.3%	171 51.4%	92 27.6%	3.94	0.978
I cannot afford to rent a house that can accommodate my family members	19 5.7%	12 3.6%	26 7.8%	201 60.4%	75 22.5%	3.90	0.977
I cannot afford to build a house in a desired locality	6 1.8%	21 6.3%	38 11.4%	197 59.2%	71 21.3%	3.92	0.859
I cannot afford to rent a house in a desired locality	13 3.9%	25 7.5%	18 5.4%	185 55.6%	92 27.6%	3.95	0.991
Affordability Index						**3.97**	**0.919**

From table 4.8, it is evident that affordability of houses remains a dream as revealed by majority admission of 84.1% and only 6.6% of the respondent's indicating contrary opinion. A mean of 4.03 was obtained which implied that to a large extent households could not afford to build a house with the desired features. A further standard deviation of 0.859 was achieved implying that there was less variance in the responses.

The findings show that houses with desired features are unaffordable for the respondents as evidenced by large proportion of (82.3%) of the respondents who admitted that they could not afford such houses. Only 5.2% of the respondents

completely disagreed that they could not afford to rent a house with desired features. The mean of 4.06 was an affirmation to these findings while the standard deviation 0.850 was an indication that there was less variance among the respondents in relation to the indicator.

Focusing on affordability of building and renting houses with desired features, majority of the stakeholders indicated that most low income earners do not have adequate financial capacity to afford houses with desired features. To support the findings of this study, Anacker (2019) in a study based in the US established that low, very low, and extremely low-income renters have insufficient income to rent houses with desired conditions due to low incomes and low or unavailability of government subsidies which resulted to high rent burdens, displacement of people and homelessness of among the residents. Related study by Torluccio and Dorakh (2015) in Italy also revealed that affordability of housing among the low-income earners was very low, with majority of residents unable to afford houses with the desired conditions and thus were dissatisfied with their current housing conditions.

Accoeding to Yap and Ng (2017), housing affordability can be conceptualized in terms of income affordability, purchase affordability and repayment affordability and those of Leng *et al.* (2017) who indicated that building a house with desired features was major challenge to most of low income earners and thus limiting the ability to own decent housing. Achilles Kallergis *et al*. (2018) too reported that high house prices was cited as the greatest barrier to owning houses with desired features. Similarly, study by Bujang *et al.* (2017) also found that low income earners have low ability to rent houses that have desired features and thus ended up rent houses that are sub-standard and that are not comfortable to live in due to financial limitations.

From the interviews with housing stakeholders, it was evident that most low income earners do not live in houses with desired conditions. In fact, given opportunity, they would move to better houses. The stakeholders interviewed also observed that;

> *"For low income earners, their priority is to have a decent housing but not necessarily with the desired features due to lack of much money to afford to build or rent such houses."*

Low income households cannot afford to build house that can accommodate all members of their families as evidenced by majority (79%) of the respondents while only 8.7% of the respondents were of the contrary opinion. Further, mean of 3.94 supported the conclusion that most households could not afford to build a house spacious enough to accommodate all family members with comfort. The standard deviation of 0.978 implied that there was less variance among the respondents' responses. Similar findings were obtained for renting option where a majority (60.4%) of the respondents admitted they could not afford to rent house big enough to accommodate the family with only 5.7% of the respondents indicating otherwise. A mean of 3.90 supported the assertions advanced by the majority while the standard deviation of 0.977 implied less variance among the responses. Similarly, most of the stakeholders interviewed indicated that to a large extent low income households could not afford big house to accommodate all family members comfortably. It was observed that;

> *"Low income earners have low incomes to enable then construct or rent big houses that could accommodate all family members. Most of the low incomes households have big families and could only manage to construct or rent single rooms or house with fewer rooms than needed in the family"*

These results concur with by Jiram *et al.* (2015) that low income households lived in small houses that cannot comfortably accommodate all household members and thus the house were crowded. Similarly, Chung *et al*., (2019) found that big house that accommodate large family members are expensive and that low income earners cannot afford to rent such a houses leading to congestion of big families in single rooms. Torluccio and Dorakh (2015) in a study in Italy also established that most low income residents are dissatisfied with the current homes, citing desire to build or move to bigger homes. Most of residents expressed desire to move to modern and spacious houses though, they acknowledge that cannot afford such housing options. On the other hand, Friedman and Koc (2017) reported that middle to high-income level families lived in bigger, newer and more recently built houses.

The ability of the households to build or rent a house in the desired locality was also determined to be very low as evidenced by majority (82.9%) and (9.3%) admission of the households for building and renting respectively. Means of 3.92 and 3.95 coupled with standard deviations of 0.859 and 0.991 for building and renting a desired house respectively. The standard deviation meant that there was less variance among the households thus confirming consensus among the households that they could not afford to build or rent a house in desired locality.

These findings conform to findings of Goodman *et al*. (2018) that houses in desired places were highly priced and that low income earners were unable to afford and this led them to live in places that they did not fully desire due to financial constraints. Matheson (2018) also found that most of low income individuals lived in places they did not fully desired to lack of financial capacity to afford rent for houses in desired places. According to Baqutayan (2016), most low income city dwellers have had to

rent or build in the outskirts of the cities since they cannot afford housings with close proximity to the cities.

From the conducted interviews, it was also revealed that most stakeholders were of the opinion that low income earners were unable to constructor even rent house in any of their desired places due to high prices of the houses and low affordability associated with low incomes. It was further observed that;

> *"Most low income individuals cannot be able to afford houses in their most preferred locality due to high prices of the houses. Most houses in prime places in Nakuru County are beyond the reach of most of low income households and therefore only the rich can afford the houses. Few low income earners are however able to acquire houses in such localities after a long time of saving".*

Focusing on the affordability index scores, the study revealed a composite mean score of 3.97 and a composite standard deviation of 0.919. The study further found that on average the households were in consensus that to a large extent they could not afford to build or rent a house a house with desired features, or a house that can accommodate family members, and they could not also afford to build or rent a house in a desired locality.

These are also among the challenges that several researchers have established in the context of low income households across the globe (Iyandemye et al., 2018; Sohaimi et al., 2017; Squires & Webber, 2019; Yap & Ng, 2017). Inability to afford housing further affects individuals in diverse ways and interventions to improve housing among low income individuals have been seen to help in overcoming the diverse housing challenges to a large extent across the world (Anthony, 2018; Chung *et al.,*

2019; O'connor, 2018; Yusof *et al.*, 2017). Baqutayan (2016) indicate that due to the affordability challenges of the houses in cities and the residents are sometimes forced to rent in the outskirts of the city leading to high transportation costs. In Malaysia, Baqutayan (2016) reported that most middle and low income household would access houses that are offer in the coutry, whose costs are within RM180, 000 and RM200, 000 which often disadvantage the low income group. The study showed that the general cost of housing would require the households to part with 30% of their gross income, level that is considered unsustainable for the families.

4.6 Correlation Analysis

The study used correlational analysis to establish the relationship between the financial factors of low-income households and the affordability of housing. Correlation analysis was aimed at showing the nature, strength and significance of the relationship between household incomes, cost of financing, house price, financial management skills and the affordability of housing among low income households in Nakuru East and Nakuru West Sub-Counties. Bryman (2015) asserts that a correlation coefficient of -1 and 1 implies that there is perfect negative and positive relationship respectively. A positive relationship is as a result of direct relationship between the variables while negative relationship implies that the two variables are inversely related. A correlation coefficient of zero indicates lack of relationship. Correlation coefficient |0.100-0.399| implies a weak relationship, |0.400-0.699| a moderate relationship and a correlation coefficient of |0.700-0.999| implies a strong relationship (Bryman, 2015). A p-value of less than 0.05 implies a significant relationship and p-values of 0.05 and above implies insignificant relationship (McDonald, 2015). These results are shown in Table 4.9.

