Journal of African Real Estate Research
Volume 7, Issue 2
www.journals.uct.ac.za/index.php/JARER/

# Factors Influencing Access to Urban Land for Private Housing Development in Minna, Nigeria

Umar Nagya[1] and Namnso Bassey Udoekanem[2] (https://orcid.org/0000-0001-9413-8956)

[1,2]Department of Estate Management and Valuation, Federal University of Technology, Minna, Nigeria

**To cite this article**: Nagya, U., & Udoekanem, N.B. (2022) Factors Influencing Access to Urban Land for Private Housing Development in Minna, Nigeria. *Journal of African Real Estate Research,* 7(2), pp. 1–23. DOI: https://doi.org/10.15641/jarer.v7i2.1205

## Abstract

Land is a major factor of production and a vital asset in the socio-economic development of any country or society. Due to the continuous increase in urban population, resulting in rapid urbanisation, access to urban land has become a challenge. This paper examines the factors that influence access to urban land for private housing development in Minna. The study adopted descriptive and causal research designs. Data for the study were obtained from field survey through structured questionnaire administered to 400 private housing developers in the study area using simple random sampling technique. Descriptive and inferential statistical techniques were used to analyse the data. A total of 18 variables were distilled from previous empirical studies through literature analysis. These variables were further analysed using factor analysis technique to obtain the factors that influence access to land for private housing development in Minna. The results indicate that the most important of these factors are land titling factor (EV = 4.717), socio-economic factor ( EV = 3.595) and land acquisition factor (EV = 1.996) with very strong factor loadings from double allocation (0.894), gender (0.838) and cost of land (0.928) respectively. The study concludes that these factors hinder effective access to land for private housing development

[1] Corresponding author's email address: namnsoudoekanem@futminna.edu.ng and nudoekanem@gmail.com

in the city. It recommends that stakeholders in land administration and management in the city should consider these factors in the land administration system to facilitate private developers' access to land for private housing development in the city.

**Keywords**: *urban land, private residential use, accessibility, Minna*

## 1. Introduction

The pace of urbanization and the number of people living in cities has increased exponentially over the course of the past century, with more than half of the world's population now living in urban areas (UN, 2017). As the world is urbanizing, many cities are grappling with a population that is growing rapidly, thereby increasing demand for land (Lipman & Rajack, 2011). At present, one billion people are living in informal settlements that lack basic services and 60 percent of urban dwellers are physically exposed to natural hazards and pollution (USAID, 2014). The urban slum population is also projected to increase to 2 billion people by 2030 (UN, 2003). A vital component of any strategy to improve living conditions for the urban poor involves improving the legal and regulatory environments related to housing and increasing the supply of affordable, legal shelter with tenure security and access to basic services and amenities. Furthermore, there has been continuous population growth in Nigeria with a significant increase of 23.95 million people from 2006 to 2012, out of which 12.87% is from the North Central Region where Niger State is located, and rural-urban migration rate recorded is 52.2%, resulting in a rise in urban population (National Bureau of Statistics, 2011). Also, statistics show that land ownership rate in the North Central Region is 25.1% (National Bureau of Statistics, 2011). This indicates inadequate access to land by residents of this region, and the condition is not different from the case of Minna, Niger State. The United Nations Development Programme (UNDP) survey in 1996 and that of Centre for Human Settlements and Urban Development (CHSUD) in 2006 in North Central Nigeria revealed that about 70 - 75% of urban residents live in slums characterised by unplanned development with inadequate infrastructure like roads, water supply and electricity. Thus, a study is required to investigate the drivers of access to urban land for private housing development in Minna.

Globally, land is required for various uses. It is a major factor of production and an important asset in the socio-economic development of any country or society. Therefore, as nations grow and rural areas become urban centres and urban centres become large metropolitan areas, there is always increased competition as well as demand for land for different purposes (Enisan & Aluko, 2015). Every person occupies a space during each second of their lifetime. While most of the space occupied at any given moment is public space (such as a street or an open space), there are units of land over which individuals, groups of persons, communities or juridical persons claim a spectrum of exclusive rights of use and control. Access to land does not mean dominion over commoditized land as its 'master', per se, but access to be at a certain space, or use and control a

certain plot of land — in common with others, as a member of a certain group or exclusively as an individual (Stebek, 2015).

