ENVIRONMENTAL IMPLICATION OF CHILD DEPRIVATION ACROSS NEIGHBORHOODS IN BIDA, NIGERIA

Child deprivation and how it can be reduced is a trending issue both at the global and national level especially in this 21st century. Despite the numerous policy and strategies put in place by the different tiers of government in Nigeria since independent in other to reduce Child deprivation in the country, deprivation is still persisting and has become a complex phenomenon that covers many dimensions of human and social behavior. It has widely been accepted that deprivation is a major cause of environmental degradation. Therefore, the conceptualization and measurement of deprivation continues to be challenging due to its multi-dimensional nature. Although, literatures are available on child deprivation but, many are outside issues that does not focus on deprivation-environmental degradation nexus across the spatial units of Bida Town, which this research seek to address, by measuring child deprivation through mapping and adopting multi-dimensional approach in analyzing the extent and contribution of child deprivation in the 12 neighborhoods in the regional headquarters of Nupe Kingdom. The sample size of 213 households was derived at 95% confidence level using sample size formula. Household data sets were generated through targeted physical and socio-economic surveys and the selection of households was achieved through multistage sampling which involves cluster and simple random technique. KOBO Collect toolkit was used for a total of 213 respondents, and the data collected was analysed using descriptive statistics and multi-dimensional poverty measurement metric. The study revealed that multidimensional child deprivation headcount in Bida is 8.3%, while 72.4% only experienced child deprivation from a uni-dimension. The study recorded an aggregate multidimensional deprivation index of 0.62 and an intensity of 0.81. Also, the study reveals nutritional Z-Score of 1.5 for the children. Field finding was able to reveal peculiar and divergent cases of child deprivation which cut across Education, Assets, Health, and Living conditions. As there are high variations ranging from High deprivation to very low, and from Ultra deprived to Non-deprived across neighborhoods, local and child specific as against national or regional anti-poverty 1ntervention programmes should be considered as veritable options for the fight against this national problem.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Housing can be said to be more than a mare shelter as it is attached to so many issues, such as adequacy, livability and affordability. Housing can be seen as a product and process (Jinadu, 2007). As a process it is a way and means by which housing goods and services are produced through the interactive construction process of land acquisition, housing finance mobilization, materials assemblage and actual construction. Housing as a product represents a commodity traded in the housing market. It is a product of investment and a means of income generation (Jinadu, 2007).

Housing is an integral element of a nation‟s economy. Its backward and forward linkages with other parts of the economy closely bond people‟s needs, demands and social processes with the supply of land, infrastructure, building materials, technology, labour, and housing finance. These linkages allow housing to act as an important engine for sustainable development and poverty reduction in both society and the economy (UN Habitat 2010).

Housing plays an important role in countries‟ economies, and the housing sector represents a notable ratio in total economic activity of most countries **(**Sheibani & Havard, 2005).Housing as man basic need cannot be overemphasized, and as such it represents one of the most basic needs of every individual, having a profound impact on health, welfare, social attitudes and economic productivity (Anofojie *et al.,* 2013). However affordability and homeownership are important factors of urban livability (Elia *et al.,* 2017). Thus it can be said that the affordability and house ownership

contributed to the neatness and living condition of any neighbourhood, as it plays a major factor that cannot be over looked.

One of the fundamental rights of an individual is the right to housing just like the right to life and right to freedom. When there is a deficiency in housing, it can impact negatively on the health, welfare and productivity of man. Housing is an indispensable necessity without which man‟s survival is impossible (Aderanmo & Ayobolu, 2010). In the world today, about 1.2 billion people live in substandard housing, while it is estimated that about 3 billion new houses will be required to cater for the population (Worldbank, 2016). The United Nations estimated that about 200 million people in the Sub-Saharan countries would live in a slum by 2020 (UN-Habitat, 2014). This has shown that the right to housing has eluded many people especially in the developing countries of the world and Nigeria is not an exception.

In Nigeria, 100,000 housing units are developed per year, as against an average of 1,000,000 units required per year to bridge the gap of 20, 000,000 million housing deficit by government target of 2033 (Centre for Affordable Housing Finance in Africa (CAFH), 2019). The problem of housing deficit in Nigeria is not peculiar to any zone or state, although the figures vary from state to state. Ilorin is one of the fastest growing state capital in the north central zone of Nigeria with the problem of housing deficit, a situation that is occasioned by the population growth and rural-urban migration (Bako *et al.*, 2017). Bridging the gap of housing deficit in Ilorin has attracted investment from both the private and public housing developers; a situation that is evident from the number of housing estates developed by the private and public developers.

In a bid to provide affordable and livable housing for the people of Ilorin, effort from both the public and private developers has led to the development of notable housing estate like the Golf estate, Harmony estate, Royale valley estate, among others. However, questions on the affordability and livability of the housing estates remain unanswered. The performance of both the public and private housing developers on the provision of affordable and livable houses in Ilorin remain a big question to be answered in the lights of all the housing units developed within the last decade. Therefore, this study is an attempt to comparatively analyze the affordability and livability of houses developed by both the public and private housing estate developers in Ilorin.

1.2 Statement of the Research Problem

As a result of the high demand for housing which is occasioned by rapid population growth and rural urban migration, there is a high proliferation of housing development by both the public and private housing developers across the country as a response to housing demand. In an attempt to reduce the housing deficit through the development of houses through different scheme and programmes, the houses developed are not only quantitatively inadequate but also qualitatively defective (Abdulaqadir & István, 2017). Similarly, in an attempt to make housing affordable for the low income earners, most developers forego the provision of basic services such as water, waste management, road among others, which are essential ingredient of a livable environment.

Ilorin, Nigeria is one of the fast growing towns, and according to NPC (2006), it is the 6^{th} most populated town in Nigeria. The rapid population growth in Ilorin has been attributed to its designation as a state capital and its proximity to Lagos and Ibadan. The demand for housing in Ilorin is generating attention from both the public and private

housing developers. However, this development are either not affordable for the target population (low income earners) or they lack the basic ingredient of a livable environment. The numerous scholarly articles that has been published on the subject matter (Bako *et al.,* 2017; Suhaida *et al.,* 2011 and Copenhagen 2013).

Monthly rent or mortgage payments constitute the single biggest expenditure in most family budgets, and many low-income families have difficulty finding housing they can reasonably afford (Turner & Kingsley, 2008). In Ilorin town, it was noted that there is about 600% increment in the rental value of two bedroom apartment between 2003-2012 the trend is also noticeable in the price of other residential properties like 3bedroom and 4bedroom apartment (Ibrahim *et al.,* 2014). This is an indication of the constant increase in rent and property value in the face of a nearly static minimum wage within the same period. Furthermore, going by the 4-6 million average value of a 2bedroom apartment as presented by Propertypro (2019), it implies that a family living on a national minimum wage of 18000 may have to save for about 62-92 years before they can be able to afford a house. For housing to exude signs and impacts of livability and wellness, it must be adequately provided with functional infrastructure. However studies have shown that houses developed by public and private developers have some deficit of facilities and amenities which are components of a good livable environment (Ibem & Aduwo, 2013).

Housing is not just having a roof over one‟s head; it is the totality of the structure and other services that makes the houses livable including water, energy, security and other component of the immediate environment. Therefore, extra expenses incurred by households on basic services such as water may increase the cost of housing and hence affect the affordability of the household.For a standard livability studies to be carried

out, Home environment which includes waste disposal management among others, neighborhood amenities, economic vitality, social environment and civic protection needs to be examined (Ahmed, 2000).

Rama *et al.* (2013) carried out a study in India where they sees livability as the living condition of a place and reflects people‟s perception of the place to be fit for living or not, it can be said that their study was not based on housing estates which is the major concern of this study.

Extant literature review has shown that much has not been written about the affordability and livability of housing estate developed by both the public and private housing developers, especially in Ilorin. The affordability and livability studies conducted were mostly done in isolation and with less emphasis on the performance of public and private housing estates. Therefore, the study seeks to fill this gap through a comparative assessment of housing affordability and livability in public and private estate in Ilorin, Kwara State, Nigeria.

1.3 Aim and Objectives of the Study

The aim of this study is to examine the affordability and livability of public and private housing estates in Ilorin, Kwara State, Nigeria with a view to determine their relationships.

The aim of the study will be achieved through the following objectives.

i. Examine the housing types and conditions within the selected estates in the study area
ii. Determine the affordability level of the houses within the selected public and private estates.

iii. Examine the livability of the houses within the selected estates using level of infrastructure provision as indices.

iv. Determine the relationship or correlation in the level of housing affordability and livability among the selected public and private housing estates in Ilorin.

1.4 Research Questions

1. What are the types and the condition of housing units in these selected housing estates?
2. How affordable are these houses within the selected housing estates?
3. Are the houses livable within the estates?
4. What is the variation in the affordability and livability of the selected public and private estates?

1.5 Study Hypothesis

Two research hypotheses were developed for the study. The research hypothesis is stated thus:

H_o: There is no statistically significant difference in the affordability of housing estate developed by the public and private Developers

H_i: There is a statistically significant difference in the affordability of housing estate developed by the public and private Developers

H_o: There is no statistically significant difference in the livability of housing estate developed by the public and private Developers

H_i: There is a statistically significant difference in the livability of housing estate developed by the public and private Developers.

1.6 Scope of the Study

The housing estates selected for the study are Mandate Estate I and II of Olorunsogo Area, and Harmony Estate phase III of Akerebiata Area along Sobi Road are both public estates while Royal Valley Along Kunlende Area in Ilorin Kwara State and Evergreen Estates situated in the new GRA, along pipeline road of Tanke, Ilorin, Kwara State are both Private Estates. The names of the existing housing estates and date of construction is presented in Table 1.1.

The study also analyse the pattern of housing development in the estate with focus on the type, design, and condition of the housing units. The study also determine the affordability of the housing units developed using house price to income / earning ratio, housing expenditure to income ratio, residual income left for housing as an indicators of housing affordability. The livability of the housing were determined using seven indicators which are housing accessibility, health, neighbourhood quality, energy efficiency, economic/ educational opportunity, Transport cost/road network, and equal right.

Finally the performance of the public and private developers will be determined on the affordability and livability.

Table 1.1: Public and Private Housing Estate in Ilorin Town, Nigeria

Names of housing estates	Developed by	Year of Construction
Kulende Estate	Public	2000
Irewolede Estate	Public	2004
Harmony phase I Estate	Public	2000
Harmony phase II Estate	Public	2005
Harmony phase III Estate	Public	2010
Mandate Estate I and II	Public	2006
Olarewaju Estate	Private	1999
Royal Valley	Private	2016
Golf Estate	Private	2010
Evergreen Estate	Private	2015

Source: Authors Compilation

1.7 Justification for the Study

The issue of building sustainable cities and communities have been on the front burner of many academic and policy debate in recent time. Hence it can be said that affordable and livable environment has a great impact on the wellbeing of people living in the neighbourhood. Due to the importance attached to the development of affordable and liveable housing, many scholars have directed their researches towards the direction of housing affordability and livability.

Abimaje *et al.* (2014) conducted a study on housing affordability in Idah, Nigeria. The study measured housing affordability of household using income as the indicator for assessment. The study did not consider expenses on basic services such as water and waste management.

This work has been considered to be of benefits to the people of Ilorin in such a way that it will serve as an instrument for formulating policies. The formulated policies will aid the provision of houses for all levels of income earners in Ilorin. It is expected that it will also guide the developers of housing estates, both the public and the private developers in the aspects of provision of affordable housing and a livable environment. The study was also considered to promote the frontal of knowledge in Ilorin, Kwara State, Nigeria.

The study was considered to improve the livable housing pre-condition for the people of Ilorin in other to achieve a healthy living. It will also estimate the social cost and also save investment of home ownership in housing delivery within Ilorin. It is expected that this study will provide relevant information on the affordability and liveability level of various housing estate. The performance of both the private and public housing developers in the provision of affordable and livable housing estate will also be

documented. This study is also expected to provide requisite information on the drivers of housing affordability and livability in the private and public housing estate.

1.8 The Study Area

1.8.1 Location of the study area

Ilorin is the capital of Kwara state and it is located within the north central region of Nigeria (see figure 1.1). Ilorin town lies within longitude 4^{o} 28‟ 44” to 4^{o} 37‟ 44” and latitude 8^{o} 25‟ 48” to 8^{o} 32‟ 48”. Ilorin town comprises of three local government areas (LGA) of Ilorin south, Ilorin east, and Ilorin west (see figure 1.2). According to projected population of 2019 by National Population Census (NPC), Ilorin south has a population of 208691, 204310 for Ilorin east, and 364666 for Ilorin West. The population of the three LGAs in Ilorin town is 777,667, making it the 6^{th} largest city by population in Nigeria. Ilorin has different housing estate among which four housing estates were selected for this study, however the four housing estates that were selected are shown in Figure 1.3.

Ilorin was founded by one Ojo-Isekuse (1600-1700AD) an itinerant hunter. The name “Ilorin” was derived from Ojo-Isekuse‟s compound (now Okelele area of Ilorin). It was on the stone that Ojo-Isekuseused to sharpen his hunting implements like cutlass and arrow hence “Lorin” meaning, “shaping of iron”. Ilorin is essentially a Yoruba city peopled by many ethnic groups such as Hausa, Fulani, Yoruba, Nupe, Kanuri, Bariba, etc. They all merged together and made the city a unique cultural point. At the same time they are all proud of their unique Ilorin identity. The ruler of the city and its environs (the Ilorin Emirate) is of Fulani origin although the Royal House had been colonized by the Yoruba thoroughly (Ibrahim, 2013).

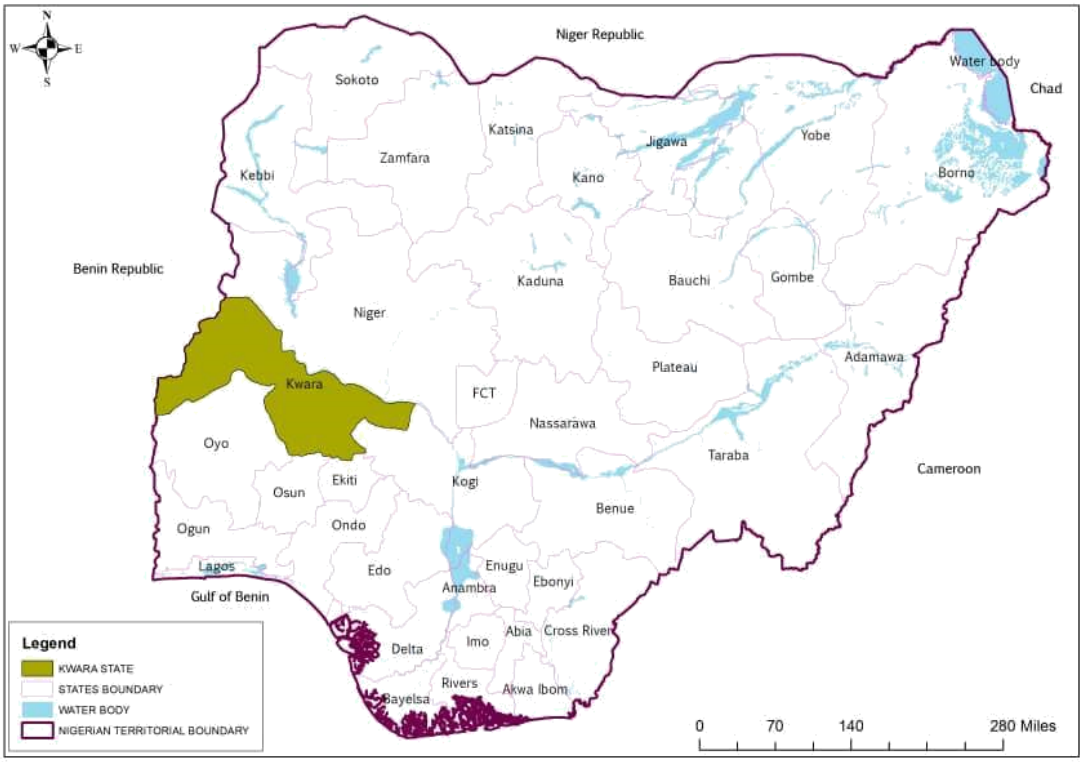

Figure 1.1: Kwara State in Nigeria
Source: Niger State Ministry of Land and Housing, 2018

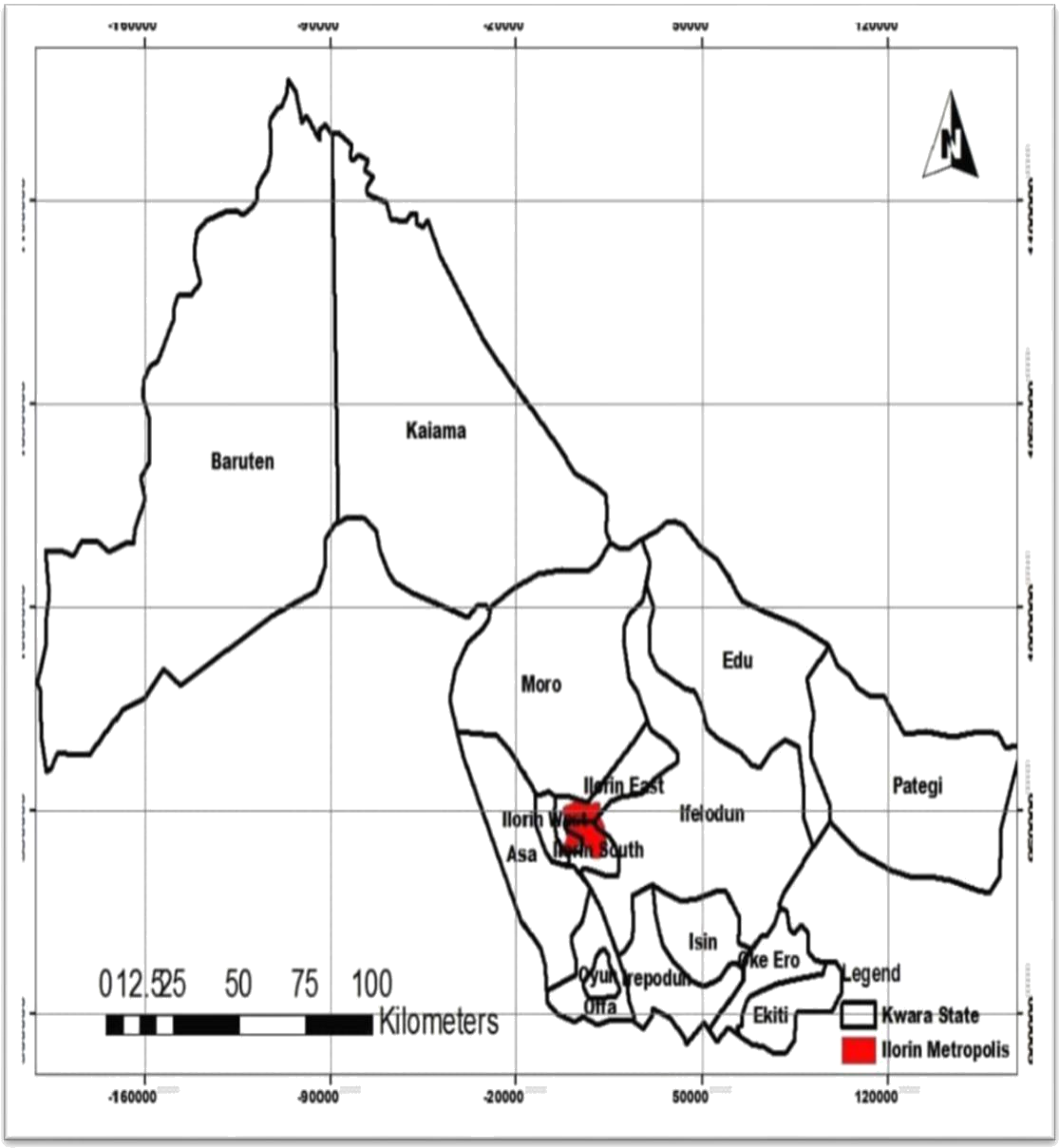

Figure 1.2: Ilorin in Kwara State
(Source: Kwara State Ministry of Land and Housing, 2018)