Table 4.9: Correlation Analysis

Variables	Statistics	Affordability of Housing
Income of Households	R	0.440**
	p-value	0.000
	N	333
Cost of House Financing	R	-0.537**
	p-value	0.000
	N	333
House Pricing	R	-0.454**
	p-value	0.000
	N	333
Financial Management Skills	R	0.582**
	p-value	0.000
	N	333

From table 4.9, correlation analyses findings revealed a moderate positive relationship between income of household and affordability of housing. This is evidenced by (r = 0.440). Similarly, p=0.00, <0.05 implies that the relationship is statistically significant. These findings indicate that enhanced income among households would lead to some reprieve in terms of initiatives towards house ownership.

These findings are in line with those of Goodman *et al*. (2018) that established positive and significant relationship between income levels and house affordability among the low income households. Similarly, Ochieng et al. (2017) found that household income has positive correlation with the access to affordable housing. Philipp (2015) found that declining household incomes contributed to challenges in the affordability of the housing especially with increasing house prices. Similarly, study for American Housing Survey and Household Budget Survey in turkey by Friedman and Koc (2017) documented that lower income households had

significantly lower household ownership aspects. In addition, study by Birčiaková *et al*. (2017) established that income levels influence the place of residence of the household. The number of the household members that are economically active was also a major consideration for affordability of the housing aspect.

Further supporting the findings of this study, Ismail *et al*., (2015) found that income of household determines type and prices of houses affordable to households. Majority of the households do not have sufficient income levels to be financed by financial institutions. Similarly, Baranoff (2016) found that income levels affect the level of affordability of housing; he established that 10% increase in the income level of the households increased the house prices by 6% and thus reducing affordability.

Correlation analysis revealed moderate and negative relationship between the cost of financing and household and affordability of housing. This is evidenced by (r= -0.537). In addition, the value (p=0.000, <0.05) shows that the relationship is significant. The study therefore shows that there is statistically significant moderate negative association between cost of financing and household and affordability of housing. As cost of housing is increased, affordability of housing is bound to reduce.

According to Ismail *et al*. (2015), interest is the cost of borrowed money. Increase in interest rate of the mortgages affect the affordability of housing; high interest rates increase the overall house prices and thus lowering affordability. Other costs, not directly attached to financing that also affect house affordability include; consultancy costs, labour cost, materials cost, equipment cost and transport costs incurred during the construction of the house project.

These findings are concurrent to the findings of Iyandemye et al. (2018) who established that high cost of house financing results to low levels of affordability among low-come households. According to study by Kenyanya (2015), there is statistically significant negative correlation between finance cost and access to mortgage and consequently reduced housing affordability levels. Similarly, Yusof, Wahab et al. (2017) observed significant negative relationship between the amount of home financing and those ownership of the citizens of Malaysia. In fact, Mariadas *et al*. (2016)reported that construction costs can be associated with up to 0.310 increase in the house price and ultimately on the housing affordability aspects.

Correlation analysis on house pricing and affordability of housing revealed a moderate negative relationship implying an inverse relationship between house pricing and affordability. This was evidenced by r=-0.454. Similarly, p=0.00, <0.05 was evidence that the association was statically significant, implying that slight increase in house pricing will significantly influence housing affordability negatively.

Prices for houses in Kenya are not well regulated giving rooms for greedy investors to exploit customers. Similarly, there are no favorable housing policy to guide in housing and house pricing. Therefore, the income to price ratio of houses gets low and thus reducing the purchasing power of houses for most of the potential house owners. Also important to note, house prices have continually increased while income levels have either remained unchanged or slightly changed, leading to a disproportionate ratio between house price and income ratios.

Similar findings were also reported by Saikah et al. (2019) and Mishra (2019) who established that supply of housing has not significantly increased as witnessed in demand for the housing, hence, the house prices has escalated, reducing affordability

as much as house prices are affected. Hilber and Schhni (2016) found that as a result of high house prices, there is reduced purchasing power for most of the residents hence reduced affordability of houses. In fact, Clement *et al*. (2018) identified price as one of the challenges in affordability of housing. However, Leng *et al*. (2017) indicated that the price increase is driven by limited supply of land, making houses in more preferable locations even expensive for middle and lower income classes.

Lastly, the study revealed positive relationship between financial management skills and affordability of housing. On this aspect, the study obtained Pearson correlation coefficient value of 0.582. This was an indication of a positive moderate association between financial management skills and affordability of housing which was significant at 5% ($p=0.00$, <0.05). In a housing project, financial management skills are important in the estimation of capital requirements, in the determination of capital composition and in the choosing of sources of fund and subsequently in managing resources around the housing project. In such projects, individuals lacking the right financial education are likely to end up in more financial obligations like housing loans as they lack adequate information on financing options as well as accompanied obligations, especially the low income families.

The current results are in support of the findings by Mulliner (2017) who found that the housing affordability is dependent on the financial management skills especially to the low-income earners. Similalrly, study by Hoffmann et al. (2019) and Ojera (2019) associated enhanced financial management abilities with better planning and financial control necessary for long term investment such as buying or buiding a house. Similar findings were reported by Olugbenga et al. (2017) who also established significant positive relationship between financial management skills and housing

affordability; poor financial behavior such as buying on credit and lack of control of expenditure may lead to unplanned commitments and reduce potential of investment in long term projects like housing. For low income households, financial management skills are particularly important since this is the only sure approach to build credit worthiness and access formal financing for long term and resource intensive projects like housing.

4.7 Diagnostic Analysis

Prior to regression analysis to examine the effect of household income, cost of financing, house price and financial management skills as predictor variables on affordability of housing, diagnostic tests were conducted to establish the if the assumptions required for multiple linear regression were met. Multiple linear regression makes several assumptions that are tested using diagnostic tests. Among the diagnostic tests that the study performed to ascertain the suitability of the multiple linear regression included linearity, collinearity, autocorrelation and homoscedasticity (Jäntschi, Bálint, & Bolboacă, 2016).

4.7.1 Linearity Test

Multiple linear regression assumes that the residuals follows a linear distribution. In this study, the researcher plotted a Normal P-P Plot of Regression Standardized Residual and scatter plots as proposed by Jäntschi et al. (2016). The research findings were as as shown in Figure 4.1.