Access to land is gained either formally, within statutory framework or through informal arrangements outside statutory framework. It comes in form of private-private (gained through the transfer of ownership in private transactions), public-private (from state allocation), private-public-private (from land pooling), private/public-private (through invasion) and customary allocation (gained in the framework of customary law) (Aluko *et al*., 2004). It also comes with various challenges, as the journey towards the lawful acquisition of land is a long and confusing one; access to land, registration of land, permission to develop the land involve time consuming, unduly cumbersome and costly procedures (Farvacque & McAuslan, 1992, Mabogunje, 2002). Also, informal access to land may be subject of fraudulent sale, insecurity of title, land speculation, and incessant rancour and litigations (Aluko *et al*., 2004). These challenges are instigated by factors that influence access to land.

Housing development in most Nigerian cities, including Minna is largely driven by the private sector (Ogu & Ogbuozobe, 2001; NTWG, 2009; Morakinyo *et al*, 2015). This is because the government alone cannot provide sustainable housing to the nation's teeming population (Akeju, 2007). Besides, there is a consensus among housing and real estate scholars in Nigeria that access to land is a crucial issue affecting private housing delivery in the country (Udoekanem, 2009; Ogu & Ogbuozobe, 2001; Morakinyo *et al*, 2015; Lawal & Adekunle, 2018; Oyediran, 2019 & Ekpo, 2019). With a housing deficit of about 22 million housing units (Moore, 2019), effective access to residential land is very essential in addressing this deficit through sustainable private housing delivery in the country. Hence, the aim of this study is to examine the factors influencing access to urban land for private housing development in Minna, Nigeria.

## 2. Literature Review

### *2.1 The Concept of Land*

Land is a factor of production. It is very essential for the provision of urban housing and infrastructural services and the production of agricultural goods (Aluko *et al*., 2004; Udoekanem *et al*., 2014 ). Land is an economic resource and an important factor in the formation of individual and collective identity, and in the day-to-day organization of social, cultural and religious life (Okoth-Ogendo, 1993). Land access is synonymous with right to land which refers to the right that individuals and communities have with respect to the ownership of land; the right to occupy, to use, to develop, to inherit, and to transfer land (Durand-Lasserve & Selod, 2009). Access to land has to do with the availability of usable land, affordability, and the convenience with which the cost of the land can be paid without undue financial strain, security of tenure and assurance against eviction (Omirin, 2003).

Access to land can be gained either formally; within statutory framework or informal arrangements outside statutory framework (Aluko *et al*., 2004). In developing countries, particularly those of the sub-Saharan Africa, access to land has been principally provided through formal and informal institutions. While the formal institutions are by statutes expected to provide cheaper, easier and more secure access to land, the bureaucratic processes and cumbersomeness in the procedures have instead created a myriad of problems (Kuma & Ighalo, 2015). Access to land involves the security, tenure and transferability of the right which has been obtained (Stebek, 2015). To the land users, access to land consists of four elements which include: land availability, land affordability, security of tenure to the land in question, and the ease with which transaction can take place in the land (Omirin, 2002).

### *2.2 Access to Urban Land*

Urban areas are a vital component of social and economic growth, as they are drivers of innovation and therefore magnets for enterprising migrants. In all countries, urban areas contribute substantially to national Gross Domestic Product (GDP) and to government tax revenues (Payne, *et al*., 2015). Gaining access to urban land comes in form of private-private (gained through the transfer of ownership in private transactions), public-private (from state allocation), private-public-private (from land pooling), private/public-private (through invasion) and customary allocation (gained in the framework of customary law) (Aluko *et al*., 2004). Secured access to urban land creates incentives for the user to invest in labour and other resources to maintain its value, sustain its productivity, and allow the user access to social and economic development opportunities (Quan, 2006).

In the urban areas of Nigeria, Olayiwola and Adeleye (2006) established that accessibility to land for residential purposes and development projects is almost becoming impossible for individual particularly the low and the middle-income groups because the price has become very prohibitive. The implication of this unequal access to land is that it has forced most urban dwellers into abject poverty owing to lack of legal titles for securing loans to invest in the construction of desirable shelter (Mabogunje, 2003). Access to urban land for commercial use usually involves acquiring land to construct business premises, or buying business premises (or working space), as owner occupier, premises rented for business, or business lease (Stebek, 2015).

