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# Mortgage Financing and Affordable Housing Nexus: Evidence from Developing Countries

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**Abstract**

The study investigated the relationship between mortgage financing and affordable housing in Kumasi, Ghana. It explores how mortgage financing influences affordable housing supply. It identified 23 banking institutions of which 11 of them are into mortgage financing. Adopting the exploratory sequential mixed method research design, the study selected banks households and, realtors as respondents using both purposive and accidental sampling techniques. The study found that, in Kumasi and Ghana, housing is affordable on paper but very expensive on the ground as none of the houses supplied on affordable housing projects are affordable to middle- and low-income earners. The study acknowledged that the high level of LtVR has made mortgage financing very expensive to ordinary Ghanaians and such calls for government-insured mortgages to make housing supply less expensive. It found that the ANOVA results from a regression analysis with a multiple R of 0.240 and R square of 0.058 shows that only 5.8% of the total mortgage lending rates are influenced by the interest rate pegged by the Bank of Ghana (BoG) and hence there is a very weak relationship between interest rate and mortgage lending rate in Ghana. The study concludes based on the findings that in Kumasi and Ghana, housing units that are supplied using mortgage financing by the government realtors are more expensive than those built by private estate developers with or without mortgages. Hence a complete reform of the mortgage policy to include government-insured mortgages to make the secondary mortgage market attractive was recommended.

*Keywords*: Affordable, Financing Housing, Mortgage, Realtors, Real Estate



## ■1.0 INTRODUCTION

Due to the influence of housing on the growth of states, providing it has become significantly prominent to governments across the globe. In emerging states, housing is a major economic, political, and social issue; the provision of this basic necessity of life, to the middle and low-income groups is of great importance (Abdul-Aziz et al., 2011; Donaldson et al., 2019; Boamah, 2011). The provision of housing for low and middle-income earners has been a major headache in many countries and the emerging world has been severely victimized (UN-Habitat, 2020; Average,2019). This incapability has been the principal cause of the escalating slum settlement in cities around the world where one billion people live in slum areas (Raoofi et al., 2022; Amit et al., 2020; De, 2017). The key to the housing problem lies in the opening of shareholders' contribution to the provision of housing, where government, non-governmental organisations, multidimensional interventions and the community can play an active role (Addo et al., 2023). The severity of the situation particularly in developing countries like Africa is the involvement of the urban poor in the provision of housing for the poor, where they are prime actors in formulating housing policies, programmes and initiatives that best suit the urban poor counterparts. Studies on the importance of housing opined that reviewing the provision of housing for low-income groups in developing countries has a higher primacy than education and healthcare (UN-HABITAT, 2022; UN, 2020; Ferguson, 1999). Housing therefore remains the most durable need of humankind even though without housing man can live but not without complications (Woods et al,2023). As a result, there are a lot of communities across the world including Ghanaian communities where vehicles scarcely move and of poor road networks where most of the hinterlands are linked by footpaths, yet these communities have where they lay their heads after daybreak. Though, this housing might not be decent or adequate as the majority of them lack the adequate facilities that constitute comfortable housing. Most of the housing in some African and particularly Ghanaian communities does not meet the UN-HABITAT's standard relative to occupancy ratio of 1:2 thus 1 room to 2 persons or occupants. Hence, those housings are provided just to protect the inhabitants against the vagaries of the weather, sunlight, rainfall and cold temperatures. Adequate housing will offer shelter for sleep, affect resource exploitation and the economic welfare of people, and influence economic growth and social steadiness (Gardner, 2021).

Decent housing is an imperative need of every human being-a basic need for human subsistence in addition to clothing and food. When people have affordable housing, their families are more constant, health improves, children's school performance gets better, settlers are better able to assimilate into society, and reliance on income supports reduces (Ackley et al., 2018; Carter et al., 2004). Accommodation and housing policies are apropos for the consciousness of the economic policy objectives of nations such as wealth creation, labour mobility and stability, investment drive, job creation and services development (Kavishe et al., 2018; CMHC, 2004a). Issues of decent accommodation in the world are becoming so critical as over a billion people, or one in seven people on the earth, live in slums currently and that populace is predicted to rise in coming eras (Bayoumi et al., 2020: De, 2017). The situation in developing countries is dare as numerous strategic interventions to advance the lives of the urban poor have failed (Appeaning et al., 2021) and slums linger to persist in the Global South (Amit et al., 2020: Coburn & Sverdlik, 2017). With increasing urbanization rates, the slum population will solitarily grow if no policy actions are taken. While there is a long history of designing, implementing, and evaluating slum policies in the Global South, there is a minimal understanding of what makes certain policies effective and what kind of socioeconomic and political circumstances enable them to succeed (Turimubumwe, 2023; Wakely et al., 2014). The resultant effect is that poor housing policies leading to a high housing deficit where many have to resort to indecent accommodation lacking the necessary facilities that make life comfortable (OECD, 2021; Ofori, 2020). In these countries housing quality for low-income earners is also a challenge that is common in all cases as it comes with high revenue mobilisation and long-term budgeting (Clegg, 2018; Ankamah et al., 2013). The cost of housing, low income, and high cost of utilities have crippled the ability of the poor in the community from securing decent accommodation (Adu-Gyamfi et al.,2020 Muhammad et al.,2020). Some scholars therefore belief that the provision of affordable housing is at its best done through Public Private Partnership policies (Chileshe et al., 2022; Alteneiji et al., 2020: Osei-Kyei et al., 2019). In South Africa, Ethiopia, and Burundi, low-income earners are living in poor-quality housing in urban and rural areas (Beier et al.,2023; Matsumoto et al.,2021). Housing is considered one of the cardinal measures of the state of an economy. Good housing policies implemented on time enhance economic growth through proper health and well-being of the citizenry (Tonn et al., 2023). Housing is one of the three primary needs of mankind after food, which is the most imperative factor for the physical survival of man (Owotemu et al.,2022; Obiakor et al., 2017). It is amongst the vital measures of the state of an economy. Housing is painstaking to be one of the finest indicators of a person's standard of living and place in society (Aizenman et al.,2019; Chakraborty et al.,2018; Jiboye, 2009a).

The concept surpasses just providing a roof over one's head (Anthony, 2023; Akinmoladun et al., 2000). It is the foundation and fulcrum upon which people could rebuild their lives following the unsettling impacts and trauma of homelessness (Tusting et al., 2020; Smith et al., 2014). Despite the socioeconomic, political and cultural importance attached to housing, it stimulates investment prospects proficient of encouraging sustainable growth and development in an economy particularly when the housing benefits are directly linked to good health and well-being as laid out in the Sustainable Development Goals-SDG 3. Hence, provision of adequate housing is an important measure of social welfare and economic development in any nation (Bah et al., 2018; Igbinoba, 2011). Access to adequate housing is an international human right that governments and social groups have campaigned for over the last two decades with support from all even though their realisations fall short on the global front (Gardner, 2021). At diverse times, governments of developed countries have played active roles in the housing sector for economic growth and development reasons. A housing sector may support poverty reduction and inclusive growth over its influence on economic output, employment, generation of demand for resources and connected services, enhanced standard of living of inhabitants and supports wellbeing (Rolfe et al., 2020; Doling et al., 2013). Still, bumpy and unintended urban growth typically places burden on resources and limits the capacity to deliver housing and related infrastructural services (Zhang et al., 2023; UN-Habitat, 2014).

Activities in the sector encompass the process of providing safe, comfortable, purposeful and affordable accommodation in an appropriate location inside a zone, reinforced by incessant upkeep of the built environment for the daily living activities of individuals or families within the community with proportionate reflection of socioeconomic and cultural aspirations and preferences (Rek et al., 2018; UN-Habitat, 2009, UN-Habitat, 2007). The sector also pledges the sustainability of qualities of energy efficiency and resource management for better quality of life (UN-Habitat, 2009). It has robust associations for motivating economic growth and development in a miserable economy and levitating the standard of living of the citizenry. There are shreds of evidence of an optimistic correlation between such indices as homeownership rates, housing-GDP connection, and quantity of total mortgage loans to bank lending, on the one hand, and a nation's level of development, on the other (Teye et al., 2015; Martin, 2005; Valadez, 2008; Igbinoba, 2011). The evidence from the literature is clear that adequate housing and decent accommodation is a booster for economic growth, development and sustainability. Nevertheless, these anticipated benefits are yet to be sensed in Ghana, where prospects for securing housing finance or a mortgage for the acquisition of homes within the lower and middle-income group are somewhat narrowed and linger to be an encumbrance (Ofori, 2020; Odenyi et al, 2015; Donkor-Hyiaman et al., 2013). As a result, the majority of the poor live in structures that provide only spaces for sleep and nothing else leaving most of them exposed to risks and hazards including rape and human trafficking. In accordance with the UN-Habitat, approximately one billion of the world's urban residents are accommodated in houses that are described as indecent housing, typically in slums and squatter settlements (Average, 2019) and the situation in Ghana is not exceptional. While much attention of policymakers has been given to the provision of social housing by the central government, little is said about how the private real estate developers who provide about 85% of the housing to the poor and low-income earners in Ghana could access mortgage facilities towards making housing affordable. There is therefore a dearth of knowledge on the use of mortgages in subsidising housing construction costs in Africa and Ghana and such a knowledge gap should be narrowed.