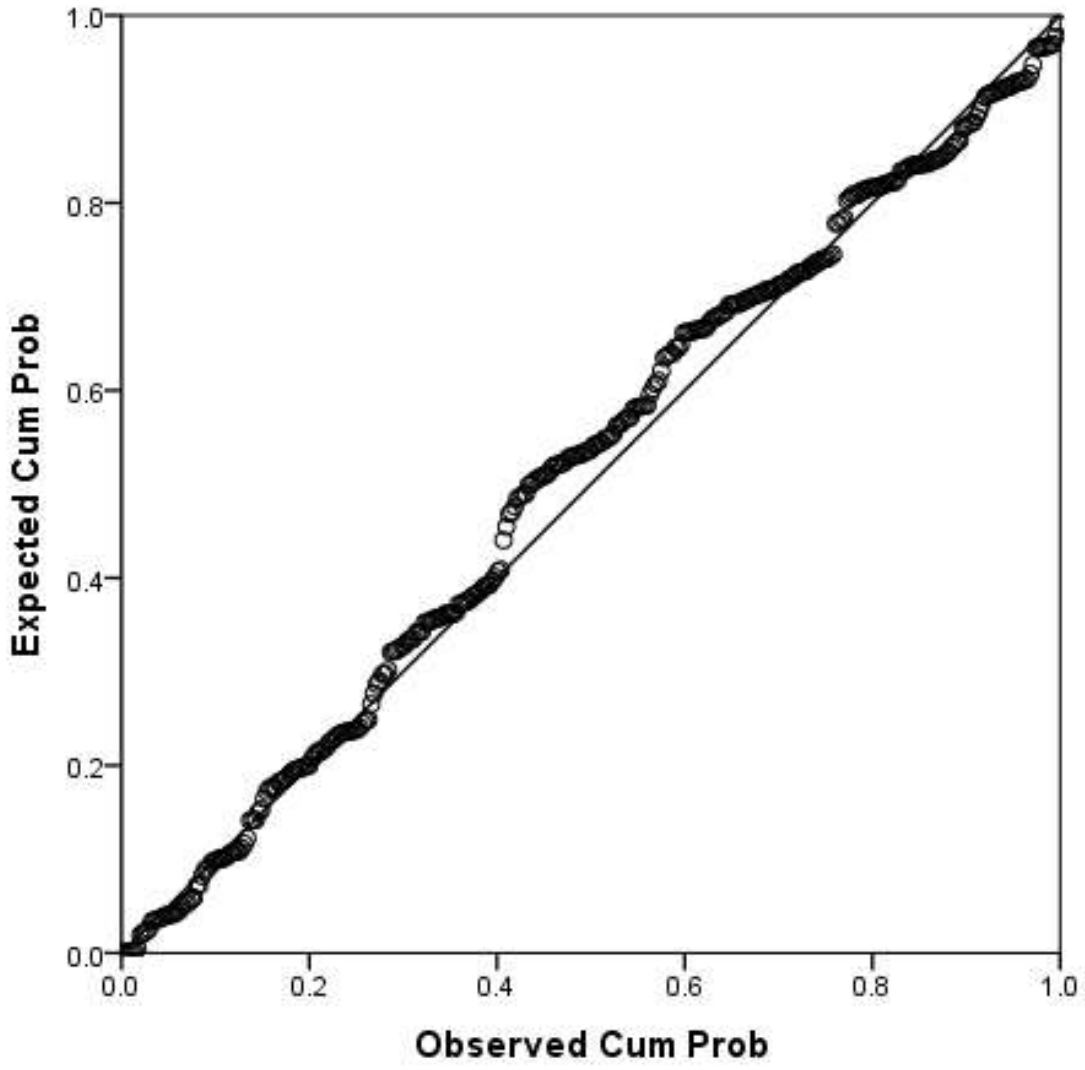

Figure *4.1: Normal P-P Plot of Regression Standardized Residual*

According to Krieger (2018), a diagonal line from the origin for Normal P-P Plot of Regression Standardized Residual indicates that residuals are linearly distributed. This is the case as shown in Figure 4.1.

4.8 Regression Analysis

The study used multiple linear regression with household income, cost of financing, house price and financial management skills as predictor variables and affordability of housing as the predicted variable. Table 4.10 shows the summary of the regression model.

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.863	0.744	0.741	0.07490

ANOVA Table

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	5.348	4	1.337	222.833	0.000
	Residual	1.840	328	0.006		
	Total	7.188	332			

Table of Coefficients

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	0.882	0.078		11.241	0.000
Household Income	0.203	0.014	0.410	14.648	0.000
Cost of House Financing	-0.186	0.012	-0.437	-15.507	0.000
House Pricing	-0.181	0.013	-0.400	-13.923	0.000
Financial Management Skills	0.200	0.012	0.456	16.204	0.000

Dependent Variable: House Affordability

Predictors: (Constant), Financial Management Skills, House Pricing, Household Income, Cost of Financing

Table 4.10 presents the multiple regression analysis outcomes. From model summary, the R-Square value of 0.744 revealed that 74.1% of the variation in affordability of housing among low income households in Nakuru East and Nakuru West Sub-Counties was attributed to the changes in house pricing, household income, cost of financing and financial management skill. Standard error of the estimate of 0.07490 achieved was an indication that the model was accurate in its prediction since it was less than 1 which implies a complete shift in Likert scale used.

These findings show financial factors collectively are critical factors in housing affordability. The findings are consistent with empirical reports such as (Soffian et al., 2018; Ang et al., 2017; Yap & Ng, 2017; Almi & Husin, 2017; Baqutayan, 2016) who studied various financial factors, some individually and others collectively and established significant relationships. Ackley and Teeling (2018) established that the level of household income is a great contributor towards affordability of housing among the low income households. Other studies have also showed a positive relationship between the level of income of households and the ability of households to meet housing needs (Ezennia & Hoskara, 2019; Bujang *et al*., 2017; Baranoff, 2016). On the other hand, house price and cost of housing have been reported as negative determinants (Marissa, 2019; Kallergis *et al*., 2018; O'connor, 2016).

ANOVA was used to test for statistical significance of the model. The study found that the regression model was significant as shown by a p=0.00, <0.05. It further indicates that the regression model provides a better fit for the data than a model with zero predictors and that at least one of the predictors is significant.

In support of these findings, Saikah et al., (2019) established a significant relationship between the house pricing and housing affordability among most of low income households. House prices were also seen to negatively affect the ability of households from low income sectors to afford a decent housing (Squires & Webber, 2019; Matheson, 2018; Yap & Ng, 2017; Mutisya, 2015; Regassa & Regassa, 2015; Salleh et al., 2015).

To evaluate the individual effect of the predictors, the study evaluated the regression coefficients of the model and whose results are shown in table of coefficients above. The study revealed that there was a statistically significant relationship between all the four independent variables with the dependent variable of the study as evidenced by $p<0.05$.

4.9 Hypothesis Testing

Research hypotheses were tested based on the findings from the table of coefficients from table 10 obtained from the multiple regression analysis. The values of t-statistic at 0.05 significance level was used with $p<0.05$ indicating statistical significance.

The first hypothesis of the study was; ***$H0_1$:*** *Household income has no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties.* The value of t=14.648 and p=0.000 were obtained indicating a positive and significant effect of household income on housing affordability. The study further obtained a beta coefficient of 0.203 for household income. This implied that a unit increase in the household income resulted to 0.203 units increase in the housing affordability with other variables held constant. Therefore, the first hypothesis stating that household income has no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties was rejected at 5%

significance level. This implies that household income affects the affordability of housing.

These results are in line with those by Ackley and Teeling (2018) who found that the level of household income is a great contributor towards affordability of housing among the low income households. Other studies have also showed a positive relationship between the level of income of households and the ability of households to meet housing needs (Baranoff, 2016; Bujang *et al.*, 2017; Ezennia & Hoskara, 2019b, 2019a; Kallergis *et al*., 2018; Marissa, 2019; O'connor, 2016).

The second hypothesis of the study was stated as; ***H0₂:*** *Cost of financing has no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties.* The values of t=-15.507 and p=0.000 implied a negative and significant effect of cost of financing on affordability of housing. Further, a beta coefficient of -0.186 was obtained. This implies that a unit increase in cost of house financing led to 0.186 units decrease in housing affordability with other variables held constant. The second hypothesis stating that cost of financing has no statistical significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties was rejected at 5% significant level. This is an indication that cost of financing affected affordability of housing and it was subsequently concluded that cost of housing has significant negative effect on housing affordability.

These results concur with Iyandemye et al. (2018) who found that high cost of house financing reduced the affordability of housing while low cost in housing financing was the reason for high affordability of housing among the low income households. These findings are also in line to the finding of other researchers who showed that high cost of housing impacted negatively to the ability of households to afford the

housing in diverse contexts (Ezennia & Hoskara, 2019b; Dewilde, 2018; Bujang *et al*., 2017 Salleh et al., 2015; Torluccio & Dorakh, 2015).

The third hypothesis was stated as; ***$H0_3$:*** *House pricing does not have statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties.* The values; t=-13.923 and p=0.000 implied a statistically significant genitive effect of house pricing on affordability of housing. Further, beta value of -0.181 implied that unit change in house pricing has inverse effect of -0.181 units on housing affordability. Based on these findings, the third hypothesis of the study was rejected and conclusion made that house pricing has statistical significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties.

These findings concur to findings of Ezennia and Hoskara (2019) and Salleh *et al*. (2015) that identified house pricing as a key determinant of house affordability. Both studies also pointed out that inability to contain house pricing at affordable levels is becoming a concern and governments and other housing stakeholders must come forward to address the issue of uncontrolled or over pricing.