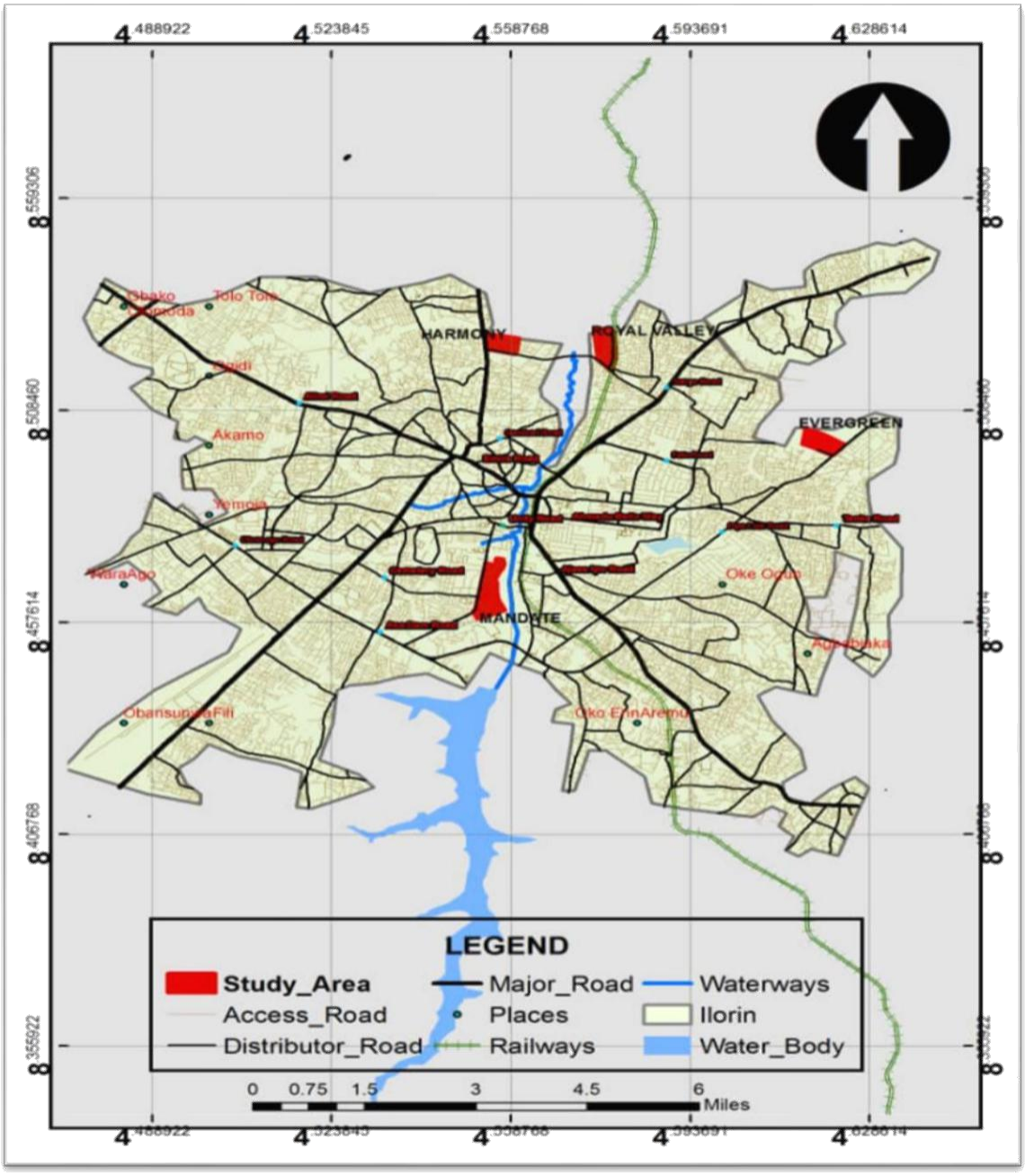

Figure 1.3: Selected housing estate in Ilorin
(Source: Kwara State Town planning development Authority, (2019)

1.8.2 Housing in the study area

Ilorin is one of the major cities in Nigeria today and its growing strength in both socio-economic affiliations is admirable. However, it is shifting gradually from local mud houses which are old pattern of housing structure, and then giving room for new modern housing types and designs.

1.8.3 Weather and climate

The climate of Ilorin is characterized by both wet and dry seasons. The rainy season begins towards the end of April and last till October while the dry season begins in November and ends in April. The temperature of Ilorin ranges from 33^{oC} to 35^{oc} from November to January while from February to April; the value ranges between 34^{oC} to 37^{oC}. Days are very hot during the dry season. The diurnal range of temperature and the mean monthly temperatures are characteristically high in the area. The total annual rainfall in the area ranges from 990.3mm to 1318mm. Rainfall in Ilorin city exhibits the double maximal pattern and greater variability both temporarily and spatially. The relative humidity at Ilorin city ranges from 75% to 88% from May to October, while in the dry season it ranges from 35% to 80%. The geology of Ilorin consists of Precambrian basement complex rock. The soils of Ilorin are made up of loamy soil with medium to low fertility. Because of the high seasonal rainfall coupled with the high temperature, there is tendency for lateritic soil to constitute the major soil types in Ilorin due to the leaching of minerals nutrients of the soil (Ajibade & Ojelola 2004).

1.8.4 Location and characteristics of the selected estate

Harmony Estate phase III was build in 2014, by the Kwara State government it is located along Sobi barracks road Ilorin , it has two bedroom apartment as well as three bedroom bungalow. The adjoining land uses to the estate are majorly residential land

uses. Mandate housing estate phase 1 was build in 2006 by the kwara state government, it is located along New Yidi road in Olorunsogo area, it has two bedroom apartment as well as three bedroom bungalow, the estate is directly opposite the new yidi prayer ground of Ilorin township, Yidi praying ground is the major landuse that is close to the estate.

Royal Valley estate was build in 2016 by the private individual, it is located along KunlendeArea, it is along Kunlende - Shao road, the adjoining land use to the estate are residential land use, although it is not far from National Open University of Nigeria, Ilorin centre. The estate has both two bedroom single detached bungalow and three bedroom as well. Evergreen housing estate was build in the year 2015, although the construction is still ongoing as the developer has not complete the target number of the proposed housing units as at January 2019. It is located in the new GRA along pipeline road of Tanke area of Ilorin. The estate comprises of two bedroom semi-detached bungalow and three bedroom bungalow.

1.8.5 Economic characteristics of Ilorin residents

The inhabitants of Ilorin metropolis are industrious and entre pricing in nature. Current commercial could be classified as large scale, medium scale and small-scale types.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The Concept and Importance of Housing

The housing concept has seen much development over the last two decades, which has passed through various phases (Durah, 1988). According to **(**Sheibani & Havard 2005), it has changed from being a fairly simple concept to one that is more complex, moving initially from the need to the development of housing. In brief, the development appears as follows: (A) The Narrow Concept: this refers to the dwelling where people live, or the materialistic building established from the walls and roof. (B) The Broad Concept: this incorporates the narrow concept but also includes assistance services, which motivate people to live in the house with stability. This study has concentrated on three different trends used to consider the concept of housing, these being: the Marxist trend, the liberal trend, and the temperate trend (Soliman, 1996).

2.1.1 Marxist trends

Marxist trends can be seen in three different ways:

House as essential commodity: the house has been regarded as including essential commodities, necessary to industrial and economic development for different community classes, because there is no labor force creation to realize development without housing. Also, housing correlates with various industries, and consequently houses become one of effective factors which affect the growth and boom of functioning capital in developmental industrial processes.

House as fixed commodity: this means it is impossible to change or remove it through the time, because it must be built on a fixed location, so it is impossible to change location, since land dedicated for housing is not allowed for real estate speculation in

most socialist countries, and the land price is controlled by government because the government is the rightful owner of all the land in the region.

Capitalist countries: regard housing not only as commodity that has value but also one that has exchange investment value in the housing market. It may be regarded as a fixed commodity when residents build the dwelling, and they are unable to pay the costs. It may be noticed that this approach produces public housing policies that match the trends, and that governments play a greater role in building housing units.

2.1.2 Liberal trends

It is confirmed in the studies analyze by (Soliman, 1996) that four principal approaches in his analysis of the liberal trend are as follows:

According to this approach, the differentiation between housing as a noun, and as a verb, is considered. If we use the first definition it will lead to a static condition, because it does not imply any increase and it will not affect the housing market, but defining housing from the point of view of a verb will introduce a dynamic situation, that will encourage development to extend to the residents‟ needs, and consequently this approach becomes very effective in the housing market.

It is impossible to segregate housing from the other social and economic variables which also change as time passes. In addition it can be considered that houses are fundamental developments, comprised of elements, materials and services connected with various activities - industrial, service or productive - where capital is invested, and thus they represent progress in economic developmental in society.

The analysis of housing unites through its forming or finishing. The suitable measurements of house is not necessary to create appropriate environment for

inhabitants, where the basic target in housing market mechanism is development of invested capital to gain potential great profit.

Independent housing forming: every family is different from others, due to the fact that the family has own organization and the type of housing chosen results from several factors such as family income, educational level and the area where they wish to live. Consequently, families are free to create their own appropriate housing. It can be noticed that this trend adopts a housing policy that depends upon the private sector and personal building

2.1.3 Temperate trend

This trend views the family‟s economic situation as the main pivot for expenditure. Betterment or development of the housing unit is connected strongly with the economic position of the family, which plays a great role in the housing market mechanism for variant social classes. Housing must be suitable for residence, and demonstrate a sanitary and environmental situation, which is appropriate not only for the family but also for society in general, and proper facilities such as water, sewage treatment, power, etc, must be provided.

Housing is a consumption commodity for all classes in the society, and political systems must provide it to people as a part of its functions to realize the equal distribution of justice. Each trend adopts particular policies to achieve its objectives, and countries may select one or more policy to enable them to reach their planned housing targets.

From the trends identified, housing can be defined as “the final outcome from variant capitals entering in the housing market mechanism, by construction, distribution, or managing the market”.

2.1.4 The concept of housing

Housing is one of the basic necessities for humans and it accounts for the largest share of the consumer price index, however, providing houses at affordable rent prices has been a long-standing issue for governments of most countries, for this reason, house rent prices and their affordability have continued to be an important policy issue. Expenditures associated with house rents has forced some households to reduce their consumption of other necessities and consequently lowered their standard of living (Eugene, 2017).

2.1.5 The need for housing

Housing is one of the best indicators of a person‟s standard of living and his or her position in the society (Ademiluyi, 2010) Housing is also an effective way to promote good governance. The need to improve housing conditions stimulates civic organizations (housing associations, community-based organizations) that act as incubators for elected representation (Duane *et al.,* 2006). The subject of housing is one that causes disputes between politicians, economists, and social experts, because it is important for society at large (Sheibani & Havard, 2005). Housing liveability is a concept that emerges over a recent time, however both housing experts and academic scholars have identified that the real meaning of liveable can be difficult to examine. There is not one singular definition of the term „liveable city Work, leisure, recreation, health care, affordable housing in a safe and green environment are in our view very important aspects of „liveability` (Rama *et al.*, 2013).

2.2 Housing Affordability

This is related to, and dependent on, several factors. Wealth, equity, consumption, income, taxes, risk, leverage, house prices and debt are the ones most often mentioned.

In addition, the borrowers mind and behaviour has a critical role in the process of homeownership and affordability, not least when estimating the risk of default. The change in one‟s affordability is a function of the factors mentioned above and the relationship is complicated (Copenhagen Business School, 2013). Affordability is well-defined by the relationship between household‟s income and housing expenditure (Fauziah *et al.,* 2016). Affordability is also apparent as interrelated to incomes, employment, housing availability, housing costs, patterns of new construction, and maintenance of the existing affordable housing stock (Singaravello, 2010).

A house is a multidimensional good, which consists of a bundle of attributes that differ in quantity and quality and influence house rent price, this includes physical attributes such as number of rooms, lot size, and housing type; community attributes such as population and characteristics of neighbourhood; and accessibility to the place of work. People‟s preferences for these attributes differ, and they often influence the amount of money that consumers would be willing to pay for house rent. House rent price is determined by the price at which a house owner is willing to give out a house unit to a potential tenant for rent and the price tenant is willing to pay i.e., equilibrium house rent price (Eugene 2017). In other words, the house that was advertised for rent by a house owner meets the preferences and demand of a potential tenant.

Housing affordability on the other hand is described as not only affordability in terms of household income but also in terms of mortgage affordability, non-housing expenditures, and current housing wealth (Stone *et al.,* 2011). Affordability of home ownership is one aspect of liveability in a city. Liveability reflects the well-being of the population; a dwelling for the present and it should be able to sustain the future. (Abdul *et al.,* 2008) described the liveable concept where a city provides housing options

consistent with affordability, job opportunities, comprehensive and easy accessibility to socialize. This will enable estates residents to live their daily life with safety, healthy and vibrancy. The current affordable housing crisis is rooted in many factors. Housing is considered unaffordable when housing costs consume too much of a person‟s income. One method to decrease the negative effects of gentrification is through affordable housing development.

2.2.1 Concept of housing affordability

The idea of affordable housing recognizes the needs of households whose incomes are not sufficient to allow them to access appropriate housing in the market without assistance (Milligan *et al.,* 2004). Thus, the term „affordable housing‟ describes housing that assists lower income households in obtaining and paying for appropriate housing without experiencing undue financial hardship (Milligan *et al.,* 2004). A range of publicly or privately initiated forms of housing may meet this specification (Milligan *et al.,* 2007). In fact, in recent years, the term „affordable housing‟ has been used as an alternative to terms such as „public‟, „social‟ or „low cost‟ housing (Gabriel *et al.,* 2005). Affordable housing is housing that is appropriate for the needs of a range of low to moderate income households and priced so that low and moderate incomes are able to meet their other essential basic living costs (Milligan *et al.,* 2007).

Affordable housing has become a serious and considerable challenge especially for low incomes households which resulted from continue growth and expansion of the urban centre. The determinants of housing affordability include household income and house price (Olatubara, 2007). Housing affordability is the capacity of household or individual to meet housing costs while maintaining the ability to meet other basic costs of living without any problem. This explains the extent to which the household or individuals are

able to pay for housing. CIH (1992) as quoted in Onu & Onu (2012) identifies variables which determine whether accommodation is affordable or not. These variables include rent levels, household income and eligibility of households for housing benefits where practiced. House rent represents the level of payment that is required to secure housing unit (Bramley, 2011). The housing industry is composed of competitive firms. The industry‟s aggregate supply depends on its output price and the real price of housing structure. Limits to supply of any factor of construction and increases in demand for construction will boost the equilibrium price of houses (Lee & Ong, 2005). This is supported by Meen (2002) who asserted that positive demand in housing leads to a temporary increase in house rents on the short-run when there is inelastic housing supply, but rents overshoot on the long run.

Right to adequate and affordable housing is an important component of standard of living. Improvement in housing stock when it is well planned with acceptable standard of infrastructures and affordable cost, it becomes strategically important social and economic investment to the individual family and the community at large. As housing contributes towards improved health and increase productivity, government should see to the situation where every individual lives in decent and affordable housing (Babatunde 2017).

It is crucial to state that while the state governments built estates are more or less allocated to civil servants on owner occupier basis, the ones built by private developers are sold at exorbitant rates. This situation is explained by Adajumo (2008) when he asserted that, in all cases the houses are not for rent, but for sale, because these developers have taken large loans from banks to finance their building projects, their objective is necessarily to get a quick return on their money; hence they prefer to sell

these houses, usually at high prices, to ensure that they have a minimum of 50% profit. After completion of the sale, they usually have 100% profit, if not more. This leaves Nigerians who are not civil servants and are not rich in cold in matters of adequate shelter; the cost at which the house reaches the market will go a long way to determine affordability (Adajumo, 2008).

The income of an employee determines his ability to afford a house. Where per unit cost of building is abnormally high as we have today, the simple implication is that few people will be able to afford it (Bello, 2008). The limited finance available will not be able to spread around the potential home owners. The gap between income and shelter cost in Nigeria is very wide. This has eliminated the low-income earners from the housing market. According to Bello (2008), high cost had been attributed to the following: Rising cost of building materials, inflation rate in the economy, high space and quality standards adopted by designers, fees of professionals involved in designs and construction, excessive profit of contractors.

The average income of Nigerians is too low to support the construction of buildings within a short or even medium time span (Opaluwa, 2010). Many even find it difficult to cope with regular and prompt rent payment. This makes the aspiration of the average Nigerian to own a house or occupy adequate rented apartment almost elusive.

2.2.2 Concept of housing livability

Throsby, (2005) explained that liveability encompasses the characteristics of urban environments that make them attractive places to live and pointed out that such characteristics could be divided into tangible features, particularly with regard to the availability of public infrastructure and intangible features, such as sense of place, local identity and social networks. Webster dictionary defines livability as „„suitability for

human living"". Livability means quality of life, standard of living or general well-being of a population in some area such as a city.

Liveability refers to the living conditions of a place and reflects people"s perception of the place to be fit for living or not. Though the interpretation of liveability varies with time and place but the concept seems to share terms like "quality of life", "well-being" and "life satisfaction" all across (Rama *et al.,* 2013). Liveability encompasses numerous factors that depend on locally prevailing economic, social and cultural circumstances and therefore becomes necessary to contextualize liveability by enlarging focus beyond generic attributes (Rama *et al.,* 2013). Livability now a day is pre-requisite for healthy living coupled with economic and social survival therefore is very important for improving the quality of life.

Senlier *et al.* 2013 stated that urban quality of life attracts attention as an important indicator of sustainable development of cities. Livability, as a measurable component of quality of life and urban quality of life concepts in urban space, is defined at utmost level as, the right of honorable life, and respect to human"s rights of existence in life. In line with this, provisioning of livability for the built environment of housing areas, that form the main function of urban settlements, emerges as an important issue. Thus, the necessity of providing the inhabitants not only the basic spatial needs, but also a way of life that individuals get involved as a participant in producing and consuming together, turns out to be the main issue (Şenlier *et al.,* 2013)

A livable community is an age-friendly community fostering active participation and independence. People of all ages and abilities will benefit from safer, barrier-free buildings and streets, better access to local businesses, and more green spaces (Hunter *et al.,* 2011). Planning local amenities in walking distance will be important.

An ideal livable community explores the complex relationship between neighborhood walkability features and the participation of residents in social and community activities (Metlife Mature Markets Institute and Stanford Center on Longevity, 2013).

The term „livability" as urban planning concept emerged as a philosophy for proactive planning/management of the built environment in the 1970s when the America academics and planners were confronted with the effects of urban sprawl such as social alienation and a loss of sense of community (Sule *et al.,* 2017)

There is a growing concern about city livability around the world and of particular concern is the aspects of the person-environment relationship which encompasses many characteristics suffice to make a place livable. Extant literature provides livability dimensions such as housing unit characteristics, neighborhood facilities, economic vitality and safety environment. These livability dimensions as well as their attributes found in the extant literature have been reported to have high reliability measurement level (Sule *et al.,* 2017).