Prior to the British rule in Nigeria, access to land was governed by the customary land tenure which was inadequate to create land for all citizens (Adedayo, 2018). At the beginning of the 20th century when Britain made a colony and protectorate of Nigeria, there was a multiplicity of land tenure and management systems in the country (Mabogunje, 2002). Apart from the system in the Lagos colony where an English freehold system had been established following its annexation in 1861, these diverse systems can be grouped broadly into two categories. The first existed in Northern Nigeria where the colonial administration had placed all lands under the control and subject to the disposition of the Governor. Without the consent of the Governor, no title to occupation and use

of land was valid. An ordinance directed that the Governor shall hold and administer the land for the use and common benefit of the native people. The ordinance laid down a maximum of 1,200 acres for agricultural grants and 12,500 acres for grazing purposes. In Southern Nigeria, the second system recognised that land was owned by lineages or extended families. Individuals have only right of use on such family land. The only land held at the Governor's disposal was that which had been expressly acquired for public purposes as Crown land. Therefore, whether in Northern or Southern Nigeria, land was considered by the people themselves largely within the nexus of a pre-capitalist social formation (Aluko *et al*., 2004; Oyedokun *et al*., 2012).

As the colonial era progressed, land alienation and sale not only grew in volume and geographical spread but also became the cause of considerable litigation and communal strife, often resulting in violent confrontation. Challenges such as multiple sales of the same land to different buyers by land-owning families, land speculation and a sharp rise in the prices of land for urban and infrastructural development, incessant disputes and land litigations, exorbitant compensation for land and, non-availability of land for government developmental projects arose, especially in Southern Nigeria (Aluko *et al*., 2004). Thus, faced with the above problems and the contrasting land tenure systems, the then federal military government promulgated the Land Use Decree (now Land Use Act) on the 29th of March, 1978 with a view to unify the various land tenure systems in the country. Under the law, all land situated in the territory of each state in the country is vested in the Governor for the use and common benefit of every Nigerian (Mabogunje, 2002). The law is also an integral part of the 1999 constitution currently being operated in the country. Therefore, statutory access to land in Nigeria follows the provisions of the Land Use Act 1978.

Aluko *et al*.(2004) argued that apart from the state government, there are other actors in the land delivery process in Lagos State. The study further suggested that it is better to have as many landlords or landowners rather than having the state as the only universal landowner if land speculation and land accessibility to the urban poor are to be controlled. It suggested that the Land Use Act must be amended in this light to make land more accessible, less cumbersome and speedier to acquire for housing development. However, in another study, it was found that the predominant source of access to residential land in North-Central Region of Nigeria is through informal land markets and developments on such lands have eluded government's effective planning and control (Kuma & Ighalo, 2015).

Access to land can be affected by various factors as presented by previous studies. The study of Adedayo (2018) identified road accessibility, title document, access to infrastructure, topography, neighbourhood development, nearness to work, level of education, marital status, occupation and distance to centre of attraction as factors influencing access to residential land ownership. Mabogunje (2003) stated that the experience of inaccessibility which characterized urban land markets have forced most urban dwellers into abject poverty owing to lack of legal titles for securing loans to invest in the construction of desirable shelter for themselves. Another effect of

lack of access to land according to Fadairo (2006) is squatting, which has led to inadequate municipal services and infrastructure like roads, water supply, sanitation and waste collection.

Samaniego *et al*. (2017) identified factors that affect adequacy of access to land to include size, offsite facilities, distance to nearest town and educational level. Ajayi and Adebayo (2017) also found that gender, marital status, educational background, income level and occupation are factors that affect land access, and specifically occupation, income and education are the significant predictors. In this context, land access adequacy is affected by tenure security (legal security of tenure and tenure guaranteed for a specified time); affordability (price of land and related services, expenditure on transportation, disposable income to cover other living costs, access to limited homeownership with lower price); cultural adequacy (design of residence in relation to local residents' natural lifestyle, materials and appearances of buildings expressing local cultural value, spaces and facilities for cultural activities); accessibility and physical environment (Gan *et al*., 2019).