The study was undertaken in Kumasi, the second largest city in Ghana to assess the affordability of housing units supplied by real estate developers relative to the cost or value of mortgage finance made available for these housing supplies. The study explores the extent to which real estate developers who are the major contributors to the housing supply in Ghana have utilised mortgage financing in their real estate business. The study is contingent on the findings of Ofori (2019) which reveals that the housing deficit situation in Ghana cannot be solved completely without giving much policy attention to private housing suppliers' the majority of whom are real estate developers. To this end, the study investigated the contribution of mortgage financing in the supply of affordable housing in Ghana particularly in Kumasi. Has the introduction and usage of mortgage financing contributed to the provision of affordable housing in Ghana and if so, to what extent? Getting responses to these questions is the rationale behind this study.

## 2.0 LITERATURE REVIEW

The word affordable attached to housing sounds so curious in the ears of the unknown and rings to the surprising ears of those who have attempted to get the details of the phenomenon. Since its inception and implementation over the last two decades in developing countries, a lot of space and housing users have yet to find how affordable are these houses under the affordable housing in so many instances most of them have had higher prices than those supplied under unaffordable bases. Contemporary demand for housing globally has reached an extraordinary phase due to factors such as urbanization influenced by an upsurge in human population, natural disasters and skirmishes including political misunderstanding and local conflicts (Bruen et al., 2013). This situation is very critical in developing countries where demand for affordable housing falls short in relation to the supply of it persistently. The method of housing distribution in developing countries continues to utilize untimely construction systems and execution measures that are often challenging and unreliable. In effect, affordability and sustainability are nowadays vibrant deliberations in the global development discussion for housing the poor in developing countries to meet the long-term sustainable development goals and needs of housing inhabitants as laid out in SDG 11. This is based on the fact that it has been ages now since inner-city house prices continued to be unaffordable to a significant number of urban low-income households (Oyalowo et al., 2018; Adjei et al., 2015). As a result, rent-to-income quotients in Africa and Asia are classically seven to nine times average incomes (Majale & Tipple, 2007). Uncertain and lavish urban lands coupled with the high cost of construction have truncated urban low-income households' pursuit to own a house in the urban centres (Buckley & Kalarical, 2005; Rono, 2007). In Ghana, a study by Appau et al (2020) confirms that land prices are not only expensive but also the transaction of land is characterised by a high level of insecurity and uncertainties where lands are bought or sold on a racketeering basis. This issue has just compounded housing affordability challenges in the country and the poor and low-income earners are the most victimised (Behr et al.,2023).

### 2.1 Status of mortgage financing in Ghana

A mortgage is any loan that is secured by a real property. This makes mortgage loans a pledge to the underlying properties and hence a dying commitment. In other parlance, a mortgage can be termed as the use of money belonging to others to purchase, renovate, complete or refurbish a house or building using a fixed asset or real property as collateral (Arvanitis, 2013; Arvanitis et al., 2013). The term is also used when a person or an entity plans to get a loan for specific reasons with the aim pledging a real estate in terms of default (Iyandemye et al., 2018). The mortgage market has some remarkable antiquity about its establishment, transactions and operationability. According to Akuffo (2006), the Building Society failed to sustain its initial effort in mortgage lending for more than three decades. This condition has been ascribed to the economic decay in the 1970s, which was characterized by an upsurge of inflation and currency devaluation and primarily, the low savings culture of Ghanaians.

Moreover, concerning the 1970-1971 housing policy, the obsolete Bank for Housing and Construction (BHC) was well-known and authorised to perform the dual role of providing concessionary construction finance to housing developers and granting mortgages to prospective homebuyers (Gavu et al, 2015). The BHC's involvement in housing development was negligible to carry any significant improvement in the industry. The BHC existed and operated for a term of merely fourteen years between 1974 and 1988 and provided mortgage loans at a value of ¢223,895,588 (US$ 994,075) to only 363 mortgagors (Boamah,2009). In the early seventies, commercial banks in Ghana including Ghana Commercial Bank, Social Security Bank (now Societe Generale Ghana), Barclays Bank Ghana Limited (now Absa Ghana) and Standard Chartered Bank joined the mortgage market yet trailed to make a mammoth impact. An inference could be taken from the fact that the Social Security Bank (SSB) on average made only 16 mortgages a year (Dauda, 2015) while Barclays Bank Limited and The First Ghana Building Society (FGBS) were the first mortgage institutions to be time-honoured under the Building Society Ordinance 1955 (Act 30) in 1956.

It has since been recognised as the only mortgage institution that was granting home loans of up to 80% and 95% housing costs to its customers and civil servants, correspondingly during that era. That notwithstanding, Standard Chartered Bank granted mortgages only to managers of specific multinational corporations. These institutions swiftly superseded lending as the operations were unpleasantly affected by the global economic crunch during the period. In 1993, the government wanted to create a two-tier integrated housing finance system under the Home Mortgage Finance Law 1993 (PNDCL329). This brought about the establishment of the Home Finance Company which then became HFC Bank (now Republic Bank) which had an initial start-up capital of US$8.2 million and US$16.2 million from the World Bank including the Social Security and National Investment Trust (SSNIT) respectively. Under the same decree, their directive was to serve as a liquidating institution for the partaking financial institutions in the primary market but failed to work. The Home Finance Company (HFC) ended as the primary mortgage lender.

Currently, a study by Ofori and Ameyaw (2020) shows that the mortgage market has 14 banking and two non-bank financial institutions as the major lenders. These include Delex Finance, Stanbic Bank Ghana, Republic Bank, Ghana Home Loans, Ecobank, Royal Bank Ghana, Sahel Sahara Bank, Prudential Bank, Absa Ghana, FBN Ghana, Bank of Africa, and Bank of Baroda, Ghana Commercial Bank (GCB) and Fidelity Bank.

### 2.2 Conceptualizing Housing Affordability

Contextually, housing is said to be affordable when it is priced within the incomes of uses of housing space without compromising their abilities to make ends meet including health and clothing. Globally, housing affordability is defined in manifold ways. The most frequently accepted definition of affordability refers to housing pricing which is taken as a measure of expenditure on housing to the income of the household (Ahadzie et al.,2018; Kalpana et al, 2015). In India for example, this is also putative by the Indian Government, which emphasises that "Affordable housing refers to any housing that meets some form of affordability standard, which could be income level of the family, size of the dwelling unit or affordability in terms of Equated Monthly Instalment (EMI) size or ratio of house price to yearly income (Bempah et al.,2018). Monash (2004) opined that the concept of affordability has two rudiments: people and what they want to buy. It is indispensable that the affordability of a given item relates to the purchasing power of its users. Still, in this context, the two elements of housing affordability are housing and its users. As such, housing affordability is seen as a multi-faceted quota, and whereas affordability is commonly defined using the expenditure method, there are other viewpoints on affordability relatively (Kalpana et al, 2015).

Housing affordability therefore describes the connexion between those two elements. Housing affordability can also be defined based on the classic hypothesis of "Economic Man". In this perception, anyone who has someplace to live is living in an affordable unit. This concept ignores the standards of living (Burke, Stone & Ralston, 2011). Essentially, housing affordability is well-defined as the capacity of households to have admittance to housing either by rent or by owner occupied or through buying (Dela,2020; O'Neill, 2008). In this article, I emphasize housing affordability in these three concepts: income affordability, purchase affordability, and repayment affordability.

The income affordability in this context equates to the income and the price of a house; that is the house price to income ratio (Gan & Hill, 2009). At a definite price for a house, one would be incapacitated to afford to borrow and pay for it then when the extent of the mortgage upsurges, borrowers access the mortgage directly. The income affordability criterion could be assimilated and understood better using the data in Table 1.