Focusing on financial management skills, the study tested the following hypothesis; ***$H0_4$:*** *Financial management skills have no statistically significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties.* The study obtained t=16.204 and p=0.000 implying significant positive effect of financial management skills on housing affordability. Further, a beta coefficient of 0.200 was obtained. This indicates that a unit increase in the financial management skills of low income households would lead to 0.200 units increase in the housing affordability with other factors held constant. The fourth hypothesis stating that financial management skills have no statistical significant effect on the affordability of housing

in Nakuru East and Nakuru West Sub-Counties was rejected at 5% significant level. Therefore, financial management skills affected affordability of housing and conclusion was made that financial management skills are significant determinants of housing affordability.

These results are consistent to those by Ojera (2019) who established that low income earners with good financial management skills were able to afford a house in the long run compare to those who had poor scores in financial management skills. Financial management skills have been also been pointed out to enhance the affordability of housing in diverse contexts (Berry et al., 2016; Baqutaya, Ariffin, & Raji; 2016; Huisamen & Weyers, 2016; Ajibola, Sharafadeen, & Owolabi, 2016; Mutisya, 2016).

Based on the findings, the following regression equation was formulated;

$Y=0.882+ 0.203X_1-0.186X_2 - 0.181X_3 + 0.200X_4$

Where;

Y = Housing Affordability

X_1 = Household Income

X_2= Cost of Financing

X_3= House Price

X_4= Financial Management Skills

4.9 Post-Estimation Diagnostic Tests

The study conducted post-estimation diagnostic tests in order to verify that the model is useful in providing estimation of the dependent variable using the independent variables of the study.

4.9.1 Autocorrelation

Autocorrelation refers to a situation where related objects in independent variables results in interrelationships between their values and thus lacking instance independence of variables. This serial correlation may imply a significant relationship between independent variables with the dependent variables while they are not (Hall, 2015b). When there is autocorrelation in a data set, it implies one is not modelling data points well enough and thus resulting to misleading estimates of model coefficients. Durbin–Watson statistic was used test for autocorrelation in the residuals as shown in Table 4.19.

Table 4.11: Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.863[a]	0.744	0.741	0.07490	2.019

Predictors: (Constant), Financial Management Skills, House Pricing, Household Income, Cost of Financing

Dependent Variable: House Affordability

Durbin-Watson statistic values range from 0 to 4 and whereby Durbin-Watson statistic value of 2 indicates absence of autocorrelation. On the other hand, a Durbin-Watson statistic between 1.5 and 2.5 indicate little or no autocorrelation and is acceptable in the regression analysis (Clements & Sarama, 2016). The Durbin-Watson value shown in Table 4.11 was 2.019 and thus assuming absence of autocorrelation.

4.9.2 Multicollinearity

The multicollinearity assumption implies that the independent variables are not highly related. This results into inflation of model coefficients and thus hard to establish the

individual effect of independent variables on the dependent variable (Creswell, 2014). Tolerance statistics and Variable Inflation Factor (VIF) were used to test the level of collinearity of the independent variables since it is widely accepted and has few procedures. The results were as shown in Table 4.12.

Table 4. 12: Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Household Income	0.698	1.433
Cost of House Financing	0.684	1.462
House Pricing	0.695	1.439
Financial Management Skills	0.688	1.453

Jenkins-smith et al. (2017) suggested that a tolerance value between 0.2 and 0.8 and a VIF value of between 1 and 5 indicates minimal of multicollinearity problem. The obtained tolerance values ranged between 0.684 and 0.698 while the VIF values ranged between 1.433 and 1.462 and therefore indicated that there was minimal multicollinearity problem and thus tolerated.

4.9.3 Heteroscedasticity

The Homoscedasticity assumption implies that there is constant variance of errors terms over the values of dependent variable. Heteroscedasticity occurs when the error term is not independently and identically distributed (Latunde, 2017). This happens when the variance in the error term is different for all combinations of outcomes of the independent variables (Miller & Whicker, 2017). Presence of Heteroscedasticity in the data was tested using the Breusch-Pagan/Cook-Wesberg Test for Heteroscedasticity. This test can be computed using SPSS and does not need other advanced statistical software unlike Bartlett Test and White's test. In this test, the

model residuals are regressed against the independent variables and then the summary statistics evaluated. The results are as shown in Table 4.13.

Table 4.13: Heteroscedasticity

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.008	4	0.002	0.603	0.661[b]
	Residual	1.023	328	0.003		
	Total	0.023	332			

a. Dependent Variable: Squared Residuals

b. Predictors: (Constant), Financial Management Skills, House Pricing, Household Income, Cost of Financing

Breusch-Pagan/Cook-Wesberg Test for Heteroscedasticity tests the null hypothesis that there are constant variance variables (Sloan & Quan-Haase, 2017). The decision rule was to reject the null hypothesis when calculated p-value is less than α value of 0.05 and fail to reject the null hypothesis if the calculated p-value is greater than α value of 0.05 based on F-Score. In performing Breusch-Pagan/Cook-Wesberg Test for Heteroscedasticity, squared residuals are regressed against the independent variables and the P-value for ANOVA table examined for F-Score (Sloan & Quan-Haase, 2017). The P-value obtained in the ANOVA table was 0.661 ($p>0.05$) and therefore the study failed to reject the null hypothesis that variance of the error terms is constant. This therefore implied that error terms of the regression model are homoscedastic.

Plotting the standardized residual versus the predicted values can also determine presence or absence of homoscedasticity (Latunde, 2016) as shown in Figure 4.4.

Figure 4.4 shows a random and even dispersion of data points around zero and thus further indicating that the errors are homoscedastic.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter five presents the summary of the major findings, conclusions and recommendations of the study. The chapter concludes with a suggestion for further studies.

5.2 Summary of the Study

The study sought to determine the effects of financial factors on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Kenya. The study objectives were to establish the effect of household income, cost of financing, effect of housing price, and effect of financial management skills on the affordability of housing in Nakuru East and Nakuru West Sub-Counties. The study variables were household income, cost of financing, house price, financial management skills and affordability of housing. The chapter is guided by the study objectives.

5.2.1 Household Income and Affordability of Housing

The first objective of this study sought to establish the effect of household income on the affordability of housing in Nakuru East and Nakuru West Sub-Counties. The study established that on average the households indicated that their income was low and could support housing needs and commitments to only small extent. This was further evident by majority of the respondents indicating small extent to the statements measuring the level of income. The study revealed that there was a statistically significant moderate and positive relationship between income of household and affordability of housing. This is due to a Pearson correlation coefficient of 0.440 which was significant at 5% significant level ($p<0.05$). The

achieved correlation coefficient implied that if the income of the household increased there was a subsequent increase in the affordability of housing and vice versa.

The study revealed t=14.648, a beta coefficient of 0.203 for household income with a $p<0.05$. This implied that a unit increase in the household income resulted to 0.203 units increase in the housing affordability with other variables held constant. Therefore, the first hypothesis stating that household income has no statistical significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties was rejected at 5% significance level. This implies that household income affects the affordability of housing.

5.2.2 Cost of House Financing and Affordability of Housing

The second objective of the study was to analyse the effect of the cost of financing on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Kenya. The study established that on average the low income households in Nakuru East and Nakuru West Sub-Counties to a large extent were unable to meet various cost of housing with a composite standard deviation showing consensus in rating the metrics. It was also established that there was a statistically significant moderate and negative relationship between the cost of financing and household and affordability of housing. This was well revealed by the obtained value of the Pearson correlation coefficient of - 0.537 which was significant at 5% ($p<0.05$). The Pearson correlation coefficient achieved implied that an increase in the cost of financing resulted in a decrease in the affordability of housing and vice versa.

Cost of house financing was found to have t=-15.507, a beta coefficient of -0.186 which was significant at 5% significance level. It was therefore revealed that a unit increase in cost of house financing led to 0.186 units decrease in housing affordability

with other variables held constant. The second hypothesis stating that cost of financing has no statistical significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties was rejected at 5% significant level. This is an indication that cost of financing affected affordability of housing.