The concept of liveability stands for the interaction between the community and the environment (Safer *et al.,* 2000). How well a city works for its inhabitants is the central focus of liveability. The inhabitants of cities need services for their well-being; this naturally brings about the concept of liveable city. The extant literature neither provide a unified definition of liveability/liveable city nor present a standardize measurement of it. The Centre for Liveable Cities (2011) refers to liveability as the city with excellent planning that creates lively, an attractive and secure environment for the inhabitants to live, work and play. It has good governance, a competitive economy, high quality of life and sustainable environment. Thus, it is an urban system that contributes to the physical and social wellbeing as well as personal development of all inhabitants (Song, 2011).

Economic Intelligent Unit (2012) described livability as one of the determinants of quality of life. Shuhana *et al.*, (2012) opined that high quality of living will affect citizen‟s lifestyle, health condition and shows stability of the built environment. Van Dorst (2012) described livability as the equilibrium between people and the built environment. His opinion suggests an ideal environment where the residents maintained outdoor spaces collectively.

City governance was considered as the most important determinant of city livability by the cross-examination of people living in the continent of Africa and those living in the Diaspora (Lawanson *et al.,* 2013). Other studies have investigated various factors in connection with livability such as dwelling units, housing services, neighbourhood and environment (Salleh, 2008).

One method to decrease the negative effects of gentrification is through affordable housing development. Municipalities, non-profit organizations, and for-profit developers can provide affordable housing for low- and moderate-income households by building it (Diane *et al.,* 2006).

The key to functionality is mixed land-use. Mixed land-use is the dispersal of residential, community, service, and retail zoning. Zoning that permits mixed-use development better supports residents of neighborhoods in leaving their car at home and walking to meet their everyday needs (Rosenthal, 2009). Mixed land-use promotes exercise, neighborhood interaction, and sustainability; in addition, the practice results in less carbon emissions and better air quality (Frank *et al.,* 2005). With less traffic congestion in small downtown areas or urban areas, streets are safer, cleaner, and more efficient for the surrounding areas. Rest stops with green spaces and benches along the walking path provide more pleasant walking experience (Weiss *et al.,* 2010).

Since housing is no doubt an important national investment and a right of every individual, the ultimate aim of any housing program is to improve its adequacy in order to satisfy the needs of its occupants (Adesoji, 2010).

Several factors have been identified that could influence house rent price. These include shortage in supply of houses for rent relative to demand, which increases house rent price. In addition, low interest rates increase investment in housing and, consequently, increases supply of houses for rent in a housing market, which pushes down house rent prices. Other factors include house quality, and location. For example, houses made up of high-quality materials and located in the city centre attract higher house rent prices than those made up of inferior materials and found in low-income areas (Eugene, 2017).

Houses in an area that have trunk infrastructure such as clean portable piped-borne water and electric power will attract a higher house rent price than houses in areas devoid of the infrastructure. An increase in the human population of an area triggers an increased demand for houses for rent relative to supply, which contributes to increased house rent prices (Eugene, 2017).

Others factors affecting house rent price are mortgage market features, which could encourage or discourage investment in the housing sector. If the market encourages investment in the housing sector, this will result in an increase in the supply of houses for rent and, consequently, reduces house rent price (Eugene, 2017).

According to the national Rolling plan, the national housing requirement is between 500,000 and 600,000 units, considering the prevailing occupancy ratio of three and four per room (Ojenuwah, 2006). As Abimaje *et al.* (2014) puts it, the rapid population

increases coupled with rate of urbanization have contributed in no small way to the shortage of urban housing in Nigeria.

The income of the average Nigerian is usually not adequate to meet his needs to own a house of his choice or rent an apartment of his taste. Some other challenges faced by Nigerians on housing affordability as enumerated by Onyike, (2007) are cost of land and building materials, high interest rates on mortgages, poorly developed mortgage finance system, administrative bottlenecks that makes the processing and securing of approvals for building plans, certificates of occupancy and other necessary government permits a nightmare, and the unmitigated corruption in the allocation of government land within the framework of Land Use Act, Cap 202 LFW, 1990.

An adequate, affordable supply of housing is the lifeblood of culturally rich, diverse, and livable urban centers. Without this, people who work here will be forced to move out of the city, with dire impacts not only on individual lives, but also on the region: more traffic congestion, increased environmental degradation, and fragmentation of communities. Housing affordability must remain a cornerstone of our city‟s commitment to an equity agenda that ensures a fundamental fairness for each individual and community that calls Seattle home. Without vigilance, we risk becoming a city accessible only to the affluent and privileged (Mayor *et al.,* 2015)

The need to have access to decent, safe and sanitary housing accommodation at affordable disposal prices has been a mirage to most Nigerians especially the middle and low income segment of the society. This is because housing entails large capital financial out lay, which is beyond the surplus accruable to families after caring for other existential needs of food, clothing, medicals, transportation and other family needs. Hence, the huge deficit of housing in the Country (Ugochukwu, 2016), which must be

accompanied by the livability of such estates and according to (Vera, 2011), he argued that there is not a general consensus on one definition. However, a scan of this national movement reveals that numerous tangible and intangible elements contribute to a community‟s level of livability. Residents and other community members find tangible elements easy to see, identify, and measure. Some examples include: Tangible Elements-visible, easily measured.

Choices in housing options, Universally designed and accessible homes, buildings, public spaces, and communication venues, walk able communities and complete streets, Accessible, affordable transportation, Choices in mobility options, Sustainable homes and communities using green building, energy-efficiency, and smart growth strategies, Healthy living environments home, workplace, public spaces, Flexible zoning and land-use policies to allow the benefits of multiple and innovative solutions to community issues, Access to appropriate and affordable basic necessities such as healthy food, socialization opportunities, amenities, supportive services, preventative health services, medical care, Safe neighborhoods, Opportunities for active engagement in community life and civic activities by residents of all ages, all cultures, and all abilities, Good educational opportunities, Meaningful volunteer and paid work opportunities for all residents (Senlier *et al.*,2013).

Vera, (2011) said intangible elements are more difficult to define; nevertheless, community evaluations show that residents definitely know when they are missing. These are aspects that have a remarkable influence on the quality of our living environments and on our daily lives and are the subject of increasing desire by residents in communities across the country. Some examples include: Intangible Elements less concretely visible, harder to define.

Sense of Community*:* If a sense of community exists, members feel a shared feeling of belonging, a feeling of interconnectedness among community members; there is a belief that members matter to one another and to the larger group; there is a shared faith that members‟ needs will be met through a commitment to act together as a community(Ugochukwu, 2016).

Community Empowerment: Community members (all age groups, ability groups, household types, and cultural and ethnic groups) feel empowered when they have avenues for actively engaging in civic opportunities and community activities; when their ability to participate in community planning and decision-making is sought and promoted; and when they feel a sense of personal control over decisions about their daily lives (Ugochukwu, 2016).

Social Capital*:* A community‟s social capital is its entire people, the network of social relationships that tie them together, and the value of these relationships for achieving mutual goals. Economic, social, and community-building benefits are maximized when a community fully capitalizes upon the creativity, skills, knowledge, and resources inherent in its social capital when defining and resolving crucial community issues (Ugochukwu, 2016).

Community Character*:* Community character has been described as a combination of traits and values, such as aesthetic and visual resources; existing patterns of landuse, population settlement, and recreation and open spaces; historic, heritage, or archeological resources; and level of health and safety. A community that is favorably recognized for its character is one in which the combination of these traits and values reflects a good quality of life (Ugochukwu, 2016).

While livability features are many and varied, a definitional characteristic that is common to all these elements is their significant impact on individual residents‟ quality of life and on the overall community‟s well-being. However, the subjective nature of “quality of life” and “well-being” adds to the imprecision of a definition for livability; and, in addition, as each municipality‟s resident profile and community circumstances are unique, the responses of community members vary when asked to prioritize livability aspects (Vera, 2011).

According to Vera (2011) stated some factors that contribute to housing unaffordability Attractive, liveable communities, Population and economic growth, High wages and economic opportunities, Natural restrictions on urban expansion , Restrictions on development density and affordable housing types (townhouses, apartments, secondary suites, etc.) , Minimum Parking requirement , Infill development fees and requirements.

2.3 Affordability Ratios

According to Gan & Hill (2009) affordability can be defined in at least three ways. The *Purchase Affordability* which determines whether the household is able to borrow enough funds to buy an asset, the *Repayment Affordability* which determines the pay back burden on the household when paying off the mortgage and the *Income Affordability* which measures the house price to income ratio.

According to (Bernard, 2008), the two first affordability ratios, the purchase affordability ratio and the repayment affordability ratio reflect the buyer‟s two main decisions when deciding to enter the owner-occupier‟s market. The questions are whether he can raise enough funds for the equity share of the funding followed whether he is able to pay off the mortgage. In this context two theories of default are relevant, aiming at the risk and the willingness of the borrower not to default on the loan.

In the purchase affordability context, the loan-to-value ratio will be considered as this ratio describes the total leverage of the household as a fraction of the market value of the asset at the time given (Zainal, 2010).When looking at the repayment affordability, four ratios will be discussed and explained. The debt service to income ratio (repayments) considers the household‟s monthly mortgage burden as a percentage of the household´s income. The installments account for the amount of the total payment which goes directly to the principal of the mortgage often referred to as the Repayment service to income ratio (Bernard, 2008). The interest service to income ratio accounts for the interest part of the whole amount used to pay off the mortgage. Finally the debt service to income ratio refers to the total mortgage debt as a percentage of the household‟s income. This ratio will be explained but not used in the sensitivity analysis in chapter seven. The income affordability is calculated by the market price of the house at the time given as a fraction of the household‟s income, as mentioned before. This is often referred to as the price to income ratio. The price to income ratio is, as said before, one measurement of the affordability of housing, and is often used in affordability indexes as well as to describe the conditions of the market (André, 2010)

2.3.1 The house price model

In order to determine the house price level that follows from an exogenous positive increment to the supply of houses as a result of government policy, it is good to take account of changes to the level of demand. The assumption here is that housing demand responds to changing wage levels and employment levels, both locally and within commuting distance. Housing demand from within the local area is simply a function of income from local jobs, equal to the local wage rate times the local employment level (Bernard, 2008).

Housing demand is also negatively related to the price of housing, Given that high prices drive down demand, it is assumed that high prices „nearby" will cause demand otherwise attributable to nearby locations to be displaced. This can be referring to this as a displaced demand effect. Hence it is assumed that demand at will be positively related to the weighted average of prices in surrounding areas (Bernard, 2008).

House price is influenced by economic factors, such as real income growth, interest rate, stock prices, supply, population growth and economic activity (Zainal, 2010). However, the following can be looked in to as some factors that affect the affordability of houses in Nigeria today. Affordability problems occur for both renters and owners. A study by Moore and Skaburskis (2004) found that there has been a progressive increase in the number of low income households with housing affordability problems.

Bernard (2008) stated that affordability problems for renters grew substantially throughout the nineties, but also for owners with mortgages. Affordability and homeownership are important factors of urban livability. However, given the rapid increase in house prices and the slower growth of individual incomes in Malaysia, the ability to own a house presents a significant challenge. Rising costs of living add to the problem. Current trends show that housing unaffordability is particularly acute among the middle-income earners, the group that constitutes the main bulk of the Ilorin urban populace. Housing affordability impinges upon urban livability (Elia, 2017).

2.3.2 The wages model

The analysis up to this point has assumed that wage levels will remain the same as the number of homes expands, but it is more reasonable to assume also that wages may change as housing supply expands and new employment is created (Bernard 2008). One important factor is the variation in worker efficiency across areas.

Housing affordability on the other hand is described by Stone *et al.* (2011) as not only affordability in terms of household income but also in terms of mortgage affordability, non-housing expenditures, and current housing wealth. Affordability of home ownership is one aspect of livability in a city. Livability reflects the well-being of the population; a dwelling for the present and future (Victorian Competition and Efficiency Commission, 2008), especially in the city. Abdul Samad *et al.* (2008) described the livable concept where a city provides housing options consistent with affordability, job opportunities, comprehensive and easy accessibility to socialize. Urban residents will be able to live their daily life with safety, healthy and vibrancy (Shaharudin *et al.*, 2010).

The government and private sectors have to make an effort to increase the number of affordable housing units by increasing supplies. A sharp rise in house prices without the support of firm fundamentals such as income growth, increase in population, accommodative monetary policy, and low unemployment rate could lead to artificial house price bubble (Zainal, 2010).

Linneman & Megbolugbe (1992) outlined factors in relation to housing affordability issues, including housing prices, household incomes, mortgage rates, instruments and underwritings, real property taxes and insurance, consumer spending and debt, local public finance, rent controls, and housing subsidies.

Skaburskis (2004) summarized eight factors that are responsible for housing affordability problems, including “geography, demography, migration / immigration / ethnicity, income recipients, income source, employment and education”. Wang *et al.* (2010) concluded that family housing wealth and mortgage debt are key to the debates of housing affordability/inequality/security/stability issues in western societies, while housing price escalation is the major research focus for affordability studies in developing countries.

2.4 Factors that Affect House Affordability and Livability in Public and Private Estates

2.4.1 Location and demand

Most people prefer to stay in better estates and livable ones within any city in Nigeria, as it is noted that such good estates are constructed or build with infrastructures and burst with economic activities. As a result, the demands for housing in such estates are always high which caused expensive houses to be offered for sale (Pivo, 2013). Affordable housing may add substance to additional "area affordability" costs such as where these houses may be located to endure additional costs due to environmental, social, or transportation conditions. For instance some developers built houses in less accessible locations, where people must drive alone to work, own more cars, or face longer commute times. Other than accessibility, neighbourhood socioeconomic conditions and public safety also need to be put in account of area affordability cost. This resulted higher area affordability costs for house owners. Additional facts related to neighbourhood conditions, accessibility, and the ability of families to afford their non-housing needs should be given more consideration (Pivo, 2013).

2.4.2 Cost of land

Effective governance of residential development and housing markets poses difficult challenges for land regulators. In theory, excessive land restrictions limit the buildable supply, tilting construction toward lower densities and larger, more expensive homes. Often, local prerogative and regional need conflict, and policymakers must make tradeoffs carefully. When higher income incumbents control the political processes by which local planning and zoning decisions are made, regions can become less affordable as prices increase (Pivo, 2013). Housing assistance programs meant to benefit lower income households could be frustrated by limits on density and other restrictions on the number and size of new units. (John 2005). Availability of buildable land in terms of ease of acquisition and cost of securing plots therefore influence housing affordability.

Availability and cost of land is in turn affected by demand for land from others sectors of the economy as well as government`s attitude to informal or illegal developments (i.e the extent to which informal housing and land development are tolerated). For instance land for development will be more available and affordable in any city where there is little control on informal land market. The overall government`s land development and control policies influence housing supply (Jinadu, 2007). Notwithstanding the shortage of land supply, a major problem that has been evolving for developers is the increasing cost of land or land and house supply is becoming so great that it is not feasible to undertake the development. This is because, on the one side costs are increasing and on the other, developers are faced with lower gross realizations as they move further from the CBD (Angelo). As a result, the demand for housing is high which caused expensive houses to be offered for sale. Therefore, it has become a challenge for the middle-

income groups to own a house, especially for graduates who have just started working (Musa *et al.*, 2013).

2.4.3 Cost of services and construction

The rising construction is also seen as one of the challenges with respect to house prices in Ilorin. According to Alliance DBS (2014), the cost-push factors such as rising construction cost and the implementation of Goods & Services Tax (GST) will continue to put pressure on material construction prices. New tenders for construction contracts have seen higher quotations. As a result, there are competitions between contractors regarding prices on raw materials and labour rate. With the increase of material production and processing price, contractors could not afford to withstand the rise of material price that forced them to raise the selling price of their finished unit (Cindy & Haron, 2013). Meanwhile, the building material cost should be sensitive towards ecological concerns. According to Oktay (2014), local or imported building materials used should suit the weather and surroundings. They have to be adaptable to changes through time which ability to adopt bring positive impacts to the residents‟ well-being and security when there is no need for short-term maintenance and upgrading costs. For labour cost, the use of Industrialized Building System may cut down labour use by 30 to 40 percent, thereby reducing the building cost of a house (Nathan, 2016).

In order to maintain house ownership, buyers would have to bear additional payment service costs that include assessment tax and property tax. Assessment tax is to cover expenses for services and development such as garbage collection, construction and maintenance of public infrastructure, and greenery maintenance. The property tax is imposed to finance construction, maintenance of public facilities, infrastructure and street lights (Elia, 2017).

However, assessment taxes paid did not explicitly specify the type of services delivered, which lead to taxpayer‟s dissatisfaction. Their argument was related to the poor service provided by the Local Government that did not reflect the rates paid. This argument of unfairness regarding payment system arose since the assessment tax rate was valued based on the size of land and type of houses. The unfairness of the tax system may reflect taxpayer‟s perceptions that they are overpaying taxes regardless of the value of the services provided by the government or about what other taxpayers are paying. Since tax payments that are not in line with the services provided by the local authority, the ability and comfort of homeowners and renters are affected. Residents had to spend additional costs to ensure that they are provided with the necessary services such as security (e.g. CCTV installations), cleanliness (e.g. hiring cleaning) and health (e.g. treatment costs, such as dengue), public transport (e.g. freight costs) and traffic congestion (Elia, 2017).

In relation to construction cost, Parker (2015) have highlighted two criteria which need to be emphasized for livability namely, making design and construction easier (such as „omit excessive restrictions on design unless benefits exceed costs‟) and residential construction productivity and supply (such as „development at scale to support more competitive industry structure and regulatory reform to transform the structure, conduct and performance of the residential construction market‟). The concept is for the community needs rather than developer.

2.5 Conceptual Framework of Housing Livability

This study adopts the housing and livability framework developed by Jana *et al.,* 2018 as shown in figure 2.1, the framework was developed in the research report of The

Livability Index 2018, Transforming Communities for All Ages by AARP Public Policy Institute of Washington DC which has several indicators.

The Livability indicators spread across seven categories of livability: Housing, Neighborhood, Transportation, Environment, Health, Engagement, and Opportunity (See figure 2.1). This is because communities across the country are enacting policies across all categories of livability (Housing, Neighborhood, Transportation, Environment, Health, Engagement, and Opportunity). These actions lay the groundwork to make places more livable for people of all ages (Jana *et al.,* 2018).It should be observed that Livability encompasses broad human needs ranging from food and basic security to beauty, cultural expression, and a sense of belonging to a community or a place and there, the livability indicators are the main functional key of every livable community, which are the major driving force of every neighborhood.

According to (Jana *et al.,* 2018) community livability is important, this is because it will promote, enhance an equitable and affordable housing, this will help to expand the location and efficient housing choices for people of all ages, income races, and ethnicities to lower the combined cost of housing and thereby increasing the affordability, location and diversity of housing types within a neighborhood which can be attributed to the quality of a good environment as it is one of the indicators of a housing livability.

However, neighborhood quality of life attracts attention as an important indicator of any community or environment. Livability, as a measurable component of quality of life and urban quality of life concepts in urban space, is defined at utmost level as, the right of honorable life, and respect to human‟s rights of existence in life (Şenlier *et al.,* 2015). Building for Life is the national criteria for every government of Nigeria, in order to

build well-designed housings and the neighborhoods. Since it is thought that the well-designed and planned environment or neighborhood will enhance the quality of life and the level of the social welfare by reducing the crime rate, increasing the public health and solving the transportation problems, then neighborhood quality should be an important factor or indicator of housing livability for both public and private developers (Jana *et al.*, 2018). The quality of every neighborhood depend on so many key things as well, which energy efficiency is one of those key issues, for a neighborhood to be clean, safe and free from all sort of environmental pollution, the energy efficiency must be checked.

Reducing energy use and toxic emissions as well reducing the amount of energy required to provide products and services for a livable neighbourhood, For example, insulating a home allows a building to use less heating and cooling energy to achieve and maintain a comfortable temperature. Embarking on a locally generated renewable energy can also be good for every livable community for the safety and comfort of the people living within the estate (Jana *et al.*, 2018).