**Table 1** Income Approach to Housing Affordability

| Economic Groups | Size | Equated Monthly Instalment |
|---|---|---|
| Low Income Group (LIG) | Minimum of 500 sq ft super built-up area<br>Maximum of 517 sq ft (48 sq m) carpet area | Not exceeding 30–40% gross monthly income of the buyer |
| Middle Income Group (MIG) | 600–1200 sq ft super built-up area<br>Maximum of 861 sq ft (80 sq m) carpet area | |
| Economically Weaker Group (EWG) | Minimum of 300 sq ft super built-up area<br>Minimum of 269 sq ft (25 sq m) carpet area | |

*Source: Adopted from MoHUPA, 2011*

But it must be acknowledged that the income approach is ultimately achieved solitary when the combination of borrower's income and market conditions permits having both repayment affordability and purchasing affordability. Moreover, purchase affordability by (Yates et al, 2007) focuses on the ability of a household to borrow adequate funds to purchase a home or a house. This approach to and definition of housing affordability therefore remains the focus of this study. The rationale is that the study sees the availability of mortgage funds as a means of increasing the purchasing power of home seekers and house buyers by way of making monies available to facilitate and speed up their construction activities geared towards increasing the supply of housing to outweigh demand and hence reducing rentals in favour of at least the MIG. Also, the repayment affordability constitutes the aptitude of a borrower to persist the burden of mortgage repayment and this approach is also linked to the interest rate that is factored in the loan by the mortgagees as well as the sources of income of the mortgagors. The implication is that the three housing affordability approaches are integrated in nature and housing cannot be made affordable if the three do not work together.

### 2.3 Factors that measure housing affordability

Literature reviews that housing affordability is similar to decent accommodation and as such it goes beyond making shelter available for human habitation to including transport accessibility location factors and quantity of income needed by the family in question to meet their necessities (McKinsey, 2017; McKinsey,2017). These basic needs according to Yates et al., (2007) must be met without government or private subsidies. Hence (Peace & Brooks, 2000; Fisher, Pollakowski & Zabel, 2009; Rowley & Ong, 2012) proposed the self-sufficiency standard and shelter poverty indicators and the amenity-based housing affordability index as benchmarks for affordable housing. It must be acknowledged that housing affordability indicators are locational based and as such some indicators work perfectly in some countries while performing poorly in other areas. Residual income measures for example focus on the level of income a household has left after paying for housing costs, founded on the rationale that what concerns the households is not what share of income is spent on housing, but pretty whether they have sufficient income left for non-housing expenses after paying for housing. Moreover, the shelter poverty indicator as opined by (Eni et al.,2014; Stone, 2006; Stone et al., 2011), for example, measures whether a household's after-housing-cost disposable income is sufficient to cover a minimum basket of non-housing expenses. In relation to the locational applicability of the indicators, it could be acknowledged that Canada has approved a measure of shelter poverty called the Housing Hardship Measure (HHM), which evaluates how much a household has available to afford such goods and services after paying for shelter. Residual income measures are predominantly convenient to classify households that are belligerent to get by.

Nevertheless, they also suffer from unpredictability, since there is no candid way to quantify the minimum income that households would need for non-housing expenses (Gabriel et. al, 2005; Ezennia et al, 2019). Such measures also say little about housing quality, and, from a practical point of view, can require extensive additional data collection (Gabriel et. al, 2005; Ezennia et al, 2019). Most disapprovingly, conversely, from a policy standpoint, there is a risk that residual income measures can misanalyse overall cost-of-living problems as cost-of-housing glitches. Although it is elusive to contend against the principle that a household's after-housing-cost income should cover at least a basket of crucial expenses, an incapability to afford these other fundamentals may likely be determined as much or more by the cost of other prerequisites themselves than by the cost of housing (Cornelius et al.,2022;OECD,2021).Also, the income-based indicators for instance are to ascertain whether or not the households have adequate funds to offset housing at the agreed rate (Burke, Stone

& Ralston, 2011; Rowley & Ong, 2012; Norazmawati, 2015; Cox & Pavletich, 2017). However, among all the indicators of housing affordability, the one that focuses on mortgage financing is the affordability limit which has some statistical significance by way of proving the determinant indicator using the mathematical formula:

$$AL = \frac{PtIR}{(1-LtVR)}\ x\ [YP], but\ YP = \frac{(1-PV)}{i}, where\ PV = (1+i)^{-n}$$

$$Hence,\ AL = \frac{PtIR}{(1-LtVR)}\ x\ [1 - \frac{(1+i)^{-n}}{i}]$$

Where:

AL: affordability limit, PtIR Payment-to-Income Ratio, LtVR: Loan-to-Value Ratio: Mortgage term and i: mortgage interest rate. The model of affordable limit "sets the ratio of the maximum allowable loan to income as proposed by (Gan & Hill, 2009, p. 4). This model is very paramount to the study as it spells out the mortgage determinant which is the rate (i) that determines the affordability of mortgage funding which has direct implications on affordable housing. This is based on the fact that lenders (mortgagees) factor in all costs of the mortgage loan into the rate being the basis for mortgage pricing. This study has the perceptual view that there is a positive correlation between affordable housing and the availability of mortgage loans though it is yet to be testified by the users and home buyers who make use of mortgages as well as housing space consumers who rent from the home buyers and housing constructors.

## 2.4 Status of Housing Affordability in Developing Countries Over the Last Decade

Taking inferences from the affordability limit concept, this study tries to show the tendency of housing affordability in relation to the tendencies of mortgage market indicators. As indicated already, all interest rates (i) trends are obtained from the Bank of Ghana (BoG) and Bank of Rwanda (BNR) (BoG, 2020, BNR, 2017), then LTVR ratio, mortgage term (n), and PtIR trend were determined on basis of data collected from the field survey as shown in Table 2. The indicator shows that the affordability was slightly constant from 2006 to 2010. Looking at this period, it is clear that the mortgage interest rate plays a significant role in housing affordability. In Table 2, from 2006 to 2010, PtIR and LtVR remained constant. It is, however, obvious that affordability falls as the mortgage interest rate rises and such has compounded issues of affordable housing supply globally (Galster et al., 2021). For households with capable income, they can be confounding that there is compensation affordability from 2006 to 2010 and from 2012 to 2016 as PtIR and n continued constant. Nevertheless, this study can opine that the condition in the field is unlike. A preliminary survey shows that more than 85% of respondents reiterated that they grieved the difficulty of diminishing affordability. Though I cannot make a final say that this is the dimness of the affordability limit; relatively, it is the effects of adopted "because total payment and higher cost of borrowing" existing on the market.

It is already obvious that, in available mortgage circumstances, mortgagors were disbursing back more than three times the house loan they get from mortgagees. The charging of higher mortgage interest rates is connected with the risks caused by the lack of a secondary mortgage market (Lehnert, Passmore, & Sherlund, 2008; Hofstrand, 2013), a situation impeding the progress of the Commercial Real Estate Industry in Ghana (Ofori and Ameyaw, 2020). Taking cognisance of the findings from Gan and Hill (2009), to govern evidently whether there was housing affordability or not, affordability limit, the average income of households and the cost of constructing a decent housing were employed.

**Table 2** Trend of affordable housing limit in developing countries within the last decade

| Period | n (years | LtVR(%) | PtIR (%) | (%) i | AL |
|---|---|---|---|---|---|
| 2006 | 15 | 30 | 33.33 | 16.07 | 2.64 |
| 2007 | 15 | 30 | 33.33 | 16.11 | 2.64 |
| 2008 | 15 | 30 | 33.33 | 16.51 | 2.59 |
| 2009 | 15 | 30 | 33.33 | 16.51 | 2.59 |
| 2010 | 15 | 30 | 33.33 | 16.94 | 2.54 |
| 2011 | 16.25 | 27.5 | 37.50 | 16.73 | 2.84 |
| 2012 | 18.75 | 25 | 45.83 | 16.49 | 3.49 |
| 2013 | 18.75 | 25 | 45.83 | 6.93 | 3.42 |
| 2014 | 18.75 | 25 | 17.66 | 45.83 | 3.30 |
| 2015 | 18.75 | 25 | 45.83 | 17.03 | 3.40 |
| 2016 | 18.75 | 25 | 45.83 | 17.30 | 3.35 |
| **Average** | **16.82** | **27.5** | **39.39** | **16.69** | |

*Source: Researcher's Construct adopted from Iyandemye et al (2018)*

The literature gives enough evidence to support the fact that while governments of advanced countries have strived to implement good housing policies geared towards making housing affordable to their citizenry, developing countries continue to hover around primitive methods of housing delivery increasing housing deficit annually (Ricky et al.,2022; Afrane et al.,2016; Woetzel et al.,2014). The high levels of LTV in developing countries coupled with no government insurance have limited the ability of the poor to contract mortgage loans and such has resulted in indecent housing where many are still relying on slums for their shelter. The need for policy diversion, intervention and implementation towards increasing affordable housing in developing countries has become imperative as far as sustainable development goals are concerned just to reduce vulnerability, shocks and risks of health while mitigating poverty levels among local dwellers in the global south. It is obvious from the literature that the provision of affordable housing and decent accommodation relies greatly on mortgage financing which is most governments in developing countries are striving to adopt. This study therefore tries to explore the extent to which the adoption and use of mortgage financing is contributing to the provision of affordable housing in Africa and Ghana to be precise. It assesses the challenges, successes and failures of industry players in their quest to utilising mortgages towards the provision of housing in Ghana.