5.3.3 House Price and Affordability of Housing

The third objective of the study entailed determining the effect of house price on the affordability of housing in Nakuru East and Nakuru West Sub-Counties, Kenya. The study revealed that on average the house prices within the desired location including house prices within the location with adequate public transport, adequate access to water services, adequate access to electricity services, adequate access to health services, adequate access to school services, adequate access to security services being cheap and house prices within the location with desirable neighborhood attributes were high. These portrays a limited affordability of the houses by the low income households in Nakuru East and Nakuru West Sub-Counties.

The study further established that there was a negative and moderate significant relationship between house pricing and affordability of housing. This was revealed by Pearson correlation coefficient of - 0.454 which was significant at 5% ($p<0.05$). The achieved value indicated that an increase in the house pricing resulted to the subsequent decrease in the affordability of housing and vice versa. The value of t=-13.923, beta coefficient of -0.181 and a $p<0.05$ were achieved in respect to house pricing. This therefore indicates that a unit increase in house pricing led to 0.181 units decrease in housing affordability with other variables held constant. The third hypothesis of the study stating that house price has no statistical significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties was rejected at 5% significance level.

5.2.4 Financial Management Skills and Affordability of Housing

The fourth objective of the study sought to examine the effect of financial management skills on the affordability of housing in Nakuru East and Nakuru West Sub-Counties. The study revealed that to a large extent household head from low-come backgrounds did not have financial management skills on strategies of savings, skills on how to control expenditures, financial planning skills, knowledge on financial obligations towards acquiring a house, skills on book keeping, skills on examining the cash flows, preparation of budgets for the income, and skills on financial risk analysis.

The relationship between the financial management skills and affordability of housing was also established on the study. On this aspect, the study obtained a Pearson correlation coefficient value of 0.582. This was an indication of a positive moderate and significant relationship between financial management skills and affordability of housing which was significant at 5% ($p<0.05$). The value obtained as an indication that an increase in the financial management skills resulted in the increase in affordability of housing and vice versa.

Focusing on financial management skills, the study obtained $t=16.204$, a beta coefficient of 0.200 and a p-value less than 0.05. This indicates that a unit increase in the financial management skills of low income households would lead to 0.200 units increase in the housing affordability with other factors held constant. The fourth hypothesis stating that financial management skills have no statistical significant effect on the affordability of housing in Nakuru East and Nakuru West Sub-Counties was rejected at 5% significant level. Therefore, financial management skills affected affordability of housing.

5.3 Conclusions of the Study

Based on the research findings of the study, the following conclusions were drawn.

5.3.1 Household Income and Affordability of Housing

The study concluded that most of low income households in Nakuru East and Nakuru West Sub-Counties were having a low level of housing affordability due to their low levels of the household income. It was also in this respect concluded that the level of household income affected the affordability of housing among the low income households. This conclusion is based on majority of the households who indicated that their household income to a large extent could not meet various aspects of housing and also from significant correlation and regression results indicating that household income affected the affordability of housing. It was also concluded that household income was the greatest determinant of housing affordability among the low income households in Nakuru East and Nakuru West Sub-Counties.

5.3.2 Cost of House Financing and Affordability of Housing

It was concluded that the most of the low income households in Nakuru East and Nakuru West Sub-Counties were to a large extent unable to afford several components of housing. The study further concluded that the cost of house financing affected the level of affordability of housing among the low income households in Nakuru East and Nakuru West Sub-Counties. The conclusion in respect to this objective was based on significant relationship and influence as established by correlation and regression analysis respectively. The study also concluded that an increase in the cost of house financing decreases the affordability of housing among the low income households.

5.3.3 House Price and Affordability of Housing

The study concluded that house prices within the desired location, house prices within the location with adequate public transport, adequate access to water services, adequate access to electricity services, adequate access to health services, adequate access to school services, adequate access to security services being cheap and house prices within the location with desirable neighborhood attributes were unaffordable to most of low income households in Nakuru East and Nakuru West Sub-Counties. The study further concluded that house prices and affordability of housing were significantly related which implied that house prices affected the affordability of housing among the low income households in Nakuru East and Nakuru West Sub-Counties. This conclusion was based on significant corrections and regression on house price and affordability of housing.

5.3.4 Financial Management Skills and Affordability of Housing

The study concluded that most of low income households in Nakuru East and Nakuru West Sub-Counties to a large extent lacked important financial management skills in consolidating funds towards housing. The study further concluded that the level of financial management skills affected the level of housing affordability. This conclusion was made based on the correlation and regression results that were significant. It was also concluded that possession of financial management skills increases the level of affordability of housing among low income households in Nakuru East and Nakuru West Sub-Counties.

5.4 Recommendations of the Study

The study recommends the Government to develop strategies that will help in increasing incomes to the low income households which has been found in this study

to be the key obstacle towards housing affordability. This can be done through targeted funding of informal business located in the low income areas of the Sub County. This will in turn boasts the entrepreneur spirit and its effect will be increased employment and incomes of households will be improved leading to affordability of housing. Targeted job creation through the both the formal and informal sector in the study area will increase opportunities for employment and also self-employment opportunities among the households. The Government can also partner with development partners in funding the construction of affordable housing with a view of reducing the cost of capital and increasing accessibility of affordable housing to low income earners. Housing stakeholders can work closely with low income households to advise them accordingly in housing matters considering the factors found significant in explaining affordability of housing in Kenya.

The study further recommends the National and County Governments to come up with a long-term plan towards increasing affordable housing financing strategies that can be accessible to most households living in the Counties whether in the formal or informal sector. The Government and the other housing stakeholders need to consider subsidizing the cost of building materials, land prices, cost of professional services associated with housing, access to mortgage facilities, transport costs associated to building, labour costs for building, government related charges on building, support services towards building such as water and electricity. When interest rates are low then many households can consolidate their income and can leverage on the affordable housing loans. In addition, the governments should ensure that housing developments around low income dwellings have adequate transport, water, electricity, and sanitation infrastructure by formulating a strong regulatory framework

that creates an enabling environment for both private and non-profit real estate developers.

The study recommends a focused financial education program to be initiated by the Government targeting the low income households in the study area both in work place, schools and to the community groups as part of the public programs There a need to equip the households with minimum financial management to improve financial literacy in savings strategies, skills on how to control expenditures, financial planning skills, knowledge on financial obligations towards acquiring a house, skills on book keeping, skills on examining the cash flows, preparation of budgets for the income, and skills on financial risk analysis. This can be done through targeted training developed by the county Government through the relevant departments. When such skills are embraced the households are able to manage their finances effectively leading to the affordability of housing. Institutions such as mortgage financial institutions, housing cooperative societies and real estate developers and agents should be in the forefront sensitizing low income households on these aspects and also availing key information on housing. This can be coordinated in collaboration with the County of Nakuru department Finance and also the Housing section. The County Government should take a led in ensuring that its citizen is economically empowered through encouraging prudent financial practice by its citizen.

5.5 Suggestions for Further Studies

A further study may be conducted to examine challenges of house affordability in the other Urban Counties in Kenya targeting the low-income households. A further study can also be done on the role of mortgage financial institutions, housing cooperative

societies and real estate developers and agents among other housing stakeholders in enhancing housing affordability among the middle-income earners in Kenya. A study can also be done on the effects of financial factors on the affordability of housing in other counties in the country in order to have a conclusive finding on these aspects. This study suggests a further study on non-financial factors effecting housing affordability across different contexts.

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APPENDICES

Appendix I: Letter of Introduction

KABARAK UNIVERSITY

Private Bag - 20157
KABARAK, KENYA
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Tel: 0773 265 999
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BOARD OF POSTGRADUATE STUDIES

25th July 2019

The Director General
National Commission for Science, Technology & Innovation (NACOSTI)
P.O. Box 30623 – 00100
NAIROBI

Dear Sir/Madam,

RE: STELLA CHERAISI KORIR- RDG. NO. GDB/M/1599/09/16

The above named is a Doctor of Philosophy student at Kabarak University in the School of Business ans Economics. She is carrying out research entitled ***"Effect of Socio-Economic Factors on Affordability of Housing among Low-income Households in Nakuru County, Kenya".*** She has defended her proposal and has been authorized to proceed with field research.