Efficient transportation system reduce cost in every livable community thereby Provide more transportation choices to decrease household transportation costs, as well as reduce our nation„s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health (Şenlier *et al.*, 2015). A well designed, built, and maintained road network will enhance safe and convenient movement by all road users whether they drive, use public transportation, walk, or bike. To achieve this, it is important for public and private developers to take note of distance to bus stop/taxi stand, distance to provision store and day to day items shop, distance to play school, distance to recreational center and other public places within the neighborhood in order

to reduce transport cost and this will help the communities to become more livable and healthier. The centralization and provision of health centers can also reduce cost of transportation.

A healthy infrastructure provides the foundation for sound development and stable growth of the neighborhood; this is because health issues play a discerning role in every neighborhood. Beyond the health care setting, local actions to address social determinants of health such as affordable housing and transportation, economic opportunity, and social isolation can also improve health outcomes and reduce the need for hospital services (Mohamad, 2016). Access to healthcare services should be a multidimensional process which will include the quality of care, geographical accessibility and availability of the right type of care for those in need within the neighbourhood. However, delivery a good quality of health services to the people of the neighborhood should be a major concern for both public and private developers in developing a livable estate and the individual‟s occupants of such community should have a equal right to access the health center in respective of the income and status (Jana *et al.,* 2018).

Community or neighborhood members irrespective of age groups, ability groups, household types, and cultural and ethnic groups will feel empowered when they have avenues for actively engaging in civic opportunities and community activities; when their ability to participate in community planning and decision-making is sought and promoted; and when they feel a sense of personal control over decisions about their daily lives thereby increasing their educational and economic opportunities through several means (Şenlier *et al.*, 2015).

This is because education and economic opportunity is one of the prevalent views regarding community livability. The neighbourhood livability of a community should improve economic competitiveness through reliable and timely access to jobs, education, and services, as well as expanded business access to markets. People choose to live in neighborhood to enjoy the economic benefits of having better jobs; opportunities to build good homes with proper services and utilities; the advantages of having excellent education both at primary and secondary school level (Şenlier *et al.* 2015). These benefits of neighborhood life are being sought by most urban dwellers in search of affordable and livable community and therefore should be one of the major concern of both public and private developers for all level of income earners (Mohamad, 2016).

In summary, according to (Jana *et al.*, 2018), Livability depends upon three key, interdependent spheres of social life: the economy, social well-being, and the environment as it was shown in figure 2.1. The economy, which supplies jobs and income, is fundamental to residents‟ health (e.g., their ability to obtain food, clothing, and shelter), as well as higher-order needs such as education, health care, and recreation. At the same time, the economy should efficiently utilize raw materials drawn from the environment, so as to ensure sufficient resources for current and future generations. Social well-being relies, in large part, on justice: a social and spatial distribution of economic and environmental resources that is fair, as well as systems of governance that are inclusive of all residents. Individual freedom and opportunity are also important components and precursors of social well-being.

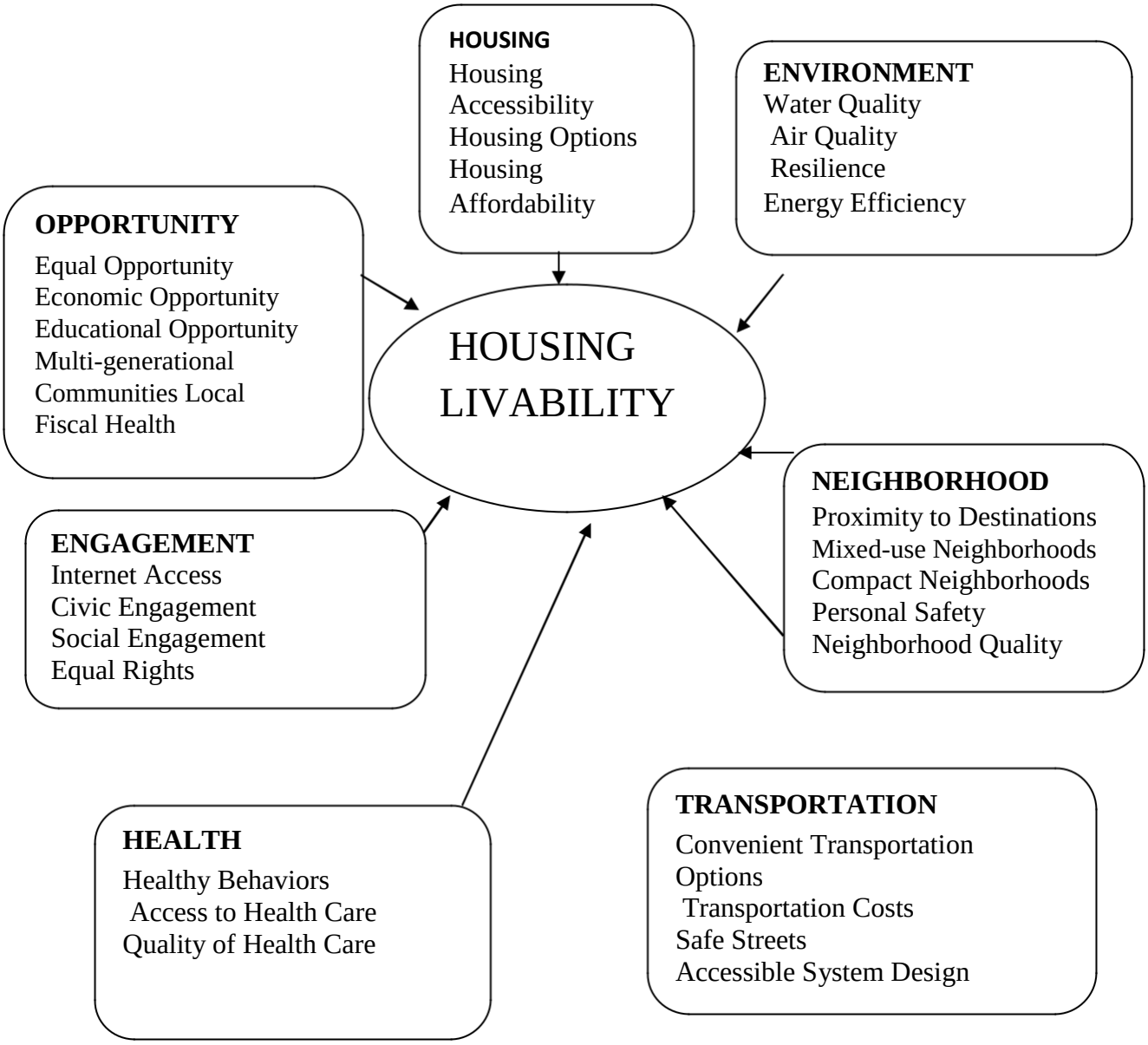

Figure 2.1: Seven indicators of housing livability and the attributes associated with each. Source: Jana *et al.*, 2018

2.6 Summary of Literatures Review

2.6.1 Cost of living

Cost of living can be said to has to do with expenses by the household on living a decent and affordable life, However from an economic perspective, employment is the most important component that contributes to quality of life because it provides the

source of income or economic base for people‟s lives (Jasmine & Ahmed, 2010). Employment opportunities are an important means for people to develop social networks and be involved in societal activities. For many, employment may also bring them psychological satisfaction in terms of providing an opportunity to demonstrate their abilities and have a feeling of achievement (Jasmine & Ahmed, 2010).

2.6.2 Public transport and roads

Urban livability is defined as a township that gives priorities to the needs of the residents (Song 2011). It offers balance by providing affordable houses in each location and efficacy in transportation, to fulfill the demands of home choices for all ages, incomes, and races, to reduce the combined housing and transportation cost burdens (US Environmental Protection Agency 2011). Federal Department of Town and Country Planning (2011) have put forward the concept of urban livability as an area with a strategic location that will allow for mixed use and the ability to provide for many people, flexible and easily responsive to changes. According to HALA Advisory Committee (2015), for the promotion of livability, the planning for new housing is led by the values of equity and sustainability to create resilient communities that are provided with good transportation choices, open space and facilities that will ensure a good quality of life for all. With regards to service cost, municipal council should be improving accessibility to achieve livability. For example, transit-oriented development should be highly accessible to all including disabilities which would encourage people to use of public transportation (Federal Department of Town and Country Planning, 2011).

Automobile use increases as incomes rise and employment is decentralized to outlying areas of a metropolis, weakening mass transit systems. The major problems of urban

transportation relate to traffic congestion, pollution from emissions, and the limited mobility of the poor. The appropriate policies for addressing these issues require urban governments to optimize land use, manage traffic and demand for transportation, formulate environmental policies and measures to mitigate congestion, improve fuel efficiency, and set up vehicle emissions control and inspection systems which will help in livability and wellbeing of the people within the community or neighborhood (World Development Report 1999 /2000). Transportation in an livable environment is about using the quality, location, and type of transportation facilities and services available to help achieve broader community goals such as access to good jobs, affordable housing, quality schools, and safe streets. This includes addressing road safety and capacity issues through better planning and design, maximizing and expanding new technologies such as intelligent transportation systems (ITS) and quiet pavements, and using travel demand management (TDM) approaches in system planning and operations. It also includes developing high quality public transportation to foster economic development, and community design that offers residents and workers the full range of transportation choices and, it involves strategically connecting the modal pieces-bikeways, pedestrian facilities, transit services and roadways-into a truly intermodal, interconnected system (Federal Highway Administration).

2.6.3 Safety and security

Households need protection against crime and violence, but they also need protection against income shocks that impair their ability to sustain themselves, reducing the incidence of crime and violence lessens another burden on the urban poor. Here again, the trend is toward community-based actions that involve community policing and citizen-police liaison committees (World Development Report 1999/2000).

Safety is an important basic need, which is reflected in the fact that everyone desires to live in a crime-free and safe neighborhood. A neighborhood with a high crime rate will result in an unsafe environment that imparts fear and worry among its residents. It is impossible to bring about a good quality of life in an area with a high crime rate, even if other living conditions are satisfactory (Jasmine & Ahmed, 2010).

The analysis indicated that efforts to promote neighborhood livability should focus on ensuring the overall safety of the community because this tends to increase their satisfaction level (Jasmine & Ahmed, 2010). Apart from the formal surveillance of security guards and police, casual or informal surveillance is equally critical. The latter concerns the design of the site that allows residents to observe the activities of their neighbors and families. The process of seeing and being seen creates a sense of community, which in turn creates territoriality among its inhabitants. The ability to take control of living space and better social surveillance tend to reduce crime and the fear of crime in communities (Jasmine & Ahmed, 2010).

2.6.4 Culture and nightlife

Housing Affordability and Livability Agenda (HALA) Advisory Committee (2015) have mentioned that the supply of affordable housing is the lifeblood of culturally rich, various, and livable urban centers. Without all of this, people who work in cities will be forced to move out, creating negative impacts not only on individual lives, but also on other aspects which include more traffic congestion, increased environmental degradation, and fragmentation of communities. Recreational nightlife is seen today as a concept with absolute and positive value in all European societies. Having time and the acquisitive power to enjoy it forms part of the definition of quality of life. Leisure time is lived as something of one‟s own, something we choose ourselves, as opposed to our

life during the rest of the week. Young people, more than any other group, experience the weekend, and its nights, as something that is especially their own (European Commission 2007) this results in demand from a particular sector of the population, rapidly met by the nightlife recreational industry. The consumption of this supply and the associated marketing helps the expansion of the predominant leisure model, going out at night, as almost the core activity of young people‟s recreational space. The model is undoubtedly perverse, since it transmits to the youngsters values associated with freedom and rebelliousness, so that they feel they are defining this leisure model themselves, when in reality it is the model that defines them (European Commission 2007).

2.6.5 Access to health facilities

Good health contributes greatly to achieving national goals and objectives and consequently, international goals such as the Millennium Development Goals. It is, therefore, required that facilities and services are provided to enhance access to healthcare services in order to ensure that all individuals irrespective of their location benefit in developing countries (Aminu *et al.,* 2014).

Access to healthcare services is a multidimensional process involving the quality of care, geographical accessibility, availability of the right type of care for those in need, financial accessibility, and acceptability of service (Peters *et al.,* 2008). Access to health care has four dimensions: Availability, accessibility, affordability, and acceptability. Health care delivery should be evaluated against these objectives. This has been referred to as effective coverage.

Accessibility to health care facilities has been identified as a major indicator of development. The importance of adequate health care facilities in providing sustainable

rural development can therefore not be over- emphasized. Convergence of opinions agreed that lack of basic health care facilities have led to inefficiency in production, declining productivity, reduced life expectance and increased infant mortality rate (Ajala *et al.*, 2005).

2.6.6 Access to leisure, parks and green areas

The physical environment is the space where people work, live and develop social networks. People are active in the space, use and interact with this space, and also perceive the space. The conditions of the space are external factors, but they have positive or negative impacts on people‟s perception and feeling. Most studies emphasize the natural environment of communities, which focuses more attention on the availability and quality of parks and green spaces. A few of them take into account the environment quality, such as pollution, litter, noisiness and congestion, as well as building maintenance (Jasmine & Ahmed, 2010). In Heylen‟s (2006) work, the availability of amenities and services are placed under this dimension.

Finally, according to Parker (2015), to achieve the home affordability target in such cities like Ilorin, the roles of city council and the government which include collaborative review of transport policy to ensure it supports housing growth and transport planning system which should be responsive to growth demand. Local government should be sharing in revenue based on economic activity to help pay for infrastructure and service, and help incentivize local communities towards growth. Likewise, this approach can be applicable in the study area (Ilorin). In brief, the livability of neighborhoods is a crucial element to the prosperity and development of cities because it reflects the real-life experiences of inhabitants. A livable neighborhood presents a delightful and desirable urban space in terms of equity, accessibility and

participation that contributes to the well-being and development of all people, thus, a livable environment creates an optimistic future for quality and living comfort, which ultimately become the determining factors in creating a sustainable built-up environment of the whole society (Jasmine & Ahmed, 2010).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Design

This study adopts the descriptive research design. The descriptive research design involves survey and rely on quantitative data to provide answers to the research questions. The study was quantitative and cross sectional survey was adopted.

This research design provoke the question of why, how and what on the subject matter. The research design also help in gathering information concerning the present situation of housing affordability and livability in Ilorin with respect to public and private estates. The data required for this study were gathered concurrently from primary and secondary data sources. While the data collected from both the primary and secondary sources were analysed and integrated to provide answers to the research question. The research was deductive and interpretive than inductive.

The study was restricted to the geographical boundary of Ilorin town; that is, only housing estates within Ilorin town were considered for this study. However, due to time constraint, only four housing estates was selected for sampling for this study, two each from public and private estates identified. The selection of the housing estate was based on the year of construction of the estates; this implies that the first two most recent housing estates developed by the public and private developers were considered in other to allow for effective comparative analysis.

The research design used for this study includes the following:

i. Observation / Participant Observation.
ii. Interviews.
iii. Surveys.

iv. Primary Data Analysis / Archival Study.

3.2 Types and Source of Data

The data used for the study are both primary (unprocessed data) and secondary (processed data). The primary data were gathered through the use of questionnaires and observation, while secondary data were sourced from internet sources, ministries, department, and agencies relevant to the study. The primary and secondary data required for the study is presented in the section below.

3.2.1 Primary data

The primary data used for this study includes the reconnaissance survey in which the photographs of the major landmarks were taken in the study area and the geographical coordinates of the selected estates were taken to allow accuracy in map digitizing. The questionnaire were administered to the residents of the selected estates by considering the type of housing, number of rooms, condition of wall, condition of floor, condition of roof, condition of door, the study also look at the following indicators of housing affordability such as House price to income/earnings ratio, Housing expenditure to income ratio, residual income left for housing, The study used data on the following indicators of livability: Security and safety, recreational facility, access to water, accessibility, access to basic education, quality of housing, quality of the neighbourhood and access to communication facility.

3.2.2 Secondary data

The secondary data required for the study include:

The names of registered housing estates in Ilorin which are gotten from the housing cooperation Ilorin as well as the number of units completed and the year of completion, except for the private estates, that were gotten from Ministry of Lands and town

planning development authority. The geographical locations of the housing estate were also picked through the use of geographical position system. Other relevant information on the subject matter was gathered through published document. The names of the estates in Ilorin metropolis is presented in the table 3.1.

Table 3.1: Names of Estate in Ilorin Town, Kwara State, Nigeria

Names of housing estates	Developed by	Year of Construction
Kulende Estate	Public	2000
Irewolede Estate	Public	2004
Harmony phase I Estate	Public	2000
Harmony phase II Estate	Public	2005
Harmony phase III Estate	Public	2010
Mandate Estate I and II	Public	2006
Olarewaju Estate	Private	1999
Royal Valley	Private	2016
Golf Estate	Private	2010
Evergreen Estate	Private	2015

Source: Authors Compilation

3.3 Study Population

The sample frame for the study is the total population of the four selected housing estates. Table 3.2 shows the number of housing units in the public and private housing estates selected. The Table shows that the total number of housing units in the estates is 1254. Therefore, since the study is household base, the sample frame for the study is 1254 households. Harmony Estate has a total of 260 housing units, while Mandate Estate has a total of 500 housing units, making a total of 760 housing units for the public housing estates. The total number of housing units in the private housing estates is 494, where Royal Valley has a total of 244 housing units and Evergreen Estates has a total of 250 housing units.

Table 3.2: Sample Frame

S/No	Name of Estates	Number of Housing Unit
	Public Housing Estate	
1	Harmony	260
2	Mandate I and II	500
	Total	**760**
	Private Housing Estate	
3	Royal Valley	244
4	Evergreen housing	250
	Total	**494**
	Grand Total	**1254**

Source: Author (2019)

3.4 Sample Size

To arrive at a sample size that will serve as a good representative for the study population, the Taro Yammane sample size formula will be adopted. The mathematical expression of the formula is presented in equation 3.1.

$$\frac{\quad}{(\quad)} \qquad (3.1)$$

Where, N =Sample frame, e = degree of freedom (0.05), SS= sample size. Therefore,

$$\frac{\quad}{(\quad)^{2}} \qquad (3.2)$$

Having substituted in the variables for the formula as presented in equation 2, the study arrived at a sample size of 400. Therefore, a total of 400 households will be sampled in the four housing estates. The distribution of the sample size is presented in Table 3.2. The sample size was distributed across the four selected housing estate base on the proportion of the housing unit in each estate to the total number of housing unit in all the estates. Table 3.3 shows that a total of 242 questionnaires will be administered in the public estates; 83 in Harmony estate and 159 in Mandate housing estate. While in the private housing estates, a total of 158 questionnaires were administered to the resident; 78 in Royal Valley Estate and 80 in Evergreen housing estate.

Table 3.3: Sample Size

S/No	Name of Estates	Number of Housing Unit	Sample Size
	Public Housing Estate		
1	Harmony	260	83
2	Mandate I and II	500	159
	Total	**760**	**242**
	Private Housing Estate		
3	Royal Valley	244	78
4	Evergreen housing	250	80
	Total	**494**	**158**
	Grand Total	**1254**	**400**

Source: Author (2019)

3.5 Sampling Technique

The study adopts the multistage sampling technique. First the housing estates identified in Ilorin were divided into two clusters based on the developer; that is either developed by the private or the public developer. Consequently, two housing estate was selected from each of the clusters based on the date of completion. The two most recent housing estates in each cluster were then selected for sampling. Secondly, to identify household to be selected for sampling in each of the housing estates, the systematic random sampling technique was adopted. The samples were selected at an interval of every 3rd houses in the housing estates. The sample interval was derived by dividing the number of housing unit in the estate by the sample size of the housing estate.

$$\frac{\text{——}}{\text{——}}$$

—— = 3 which is the sample interval

3.6 Instrument and Equipment for Data Collection

The primary instrument for data collection for this study is the questionnaire, digital camera and geographic positioning system (GPS).