## ■3.0 MATERIALS AND METHODS

The study was conducted in Kumasi, the second-largest city in Ghana. Over the last decade, the city has experienced rapid urban growth ranging from population growth to housing expansion. The city had a population of 2,010,000 in 2010(GSS, 2010) with a current population of 3491,154 of which the inner city alone has a population of 1,468,609 (World meter, 2021) and with a growth rate of 4.24%, the Township is estimated to have a population of 3,630,000 and 4,940,000 in 2032. See Figure 1 for the Map of Kumasi. The housing situation of Kumasi is not different from that of the entire country as the deficit in the country is a shared problem and the people of Kumasi are not spared. Currently, there is a housing insufficiency of 2.5 million housing units which could be solved if and only when the country is capable of constructing 200,000 housing units every year (Ofori et al, 2020). Of these, residential property demand stands at 150,000 units per annum, with a shortfall of over 100,000 housing units. Current production of residential properties averages only 35,000 units per annum (KMA, 2013). Kumasi is one of the cities that has benefited from the affordable housing projects of the Ghana government since 2004 and hence has informed its selection for this study to assess how affordable those affordable housing units are relative to mortgage accessibility, availability and pricing amongst mortgagees and mortgagors.

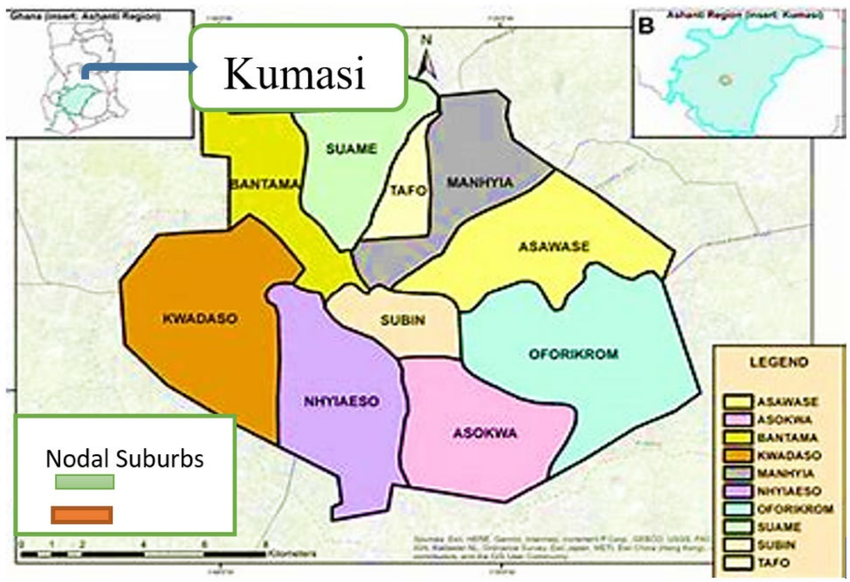


**Figure 1** Map of Ghana Showing Kumasi

### 3.1 Research Design

The study employs the exploratory sequential mixed-method research design. This method has been informed by the fact that the study encompasses both qualitative and quantitative aspects, however, the data begins with a qualitative research phase and explores the views of participants (Creswell, 2014). The data are then analysed, and the information is used to physique into a second, quantitative phase. In line with this approach and relative to the aim of this study towards justifying the nexus of mortgage financing and affordable housing in Ghana, the study puts much emphasis on correlational research design to cater for the quantitative aspects. The reason is that correlational research is a non-experimental research technique that helps researchers establish a relationship between two closely connected variables (Boucaud, 2017). This research design is appropriate for the study because this type of research requires two different market phenomena which are not based on assumption while evaluating a relationship between their variables but rather conclusions are based on statistical analysis techniques to calculate the relationship between them. In line with this research design, participants especially those in the mortgage market (Bankers and Investors) were probed to give their accounts on the challenges of accessing mortgage loans towards expanding their business. The design aided the researcher in exploring the specific mortgage financiers in Ghana and their investment procedures. Data on both primary and secondary mortgage industry players were retrieved from the literature to cater for the qualitative analysis.

### 3.2 Sample Techniques and Sample Size

The nature of the study calls for both purposive and simple random sampling techniques respectively to target experts in the housing sector with ample knowledge of mortgage and housing (See Jin et al., 2024; Xu et al., 2021; Palinkas et al., 2015) Palinkas et al. (2015) opined that purposeful sampling is extensively applied in qualitative research for identifying and collecting information-rich cases associated with the phenomenon of interest and adopting it in this study targeting mortgage experts is suitable. The purposive sampling technique was adopted to select the various mortgagees (Banks that give mortgages) in Kumasi Township while the simple random sampling technique was utilized to select real estate developer or development companies in Kumasi who are already supplying housing space/accommodation to include both private and public sector agencies within the commercial real estate industry. The public sector real estate developers in the context of this study are those who are into affordable housing projects and in this case, the focus was on those who built the 91 block 1024 housing units comprising both one and two bedrooms of affordable housing in Asokore Mampong in Kumasi. Since the year 2000, there has been only one affordable housing project in Kumasi, and such informs the use of purposive in its selection. The private developers would be randomly selected using the company registration numbering system after they have been stratified into units about their location. The study with the aim of utilizing the loan-to-income ratio, adopted accidental sampling to select 50 home seekers (household heads in Kumasi) who wish to purchase homes relative to their incomes. The majority of these household heads were government workers with few doing their businesses.

Moreover, the study selected 17 real estate companies (mortgagors) including 3 of those in the affordable housing project for the public sector and 11 banks (mortgagees) that are currently funding projects in the study area. The study included private housing suppliers to ascertain whether or not the availability or the use of mortgage funding encourages the supply of affordable housing. The real estate development companies provided information concerning, how many houses they have supplied, how many are in the pipeline and how much they let or sell their apartments and homes with or without mortgage while the banks supplied data on the type of mortgage services available and provided as well as the price of their mortgages relative to rate (interest), downpayment and payment terms or policies or penalties.

### 3.3 Data Source and Collection Techniques

The study adopted both primary and secondary sources of data collection. It made use of semi-structured questionnaires, interview, interview guides and field surveys to gather primary data. In line with the interview, face-to-face interviews were utilized in interviewing real estate developers and banks that are into mortgages (See Xu, et al., 2022). The interview guide was designed in a semi-structured form containing a set of questions streamlined to target banks who provide mortgages to real estate developers. This method was utilised by (Xu et al., 2022) in the quest to assess residential housing price index forecasting via neural networks in China. The procedure is worth adopting in this study. Through the interview guide, mortgage investors were probed on how they determine their mortgage rates such that it will not deter mortgagors while probing them on how they sell their products. The semi-structured questionnaires comprising both closed and open-ended were used to probe both mortgagors and mortgagees on how affordable their housing units are with or without a mortgage. According to (DeJonckheere et al., 2019) the method helps the researcher to collect open-ended data, to explore respondents' thoughts. The questionnaire questions were used to get responses from the industry players as well as the end users of the product thus persons who develop houses from out of mortgage funding. In order to confirm the information in literature, the internet, municipal archives on housing and affordable housing projects as well and books were consulted for secondary information.

### 3.4 Data Analysis and presentation techniques

Adopting both Microsoft Excel and SPSS tools boxes respectively, the study utilized both chi-square and regression models where ANOVA was used to ascertain the nexus of mortgage lending rate and interest while measuring housing affordability using affordable limit formula with LtVR and PtIRs as parameters adopted from (Gan & Hill, 2009 p.4). Quantitative data collected and collated were presented using tables, graphs and charts. Qualitative information was analysed and presented thematically using the deductive approach. The deductive approach is because the raw data would be structured by way of coding while writing others in an explanatory or descriptive manner, especially interviews and discussions.