The information obtained in the course of this research will be used for academic purposes only and will be treated with utmost confidentiality.

Please provide her with a research permit to enable her to undertake her research.

Thank you.

Yours faithfully,

Dr. Betty Jeruto Tikoko
DIRECTOR, POSTGRADUATE STUDIES

KABARAK UNIVERSITY
DIRECTOR
POST GRADUATE STUDIES
25 JUL 2019
PRIVATE BAG - 20157, KABARAK

Kabarak University Moral Code

As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord. (1 Peter 3:15)

Appendix II: Research Questionnaire

Dear Respondent,

This questionnaire is intended to collect data on **'EFFECT OF FINANCIAL FACTORS ON AFFORDABILITY OF HOUSING AMOUNG LOW-INCOME HOUSEHOLDS IN NAKURU EAST AND NAKURU WEST SUB-COUNTIES, NAKURU COUNTY, KENYA'** Kindly do fill the set questions to the best of knowledge**.** Also note that your responses will be kept anonymous and confidential

Section A: Background Information

Kindly tick the box that best describes your personal and household background characteristics.

1. What is your gender? 1. Male [ ] 2. Female [ ]
2. What is your Marital Status?
   - i. Single [ ]
   - ii. Married [ ]
   - iii. Separated [ ]
   - iv. widowed/Widower [ ]
   - v. Divorced [ ]
3. Your highest level of education
   - No formal education [ ]
   - i. Primary level [ ]
   - ii. Secondary level [ ]
   - iii. Certificate [ ]
   - iv. Diploma [ ]
   - v. Graduate [ ]
   - vi. Postgraduate [ ]
4. Your occupation
   - i. Unemployed [ ]
   - ii. Employed [ ]
   - iii. Self - employed [ ]
5. Type of employment
   - i. Skilled [ ]
   - ii. Semi-skilled [ ]
   - iii. Unskilled [ ]
6. Your position

i. Senior staff [ ]
ii. Management staff [ ]
iii. Junior staff [ ]
iv. Casual [ ]
v. None [ ]

Section B: Income Levels

Using a five point likert based scale, 1.No Extent, 2. Small Extent, 3. Moderate Extent, 4. Large Extent and 5.Very Large Extent, indicate the manner in which you agree with the stated objectives on influence of income levels on housing affordability.

S/N	Statement	NE	SE	ME	LE	VLE
7.	My income levels are stable over a period of time					
8.	My income levels can support mortgage repayments					
9.	My income levels can cater for most of my financial needs					
10.	My income levels can support housing features that I would desire					
11.	My income levels can support housing commitments					
12.	My income levels is above the rest household members					
13.	My income levels are improving					
14.	I have household members who are economically inactive					

Section C: Cost of Financing

Using a five point likert based scale, 1.No Extent, 2. Small Extent, 3. Moderate Extent, 4. Large Extent and 5.Very Large Extent , indicate the manner in which you agree with the stated objectives on influence of cost of financing on housing affordability.

S/N	Statement	NE	SE	ME	LE	VLE
15.	The cost of building materials is high for me					
16.	Land prices are high for me					
17.	The cost of professional services associated with housing are not within my reach					

18.	I am unable to access mortgage facilities					
19.	Transport costs associated to building are high for me					
20.	I am unable to meet to labour costs for building					
21.	Government related charges on building are unaffordable to me					
22.	Support services towards building such as water and electricity are costly for me					

Section D: House Pricing

Using a five point likert based scale, 1-No Extent, 2-Small Extent, 3-Moderate Extent, 4-Large Extent and 5-Very Large Extent, indicate the manner in which you agree with the items on influence of house prices on housing affordability.

S/N	Statement	NE	SE	ME	LE	VLE
23.	The house prices within the location I desire are cheap					
24.	House prices within the location with adequate public transport means are low					
25.	House prices within the location with adequate access to water services are lowly priced					
26.	House prices within the location with adequate access to electricity services are not costly					
27.	House prices within the location with adequate access to health services are manageable					
28.	House prices within the location with adequate access to school services are not high					
29.	House prices within the location with					

	adequate access to security services are cheap					
30.	House prices within the location with desirable neighborhood attributes are inexpensive					

Section E: Financial Management Skills

Using a five point likert based scale, 1-No Extent, 2-Small Extent, 3-Moderate Extent, 4-Large Extent and 5-Very Large Extent, indicate the manner in which you agree with the statements on influence of financial management skills on housing affordability.

S/N	**Statement**	**NE**	**SE**	**ME**	**LE**	**VLE**
31.	I do not have skills on strategies of savings					
32.	I do not have skills on how to control expenditures					
33.	I do not have financial planning skills					
34.	I do not have knowledge on financial obligations towards acquiring a house					
35.	I do not have skills on book keeping					
36.	I do not examine my cash flows					
37.	I do not prepare budgets for my income					
38.	I do not have financial risk analysis skills					

Section E: Affordability of Housing

Using a five point likert based scale, 1-No Extent, 2-Small Extent, 3-Moderate Extent, 4-Large Extent and 5-Very Large Extent, indicate the manner in which you agree with the statements on the affordability of housing.

S/N	Statement	NE	SE	ME	LE	VLE
39.	I can afford to build a house with desired features					
40.	I can afford to rent a house with desired features					
41.	I can afford to build a house that can accommodate my family members					
42.	I can afford to rent a house that can accommodate my family members					
43.	I can afford to build a house in a desired locality					
44.	I can afford to rent a house in a desired locality					

THANK YOU

Appendix III: Interview Schedule for Housing Stakeholders

Introduction: Thank you for agreeing to take part in this study. You are expected to give provide information in regard to affordability of housing from the point of income levels of households, housing prices, cost of financing, and financial management skills of households.

Questions

1. How does affordability of housing vary among your clients in the following categories of low-income households;
   i. Unemployed households
   ii. Employed households
   iii. Self – employed households
2. How does the type of employment influence the affordability of housing among the following categories of your low-come clients;
   i. Skilled Employment
   ii. Semi-skilled
   iii. Unskilled
3. How does yearly income among your clients affect affordability of housing?
4. Do you consider the house prices to be in accordance to the different levels of income of your low-come clients?
5. How do the following aspects of housing finance cost influence the affordability of housing among your low-come clients;

i. The cost of building materials

ii. The cost of land

iii. The cost of professional services

iv. The cost of mortgage facilities

v. Labour costs

vi. Any other

vii. Government related charges, land rates or permits on building

6. Are your low-come clients aware of various ways to finance their housing needs? Mention few alternatives of getting housing finance.

7. Which financial management skills do you consider important in enabling low-come households own houses? Describe the extent in which your clients possess these skills.

8. What are the most considered factors by your low-come clients for a house to be termed as affordable for them?

Appendix IV: List of Key Housing Stakeholders

S/n	Name of Stakeholder	Physical Location
1.	Housing Finance Company	Biashara Ward
2.	Kivumbini Housing	Menengai social hall
3.	Siranga Moyie Housing Cooperative	Sokoni plaza
4.	Upendo wa Jirani Housing	Bondeni ward
5.	Koyumkei Housing	Kapkures ward
6.	Lanet Axis Housing	Pipeline
7.	Hyrax Housing	Menengai high school
8.	Kuinuana Housing	Kanu street - sokoni
9.	Gofa Housing	Barnabas centre
10.	Beyond Housing	Biashara ward
11.	Suluhisho Housing	Muthaiti complex
12.	Nakuru workers Housing	Sub County Co-operative offices Nakuru
13.	Nakuru Teachers Housing	Gate House
14.	All Homes Housing	Shabab
15.	Wakarimu Housing	Vickers Plaza
16.	Railway housing	Railway Station
17.	Tuinuane Housing	Mache plaza
18.	Easy homes Housing	Gate house 6th floor
19.	Abundant Life Housing	Bondeni Estate
20.	Hysa Housing	Hygiene Butchery
21.	Agro housing co-op	Spikes centre
22.	Vision for youths housing co-op	Kaptembwa
23.	Lake side housing	Gate house
24.	Thow housing	White house shopping centre
25.	Nakuru savers housing	Biashara Ward
26.	Nacom Housing	Biashara ward
27.	Nakuru Analysts Housing	Lanet Ward