3.6.1 Questionnaire

Two types of questionnaires were developed for the study; a well-structured close ended questionnaire and a checklist questionnaire. The close ended questionnaires were divided into four sections. Section "A" of the questionnaire was used to elicit information on the socio-economic attribute of the respondents, which include gender of household head, education, and occupation status. Section "B" of the question focus on the housing characteristics in terms of types, design, building material and condition, while section "C" was used to elicit information the housing affordability within the selected housing estates which includes the household monthly income and household monthly expenditure on housing . The checklist questionnaire was used to determine the performance of the livability indicators in the estates

3.6.2 Digital camera

Digital camera was used to take the pictorial view of housing units within the four selected housing estates.

3.7 Method of Data Analysis

The primary data from the field were analyzed according to the objectives of this study. The data required were analysed using descriptive statistics to describe the housing types and condition. The primary descriptive statistics to be employed would include frequencies, percentage.

Descriptive statistics was employed, the mean, median and standard deviation of household head income were determined, the percentage of the expenditure on mortgage in relation to the total income of household head was also determined.

The data for this study were also collected in weighted form using likert scale. Hence, descriptive statistics was employed as analytical tool. The description of the livability

indicators were analysed using frequencies and percentage, while the livability index were computed using the formula presented in equation 3.3

(i) ( ) ( ) ( )/ ..... (3.3)

Where: *LI*= Livability Index

w_i= the weight of the i^{th} term

n= frequency of the ith term

N= the total number of sample

W= the maximum weight

The study also adopts the use of inferential statistics for the test of hypothesis. The inferential statistics to be adopted was Analysis of Variance (ANOVA). ANOVA provide tool for determining the variation between different groups of variables. Therefore, to determine the variation between the two groups of housing estate (Public and Private) the test of ANOVA was employed as analytical tool in summary, the research methodology can be summarized in Table 3.4

Table 3.4: Summary of the Research Methodology

Objective	**Data Require**	**Instrument for collection**	**Method of Data Analysis/Presentation**
Examine the housing types and conditions within the estates	The type of housing, number of rooms, condition of wall, floor, roof, and door, and the building material of housing component	Questionnaire, digital camera and GPS	Descriptive Statics Frequencies /Table Percentage /Chats
Determine the affordability of the houses within the estates	The rental value, property value, average monthly household income, average monthly expenditure on basic services	questionnaire,	Descriptive Statics Frequencies /Table Percentage /Chats

Table 3.4: Cont'd

Examine the livability of the houses within the estates using level of infrastructure provision as indices	Livability indicators: Security and safety, recreational facility, water, accessibility, clean energy, waste management, drainage facility, and educational facility.	Questionnaire	Descriptive Statics Frequencies /Table Percentage /Chats
Determine the variation in housing affordability and livability among the housing estates	This objective will be achieved through processed data from objective (2) and (3). Data from objective two	Questionnaire	Inferential statistics Analysis of Variance (ANOVA).

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Demographic Characteristics of the Respondents

This section deals with the findings from the study. It starts with the bio data of the respondents which includes the gender of the respondents, age, marital status, occupation, as well as the educational qualification of the respondents.

4.1.1 Gender and marital status of respondents

Table 4.1 shows that 82.5% of the respondents were males and 17.5% were females. The results of the marital status revealed that 95% of the respondents were married, 2% of them were single and 3% of the respondents were widows/widowers. The results is shown in fig 4.1

Table 4.1: Gender Status of the Respondents

Gender	Frequency	Percentage
Male	316	82.5 %
Female	67	17.5%
Total	383	100

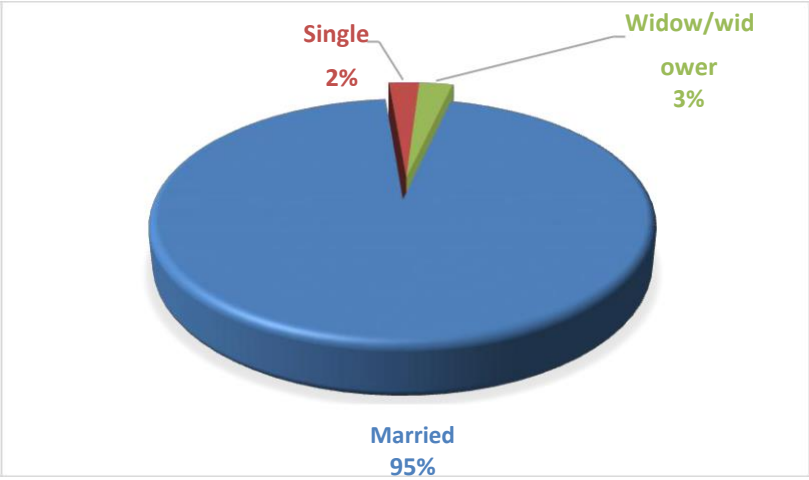

Figure 4.1: Marital Status of the Residents

4.1.2 Occupational status of the respondents

Results of the occupational status of the respondents showed that 26.1% of the respondents were civil servants, 34.2% them were businessmen/women, while 39.7% of the respondents were those that were self-employed i.e those with their private firms, private schools, private clinic/hospitals etc. This is an indication that many of the respondents were self-employed and businessmen/women as shown in fig 4.2. The significance of this result is that livelihood of the household will therefore affect the housing environment they dwell.

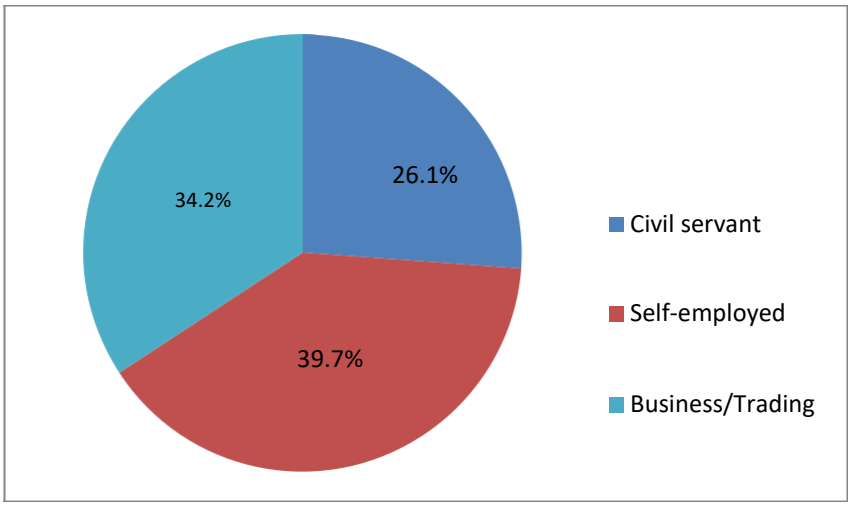

Figure 4.2: Occupational Pattern of the Residents

4.1.3 Educational status of the respondents

The highest educational qualification of the household-heads of research population in the survey was also examined. As shown in Table 4.2 household-heads with tertiary educational as highest educational qualification constituted about 62.2%. This is followed by those with secondary education constituting around 35.5%. Those with primary education accounted for 2.3%. This result indicates that majority (over 50%) of the houses in the research population were those whose household-heads have tertiary education while the least (less than 2.4%) were those with primary education certificate.

Table 4.2: Educational Status of the Respondents

Highest Educational Status	Frequency	Percentage
Tertiary	238	62.2 %
Secondary	136	35.5%
Primary	9	2.3%
Total	383	100

4.2 Housing Types and Condition in the Estates

4.2.1 Housing types based on structure and design

Table 4.3 shows the different types of housing based on structure and design provided in the public and private estates in the study area. The research reveals that at Harmony Estate, 17.5% of the housing units provided were detached and29.0% were semi-detach while at Mandate Estate 27.4% of the housing units provided were detached while 61.8% were semi-detach, at Royal Valley Estate, 27.0% of the housing units provided were detached and3.8% were Semi-detach; and at Evergreen Estate 65.8% of the housing units provided were detached and5.3% were Semi-detach. Research revealed that 65.8% of the housing units provided at each of the estates were detached bungalows, while 34.2 %, accounted for semi detach houses.

From the result in table 4.3 it can be concluded that Evergreen housing estate had highest percentage of detached housing units with 28.17%. Mandate housing estates records the highest percentage of the total housing units in the study area with semi-detached housing units with 61.7%. This results now shows that Evergreen housing estates which is a private housing estate, had more of detached bungalows than the other three estates while Mandate estates contain more of semi-detached bungalows than the other three estates.

Table 4.3: Housing Types Based on Structure Design

Types	Public		Private		Total
	Harmony	**Mandate**	**Royal Valley**	**Evergreen**	
Detached	44 (17.5%)	69 (27.4%)	68(27.0%)	71(28.17%)	**252 (65.8%)**
Semi-detach	38(29.0%)	81(61.8%)	5(3.8%)	7(5.3%)	**131(34.2%)**
Total	**82(21.4%)**	**150(39.2%)**	**73(19.1%)**	**78 (20.4%)**	**383(100%)**

4.2.2 Housing types based on the internal composition/ height

Table 4.4 shows that Harmony Estate had 23.7% flat apartment, Mandate Estate had 44.3% flat apartment, Royal Valley had 14.5% flat apartment and Evergreen Estate had 17.6% flat apartment. The result also shows that duplex buildings in Harmony estate had 16.5%, Mandate Estate had 28.1%, Royal Valley had 23.1% and Evergreen Estate had 32.2%. Therefore, the overall report revealed that majority of the housing types based on the internal composition/height, were 68.4% of bungalows and 31.6% low rise buildings. This implies that housing developers developed more of bungalows than low rise buildings.

Table 4.4: Housing Types Based on the Internal Composition/ Height

Types	**Public**		**Royal Valley**	**Evergreen**	**Total**
	Harmony	**Mandate**			
Flat apartment	62(23.7%)	116(44.3%)	45 (14.5%)	46(17.6%)	**269 (68.4%)**
Duplex	20(16.5%)	34(28.1%)	28(23.1%)	39 (32.2%)	**121(31.6%)**
Total	**82(21.4%)**	**150 (39.2%)**	**73(17.2%)**	**78(22.2%)**	**383(100%)**

4.2.3 Housing type based size of the housing

Table 4.5 revealed that 32.0% of the houses were two bedroom apartments in Harmony Estate, 43.5% in Mandate Estate were two bedrooms flat, 12.9% in Evergreen Estate were two bedrooms flat and 11.6% in Royal Valley estate were two bedrooms flat. The study also reveals that 17.9% of the houses are three bedroom bungalows in Harmony Estate, 36.8% of the houses are three bedroom apartments in Mandate Estate, Evergreen Estate had 27.4%, and Royal Valley has 17.9%, while for four bedroom bungalows Harmony Estate had 16.7%, Mandate Estate had 51.2%, Evergreen Estate had 15.5% and Royal Valley had 24.7%; and for five bedrooms and above Evergreen estate had 51.4% and Royal Valley estate 48.6%.

Therefore, the table shows that two bedrooms apartment, based on housing types had38.4%, three bedrooms have 30.5%, and four bedrooms have 21.95% and five bedrooms and above have 9.1%. It‟s clear that public estate has more of the housing types with two bedrooms at 32.05% and 43.5% respectively while private estate had few of two bedrooms at 12.9% and 11.6% respectively.

Table 4.5: Housing Type Based Size of the Housing

No of Bedroom	Harmony	Mandate	Evergreen	Royal Valley	Total
Two	47(32.0%)	64(43.5%)	10(12.9%)	17(11.6%)	**138(38.4%)**
Three	21(17.9%)	43(36.8%)	32(27.4%)	21(17.9%)	**117(30.5%)**
Four	14 (16.7%)	43(51.2%)	13(15.5%)	23(24.7%)	**93(21.9%)**
Five & Above	0(0.0%)	0(0.0%)	18(51.4%)	17(48.6%)	**35(9.1%)**
Total	**82(21.4%)**	**150(39.2%)**	**73(21.4%)**	**78(18.0%)**	**383(100%)**

4.2.4 Conditions of houses in the estates

4.2.4.1 Condition of walls

Available statistics from field survey shows the condition of the houses in the estates. Table 4.6 shows the general condition of wall in all the four estates, in the case of Harmony estate, 23.2% of the building wall condition were intact, a little above half (54.9%) were cracked while 21.9% of the walls were dilapidated. At Mandate estate 34.7% of the building wall condition were intact, a little above half (56.0%) were cracked while 9.3% of the walls were dilapidated.

At Royal Valley Estate (94.5%) of the building wall conditions were intact and only 5.5% were cracked. At evergreen estate (93.6%) of the building wall conditions were intact and 6.4% were cracked. This shows that over 50% of the building in the private estates of the study area still had their wall condition in good shape and intact, while less than 50% of the buildings in public estates of the study area had their wall condition in good shape. It further shows that Private housing estates have better building conditions than public housing estates. Example of this can be seen in plate I, and plate II respectively.

Table 4.6: Walls Condition

	Public		**Private**	
Walls Condition	**Harmony**	**Mandate**	**Royal Valley**	**Evergreen**
Intact	19 (23.2%)	52(34.7%)	69(94.5%)	73(93.6%)
Cracked	45 (54.9%)	84(56.0%)	4(5.5%)	5(6.4%)
Dilapidated	18(21.9%)	14(9.3%)	0(0.0%)	0(0.0%)
Total	**82(100%)**	**150(100%)**	**73(100%)**	**78(100%)**

Plate I: Cracked wall of a building at Mandate housing estate

Plate II: Good wall of a building at Evergreen housing estates

4.2.4.2 Floor condition

As shown in Table 4.7, floor conditions of houses in the study area were assessed through the assistance of the respondents. The findings show that at Harmony estate 25.6% of the dwelling units floor condition were intact, 20.7% of the housing units floor condition were intact in Mandate estates. However 68% of the floor conditions of the buildings in Harmony estate were cracked while 75.3% floor condition of Mandate estate were cracked, it was also recorded that 6.1% of the floor condition were eroded in Harmony estate and only 4% was eroded in Mandate estate.

The results also shown that 94.5% of the dwelling units floor condition were intact in Royal Valley estate, 5.5% of the dwelling units floor condition were cracked in Royal Valley estate, while in Evergreen Estate 93.6% of the floor are intact, only 6.4% of the floor were cracked. None of the housing units floor condition was eroded which means that a private housing estate has a good number of dwelling units with good floor condition than public housing estate.

Table 4.7: Floor Condition

	Public		**Private**	
Floor Condition	**Harmony**	**Mandate**	**Royal Valley**	**Evergreen**
Intact	21(25.6%)	31(20.7%)	69(94.5%)	73(93.6%)
Cracked	56(68.3%)	113(75.3%)	4(5.5%)	5(6.4%)
Eroded	5(6.1%)	6(4%)	0(0%)	0(0%)
Total	**82(100%)**	**150(100%)**	**73(100%)**	**78(100%)**

4.2.4.3 Roof condition

The condition of the roofing condition of the houses in the study area was gauged through the help of the results from the field. Table 4.8show that 35.4% of building roof of the housing units in Harmony estate were intact. Little above 50% (57.3%) of the roof condition of houses in Harmony estate were rusted, 7.3% of the buildings had their roofs removed by wind. Results shows that at Mandate estate 22.7% of roofs were intact, 77.3% of the roofs were rusted and none of the roofs were removed or part missing.

It was also noted during the survey that in Royal Valley estate 71.2% of the roofs were intact, only28.8% were rusted and none of the roofs were removed, at Evergreen estate, 71.8% of the buildings has their roofs intact, only 28.2% of the roofs were rusted and none of the roofs were removed. Therefore it can be deduced that the roofing condition of the houses in private estates has more of intact roofs and less of rusted roofs than public estates, Plate III and IV shows the condition of some of the roofs for both the public and private estates.

Plate III: A building showing some parts of the roofs missing at Mandate estate

Plate IV: A building showing the good condition of roof at Royal valley estate

Table 4.8: Roof Condition

Roof Condition	Public		Private	
	Harmony	**Mandate**	**Royal Valley**	**Evergreen**
Intact	29(35.4%)	34(22.7%)	52(71.2%)	56(71.8%)
Rusted	47(57.3%)	116(77.3%)	21(28.8%)	22(28.2%)
Part Missing	6(7.3%)	0(0 %)	0(0%)	0(0%)
Total	**82(100%)**	**150(100%)**	**73(100%)**	**78(100%)**

4.2.4.4 Condition of doors

Table 4.9 reveals the condition of doors in both public and private estates. At Harmony estate, intact doors were 92.7%, 7.3% were broken. At Mandate estate, 78.7% of the estate has their doors intact, 21.3% of the doors were broken.

The findings also reveals that at Royal Valley, 94.5% of the doors were intact and only 5.5% of the doors were broken not fully functional, while at Evergreen estate 93.6% of the housing units has their doors intact, only 6.4% of the housing units has their doors to be broken or not fully functional. This infers that majority of the housing units in both the public and private estate has their doors intact.

Table 4.9: Condition of doors

Condition of Doors	Public		Private	
	Harmony	Mandate	Royal Valley	Evergreen
Intact	76(92.7%)	118(78.7%)	69(94.5%)	73(93.6%)
Broken	6(7.3%)	32(21.3%)	4(5.5%)	5(6.4%)
Total	**82(100%)**	**150(100%)**	**73(100%)**	**78(100%)**

4.2.4.5 Condition of windows

Table 4.10 shows the condition of windows in both the public and the private estate. The housing units in Harmony estate has 97.6% of the windows intact, 2.4% of the windows in harmony estate removed. 74% of the windows in Mandate estate were intact and 26% of the windows in the estate were removed. At Royal Valley estate, 94.5% of the windows were intact and 5.5% of the windows were removed. At Evergreen estate, 93.6% of the windows were intact and 6.4% of the windows were removed. This implies that majority of the houses in both the public and private estate has their windows intact. Plate V and VI shows the conditions of the windows in both the public and private housing estates.

Plate V: A building showing windows removed at Harmony estate

Plate VI: A building showing windows intact at Evergreen estate

Table 4.10: Condition of windows

	Public		**Private**	
Condition of Window	**Harmony**	**Mandate**	**Royal Valley**	**Evergreen**
Intact	80(97.6%)	111 (74%)	69(94.5%)	73(93.6%)
Removed	2(2.4%)	39 (26%)	4(5.5%)	5(6.4%)
Total	**82(100%)**	**150(100%)**	**73(100%)**	**78(100%)**

4.2.4.6 Housing condition index

Analysis from the field survey based on housing condition index as shown in table 4.11 revealed that the general condition of housing units, using the housing condition index. It shows that ,at Harmony estate the condition was fair, at Mandate estate the condition was good, while at Royal valley and Evergreen estates the condition were very good. It was observed that the general level of housing condition at the two public estates was fair with all five housing condition indicators had an index score ranging between 2 and 2.3, at the private estates the general level of housing condition was very good with all five housing condition indicator shaving an index score ranging between 2.9 and 2.8.