## ■4.0 RESULTS AND DISCUSSION

### 4.1 Response Rate and Background of Respondents

The study, in its quest to assessing the nexus of affordable housing and mortgage financing in Ghana, selected two categories of respondents; real estate developers (mortgagors) and banks who are into mortgages (mortgagees). In line with this, the study targeted only commercial banks that are legally registered with the Bank of Ghana with the right to do commercial transactions including mortgages per the status of the country. The study then identified 23 commercial banks in Kumasi;Absa Bank Ghana Limited, Access Bank Ghana, Agricultural Development Bank of Ghana, Bank of Africa Ghana Limited,CalBank Limited, Consolidated Bank Ghana Limited, Ecobank (Ghana) Limited, FBN Bank Ghana Limited, Fidelity Bank Ghana Limited, First Atlantic Bank Limited, First National Bank Ghana, GCB Bank Limited, Guaranty Trust Bank Ghana Limited, National Investment Bank Limited, Omni BSIC Bank Ghana Limited, Prudential Bank, Republic Bank Ghana Limited, Société Générale Ghana Limited, Stanbic Bank Ghana Limited, Standard Chartered Bank Ghana Limited, United Bank for Africa Ghana Limited, Universal Merchant Bank Limited, Zenith Bank (Ghana) Limited) as of the time of research of which of which only eleven (11) were really into mortgage financing; First National Bank, Republic Bank(HFC), Ghana Commercial Bank, Stanbic Bank, Fidelity Bank, Societe Generale Ghana, Omni Bank,Absa Ghana, CalBank, , Standard Chartered Bank Ghana Limited and Zenith Bank (Ghana)

These numbers represent (47.83%) of the total banks in the city. Moreover, the 17 real estate companies selected for the study are; Kings Realty Ltd, AHG Properties, Mic-fam limited, Charisco Home Innovations (C.H.I), Otitri Real Estate and Construction, Novatect Atelier Limited, Augson Global, LLC, The Schirmer Investments Ltd, Blue Rose Limited, Design Resources Estates, GoldKey Properties Limited, Rehoboth Property Limited, Lakeside Estates, Beaufort Property, Emefs Construction Limited, Adom City Estate Limited and Mobus. Of these,3(17.65%) was into the construction and provision of affordable housing projects: Otitri Real Estate and Construction, Novatect Atelier Limited and Blue Rose Limited. However, of the 50 home seekers who were accidentally sampled, 37 were government workers with 13 being private businessmen and women. In all,17 women were selected with the rest being men and these respondents were selected to know their income levels as home seekers.

### 4.2 Bank Rates and Charges

The fluctuating pace of interest rates in Ghana has a detrimental effect on the real estate industry as far as mortgage determinants (rates) are concerned. In respect of this, the study wanted to know the trend and pattern of interest in rare alterations using a ten-year time scale taking inferences from 2011 to date. Figure 2 shows the trend analysis of interest rate changes between 2011 and 2021. From Figure 2, it is true that the economy of Ghana has not been stable as the rate of borrowing (lending) keeps on changing with a decade record of instability. This is dangerous to both home buyers and home or building constructors as far as the supply of housing is concerned. A stable LtVRR helps borrowers set a target and to maintain their rent or housing prices within a given period and vice versa. Taking cognisance of the rates in Figure 2, within the first five years of unstable lending rate, there was a percentage change of 47.06 while the last five years gave a percentage change of -58.23. The implication is that from 2011 to 2016 the interest rate increased in an increasing manner (13.5-25.5%) while the last five years experienced a change in lending rate which increased in a decreasing manner (20.0-12.64%).

These fluctuations in lending rates decreases standard of living by increasing the cost of living with a decreasing purchasing power to include housing which remains a necessity for human survival. The economic implication is therefore resident on the fact that as interest rates keep on increasing, mortgage loans also increase thereby affecting rent and hence making housing unaffordable for especially middle and low-income groups to endure.

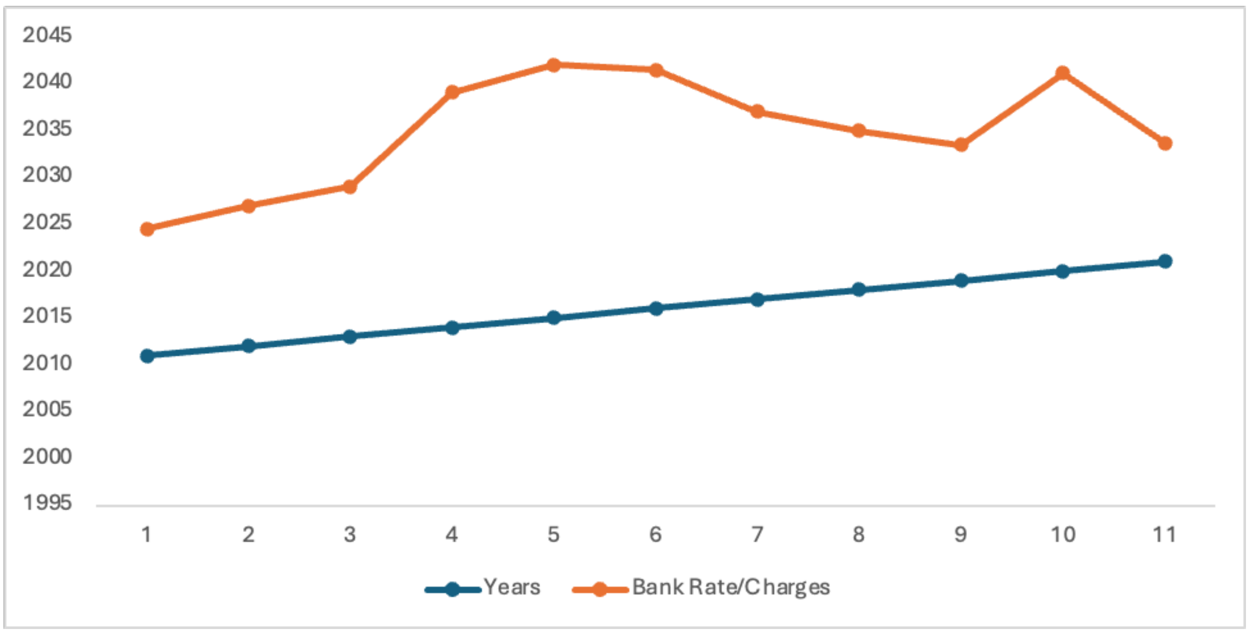


**Figure 2** Trend analysis of lending rates fluctuations in Ghana between 2011 and 2021

### 4.3 Aggregate effect of interest rates on lending rates amongst the various banks in Ghana

In relation to Figure 2, the study wanted to know the mismatch between the interest rates from the Bank of Ghana and the lending rates that are used by the various banks in the country in pricing their products. The rationale was to ascertain whether the central bank in the country is in control of its policy initiatives to measure and regulate business transactions through a controlled rate of interest. Table 1 shows the rate various interest rates and lending rates among the various banks in Ghana.

**Table 3** Interest and lending rates amongst the banks in Ghana

| Banks | Average Interest Rate (%) | Average Lending Rate (%) |
|---|---|---|
| Access Bank | 9.5 | 26.2 |
| ADB Bank | 6.2 | 22.9 |
| Bank of Africa | 11.6 | 26.6 |
| Bank of Baroda | 14.5 | 15 |
| BSIC | 10 | 27.4 |
| Barclays Bank | 10.4 | 18.2 |
| CAL Bank | 9 | 27.3 |
| Ecobank | 10.9 | 25.9 |
| Energy Bank | 5.7 | 28.2 |
| First Atlantic Bank | 8.9 | 25 |

| | | |
|---|---|---|
| FBN Bank Ghana | 5.3 | 27.9 |
| Fidelity Bank | 10.1 | 21.4 |
| First National Bank | 11.1 | 21.6 |
| GCB Bank | 8.7 | 25.1 |
| GN Bank | 13.3 | 22.4 |
| Guaranty Trust Bank | 7.4 | 24.8 |
| Heritage Bank | 9.5 | 29.6 |
| HFC Bank | 9.9 | 28.9 |
| National Investment Bank | 11.4 | 30.5 |
| OmniBank | 14.7 | 30.9 |
| Premium Bank | 14.8 | 36 |
| Prudential Bank | 10.9 | 26.4 |
| Sovereign bank | 12.9 | 34.2 |
| Standard Chartered Bank | 4.9 | 17.4 |
| Societe Generale Bank | 9.7 | 18.8 |
| Stanbic bank | 12.4 | 19.1 |
| The Royal Bank | 14.5 | 34.4 |
| United Bank for Africa | 13.1 | 27.9 |
| Universal Merchant Bank | 6.6 | 26.2 |
| Unibank | 12.6 | 36.8 |
| Zenith Bank | 11.6 | 22.2 |

The figures in Table 3 indicate the various interest rates and lending rates amongst the various banks in Ghana on an average basis. The rates in comparison seem not to show any trend on implication as there is a mismatch between the interest rate and the lending rate. To confirm the data with statistical backing, the study run a regression analysis to determine the relationship between the two rates and to ascertain whether or not the interest rate has implications on the lending rates (Refer to Table 3).