S/n	Name of Stakeholder	Physical Location
28.	Browncord Adverts	Equator house 3rd floor room,
29.	Damka Properties	Cigma plaza, 2nd floor,
30.	Twinestar Commercial Agencies	Biashara Ward
31.	Ocra Realtors Ltd	Albizia Grove, Sobea kabarak
32.	Anduru Construction Co Ltd	Equator House, 3rd Flr Kenyatta
33.	E-rent Kenya	Box 137, Njoro, Nakuru
34.	Focus Management Ltd	Mache Plaza, 2nd Flr
35.	Nairobi Homelands Management Services	Gate Hse, 2nd Flr Mburu Gichua Rd
36.	Nyandarua Agencies Ltd	197-20100, Nakuru
37.	A20.mpiva Estate Ltd	Box 219-20100, Nakuru
38.	Bahengo Commercial Agencies	Gate House
39.	Bima Plains Service	Pluto Building Kenyatta Avenue, Box 939-20100, Nakuru
40.	Bubwa Agencies Ltd	Biashara St, Nakuru
41.	Buildtech Ltd	Box 7487-20100, Nakuru
42.	Chrisca Real Estates	Nakuru, KANU Building, Gichua Rd, Box 16259-20100, Nakuru
43.	Dayton Property Agency	Box 1390-20100, Nakuru
44.	Flash Commercial Agencies	Pinkam House, Mburu Gichua Rd, Tudor, Box 514-20100, Nakuru
45.	Frankana Commercial Agencies Ltd	Pinkam House, Mburu Gichua Rd, Tudor, Box 592-20100, Nakuru
46.	G G Gachara Contractors Ltd	Box 2961-20100, Nakuru
47.	Jagir Singh Contractors Ltd	Box 7254-20100, Nakuru
48.	Jakika Recoin Commercial Agencies	Box 161-20100, Nakuru
49.	Johana Construction	Box 2613-20100, Nakuru
50.	Joje Commercial Agencies	Plutos House, Kijabe Rd, Box 14645-20100, Nakuru
51.	Jojean Properties Ltd	Vickers Housetta Ave, Tudor, Nakuru

S/n	Name of Stakeholder	Physical Location
52.	Joy - Re Commercial Agencies	Plutos Buildingtta Ave, Tudor, Nakuru
53.	Kalalu Building Contractors	Magnolia Bldg Market Rd, Nakuru
54.	Kimiti Lakeside Agency	Pinkam House, 1st Flr Mburu Gichua Rd Central(CBD), 15750-20113 Bahati, Nakuru
55.	Lawrence Commercial Link	Gate House, Mburu Gichua Rd, Box 13832-20100, Nakuru
56.	Makao Enterprises Ltd	National Bank Bldg, 1st Flr Kenyatta Ave Central(CBD), 1890-20100 , Nakuru
57.	Nakuru Urban Services Co Ltd	Gate house, Geoffrey Kamau Way, Box 3014-20100, Nakuru
58.	Prudential Construction Company	Temple House, Box 3899-20100, Nakuru
59.	Valco International Agency Ltd	Plutos Bldg Kenyatta Ave, 17327-20100 , Nakuru
60.	Muigai Commercial Agencies Ltd	Equator Hse Kenyatta Ave, 1622-20100 , Nakuru
61.	Point 'A' Commercial Agencies Ltd	Pinkam Hse Mburu Gichua Rd Central(CBD), 13707-20100, Nakuru
62.	Achero Commercial Agencies	Biashara Centre, 1st Flr, L0B Mburu Gichua Rd Central(CBD), 34100-20100 , Nakuru
63.	Bertrose Enterprises	Arcade Bldg, Opp Shah Outfitters, Kenyatta Ave, P.O. Box: 12552-20100 Nakuru,
64.	Cheri Skyways Capital	Prestige Mall, 1st Flr, 43 Kenyatta Ave, P.O. Box: 3638-20100 Nakuru,
65.	Kingsway Agencies	12236-20100 , Nakuru
66.	Mato Commercial Agencies	Bellion House, 2nd Flr, 10 Kenyatta Ave Central(CBD), 150407-20100

S/n	Name of Stakeholder	Physical Location
		, Nakuru
67.	Mbuka Ventures	Pinkam House, 2nd Flr, 17B Mburu Gichua Rd Central(CBD), 16428-20100 , Nakuru
68.	MCA Properties	Equator House, 1st Flr Kenyatta Ave Central(CBD), 1622-20100 , Nakuru
69.	Nakstate Properties	Kenyatta Ave, Grey Hse, 2nd, P.O. Box: 16292, 20113 Bahati, Nakuru
70.	Pillar Insurance & Commercial Agencies	Gibcon House, 2nd Flr Kijabe Row Central(CBD), 10097-20100 , Nakuru
71.	Primage Micro Comm Agencies	Kanu Bldg, 1st Flr Mburu Gichua Rd, 2969-20100 , Nakuru
72.	Real Care Properties	Mache Plaza, 2nd Flr Kijabe Row Central(CBD), 12169-20100 , Nakuru
73.	Shimoni Commercial Agencies	Gibcon House, 2nd Flr Kijabe Row Central(CBD), 14504-20100 , Nakuru
74.	Skylink Commercial Agency	Pinkam House, 2nd Flr, 10G Mburu Gichua Rd Central(CBD), Nakuru
75.	Stewa Commercial Agencies	Gate House, 5th Flr, 502 Mburu Gichua Rd Central(CBD), 1130-20100 , Nakuru
76.	Wanaruona Agencies	Inder Singh Bldg Kenyatta Ave Central(CBD), 12635-20100 , Nakuru
77.	White Stone Comm Agencies	488-20100 , Nakuru
78.	Ashina Enterprises	Opposite Bontana Chege House, 1st Flr, 17 Government Rd Central (CBD), 3202-20100 , Nakuru
79.	Green Gates	Mache Plaza Kijabe Row Central(CBD), 16552-20100 , Nakuru
80.	Jodak investment Ltd	Mache Plz, Kijabe Rd, Nakuru

Appendix V: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **124301**

Date of Issue: **16/August/2019**

RESEARCH LICENSE

This is to Certify that Ms.. STELLA KORIR of Kabarak University, has been licensed to conduct research in Nakuru on the topic: EFFECT OF SOCIOECONOMIC FACTORS ON AFFORDABILITY OF HOUSING AMOUNG LOW-INCOME HOUSEHOLDS IN NAKURU COUNTY, KENYA for the period ending : 16/August/2020.