Table 4.11: Housing Condition Index Rating Scale of Estates

Indicators	Harmony	Mandate	Royal Valley	Evergreen
Wall	2.0	2.2	2.9	2.9
Floor	2.1	2.1	2.9	2.9
Roof	2.1	2.2	2.7	2.7
Door	1.9	2.7	2.9	2.9
Window	1.9	2.7	2.9	2.9
Mean	2.0	2.3	2.9	2.8

Housing Condition Index Rating Scale
0-1 Very poor, 1.1- 1.5 Poor, 1.6 – 2.0 Fair, 2.1 – 2.5 Good and 2.6- 3.0 Very good

4.2.4.7 Housing condition in public and private estates

Table 4.12 revealed that in public housing estate,46% of dwelling units in Harmony estate were in good condition, 55% of the houses in Mandate Estate were good while in private housing estate; over 80% of the houses were in good state at Royal Valley and Evergreen Estate. However, in public housing estate, 42% of the houses in Harmony Estate were fair, 36% of the houses in Mandate Estate were fair while in private housing estate, less than 10% of the houses in Royal Valley and Evergreen Estate were fair. Also in Public housing estate 12% of the houses at Harmony Estate and 9% of the houses in

the Mandate estate were in poor condition. At private housing estate, less than 5% of the houses are in poor condition. This indicates that Private housing estate had the higher percentage of houses with good condition; this means that the housing units in the private estates have been given needed attention by owners compared to public housing estate.

Table 4.12: Housing Condition of the building elements in the Public and Private Estate

	Harmony	Mandate	Royal Valley	Evergreen
Good	346(46%)	225(55%)	328(90%)	348(89%)
Fair	313(42%)	148(36%)	29(8%)	32(8%)
Poor	91(12%)	37(9%)	8(2%)	10(3%)
Aggregate	750(100%)	410(100%)	365(100%)	390(100%)

4.3 Housing Affordability in Harmony and Mandate Housing Estate

The result as presented in Table 4.13 on the household monthly income in selected public housing estates revealed that at harmony estate the respondents that resided in two bedrooms flats earned an average monthly income of ₦123, 500 on monthly basis. However the respondents that resided in three-bedroom flat earned an average monthly income of ₦125, 500 and the respondents that resided in four-bedroom flat earned an average monthly income of ₦175, 500.

Also at the Mandate housing estate, the respondents that resided in two bedrooms flats earned an average monthly income of ₦129,000 on monthly basis, while the respondents that resided in three- bedroom flat earned an average monthly income of ₦125,000 , and the respondents that resided in four-bedroom flat earned an average monthly income of ₦177,500. These results revealed the majority of residents of the study area were medium-income earners this is based on the extent literature review on the categories of income earners in Nigeria, which states that a low-income earner is a

person who earns the National Minimum Wage or less as employment income. The current Minimum Wage in Nigeria stands NGN30, 000 per month or NGN360, 000 per annum (Finance Act 2020) A medium income earner should earn between NGN 75,000 to NGN 100,000 monthly (Robertson *et al.,* 2011). High income earners are those that earn above NGN 100,000 monthly. And since monthly take-home of the respondents were above₦30,000 monthly which is the current approved national wage by the federal government of Nigeria, it can be deduced that they are medium-income earners.

Table 4.13: Household Monthly Income in Public Housing Estates

Housing Types	Minimum	Maximum	Average
2 Bedroom	100000	147000	123,500
3 Bedroom	105000	146000	125,500
4 Bedroom	151000	200000	175,500
2 Bedroom	110000	148000	129,000
3 Bedroom	102000	149000	125,500
4 Bedroom	155000	200000	177,500

4.3.1 Housing affordability of evergreen and royal valley housing estate

The result depicted as shown in table 4.14, the household monthly income in a selected private housing estate, uncovered that at Evergreen estate, the respondents that dwelled in two-bed rooms apartment earned an average income of ₦250, 000, while the respondents that lived in three bedrooms bungalows earned an average income of ₦282,000 ; the respondents that lived in four bedrooms apartment earned ₦349,000 on monthly basis and those who lived in five bedrooms apartments get ₦476,000 as a monthly income. Likewise, at Royal Valley estate, the respondents that lived in two bedrooms houses earned an average of ₦174,500 on monthly basis, while the respondents that dwelled in three bedrooms apartment earned ₦173,500 per month and the respondents that lived in four-bedroom bungalow received an average monthly

income of ₦257,500, while those living in five-bedroom apartment earned an average of ₦449,000 on monthly bases. This shows that the highest number of household heads in the study area were high-income earners. Since their monthly income is far above₦30,000 per month or ₦360,000 per annual which is the current approved national wage by the federal government of Nigeria.

The implication of this is that those who earned above the ₦30,000 approved minimum wage or less are not found in a private estate, this means that only those who are high-income earners can be seen living in a private estate.

Table 4.14: Household Monthly Income in Private Housing Estates

Housing Types	Minimum	Maximum	Average
2 Bedroom	203000	297000	250,000
3 Bedroom	214000	350000	282,000
4 Bedroom	303000	395000	349,000
5 Bedroom	452000	500000	476,000
2 Bedroom	152000	197000	174,500
3 Bedroom	150000	197000	173,500
4 Bedroom	215000	300000	257,500
5Bedroom	410000	488000	449,000

4.3.2 Household monthly expenditure on mortgage in public housing estate

The result of the household monthly expenditure on a mortgage in public housing estates revealed that at Harmony estate the respondents that resided in two- bedrooms flat spent an average of ₦25, 000 out of their monthly income on housing. However the respondents that resided in three bedroom flat spent an average ₦33,333 out of their monthly income on housing and the respondents that resided in four bedrooms flat spent an average ₦37,500 out of their monthly income on housing.

Also at Mandate housing estate, the respondents paid similar on housing with people residing in harmony. The maximum housing expenditure for households as canvassed by the International Labour Organization (ILO) is 1% -30%, which is considered normal to allow households to meet other obligations for healthy living. Based on this, the 30% of the monthly income of respondents residing at two-bedroom flat at harmony estate is ₦37,050 and they spent an average ₦25,000 out of their monthly income on housing. This implies that the houses at the public estates in the study area are affordable.

Table 4.15: Household Monthly Expenditure on Mortgage in Public Housing Estate

Housing Types	Minimum	Maximum	Average
2 Bedroom	25,000	25,000	25,000
3 Bedroom	33,333	33,333	33,333
4 Bedroom	37,500	37,500	37,500
2 Bedroom	25,000	25,000	25,000
3 Bedroom	33,333	33,333	33,333
4 Bedroom	37,500	37,500	37,500

4.3.3 Household monthly expenditure on mortgage in private housing estate

The result as shown in Table 4.16 on the household monthly expenses on a mortgage in a private housing estate, revealed that at evergreen housing estate, those that lived in two-bedrooms apartments paid an average of ₦83,333 monthly on mortgage from their monthly income, while the respondents that lived in three-bedroom flat paid an average of ₦138,888 monthly on mortgage out of their monthly household income, the respondents that dwelled in four bed-rooms flat spend an average of ₦180,555 out of their monthly income on a mortgage while those living in five-bedroom apartment spend an average of ₦277,778 on mortgage out of their monthly income. In addition, the study also revealed that at royal valley estate, those that lived in two-bedrooms

apartments paid an average of ₦52,083 monthly on mortgage from their monthly income, while the respondents that lived in three-bedroom flat paid an average of ₦72,916 monthly on mortgage out of their monthly household income, the respondents that dwelled in four bed-rooms flat spend an average of ₦125,000 out of their monthly income on a mortgage while those living in five-bedroom apartment spend an average of ₦145,833 on mortgage monthly. The maximum housing expenditure for households as peddled by the International Labor Organization (ILO) is 1% - 30%, which is viewed as normal to allow families to meet different commitments for good living. Because of this, 30% of the monthly income of respondents living at a two-bedroom flat at the evergreen estate is ₦75,000 and they spend an average of ₦83,333 out of their monthly income on housing. This infers that the houses at the private housing estate in the study area are not affordable, thus it can be said that the occupants are paying through their sweat.

Table 4.16: Household Monthly Expenditure on Mortgage in Private Housing Estate

Housing Types	Minimum	Maximum	Average
2 Bedroom	83,333	83,333	83,333
3 Bedroom	138,888	138,888	138,888
4 Bedroom	180,555	180,555	180,555
5 Bedroom	277,778	277,778	277,778
2 Bedroom	52,083	52,083	52,083
3 Bedroom	72,916	72,916	72,916
4 Bedroom	125,000	125,000	125,000
5Bedroom	145,833	145,833	145,833

4.3.4 Household monthly expenditure of mortgage in both public and private estate

The study assessed further to determined the monthly expenditure of the mortgage in both public and private estate of the study area. The analysis shown in Table 4.17 revealed that the respondents in two bedroom flat within harmony estate, spent 20% of

their monthly income on housing, occupants of three bedroom flat spent 27% of their monthly income on housing while the occupants of four bedroom bungalows spent 21% of their monthly income on housing. This indicates that, the majority of the respondents spend below 30% of their monthly income on housing, which is standard and acceptable way of measuring housing affordability by the International Labor Organization (ILO).

Table 4.17: Household Monthly Income and Percentage Spent on Housing in Harmony Estate

Number of Rooms	Monthly Income	Monthly Expenditure on housing	Percentage of income spent on housing
Two Bedroom	123,500	25,000	20%
Three Bedroom	125,500	33,333	27%
Four Bedroom	175,500	37,500	21%

4.3.5 Household monthly expenditure on housing in mandate estate

The level of household monthly expenditure on the mortgage in Mandate estate is presented in Table 4.18. The study revealed that the respondents in two bedroom flats spent 19% of their monthly income on housing, occupants of three bedroom apartments spent 27% of their monthly income on housing, while those in four bedroom bungalows spent 21% of their monthly income on housing. However, by the standard set by International Labor Organization (ILO), from this analysis, it can be said that the occupants of Mandate estate spent below 30% of their monthly income on housing which is an appropriate. This is accepted by the International Labor Organization (ILO), because it allows other needs of man to be meet without suffering.

Table 4.18: Household Monthly Income and Percentage Spent on Housing in Mandate Estate

Number of Rooms	Monthly Income	Monthly Expenditure on housing	Percentage of income spent on housing
Two Bedroom	129,000	25,000	19%
Three Bedroom	125,500	33,333	27%
Four Bedroom	175,500	37,500	21%

4.3.6 Household Monthly Expenditure on Housing in Royal valley Estate

The result as shown in Table 4.19, on the household monthly expenses on a mortgage in a private housing estate, revealed that at Royal Valley Estate, residents of two bedroom apartments spent 30% of their monthly income on the remuneration of a mortgage, occupants of three bedrooms spent 42% of their monthly income on housing, respondents in four bedroom flat spent 49% of their monthly income on housing while the occupants of five bedroom flat spent 32% of their monthly income on housing. However the maximum housing expenditure for households as canvassed by the International Labor Organization (ILO) is not more than 30%, which is considered normal to allow households to meet other obligations for healthy living. Based on this, the majority of respondents residing at Royal Valley Estate spent more than 30% of the monthly income on housing.

Table 4.19: Household Monthly Income and Percentage Spent on Housing in Royal valley Estate

Number of Rooms	Monthly Income	Monthly Expenditure on housing	Percentage of income spent on housing
Two Bedroom	174,500	52,083	30%
Three Bedroom	173,500	72,916	42%
Four Bedroom	257,500	125,000	49%
Five Bedroom	449,000	145,833	32%

4.3.7 Household monthly expenditure on housing in evergreen estate

The study analysis as depicted in Table 4.20 demonstrated that, 33% of monthly income is spent on housing by the occupants of the two bedroom flat, respondents in three bedroom bungalows spent 49% of their total monthly income on housing, the occupants of four bedroom flat spent 52% of their monthly income on housing while 58% of the total income is spent on housing by the occupants of five bedrooms in evergreen estate. The most extreme housing expenditure for the household as campaigned by the international labour organization (ILO) is that, it should not be more than 30% of the monthly household income, which is viewed as ordinary to permit families to meet different commitments for solid living. In view of this, most of the respondent's dwelling at evergreen estate spent over 30% of their monthly income on remuneration of a mortgage.

Table 4.20: Household Monthly Income and Percentage Spent on Housing in Evergreen Estate

Number of Rooms	Monthly Income	Monthly Expenditure on housing	Percentage of income spent on housing
Two Bedroom	250,000	83,333	33%
Three Bedroom	282,000	138,888	49%
Four Bedroom	349,000	180,555	52%
Five Bedroom	476,000	277,778	58%

4.4 Level of Housing Livability in the Public and Private Housing Estates

4.4.1 Level of housing livability in harmony housing estates

The level of housing livability in the public and private housing estates occupied by the respondents was assessed through the use of Mean Weight Value (MWV).Livability Index was also calculatedusing a likert scale of 0-1.49 Very Low, 1.50-2.49 Low, 2.50-3.49 Moderate, 3.50-4.49 High and 4.50-5.00 Very high to provide future reference. Ten (10) indicators adapted from extant literature review were used, The indicators are location (access to other part of the town), health (access to primary healthcare facility), housing quality, economic opportunity, safety of lives and properties, neighborhood quality, access to basic education, access to potable water, access to civic/social engagement, and access to communication/internet facility.

The findings from the Harmony estate were presented in Table 4.2. it revealed that accessibility of the estate to other parts of the town and access to civic/ social

engagement were ranked high with a MWV= 368 and 294 and livability index of 4.49 and 3.59 respectively.

Accessibility to health care facility =MWV of 286 and livability index of 3.49, access to economic opportunity =MWV of 2777 and livability index of 3.38, safety of the housing estate= MWV of 206 and livability index of 2.51, accessibility to basic education=MWV of 209 and livability index of 2.55 while access to communication/internet facility= MWV of 286 and livability index of 3.49 which are all ranked moderate.

The neighborhood quality, quality of the housing and access to water were the least ranked indicators with a MWV= 201, 203 and 147 and livability index of 2.45, 2.48 and 1.79 respectively. The overall level of livability was however still within the moderate livability index range, based on the average of 3.02.

Table 4.21: Livability Index of Harmony Estate

Indicators	**MWV**	**Livability Index**	**Remark**
Accessibility of the estate to other parts of the town	368	4.49	High
Accessibility to health care facility	286	3.49	Moderate
Quality of the housing	203	2.48	Low
Access to economic opportunity	277	3.38	Moderate
Safety of the housing estate	206	2.51	Moderate
Quality of the neighborhood	201	2.45	Low
Accessibility to basic education	209	2.55	Moderate
Access to water	147	1.79	Low
Access to civic/ social engagement	294	3.59	High
Access to communication/internet facility	286	3.49	Moderate
Average		**3.02**	**Moderate**

MWV= Mean of weighted value

4.4.2 Level of housing livability in mandate housing estates

Field survey from the mandate estate was analyze as shown in Table 4.22, which revealed that the accessibility of the estate to other parts of the town and access to economic opportunity were ranked high with a MWV= 534, 528 and livability index of 3.56, 3.52 respectively; access to communication/internet facility= MWV of 522 and livability index of 3.48, access to civic/ social engagement=MWV of 524 and livability index of 3.49, access to water= MWV of 302 and livability index of 2.01.

Accessibility to basic education =MWV of 382 and livability index of 2.55, quality of the neighborhood=MWV of 377 and livability index of 2.51, quality of the housing=MWV of 376 and livability index of 2.51, accessibility to health care facility=MWV of 380 and livability index of 2.53are all ranked moderate.

It was also discovered that safety of the housing estate was ranked low and the least in the table with MWV of 371 and livability index of 2.47. The average livability index of the entire estate is 2.86 which is said to be moderate.

Table 4.22: Livability index of Mandate Estate

Indicators	MWV	Livability Index	Remark
Accessibility of the estate to other parts of the town	534	3.56	High
Accessibility to health care facility	380	2.53	Moderate
Quality of the housing	376	2.51	Moderate
Access to economic opportunity	528	3.52	High
Safety of the housing estate	371	2.47	Low
Quality of the neighborhood	377	2.51	Moderate
Accessibility to basic education	382	2.55	Moderate
Access to water	302	2.01	Moderate
Access to civic/ social engagement	524	3.49	Moderate
Access to communication/internet facility	522	3.48	Moderate
Average		**2.86**	**Moderate**

MWV= Mean of weighted value

4.4.3 Level of housing livability in evergreen housing estates

The livability index of evergreen estate is presented in the table 4.23. The table indicated that safety of the housing estate recorded MWV of 372 with livability index of 4.54, Accessibility to basic education has MWV of 373 with livability index of 4.55, access to water recorded MWV of 372 and index of 4.54 were rated to be very high. This implies that (safety of the estate, access to water, access to basic education) are in good condition. Furthermore in evergreen estate, access of the estate to other parts of the town recorded an MWV of 295 with livability index of 3.60, access to health care facility has an MWV of 368 with an index of 4.49, access to economic opportunity has an MWV of 287 with index of 3.50, quality of housing recorded MWV of 368 with an index of 4.49, access to communication/internet facility has an MWV of 362 and index of 4.41, were all ranked high.

The least ranking in evergreen estate is access to social and civic engagement which has MWV of 283 and index of 3.45 were moderate. On the average, the livability index of the evergreen estate is 4.20, and this implies that general livability index of evergreen estate is high.

Table 4.23: Livability index of Evergreen Estate

Indicators	MWV	Livability Index	Remark
Accessibility of the estate to other parts of the town	295	3.60	High
Accessibility to health care facility	368	4.49	High
Quality of the housing	368	4.49	High
Access to economic opportunity	287	3.50	High
Safety of the housing estate	372	4.54	Very High
Quality of the neighborhood	364	4.44	High
Accessibility to basic education	373	4.55	Very High
Access to water	372	4.54	Very High
Access to civic/ social engagement	283	3.45	Moderate
Access to communication/internet facility	362	4.41	High
Average		**4.20**	**High**

MWV= Mean of weighted value

4.4.4 Level of housing livability in Royal Valley housing estates

Analysis rating of housing livability in royal valley housing estate were carried out and the result is indicated in table 4.24, it was established that quality of neighborhood recorded 4.55 of livability index, accessibility to basic education has 4.54 of livability index, access to water recorded 4.62 of livability index; this shows that, the livability index of the above mention indicators were rated very high.

Furthermore, access to health care facility has a livability index of 4.36, quality of housing recorded 4.38 of index, safety of the estate is 4.49 livability index, access to communication/internet facility has 4.49; this implies that (access to health care facility, quality of housing, safety of the estate, access to communication/internet facility) are high in rating according to the livability index.

Similarly, accessibility of the estate to the other part of the town recorded 3.09 index, access to economic opportunity has 3.49 and access to social/civic engagement produced 2.55 index which were moderate. The overall level of general living condition of royal valley estate was high livability index range; this is based on the average of 4.06

Table 4.24: Livability index of Royal valley Estate

Indicators	MWV	Livability Index	Remark
Accessibility of the estate to other parts of the town	213	3.09	Moderate
Accessibility to health care facility	301	4.36	High
Quality of the housing	302	4.38	High
Access to economic opportunity	241	3.49	Moderate
Safety of the housing estate	310	4.49	High
Quality of the neighborhood	314	4.55	Very high
Accessibility to basic education	313	4.54	Very high
Access to water	319	4.62	Very high
Access to civic/ social engagement	176	2.55	Moderate
Access to communication/internet facility	310	4.49	High
Aggregate		**4.06**	**High**

MWV= Mean of weighted value

4.5 Analysis of Relationship in Housing Affordability and Livability across the Estates

The result on housing affordability and livability index serve as a basis for further analysis on the relationship in housing affordability and livability across the four (4) estates which are public and private estate in the study area.

4.5.1 Relationship in housing affordability between Mandate and Harmony estate

Table 4.25shows that the relationship between Mandate and Harmony estate on affordability. Analysis of variance (ANOVA) was used in getting the result. F value was recorded as 1.067 and P value (significance) figures were recorded as 0.341, which shows that there no statistically significance difference of housing affordability between mandate and harmony estate since the significance figure is greater than (>) 0.05 confidence level. This implies that the level of affordability of houses in the two public estates is similar.