**Table 4** Regression analysis of interest rate and lending rate

SUMMARY OUTPUT

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.2400 |
| R Square | 0.0576 |
| Adjusted R Square | 0.023954 |
| Standard Error | 2.815034 |
| Observation | 30 |

ANOVA

| | *Df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 1 | 13.56428 | 13.56428 | 1.711 | 0.20140 |
| Residual | 28 | 221.8837 | 7.924 | | |
| Total | 29 | 235.448 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95.0%* | *Upper 95.0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | 6.9781 | 2.680485 | 2.603 | 0.014 | 1.48740 | 12.468 | 1.4874 | 12.46 |
| 26.2 | 0.1342 | 0.10263 | 1.308 | 0.201403 | -0.07595 | 0.344501 | -0.07595 | 0.3445 |

*Source: Field Survey, 2021*

The regression analysis shows the relationship between interest rate and lending rate in Ghana. The focus of the study in relation to the statistical figures in the table is the Multiple R and the R square. A multiple R of 0.240 at P-Value of 0.05 indicates that though there exists a relationship between interest rate and lending rate the relationship is very weak and negligible. This is supported by the R square of 0.058 shows that only 5.8% of the total lending rates are affected by the variations in the interest rate and as such the study can prove that though some countries do use the interest rate to control the lending rates among banks but the situation in Ghana is very different. The implication is that in Ghana, the interest rates fixed by the Bank of Ghana have no absolute control over how monies are lent to borrowers including mortgages as even banks with lower interest rates charges more than 100% above it as lending rates.

### 4.4 Incomes of home seekers in Kumasi

The basis for securing a loan in a form of mortgage is the income of the borrower (Mortgagor) as it serves as the cushion to influence the loan (Danquah et al.,2022). The study in an attempt to evaluate the payment-to-income ratio, selected 50 household heads in Kumasi Township. In line with that, these home seekers were asked to give approximate amounts of their incomes and Table 5 gives details to that effect.

**Table 5** Income levels of home seekers in Kumasi

| No. Household heads | Monthly Net Income (Gh¢) |
|---|---|
| 1 | 2850 |
| 2 | 3100 |
| 3 | 4050 |
| 4 | 5400 |
| 5 | 3200 |
| 6 | 4900 |
| 7 | 2750 |
| 8 | 2500 |
| 9 | 5100 |
| 10 | 3750 |
| 11 | 4600 |
| 12 | 1700 |
| 13 | 2900 |
| 14 | 1840 |
| 15 | 2500 |
| 16 | 3000 |
| 17 | 2400 |
| 18 | 4550 |
| 19 | 4230 |
| 20 | 5050 |
| 21 | 4300 |
| 22 | 1850 |
| 23 | 2000 |
| 24 | 4000 |
| 25 | 870 |
| 26 | 1500 |
| 27 | 5000 |
| 28 | 3700 |
| 29 | 2300 |
| 30 | 1800 |
| 31 | 4300 |
| 32 | 3100 |
| 33 | 2470 |
| 34 | 3600 |
| 35 | 4000 |
| 36 | 3400 |
| 37 | 6250 |
| 38 | 2100 |
| 39 | 1950 |
| 40 | 720 |
| 41 | 845 |
| 42 | 5200 |
| 43 | 4400 |
| 44 | 2300 |
| 45 | 1900 |
| 46 | 2780 |
| 47 | 3060 |
| 48 | 5000 |
| 49 | 300 |
| 50 | 4350 |

*Source: Field Survey, 2021*

Table 5 shows the various income levels of 50 household heads in Kumasi of the time of the study. To make accurate justification for their capabilities in terms of accessing mortgage loans and hence living in affordable homes, the study collected their approximate net incomes ranging from Gh¢6250 to Gh¢720 respectively. It was observed from the survey that the sizes of the net incomes of the various household heads have direct linkages with the household sizes and their respective locations relative to the Central Business District (CBD). It was observed that the person with the highest net income had only a child and a wife though they were living in a rented apartment close to the CBD. In respect of that, the majority of them had low net incomes because their dependency ratios were high due to big family sizes. For instance, a woman was identified as a household head with 6 children with a divorced marital status who works as a trader making only Gh¢845 monthly net income. From Table 4, the average monthly income per household head is Gh¢3,194.3 that is (Gh¢38,331.6 annually) and this would be the basis for determining the affordability of mortgages by home seekers in the Kumasi Municipality. The data in Table 5 confirms the findings of (Dabla-Norris et al.,2015) that indicates that there are high income inequalities among households of developing nations. This is due to unregulated minimum wages and ill-labour law enforcement authorities among others.

**Table 6** Mortgage downpayment required by mortgage banks in Ghana

| Mortgage Institution | Downpayment |
|---|---|
| Ghana Commercial Bank | 20 |
| Republic Bank | 20 |
| Cal Bank | 15 |
| Stanbic Bank | 25 |
| Fidelity Bank | 20 |
| Société Générale Ghana | 25 |
| Omni Bank | 10 |
| Bond Financial Service | 25 |
| Prudential Bank | 24 |
| Standard Chartered Bank | 10 |
| First National Bank | 25 |

*Source: Field Survey, July 2021*

Downpayments required by banks are major factor that influence housing affordability (Hassan et al.,2021). The percentage of downpayment required by banks also play a major role in the services provided to the customers of the bank (Dauda et al.,2016) to increase their satisfaction. Table 6 indicates that among the eleven banks that makes mortgages available for their clients, Omni Bank and standard charted banks are the banks that give the lowest (10%) downpayments. It is, however, clear that the maximum insurance given by these banks is 90% and a mortgagor can have up to 90% of the property value as a loan. The implication is that in Ghana there is no government-insured residential mortgage and as such private banks have taken over the mortgage market. Though a 10% downpayment is very minimal, a country like Ghana with the majority of home seekers being classified as low-income earners may not be able to afford to 20-25% downpayment required by the majority of the banks in the Kumasi municipality and Ghana in general.

## 4.5 Cost of constructing decent housing in Kumasi

The cost of building a decent house in Kumasi is locational specific, however, in the course of the study, some experts in the real estate industry were consulted through face-to-face interviews and the various estimates for getting a decent house constructed in Kumasi were given relative to location and types. In line with this, an estimation of a three-bedroom apartment located 1km from/within the CBD was used as a benchmark (see Table 7).

**Table 6** Quantity Estimate of the cost of a three-bedroom apartment in Kumasi

| **Description** | **Cost (Gh¢)** |
|---|---|
| Foundation to casting | 36450 |
| Foundation to lintel | 30800 |
| Lintel to Roofing | 20000 |
| Wooding frame for roofing | 16,000 |
| Mental Roofing Installation | 20,000 |
| Rework and | 5000 |
| Workmanship from Foundation to Lintel | 7500 |
| Workmanship for roofing | 4000 |
| Others including finishes | 9500 |
| **Grand Total** | **149,250** |

*Source: Field Survey, July 2021*

Taking inferences from the estimates in Table 7, a simple estimate could be made for two bedrooms and a single bedroom in a similar location within the Kumasi Township. The implication is that a two-bedroom from/within 2km from the CBD is Gh¢99500 while a single bedroom in a similar location is Gh¢49750. However, from the experts' viewpoints, it is only the labour cost that decreases as one moves far and away from the CBD and the reason is that people are willing to offer cheap labour at the outskirts of the towns. So, it was estimated that labour cost in terms of workmanship reduces by 5% for 2km from/within the CBD and 8% for that of 3km. That is a three-bedroom within 2km and 3km from the CBD would be Gh¢141,788(US$23,830) and Gh¢137,310(23,077) respectively. Figure 3 gives details of the various categories of housing, their cost of construction and location relative to the CBD in km.