License No: **NACOSTI/P/19/554**

124301

Applicant Identification Number

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Verification QR Code

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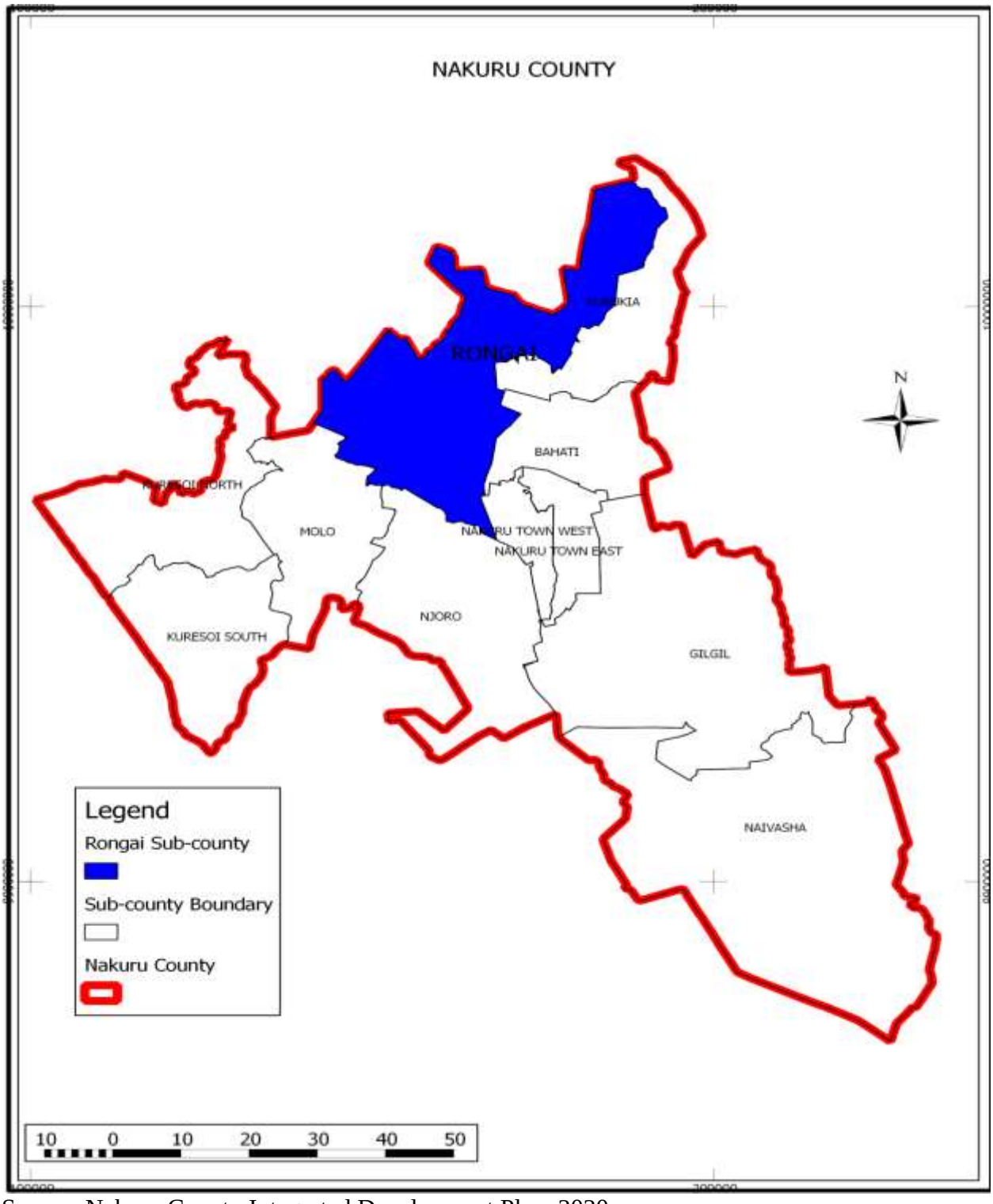
Appendix VI: Map of Nakuru County



Source: Nakuru County Integrated Development Plan, 2020

Appendix VII: Publications

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Financial Management Skills and Affordability of Housing in Nakuru County

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Abstract
This study sought to determine the relationship between financial management skills and house affordability. The study adopted positivist, cross sectional design to collect, analyze and make conclusions on the relationship between the two variables. Heads of households were identified as the respondents in this study, where us each household was considered as unit of analysis. Research data was collected through structured questionnaires and interview guides. Data was collected from 384 households in London, Kaptembwa, Kapkures, Rhonda, Shaabab, Biashara, Kivumbini, Flamingo, Menengai and Nakuru East wards within Nakuru East and Nakuru west sub-counties. Results from the study revealed that financial management skills are a significant determinant of house affordability. In fact, it was evident that financial planning, budgeting, expenditure and financial control among other skills are very critical in the journey towards house ownership. The study recommends that individuals should enhance financial management skills through trainings and seminars. Financial institutions, as well as the government can support the households by organizing training opportunities, especially for low income households. The study recommends that further study should focus on financial management areas that are key to low income households and how such skills can be used towards house ownership

Keywords: Financial Management Skills, Housing Affordability, Nakuru County
DOI: 10.7176/RJFA/12-20-05
Publication date: October 31st 2021

1. Introduction

The conversation around house affordability is very popular among individuals, households, investments and even the government. This is because, to an individual, access to a decent home is a basic need and a right. To a household, the general wellbeing of a household largely lies on its habitat, a home. To the government, affordable and decent housing is one of the key indicators of social and economic wellbeing.

In most nations, the issue of access to affordable and decent housing is still emotive. This is largely because, the individual households are largely unable to acquire or access decent and affordable houses, either because they are too expensive for them or the households just do not have the capacity to acquire or rent one [3]. While most governments put measures to have a planned strategic way to deal with the housing issue, generally, achievement of adequate affordable and decent hosing still remains far from realization to most governments [24]. This is largely attributed to the fact that while housing is resource intensive, the rate of population growth is on the rise, especially in urban areas, due to rural urban migration in search of opportunities.

In Kenya, the housing problem is so big that the efforts can be seen in all levels, starting from individuals, investment organizations, religious organizations, and non-governmental organization to the government and sometimes even to international development partners [9]. In fact, to reducing the housing problem in the country, the government has put affordable housing as one of the main agenda in the next five years [10]. Among other factors identified empirically to influence house affordability is the financial management skills [2, 11, 14]. It is on this ground that this study examines the relationship between financial management skills and house affordability in Nakuru County.

2. Literature Review

2.1 Financial Management Skills

Financial management skills are the financial competencies necessary in organizing and controlling financial activities and resources [8]. Financial management skills are useful in estimation of capital requirements of a

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Cost of Financing on Affordability of Housing in Nakuru East and Nakuru West Sub-counties, Nakuru County, Kenya

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Abstract: Access to affordable and decent housing remains a dream to many households, especially in developing nations. In Kenya, the housing need has been identified as one of the most agent area that needs attention. In fact, the government has put affordable housing as one of the big four agenda for the Nation. This study examined the relationship between cost of financing and affordability of housing in Nakuru East and Nakuru West Sub-Counties. Data was collected from 384 households sampled from the 11 wards in the two sub-counties. Stratified random sampling was used to ensure adequate representation of every ward in the sample. Data was collected through self-administered structured questionnaires and interviews. A pilot test was conducted prior to the actual study, incorporating reliability and validly tests. The study achieved a response rate of more than 87%. Findings from analysis revealed that cost of finance is significant determinant of affordability of housing. The study recommends that the government and other stakeholders in the housing sector should consider subsidizing cost of building materials, land, and cost of professional services, mortgage facilities as well as water and electricity. The government can partner with financial institutions as well as private investment organizations to offer more affordable housing solutions to the general public.

Keywords: Cost of Financing, Affordability of Housing, Nakuru County

1. Introduction

Housing remains an important issue both to individuals and to governments. The issue cuts across all social setups and locations. While traditionally, home development was easier, especially where land was majorly ancestral, with increased population and rural urban migration, most households now have to acquire land for home [25].

Housing affordability remains one of the most important aspects of housing, whether the house is rented or owned. To the government, affordable housing demand has led to development of policies on house allowances and subsidies, housing benefits and mortgage regulations [1]. Globally, literature indicates that housing unaffordability affects 2.6% of all households across the world and whereby owner occupation unaffordability was 1.2% and unaffordability in private renting was 7.9% [16].

UN Habitat reported that affordability of housing is a big challenge to most households, especially in developing nations [23]. This is particularly true when the cost compromises the occupants' enjoyment of other human rights. While noting lack of a universally acceptable conceptualization of affordable housing, [15] nevertheless views affordable housing as the capacity of an individual to purchase a housing unit without restricting demands for other financial resources. This viewpoint is contextually similar to that of UN [13]. Affordable housing should costs not more than 30% of gross household income for low income households [25]. This view point relates to the affordability of housing within the context of low income households.

In Kenya, the question of affordable and decent housing is critical to the government to the point the housing has been identified as one of the big four agenda for the government [11]. While the Kenyan government has recognized the problem of housing, especially in urban areas, and has rolled out affordable housing program through the 'boma yangu' initiative, the demand for housing is projected to be way beyond what the government can supply [12]. The efforts by