Table 4.25: Relationship in housing affordability between Mandate and Harmony Estate

Mandate and Harmony Estate	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	66.125	1	66.125	1.067	.341
Within Groups	371.750	6	61.958		
Total	437.875	7			

4.5.2 Relationship in housing affordability between Royal Valley and Evergreen estate

The relationship in the level of housing affordability between royal and evergreen estate is presented in table 4.26. The result of the ANOVA test shows an F statistics value of 0.826 and a p value (significant) 0.399 was recorded. The p value recorded is greater than 0.05(95% confidence level). Therefore, this implies that there is no statistically significant variation in the level of housing affordability between royal and evergreen estate. That is, the level of affordability of houses in the two private estates is the same.

Table 4.26: Relationship in housing affordability between Royal valley and Evergreen estate

Royal Valley and Evergreen Estate	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	128.000	1	128.000	.826	.399
Within Groups	930.000	6	155.000		
Total	1058.000	7			

4.5.3 Relationship in housing affordability between Public and Private Estate

Further analysis was conducted to determine the relationship in housing affordability between public and private estate. Result was shown in Table 4.27, which was gotten by the use of analysis of variance (ANOVA), F statistics value were recorded as 185.468and P- value (significance) were recorded as 0.000, This implies that there is

statistically significance relationship in the level of housing affordability between public and private estate since the significance figure is less than (<) 0.05 confidence level. In view of this, it can be said that the houses in public housing estates are more affordable than the houses in private estates.

Table 4.27: Relationship in housing affordability between Public and Private Estate

Public and Private	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15708.781	1	15708.781	185.468	.000
Within Groups	508.188	6	84.698		
Total	16216.969	7			

4.5.4 Relationship in housing livability between Mandate and Harmony Estate

The relationship in the level of housing livability between mandate and harmony estate is presented in Table 4.28. The result of the ANOVA test shows an F statistics value of 0.262 and a p value (significant) 0.615. The p value recorded is greater than 0.05(95% confidence level). Therefore, this implies that there is no statistically significant relationship in the level of housing livability between Mandate and Harmony estate. That is, the level of livability in the estate is not significant different; the houses in the two public estates are the same in terms of facilities and quality of the estates.

Table 4.28: Relationship in housing livability between Mandate and Harmony estate

Mandate and Harmony Estate	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.126	1	.126	.262	.615
Within Groups	8.699	18	.483		
Total	8.825	19			

4.5.5 Relationship in housing livability between Royal valley and Evergreen estate

The relationship in the degree of livability between the Royal valley and Evergreen estate is presented in Table 4.29. The consequence of the ANOVA test shows an F statistics value of 0.273 and a p value (significant) 0.608. The p value recorded is greater than 0.05(95% confidence level). Consequently; this suggests that there is no statistically significant variation in the level of housing between Royal valley and Evergreen estate. That is, the degree of livability of the two private estates is not significantly difference. In addition, the houses in the two private estates are the same in terms of facilities and quality of the estates.

Table 4.29: Relationship in housing livability between Royal and Evergreen Estate

Royal and Evergreen Estate	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.105	1	.105	.273	.608
Within Groups	6.928	18	.385		
Total	7.033	19			

4.5.6 Relationship in housing livability between Public and Private Estate

Table 4.30 shows that the relationship in housing livability between public and private estate. The result was deduced through the use of analysis of variance (ANOVA), F statistics value recorded as 17.685 and P- value (significance) recorded as 0.001, this implies that there is statistically significance relationship in housing livability between public and private estate since the significance figure is less than (<) 0.05 confidence level. This means that there were better houses with good facilities in private housing estate than public housing estate, which makes private estate more livable than public estate.

Table 4.30: Relationship in housing livability between Public and Private Estate

Public and private Estate	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.033	1	7.033	17.685	.001
Within Groups	7.158	18	.398		
Total	14.191	19			

4.6 Summary of Findings

4.6.1 Social-economic characteristics

The greater percentages of the respondents in both public and private estate were male with an overall proportion of 82.5% male and 17.5% females. The highest occupation in the study area is those that are self-employed which account for 39.7% followed by business which is 34.2% and civil servant with the least percentage which is 26.1%. Also, the study discovered that a greater proportion of respondents had tertiary education which is 62.2%, Secondary education has 35% and primary education has 2.3%.

4.6.2 Housing types and conditions

The study found out that the majority of the houses in both public and private estate (65.8%) were bungalows. These buildings comes in form of two bedroom, three bedroom, four bedroom and five bedroom. Floor conditions shown in the results revealed that the majority of the houses have their floors intact (50.4%). It was also discovered that the highest percentage of roofs in study area were rusted (53%). Study also found out that 87% of the doors and windows were intact within the study area.

In summary, harmony estate has 46% of dwelling units that were in good condition, 55% of the houses in mandate estate are good while in private housing estate, 90% of

the houses were in good state at royal valley, and 89% of the houses in evergreen estate were good.

4.6.3 Housing affordability in the study area

The greater percentage of the sample population in public estates earned between a minimum of ₦ 123,500 monthly – a maximum of ₦177,500 monthly, while those in private estate earned between an minimum of ₦250,000 –a maximum of ₦449,000 monthly. This is an indication that the majority of the respondents are high income earners and medium income earners in the study area. The monthly expenditure of the occupants of public estates were, minimum of ₦25,000 monthly and a maximum of ₦37,500 monthly spent on housing while their counterparts in private estates, spent a minimum of ₦83,333 monthly and a maximum of ₦145,000 monthly on housing. Therefore the percentage of monthly income spent on housing is public estate is between 19% to 27% while in private estate, the percentage of monthly income spent on housing is between 30% to 58%.

4.6.4 Housing livability in the study area

The study also find out that Harmony and Mandate estates has an average livability index of 3.02 and 2.86 respectively which are moderate in ranking of the livability index. It was also recorded that Evergreen estate and Royal valley estates, has an average livability index of 4.20 and 4.06 respectively, this is high in the livability index of the study.

4.6.5 Relationship in housing affordability and livability

The relationship in the level of housing livability between the two public estates shows that there was no difference between the two estates, also there was no difference between the two private housing estates, but there was a great difference in terms of

livability between public and private estate. However, the variation in the level of affordability between the two public estates revealed that there was no difference between the two estates, while in private estates, it was recorded that there was no difference between the two estates, but there was a great difference in terms of affordability between public and private estate.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Housing affordability and livability are identified as key prerequisites to the wellbeing of individuals in both private and public estates in developed or developing countries. This is because housing impact on other important areas of life. For the purpose of this study, types and conditions of the houses within the estates were considered. However, other objectives were also taken into consideration such as to determine the affordability of the houses within the estates in Ilorin. This study particularly focus on Public and Private Estates; taking into consideration average monthly income of the household, average monthly expenditure of the household on housing and the livability of the houses. This study observed that housing affordability is influenced by the major indicators which are income level of the residents and monthly expenditure of occupants on housing.

The study results concluded that the condition of some housing components such as walls, roofs, floor, doors and windows in majority of the houses within the public housing estates were not in good condition while in private estate, the majority of the houses have their walls, roofs, doors, floor, and windows were intact and good. Single family houses such as two bedroom bungalows, three bedroom bungalows, four bedroom bungalows and a few five bedroom low rise buildings were recorded during the survey.

The study also concluded that the houses in public housing estates were more affordable. This is because the expenditures on housing in public estate were between 19% to 27% of the occupants‟ monthly income. The study concluded that the majority

of the occupants in the public housing estate were medium income earners who earn between ₦123,500- ₦177,500 monthly. In private housing estate however, it was concluded that the houses were not affordable due to the level of household monthly income spent on housing. The occupants of private housing estates in the study area, spent between 30% to 58% of their monthly income on housing. This infers that they are paying the mortgage in pains or allowing some other needs of man to suffer which might affect their quality of life. Going by the standard set by International Labor Organization (ILO), it can be concluded that the houses in private housing estate were not affordable.

From the result of the analysis, it can be concluded that the houses in private housing estate were livable with all the indicators rated good; while in public housing estate, houses were not livable because some of the indicators rated fair or poor in condition.

Finally, the study concluded that there is a relationship between the affordability and the livability of the housing. It is therefore concluded that, those in private estates pay higher percentage of their monthly income as mortgage for almost the same type of housing in public estates, but they enjoy better environment and living condition than those in public estates. However, those in public estates pays less for mortgage than those in private estate but the environment is not as livable as expected.

5.2 Recommendations

Base on the findings of the study, the following recommendations are made:

The research shows that there is serious housing condition problem that needs urgent attention of both public and private developers. Therefore, government on the other hand is recommended to come up with policies that will enhance compulsory periodic

maintenance of major building elements like walls, floors, roofs, doors and windows in public housing estates.

There should be an arrangement from the executive and legislative arms of the government that will regulate the cost of housing in the estates built by private developers, government should also introduced gross subsidy in terms of housing provision. This will allow low income earners to acquire affordable and quality houses without paying more than 30% of their monthly income on housing, In addition, highlights should be put on the use of well processed local building materials such as burnt briks, compressed earth bricks etc. This will help in diminishing the cost of housing, hence making it affordable for all.

The checklist shows that private estate are more livable than public estate, it is therefore recommended that collective effort should be made by the occupants of public estates to enhance the efficiency of the facilities and infrastructure provided within the public estates ,such facilities that needed to be improved are portable water, they should also improved the general quality of the neighborhood, the quality of houses needed serious attention, Schools should be well equipped with necessary equipments and lastly the security of the estate should be improved upon by the occupants of the public estate as well as the government so as to make the estate livable.

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APPENDIX A

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA SCHOOL OF POST GRADUATE STUDIES DEPARTMENT OF URBAN AND REGIONAL PLANNING

QUESTIONNAIRE

Dear Sir/Madam,

This questionnaire is designed specifically for a research in the area of comparative analysis of housing affordability and liveability in public and private housing estates in Ilorin, Nigeria.

All the information that will be given to the researcher will be strictly for academic purposes. Thank you for your co-operation.

SECTION A: SOCIO- ECONOMIC CHARACTERISTICS OF THE RESPONDENT

1. Gender (A) Male (B) Female
2. Education Status (A)Tertiary (B)Secondary (C)Primary (D)No formal education/Quranic
3. Occupation (A) Civil servant (B) Self-employed (C) Artisans) (D) Farming (E) Business/Trading
4. Age of household head (a) 18-30 (b) 31-43 (c) 44-56 (d) 57-69 (e) 70 and above
5. Marital Status (a) Married (b) Single (c) Separated (d) Widow/Widower

B. HOUSING TYPES SURVEY

1. Type of house based on structure and design (a) Single detached bungalow (b) Semi detached bungalow (c) multiple row
2. Types of housing based on internal composition/ height
   a) Bungalow b) Terrace c) low rise d) high rise
3. Types of housing based on building materials a) Cement b) mud c) Bricks
4. Types of housing based on number of rooms.(a) Two (b) Three (c) Four (d) Five

C. HOUSING CONDITION SURVEY

1. Condition of wall (a) Intact (b) Crack (c) Broken (d) Dilapidated
2. Condition of roof a) Intact b) Rusted c) part missing
3. Condition of floor a) Intact b) cracked c) eroded
4. Condition of doors a) Intact b) Broken c) Removed
5. Condition of windows a) Intact b) Broken c) Removed

D. HOUSING AFFORADABILITY SURVEY

1. Household monthly income for 2bedroom occupants

(a) ₦ 100,00-₦200,000 (b) ₦201,000-₦ 300,000(c) ₦301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

2. Household monthly income for 3bedroom occupants

(a) ₦ 100,00-₦ 200,000 (b) ₦201,000-₦ 300,000 (c) ₦ 301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

3. Household monthly income for 4bedroom occupants

(a) ₦ 100,00-₦ 200,000 (b) ₦201,000-₦ 300,000 (c) ₦ 301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

4. Household monthly income for 5bedroom occupants

(a) ₦ 100,00-₦ 200,000 (b) ₦201,000-₦ 300,000 (c) ₦ 301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

5. Household monthly expenditure for 2bedroom occupants

(a) ₦ 100,00-₦ 200,000 (b) ₦201,000-₦ 300,000 (c) ₦ 301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

6. Household monthly expenditure for 3bedroom occupants

(a) ₦ 100,00-₦ 200,000 (b) ₦201,000-₦ 300,000 (c) ₦ 301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

7. Household monthly expenditure for 4bedroom occupants

(a) ₦ 100,00-₦ 200,000 (b) ₦201,000-₦ 300,000 (c) ₦ 301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

8. Household monthly expenditure for 5bedroom occupants

(a) ₦ 100,00-₦ 200,000 (b) ₦201,000-₦ 300,000 (c) ₦ 301,000-₦ 400,000 (d) ₦ 401,000-₦ 500,000

HOUSING LIVABILITY SURVEY

INDICATORS	5	4	3	2	1
Accessibility of the estate to other parts of the town					
Accessibility to health care facility					
Quality of the housing					
Access to economic opportunity					
Safety of the housing estate					
Quality of the neighborhood					
Accessibility to basic education					
Access to water					
Access to civic/ social engagement					
Access to communication/internet facility					

APPENDIX B

MONTHLY INCOME OF TWO BEDROOM OCCUPPANTS AT HARMONY ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
3000000	25000	30000	147783
3000000	25000	30000	131817
3000000	25000	30000	147125
3000000	25000	30000	100874
3000000	25000	30000	143140
3000000	25000	30000	140339
3000000	25000	30000	137953
3000000	25000	30000	122377
3000000	25000	30000	107170
3000000	25000	30000	118456
3000000	25000	30000	133844
3000000	25000	30000	107890
3000000	25000	30000	124049
3000000	25000	30000	147582
3000000	25000	30000	129643
3000000	25000	30000	142398
3000000	25000	30000	136268
3000000	25000	30000	104628
3000000	25000	30000	118896
3000000	25000	30000	121831
3000000	25000	30000	147689
3000000	25000	30000	134716
3000000	25000	30000	147098
3000000	25000	30000	146478
3000000	25000	30000	129356
3000000	25000	30000	121021
3000000	25000	30000	104091
3000000	25000	30000	126286
3000000	25000	30000	132650
3000000	25000	30000	105097
3000000	25000	30000	134032
3000000	25000	30000	100877
3000000	25000	30000	121816
3000000	25000	30000	121769
3000000	25000	30000	119127
3000000	25000	30000	102105
3000000	25000	30000	131497
3000000	25000	30000	144920
3000000	25000	30000	119039
3000000	25000	30000	141159

3000000	25000	30000	136013
3000000	25000	30000	116915
3000000	25000	30000	139029
3000000	25000	30000	102484
3000000	25000	30000	137989
3000000	25000	30000	108643
3000000	25000	30000	115200

MONTHLY INCOME OF THREE BEDROOM OCCUPPANTS AT HARMONY ESTATE

Price of the building	Monthly Expenses	Min Wage	Hhincom
4000000	33333	30000	105698
4000000	33333	30000	116983
4000000	33333	30000	140838
4000000	33333	30000	146428
4000000	33333	30000	133982
4000000	33333	30000	121297
4000000	33333	30000	110940
4000000	33333	30000	122507
4000000	33333	30000	119025
4000000	33333	30000	116288
4000000	33333	30000	143901
4000000	33333	30000	121097
4000000	33333	30000	130110
4000000	33333	30000	136892
4000000	33333	30000	142173
4000000	33333	30000	115055
4000000	33333	30000	136541
4000000	33333	30000	125990
4000000	33333	30000	130816
4000000	33333	30000	121615
4000000	33333	30000	113771

MONTHLY INCOME OF FOUR BEDROOM OCCUPPANTS AT HARMONY ESTATE

Price of the building	Monthly Expenses	Min Wage	Hhincom
4500000	37500	30000	183259
4500000	37500	30000	156885
4500000	37500	30000	164602
4500000	37500	30000	190249
4500000	37500	30000	199305
4500000	37500	30000	152667
4500000	37500	30000	197942
4500000	37500	30000	158632
4500000	37500	30000	167198
4500000	37500	30000	176660
4500000	37500	30000	151383
4500000	37500	30000	160695
4500000	37500	30000	155414
4500000	37500	30000	154630

APPENDIX C

MONTHLY INCOME OF TWO BEDROOM OCCUPPANTS AT MANDATE ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
3000000	25000	30000	136393
3000000	25000	30000	113177
3000000	25000	30000	138628
3000000	25000	30000	103288
3000000	25000	30000	125783
3000000	25000	30000	127846
3000000	25000	30000	117765
3000000	25000	30000	142657
3000000	25000	30000	119109
3000000	25000	30000	115812
3000000	25000	30000	103160
3000000	25000	30000	100854
3000000	25000	30000	145349
3000000	25000	30000	109712
3000000	25000	30000	128184
3000000	25000	30000	140856
3000000	25000	30000	105642
3000000	25000	30000	106841
3000000	25000	30000	103100
3000000	25000	30000	122862
3000000	25000	30000	109527
3000000	25000	30000	124197
3000000	25000	30000	136395
3000000	25000	30000	100993
3000000	25000	30000	138630
3000000	25000	30000	100736
3000000	25000	30000	122703
3000000	25000	30000	136913
3000000	25000	30000	146132
3000000	25000	30000	140691
3000000	25000	30000	120861
3000000	25000	30000	134493
3000000	25000	30000	126053
3000000	25000	30000	133240
3000000	25000	30000	123611
3000000	25000	30000	129417
3000000	25000	30000	117075
3000000	25000	30000	105149
3000000	25000	30000	132950
3000000	25000	30000	126260
3000000	25000	30000	147737

3000000	25000	30000	131674
3000000	25000	30000	146152
3000000	25000	30000	110966
3000000	25000	30000	143898
3000000	25000	30000	125321
3000000	25000	30000	130771
3000000	25000	30000	117598
3000000	25000	30000	129115
3000000	25000	30000	143503
3000000	25000	30000	120515
3000000	25000	30000	103265
3000000	25000	30000	105253
3000000	25000	30000	139955
3000000	25000	30000	135873
3000000	25000	30000	134148
3000000	25000	30000	140426
3000000	25000	30000	143070
3000000	25000	30000	137312
3000000	25000	30000	118594
3000000	25000	30000	133065
3000000	25000	30000	147440
3000000	25000	30000	147721
3000000	25000	30000	132263

MONTHLY INCOME OF THREE BEDROOM OCCUPPANTS AT MANDATE ESTATE

Price of the building	Monthly Expenses	Min Wage	Hhincom
4000000			33333.3333
		30000	122360
4000000			33333.3333
		30000	119292
4000000			33333.3333
		30000	115385
4000000			33333.3333
		30000	137663
4000000			33333.3333
		30000	124416
4000000			33333.3333
		30000	136494
4000000			33333.3333
		30000	129834
4000000			33333.3333
		30000	109491
4000000			33333.3333
		30000	143723
4000000			33333.3333
		30000	144740

4000000			33333.3333
		30000	118982
4000000			33333.3333
		30000	142771
4000000			33333.3333
		30000	142171
4000000			33333.3333
		30000	133213
4000000			33333.3333
		30000	116095
4000000			33333.3333
		30000	107252

4000000	33333.3333	30000	110398
4000000	33333.3333	30000	126166
4000000	33333.3333	30000	136732
4000000	33333.3333	30000	117564
4000000	33333.3333	30000	118396
4000000	33333.3333	30000	110649
4000000	33333.3333	30000	140775
4000000	33333.3333	30000	102776
4000000	33333.3333	30000	145341
4000000	33333.3333	30000	149197
4000000	33333.3333	30000	135524
4000000	33333.3333	30000	108064
4000000	33333.3333	30000	141948
4000000	33333.3333	30000	139016
4000000	33333.3333	30000	138411
4000000	33333.3333	30000	106595
4000000	33333.3333	30000	141982
4000000	33333.3333	30000	104514
4000000	33333.3333	30000	117984
4000000	33333.3333	30000	121773
4000000	33333.3333	30000	141712
4000000	33333.3333	30000	125222
4000000	33333.3333	30000	108426
4000000	33333.3333	30000	105793
4000000	33333.3333	30000	118203
4000000	33333.3333	30000	141150
4000000	33333.3333	30000	119529