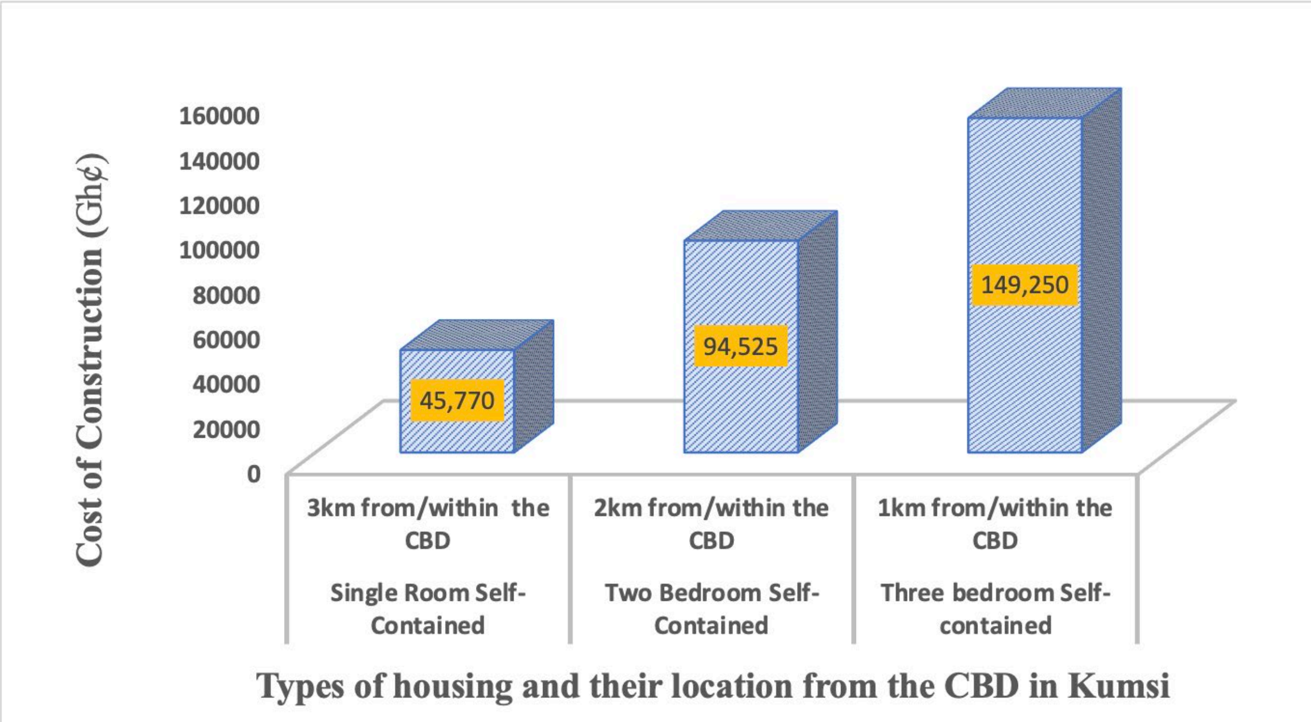


**Figure 1** Cost of constructing decent housing in Kumasi relative to type and location

From figure 3, the average cost of getting a decent housing unit constructed at the outskirts (3km) of Kumasi Metropolis is Gh¢45,770, when the choice of location is within 2km of the CBD, the home seekers will need Gh¢47263 for a single housing unit with 1km location been Gh¢49750.In line with the figures, a 47-year-old man;

> *"A real estate developer and a quantity surveyor had this to say; these quantities as being estimated are without the cost of land and dependent on the fairness of the quantity surveyor and the financial stability of the economy from the start of the project till completion. When the quantities are overestimated or the level of inflation is the fluctuating type then the cost of construction may be too dearer than the current open market cost, he added. It must be acknowledged that these cost estimates are for private real estate developers who provide housing on an affordable basis*."

## 4.6 Effect of Available Mortgage Finance Market Type on Housing Affordability

The primary mortgage market has been the only source of housing finance market in Ghana and in Kumasi city for the last ten years. The lack of the secondary mortgage market in Ghana impedes the ability of private estate developers from getting funding to develop at a price that will be much affordable for the poor and low income earners (Mukhija et al., 2004) It is predictably obvious that mortgagees are at risk; as indicated in the literature that the lack of a secondary mortgage market increases risks to mortgage lenders resulting in high interest or lending rates. Therefore, the field survey was undertaken to confirm whether these effects are present in the local mortgage market, hence, a high-interest rate was found and other strict conditions such as high LtVR and mortgage lending rate increased the cost of borrowing by mortgagors. These are the best indicators of checking risk occurrence. Therefore, it is worthy to illustrate whether the risks are associated with the economic environment or are associated with the mortgage finance market itself to affordable housing supply.

## 4.7 Value of affordable housing provided by private realtors

The value of affordable housing in the context of this study implies the cost of construction, cost of land and estimated profit.

**Table 8** Value of private affordable housing in Kumasi

| Types of Housing | Location | Cost of Construction-CC (Gh¢) | Cost of Land 100/90m$^2$(Gh¢) | Estimated Profit (10% of CC) (Gh¢) | Housing Value (Gh¢) |
|---|---|---|---|---|---|
| Single Room Self-Contained | 3km from/within the CBD | 45770 | 35,000 | 4,577 | 85,347 |

| | | | | | |
|---|---|---|---|---|---|
| Two Bedroom Self-Contained | 2km from/within the CBD | 94,525 | 85,000 | 9,452.5 | 188,978 |
| Three bedroom Self-contained | 1km from/within the CBD | 149,250 | 120,000 | 14,925 | 284,175 |

*Source: Field Survey, July 2021*

Table 8 shows that a single-bedroom self-contained building in Kumasi sells at Gh¢85,347 with two-bedroom self-contained going for Gh¢188,978. However, if a loan of 90% of the value of the house could be made available for mortgagors, then it implies that each private realtor could get an average of Gh¢76812.30 as capital for such investment.

## 4.8 Measuring Housing Affordable Limit of Home Seekers in Kumasi

Affordable limit is measured by finding the product of the ratio of PtIR and LtVR and that of the Years Purchase factor. In this study, the PtIR was calculated by finding the ratio of the average annual gross income of households (home seekers) and the price/cost of a housing unit and Table 9 gives details of that effect.

**Table 9** Payment to Income Ratio for Home Seekers in Kumasi

| Payments/Price of Housing Unit (Gh¢) | Income 38,332(Gh¢) Ratios |
|---|---|
| 85,347 | 2.2265209 |
| 188,978 | 4.9300323 |
| 284,175 | 7.4135187 |

Table 8 indicates the average income of home seekers in Kumasi in relation to the cost of getting a single, two-bedroom and a three-bedroom apartment respectively. In line with the average income and the cost of buying or constructing the respective buildings (bedrooms), Table 8 shows the payment-to-income ratios with respect of the type of building required by the home seeker. It is obvious that the payment-to-income ratio for a three-bedroom as shown in Table 9 is pegged at 7.41, with that of a single bedroom set at 2.23 while that of a two-bedroom is 4.93. The implication is that irrespective of the type of housing needed by an average Ghanaian in Kumasi he or she must spend two times his or her annual income before getting such a house. From the Table, if a home seeker wishes to get a three-bedroom apartment, he or she must spend 7 times his or her annual income to meet the requirement. These findings indicate a mismatch between the categories of affordability standards set aside by (Gan & Hill, 2009 p.4) stating figuratively that Price-Income Ratio Housing markets are rated as "affordable" at or below 3 times gross annual household income (Median Multiple), "moderately unaffordable" at or below 4 times income, "seriously unaffordable" at or below 5 times income and above 5, rated "severely unaffordable". This situation is seen as dangerous to SDG 11(Sustainable Cities) and SDG 3 (Good Health and Wellbeing) respectively and such confirms the study by (Sarfoh et al.2016) that opined that the provision of affordable housing is challenging in Ghana. As such the subsequent paragraph shows the computation of the Affordable Limit using the data in Table 8 and an average lending rate of 26.00%.

## 4.9 Determination of affordable housing Limit for Home seekers in Kumasi

Using the data in Table 8 and an average mortgage lending rate of 26.00% the study tries to determine how the demand for housing in Kumasi is affordable in relation to single, two-bedroom and three-bedroom apartments, assuming the mortgage terms are pegged at 25 years constantly.