MONTHLY INCOME OF FOUR BEDROOM OCCUPPANTS AT MANDATE ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
4500000	37500	30000	159741
4500000	37500	30000	164848
4500000	37500	30000	170561
4500000	37500	30000	199951
4500000	37500	30000	169561
4500000	37500	30000	170568
4500000	37500	30000	187878
4500000	37500	30000	167478
4500000	37500	30000	184217
4500000	37500	30000	158214
4500000	37500	30000	197282
4500000	37500	30000	156687
4500000	37500	30000	193053

4500000	37500	30000	198388
4500000	37500	30000	178768
4500000	37500	30000	156851
4500000	37500	30000	185288
4500000	37500	30000	155912
4500000	37500	30000	175050
4500000	37500	30000	164474
4500000	37500	30000	183239
4500000	37500	30000	152702
4500000	37500	30000	166569
4500000	37500	30000	185244
4500000	37500	30000	167222
4500000	37500	30000	163360
4500000	37500	30000	184670
4500000	37500	30000	172146
4500000	37500	30000	152377
4500000	37500	30000	190437
4500000	37500	30000	171886
4500000	37500	30000	165297
4500000	37500	30000	159216
4500000	37500	30000	176371
4500000	37500	30000	189119
4500000	37500	30000	193268
4500000	37500	30000	154619
4500000	37500	30000	171846
4500000	37500	30000	182206
4500000	37500	30000	177907
4500000	37500	30000	154249
4500000	37500	30000	199033
4500000	37500	30000	199128

APPENDIX D

MONTHLY INCOME OF TWO BEDROOM OCCUPPANTS AT EVERGREEN ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
6000000	83333.3	30000	226298
6000000	83333.3	30000	249755
6000000	83333.3	30000	223183
6000000	83333.3	30000	258791
6000000	83333.3	30000	271422
6000000	83333.3	30000	227743
6000000	83333.3	30000	228096
6000000	83333.3	30000	203360
6000000	83333.3	30000	297752
6000000	83333.3	30000	247658
6000000	83333.3	30000	259216
6000000	83333.3	30000	252286
6000000	83333.3	30000	217129
6000000	83333.3	30000	260604
6000000	83333.3	30000	262291
6000000	83333.3	30000	261524
6000000	83333.3	30000	296618
6000000	83333.3	30000	264185
6000000	83333.3	30000	264185

MONTHLY INCOME OF THREE BEDROOM OCCUPPANTS AT EVERGREEN ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
10000000	138888.9	30000	266649
10000000	138888.9	30000	254642
10000000	138888.9	30000	272540
10000000	138888.9	30000	214432
10000000	138888.9	30000	226883
10000000	138888.9	30000	288532
10000000	138888.9	30000	317698
10000000	138888.9	30000	346714
10000000	138888.9	30000	244698
10000000	138888.9	30000	269833
10000000	138888.9	30000	230440
10000000	138888.9	30000	329628
10000000	138888.9	30000	327532

10000000	138888.9	30000	250037
10000000	138888.9	30000	320376
10000000	138888.9	30000	282464
10000000	138888.9	30000	222013
10000000	138888.9	30000	328318
10000000	138888.9	30000	250634
10000000	138888.9	30000	280887
10000000	138888.9	30000	233014
10000000	138888.9	30000	296058
10000000	138888.9	30000	286131
10000000	138888.9	30000	265649
10000000	138888.9	30000	251197
10000000	138888.9	30000	235933
10000000	138888.9	30000	286477
10000000	138888.9	30000	330497
10000000	138888.9	30000	341187
10000000	138888.9	30000	270073
10000000	138888.9	30000	312589
10000000	138888.9	30000	295047

MONTHLY INCOME OF FOUR BEDROOM OCCUPPANTS AT EVERGREEN ESTATE

Price of the building	Monthly Expenses	Min Wage
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000
13000000	180555.6	30000

MONTHLY INCOME OF FIVE BEDROOM OCCUPPANTS AT EVERGREEN ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
20000000	277777.8	30000	453904
20000000	277777.8	30000	491061
20000000	277777.8	30000	457538
20000000	277777.8	30000	495068
20000000	277777.8	30000	493297
20000000	277777.8	30000	488721
20000000	277777.8	30000	496079
20000000	277777.8	30000	459868
20000000	277777.8	30000	488618
20000000	277777.8	30000	452583
20000000	277777.8	30000	453207
20000000	277777.8	30000	496942
20000000	277777.8	30000	493832
20000000	277777.8	30000	485886
20000000	277777.8	30000	499154
20000000	277777.8	30000	468220
20000000	277777.8	30000	458703
20000000	277777.8	30000	476944

APPENDIX E

MONTHLY INCOME OF TWO BEDROOM OCCUPPANTS AT ROYAL VALLEY ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
5000000	52083.3	30000	168881
5000000	52083.3	30000	163813
5000000	52083.3	30000	169689
5000000	52083.3	30000	167863
5000000	52083.3	30000	152501
5000000	52083.3	30000	162066
5000000	52083.3	30000	195451
5000000	52083.3	30000	175329
5000000	52083.3	30000	197255
5000000	52083.3	30000	177788
5000000	52083.3	30000	160571
5000000	52083.3	30000	162524
5000000	52083.3	30000	181763
5000000	52083.3	30000	165987
5000000	52083.3	30000	161402
5000000	52083.3	30000	181434
5000000	52083.3	30000	164923

MONTHLY INCOME OF THREE BEDROOM OCCUPPANTS AT ROYAL VALLEY ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
7000000	72916.7	30000	167785
7000000	72916.7	30000	195481
7000000	72916.7	30000	188271
7000000	72916.7	30000	150170
7000000	72916.7	30000	174837
7000000	72916.7	30000	172080
7000000	72916.7	30000	169820
7000000	72916.7	30000	194321
7000000	72916.7	30000	194637
7000000	72916.7	30000	152717
7000000	72916.7	30000	194652
7000000	72916.7	30000	155669
7000000	72916.7	30000	168615
7000000	72916.7	30000	175406
7000000	72916.7	30000	183316
7000000	72916.7	30000	158029

7000000	72916.7	30000	184456
7000000	72916.7	30000	177042
7000000	72916.7	30000	185220
7000000	72916.7	30000	197275
7000000	72916.7	30000	153259

MONTHLY INCOME OF FOUR BEDROOM OCCUPPANTS AT ROYAL VALLEY ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
12000000	125000.0	30000	218460
12000000	125000.0	30000	289473
12000000	125000.0	30000	230563
12000000	125000.0	30000	295606
12000000	125000.0	30000	234759
12000000	125000.0	30000	211672
12000000	125000.0	30000	258830
12000000	125000.0	30000	267670
12000000	125000.0	30000	233245
12000000	125000.0	30000	225014
12000000	125000.0	30000	262111
12000000	125000.0	30000	258523
12000000	125000.0	30000	247570
12000000	125000.0	30000	290132

MONTHLY INCOME OF FIVE BEDROOM OCCUPPANTS AT ROYAL VALLEY ESTATE

Price of the building	Monthly Expenses	Min Wage	Hh income
14000000	145833.3	30000	498435
14000000	145833.3	30000	408169
14000000	145833.3	30000	425285
14000000	145833.3	30000	446733
14000000	145833.3	30000	488724
14000000	145833.3	30000	461550
14000000	145833.3	30000	437498
14000000	145833.3	30000	426567
14000000	145833.3	30000	404244
14000000	145833.3	30000	415396
14000000	145833.3	30000	462673
14000000	145833.3	30000	460548
14000000	145833.3	30000	419771

14000000	145833.3	30000	447339
14000000	145833.3	30000	477591
14000000	145833.3	30000	446970
14000000	145833.3	30000	487056

APPENDIX F

LIVABILITY INDEX OF HARMONY ESTATE

Accessibility of the estate to other parts of the town	Accessibility of health care facility	Quality of the housing	Access to economic opportunity	Safety of the housing estate	Quality of the neighbouhood	accessibility of health basic education	Access to water	Access to civic/ social engagement	Access to communication/internet facility
3	4	5	4	5	5	4	5	2	4
2	5	4	4	5	5	5	4	2	5
4	4	4	3	5	4	5	5	2	4
4	5	5	3	4	4	5	5	3	4
4	4	5	4	5	4	5	4	3	4
3	4	5	3	4	5	4	5	3	4
2	5	5	4	5	5	4	5	2	5
4	5	4	3	5	5	4	5	2	5
4	5	5	3	4	4	5	4	3	5
3	5	5	3	5	4	5	4	3	4
4	5	5	3	5	4	4	5	2	5
3	4	4	4	5	5	4	5	3	4
3	5	4	3	4	4	4	4	2	5
2	5	5	4	4	5	4	4	2	4
4	5	5	4	5	4	4	5	2	5
3	5	4	4	5	4	5	5	2	4
3	4	4	3	5	5	5	5	3	4
2	4	4	4	4	4	4	5	3	4
2	5	4	4	5	4	4	4	2	5
2	5	4	3	5	5	5	4	3	5
3	5	5	4	4	4	4	4	3	5
3	5	5	4	5	4	5	4	2	4
2	4	5	3	4	5	5	4	3	4
2	5	5	3	4	4	4	4	2	4
3	4	5	3	4	4	4	4	3	5
2	5	5	4	4	4	5	4	2	4
3	4	4	4	4	5	5	5	3	4
2	4	5	3	4	5	4	5	3	5
4	5	4	3	5	5	5	5	3	4
3	5	5	3	5	5	4	5	3	5
2	4	4	4	4	5	5	5	3	4
3	5	4	3	5	5	4	5	2	5
2	5	4	4	5	5	4	4	3	4
3	5	5	4	4	5	5	5	3	5
3	4	5	4	5	5	5	5	2	4
4	4	4	3	5	4	5	5	3	4
2	4	5	4	5	4	5	5	3	5
3	4	4	4	4	5	4	5	2	4

3	5	4	3	5	4	5	4	3	5
3	4	5	3	4	5	4	4	3	4
3	4	4	4	4	4	4	5	3	5
3	4	4	4	5	4	4	5	3	5
2	4	4	3	5	5	4	4	3	4
4	5	5	4	5	4	5	4	2	4
4	4	5	4	4	4	4	4	3	4
4	5	4	4	5	5	5	4	2	4
3	5	5	3	5	4	4	4	2	5
3	4	4	4	5	5	5	5	2	4
4	4	4	4	4	4	4	4	2	4
2	4	4	3	5	5	4	5	3	5
4	4	5	3	4	4	4	5	3	5
2	5	5	4	4	4	5	4	2	5
3	4	4	3	5	5	5	4	2	5
3	4	4	3	5	5	5	4	3	4
3	5	4	3	5	5	4	4	3	5
2	4	4	3	5	4	5	5	3	5
3	5	5	4	4	4	4	5	2	5
2	5	4	4	5	5	4	4	2	5
4	4	5	3	4	5	5	4	3	5
2	4	5	3	5	5	5	5	2	4
3	5	5	3	4	5	4	5	3	5
2	5	5	3	4	4	4	5	2	5
4	4	4	4	5	5	4	5	2	5
3	4	5	4	4	4	4	4	3	4
4	5	5	4	4	5	4	5	2	4
2	5	5	4	5	4	4	5	3	5
4	5	4	3	5	5	4	5	2	4
4	4	4	4	4	4	4	4	3	5
4	4	5	4	4	5	5	5	2	5

APPENDIX G

LIVABILITY INDEX OF MANDATE ESTATE

Accessibility of the estate to other parts of the town	Accessibility of health care facility	Quality of the housing	Access to economic opportunity	Safety of the housing estate	Quality of the neighbouhood	accessibility of health basic education	Access to water	Access to civic/ social engagement	Access to communication/internet facility
4	2	2	3	3	3	3	3	3	4
4	2	3	3	3	2	2	1	3	3
4	2	3	4	3	3	3	3	4	3
4	3	2	3	2	3	3	3	4	4
4	2	2	4	2	2	3	3	3	4
4	2	3	4	2	2	3	2	3	4
3	2	2	4	3	3	3	2	3	4
4	2	2	3	3	3	2	1	4	3
3	3	3	3	3	2	2	3	3	3
3	2	3	3	2	2	2	2	3	3
3	3	2	4	3	3	2	1	3	4
4	2	2	3	2	3	3	1	4	4
3	3	2	3	3	2	2	1	4	3
4	3	2	4	2	2	2	1	4	3
4	2	2	3	3	3	3	3	4	3
3	2	2	4	3	2	2	2	3	3
4	2	3	4	3	3	3	3	4	4
3	2	3	3	3	3	2	2	4	4
4	2	3	4	3	3	2	1	4	4
3	2	3	4	2	2	2	1	4	4
4	2	3	4	3	2	2	2	4	3
3	3	3	4	2	3	2	2	4	4
4	2	3	4	3	2	2	3	3	4
4	3	2	4	2	2	3	2	4	4
3	3	2	3	2	3	3	1	4	4
3	2	3	3	3	3	3	1	4	4
4	3	3	4	2	3	3	3	4	4
3	3	3	4	2	2	3	2	3	4
3	3	2	3	3	3	3	1	3	3
4	2	3	3	2	3	2	3	4	3
4	3	2	4	3	3	3	1	4	4
4	2	3	3	2	2	3	3	4	4
3	3	2	4	2	3	3	1	3	4
4	3	2	4	2	3	2	3	3	4
3	2	2	4	2	2	3	3	4	4
3	2	2	4	2	2	3	3	4	3
3	3	3	4	3	3	3	1	3	4
3	2	3	3	3	3	2	1	3	3

3	2	3	4	3	2	2	2	3	4
4	2	2	4	2	3	3	3	3	4
3	2	3	3	3	2	2	2	4	4
4	3	3	3	2	2	2	2	3	3
4	3	2	4	3	2	3	2	4	3
4	3	2	4	2	3	3	1	4	3
4	2	3	4	2	2	3	3	4	4
4	2	2	4	3	3	2	2	4	4
4	3	3	3	3	2	2	3	4	4
4	2	3	4	3	3	3	1	3	3
3	2	3	4	2	2	2	3	4	3
4	3	2	4	3	3	2	3	3	4
4	3	3	3	3	3	3	3	3	3
3	3	3	4	2	2	3	1	3	3
4	3	3	4	3	2	3	2	3	4
3	3	3	4	3	2	3	1	3	4
4	3	3	4	3	2	2	3	3	3
4	3	3	3	2	3	2	2	4	4
3	3	3	4	2	2	2	2	4	3
4	2	3	4	3	3	2	1	3	4
3	3	3	4	2	2	2	3	4	3
4	3	3	3	3	2	2	1	4	4
3	2	2	3	3	2	3	2	3	4
4	3	2	4	2	2	3	2	4	3
4	3	3	4	3	2	2	1	4	3
3	2	3	3	3	3	2	1	4	3
4	2	3	4	2	2	2	1	4	3
4	3	2	3	3	3	3	3	4	3
4	3	2	3	3	2	2	3	4	3
3	2	2	3	2	2	3	1	3	4
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3	2	2	4	2	2	2	2	3	3

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3	3	2	4	3	3	3	1	3	3
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3	3	2	4	3	3	3	2	3	3
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4	3	3	3	3	3	2	1	3	4
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4	3	2	4	2	3	3	1	3	3
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4	2	3	4	3	3	2	1	4	4
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3	3	2	4	2	2	2	1	3	3
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4	3	3	3	3	3	2	1	4	4
3	2	3	4	2	3	3	3	3	4
3	2	2	4	3	3	3	2	4	3
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4	3	3	3	3	3	2	3	4	3
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3	3	2	4	2	2	2	2	3	3
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3	3	2	3	2	2	2	2	4	3
4	2	3	4	2	2	2	3	3	4
4	3	2	4	2	3	2	2	4	3

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4	3	3	4	3	3	3	1	3	4
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4	3	3	4	2	2	2	3	4	3
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4	3	2	4	3	2	2	2	4	4
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4	3	3	3	3	3	2	3	3	4
4	2	2	3	2	3	2	3	4	3
3	2	2	4	2	3	2	1	4	3
3	3	2	3	2	3	2	3	3	4
4	2	3	3	2	3	2	2	4	3
3	3	2	4	2	2	3	3	4	3
3	3	2	4	2	3	3	1	3	4
3	2	3	3	3	3	3	3	3	4

APPENDIX H

LIVABILITY INDEX OF EVERGREEN ESTATE

Accessibility of the estate to other parts of the town	Accessibility of health care facility	Quality of the housing	Access to economic opportunity	Safety of the housing estate	Quality of the neighbouhood	accessibility of health basic education	Access to water	Access to civic/ social engagement	Access to communication/internet facility
4	5	4	4	5	4	5	5	4	4
3	5	4	3	4	4	4	4	3	4
4	4	4	4	5	5	4	4	4	4
4	5	4	4	5	5	5	4	4	5
4	4	4	4	5	4	5	4	4	5
4	5	4	4	5	5	5	4	4	5
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3	4	4	3	4	5	4	5	3	4
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4	5	5	4	5	5	4	5	3	5
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3	4	4	4	4	4	4	5	4	4
3	4	4	4	5	5	4	4	4	4

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3	4	5	4	4	4	4	5	4	4
3	5	4	3	4	4	5	4	4	5
3	5	5	3	5	4	4	5	3	5
4	4	4	4	4	5	5	5	4	5
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3	5	5	4	4	4	5	5	3	5
3	5	4	3	4	5	5	5	3	5
3	4	5	4	5	4	5	5	3	4
4	5	4	4	5	5	5	4	3	4
4	4	5	4	5	5	4	5	3	5

APPENDIX I

LIVABILITY INDEX OF ROYAL VALLEY ESTATE

Accessibility of the estate to other parts of the town	Accessibility of health care facility	Quality of the housing	Access to economic opportunity	Safety of the housing estate	Quality of the neighbouhood	accessibility of health basic education	Access to water	Access to civic/ social engagement	Access to communication/internet facility
3	4	5	3	5	5	4	4	3	5
3	4	5	4	4	4	4	5	2	5
4	5	5	3	4	5	5	5	2	5
2	4	5	3	5	4	4	5	2	5
2	4	5	4	4	5	4	5	2	4
4	5	5	3	4	5	5	5	2	4
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2	4	4	3	4	5	4	5	3	5
3	4	5	4	5	4	4	5	3	5
4	5	5	3	5	4	5	5	3	5
4	4	4	4	4	4	5	5	3	4
2	4	5	3	4	5	5	4	3	4
2	5	4	4	5	5	5	4	3	4
2	5	5	4	5	4	5	4	2	5
4	4	4	3	4	4	4	5	3	4
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3	5	4	4	4	5	4	5	2	5
2	5	4	3	5	4	5	4	2	5
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2	5	4	3	4	5	4	5	2	4
2	5	5	3	4	4	5	4	2	5
3	4	5	3	5	5	5	5	3	5
2	5	5	3	5	5	5	4	3	4

4	5	5	4	4	5	5	4	3	4
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3	5	4	3	5	4	4	4	2	5
2	4	5	4	4	4	4	5	3	4
4	5	4	3	5	4	5	5	2	4
4	5	5	3	4	5	5	5	2	4
3	5	4	3	4	4	4	4	3	5
2	5	5	3	5	4	4	4	2	4
3	4	4	3	4	5	5	5	3	5
4	4	4	3	4	5	5	5	2	5
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2	4	5	4	5	4	5	5	2	4
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4	4	4	3	4	5	5	4	3	5
3	4	5	3	4	5	4	5	2	5
2	5	4	3	5	5	5	4	2	5