***AL for a Single Bedroom***

$$AL = \frac{PtIR}{(1-LtVR)}\ x\ [YP], but\ YP = \frac{(1-PV)}{i}, where\ PV = (1+i)^{-n}$$

$$AL = \frac{PtIR}{(1-LtVR)}\ x\ [YP], but\ YP = \frac{(1-PV)}{i}, where\ PV = (1+i)^{-n}$$

$$Hence,\ AL = \frac{2.23}{(1-0.9)}\ x\ [1 - \frac{(1+.26)^{-30}}{.26}] =$$

$$AL = \frac{2.23}{(0.10)}\ x\ [1 - \frac{(1.26)^{-25}}{.26}] = \frac{2.23}{(0.10)}\ x\ [1 - \frac{(1.26)^{-25}}{.26}] =$$

$$AL\ 22.3\ x\ [1 - \frac{0.0031}{.26}] = 22.3\ x\ [1 - 0.0119] = 22.3\ x\ [0.9881] = \mathbf{22.03}$$

The result of 22.03 implies that a home seeker in Kumasi with an average income of Gh¢38,332.00 can afford a single bedroom in an affordable housing building constructed by a private real estate developer if he or she spends 22 times the annual average income before getting access or owning such type of housing.

***AL for a two bedroom***

$$AL = \frac{7.41}{(0.10)}\, x\, [1 - \frac{(1.26)^{-25}}{.26}] \;\; = \frac{4.93}{(0.10)}\, x\, [1 - \frac{(1.26)^{-25}}{.26}] \; =$$

$$AL\ 49.3\ x\ [1 - \frac{0.0031}{.26}] \;\; = 49.3\ x\ [1 - 0.0119\,] \;\; = 49.3\ x\ [0.9881] \;\; = \mathbf{48.71}$$

Also, the result of 48.71 infers that a home seeker in Kumasi with an average income of Gh¢38,332.00 can afford a two-bedroom of an affordable housing building constructed by a private real estate developer if he or she spends 48 times the annual average income before getting access or owning such type of housing.

***AL for a three-bedroom***

$$AL = \frac{7.41}{(0.10)}\, x\, [1 - \frac{(1.26)^{-25}}{.26}] \;\; = \frac{7.41}{(0.10)}\, x\, [1 - \frac{(1.26)^{-25}}{.26}] \; =$$

$$AL\ 74.1\ x\ [1 - \frac{0.0031}{.26}] \;\; = 49.3\ x\ [1 - 0.0119\,] \;\; = 74.1\ x\ [0.9881] \;\; = \mathbf{73.22}$$

Once again, the result of 73.22 deduces that a home seeker in Kumasi with an average income of Gh¢38,332.00 can afford a three-bedroom in an affordable housing building constructed by a private real estate developer if he or she spends 73 times the annual average income before getting access or owning such type of housing. This then confirms the fact that, the affordable limits in books are different from that of the reality on the ground as reiterated by some households during the primary survey. It can therefore be concluded on the basis of the figures obtained for the three types of housing units in relation to their cost of construction or purchase and the income of home seekers that none of the housing categories is affordable and their unaffordability is of severe type as they are above 5.1(see Meen, 2018; Gan & Hill, 2009). This is because in accordance with (Gan & Hill, 2009, p. 4; Iyandemye et al, 2018), a housing unit is said to be affordable if a household or a home seeker does not spend three times his or her annual gross income on it.

### 4.10 Government Affordable Housing in Kumasi

In reference to the private affordable housing units, the study wanted to know how much then it will cost the government real estate developers to construct a single bedroom in locations similar to those aforementioned. In line with this, the archives on affordable housing projects at the Asokore Mampong District Assembly at the housing and estate unit were consulted and the following figures were obtained; A two-bedroom unit is priced at Gh¢186,500, while a one-bedroom special costs Gh¢142,500, and a one-bedroom standard going for GH¢98,500.The implication is that a three-bedroom standard will be priced at Gh¢295,500 which is even higher than the same housing units located at 1km within the CBD built by a private realtor at Gh¢149,250. With the view of confirming why the affordable housing units provided by the government realtors built with mortgage loans are more costly and or expensive than those provided by the private realtors most of whom had no mortgage financing, a forty-three-year-old mortgage financier in one of the mortgage banks was contacted and had this to say:

> *"Mortgage financing comes with standards upon which buildings must be constructed. As a result, the mortgagees in the government sector measure their financial layout with quality or decent housing supply which comes with providing specific facilities in buildings to meeting the UN-HABITAT standards towards SDG11, making the cost of construction very high, he added. So, the government affordable housing units may be seen as unaffordable as compared to that of the private affordable housing units, but the standards must be met, he exclaimed. "*

His comments support the findings of (UN-Habitat, 2019; and Asante et al., 2018) that reveal that affordable housing projects under the care of governments in developing countries are very expensive to afford by low and middle-income earners who are supposedly the targets for the project. Hence, making most urban dwellers indifferent about building to own or renting. In the same vein, a thirty-nine-year-old woman who has been in the commercial real estate business for the past eleven (11) years reiterated that:

> *"I have to be frank with you that, though we have some partial mortgage financing to supporting our businesses, not all of our structures meet the international standards on decent housing and that makes our housing a bit less expensive than those provided by the government sector. However, it does not necessarily mean that our housing does not provide comfort to the renters and purchasers and the fact that we are profit maximizing entities we must do something to reducing prices to make more sales to compete with others for sustainability and continuity in business."*

The implication is that in Kumasi and Ghana in totality, housing is affordable on paper and expensive on the ground, unlike developed countries where affordable housing is been felt economically by citizens through government mortgage insurance and this confirms the study by (Wang et al., 2023; Danso-Wiredu, 2018).

## 5.0 POLICY IMPLICATION

The rate at which the supply of housing in Kumasi is getting expensive on a daily basis is alarming and there is a looming danger of homelessness in the coming decades if the government does not intervene. The government has since done little in terms of supplying affordable housing to her citizenry as all the housing provided in the name of affordable housing at Asokore Mampong in Kumasi is unaffordable taking cognisance of the value and the average annual gross incomes of home seekers. The LtVR in Ghana is very high, and it is as a result of the fact that government insured mortgages are absent and the mortgagees have no option than to require higher percentage of the value of the underlined properties. The Ghana government in her quest to providing affordable housing should invest in the secondary mortgage market to make the market competitive and attractive. If the average income of a Ghanaian is as lower as Gh¢300 (US$21.43) then a one-bedroom special under the affordable housing project by the Ghana government that cost Gh¢142,500(US$10,178.57) is very expensive for both the poor, low and middle-income earners to afford. If mortgage facilities in the country are properly formulated by the government to include an insured LTV policies for the private real estate developers, affordable housing could be easily accessed to the general public instead of the few.

## 6.0 CONCLUSION AND RECOMMENDATION

The study has been able to explore the concept of affordable housing in developing countries to include Ghana. It could be acknowledged that affordable housing is measured with standards and developing countries like Ghana is far and away from those required benchmarks taking into consideration the affordable limits figures. In affirmative, the findings of this study show that there is a disparity between the categories of affordability standards set aside by (Gan & Hill, 2009 p.4). A developing country like Ghana needs a formidable housing financial policy through mortgage loans but it is sad to notice that the secondary mortgage market that facilitate mortgage transactions are totally unavailable and some attempts to bringing it to fore have proved futile. Though there are a number of primary mortgage market operators in a form of banks in the country, the monies they have accumulated has not been utilized because there is no market for such investment as far as housing finance is concerned. The study can then conclude that in Ghana there are several housing units that are offered on affordable housing basis, but their prices (rents) are as higher as those that are not affordable. As a result, a home seeker who wish to have a single bedroom affordable house must spend at least 2 times his or her annual gross income before owning such a house.

The situation is so critical that in Kumasi, a two-bedroom house from/within 2km from the CBD is Gh¢99,500 while a single bedroom in similar location goes for Gh¢49,750 and two km from the CBD of Kumasi is almost an outskirt and it will be very expensive for middle and low income earners to afford the cost of transportation into the CBD on daily basis to their work places. The study can conclude based on the findings that in Kumasi and Ghana the provision of mortgage financing has no bearing on making housing supply affordable based on the fact that all housing units that are supplied with fully financed mortgage loans are more expensive than those that are with partial or no mortgage financing. As such, the country needs a complete mortgage policy reform that will facilitate the operation of the secondary mortgage market such that the government could insure housing to reduce LtVR. This when done will reduce the cost of supplying housing to the bearable minimum percentage to making housing affordable to the middle- and low-income earners. However, the study was geographically limited to only Kumasi and for that matter the severity of how mortgage financing falls short in the larger real estate business was not properly explored. Moreover, the study could not extend the assessment of mortgage financing to end users of mortgage facilities (Tenants) on whom all costs in the form of rates and taxes are incident to know how they could sustain their incomes in patronising affordable homes. Hence, further research using case studies to cover at least 4 major cities in Ghana is needed to draw general conclusions using indexing or statistical trials.

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