### *2.3 Empirical Studies on Access to Residential Land for Private Housing Development*

Land is very essential for the development of sustainable human settlements (Nubi & Ajoku, 2011), including private housing development. Access to land at an affordable cost is a major challenge to sustainable housing development by private developers in Nigeria (CAHF, 2019). A plethora of empirical studies including Udoekanem (2009), Bichi (2010), Kuma and Ighalo (2015) and Owoeye and Adedeji (2015) have found that access to land for private housing development in various parts of Nigeria is from informal land delivery channels. According to the World Bank (2016), informal land development occurs because available land options are either unaffordable or too isolated and the public housing options accessible through government programmes are inconveniently located or not in line with family asset-building strategies. Kwame and Antwi (2004) studied the impact of land delivery and finance on the supply of residential accommodation in three cities of Ghana namely, Accra, Tema and Kumasi. The study found that there is progressive increase in informal land transactions in the study areas. The results of the study also indicated that housing delivery in the study areas is hindered by the inefficiency of the land delivery system. Adedayo (2018) examined the factors that influence access to residential land in Lokoja Metropolis of Kogi State, Nigeria. The study obtained data through questionnaire administered to 396 respondents, spread across seven residential neighbourhoods in the study area namely Adankolo, Lokongoma, Ganaja, Barracks, Zango Daji, Lpkoja Town and Falele. Multiple regression analysis was utilized to analyse the data collected for the study. The study found that location (-1.989), access to infrastructure (-0.933), neighbourhood development (-1.041), nearness to work (-1.642), marital status (- 0.633), gender (-0.603) and distance to centre of attraction (-1.458) have statistically significant negative influence on access to residential land in the study area at p-value less than 0.05. Olujimi and Iyanda (2013), Mohammed (2016) and Oyedeji (2018) also carried out similar studies in various parts of Nigeria and the factors identified are summarized in Table 1 below.

**Table 1: Suggested Factors that Influence Access to Residential Land**

| Author (s) | Year of Study | Factors Identified |
|---|---|---|
| Olujimi and Iyanda | 2013 | Time taken to acquire land, cost of land, access and time taken to receive legal titles from government. |
| Mohammed | 2016 | High cost of land, cumbersome government allocation, complicated small plots, assembly operations, legal issues, double allocation, high cost of titling, multiplicity of charges and encroachment/trespassing. |
| Oyedeji | 2018 | Land affordability, land availability, ease of land transactions and security of land tenure |
| Adedayo | 2018 | Road accessibility, title document, access to infrastructure, topography, neighbourhood development, nearness to work, level of education, marital status, gender, occupation and distance to centre of attraction |

**Source:** *Extracted from Olujimi and Iyanda (2013), Mohammed (2016), Oyedeji (2018) and Adedayo (2018)*

This study seeks to examine these factors as they affect access to urban land for private housing development in Minna, Nigeria.

## 3. Research Methodology

### *3.1 The Study Area and its Characteristics*

Minna is the area delineated for this study. It is one of the developing cities in North – Central geopolitical zone of Nigeria. The city is linked to neighbouring cities by road and is 156 km away from Abuja, the Federal Capital Territory (FCT) of Nigeria. Minna is also connected by railroad to Kano in the north and Ibadan and Lagos in the south. The city is served by Minna Airport. It lies at latitude 9037' North and longitude 6033' East on a geological base of undifferentiated basement complex of mainly gneiss and magmatite. Urban development in the north – east part of the town is limited by a continuous steep outcrop of granite.

Minna is the capital of Niger State of Nigeria. This is shown in Figure 1 below. The city was chosen as such on 3rd February, 1976 when the State was created by the Federal Government, then led by General Murtala Mohammed. It is the political headquarters of Niger North-East Senatorial District. The town is an administrative one with a huge population of civil servants. The administrative structure of the city has great influence on the pattern of land use. In terms of traditional governance system, Minna is also an emirate.
The Emir of Minna is the head of city's emirate council. The council comprises all the district

heads and traditional title holders in the area.

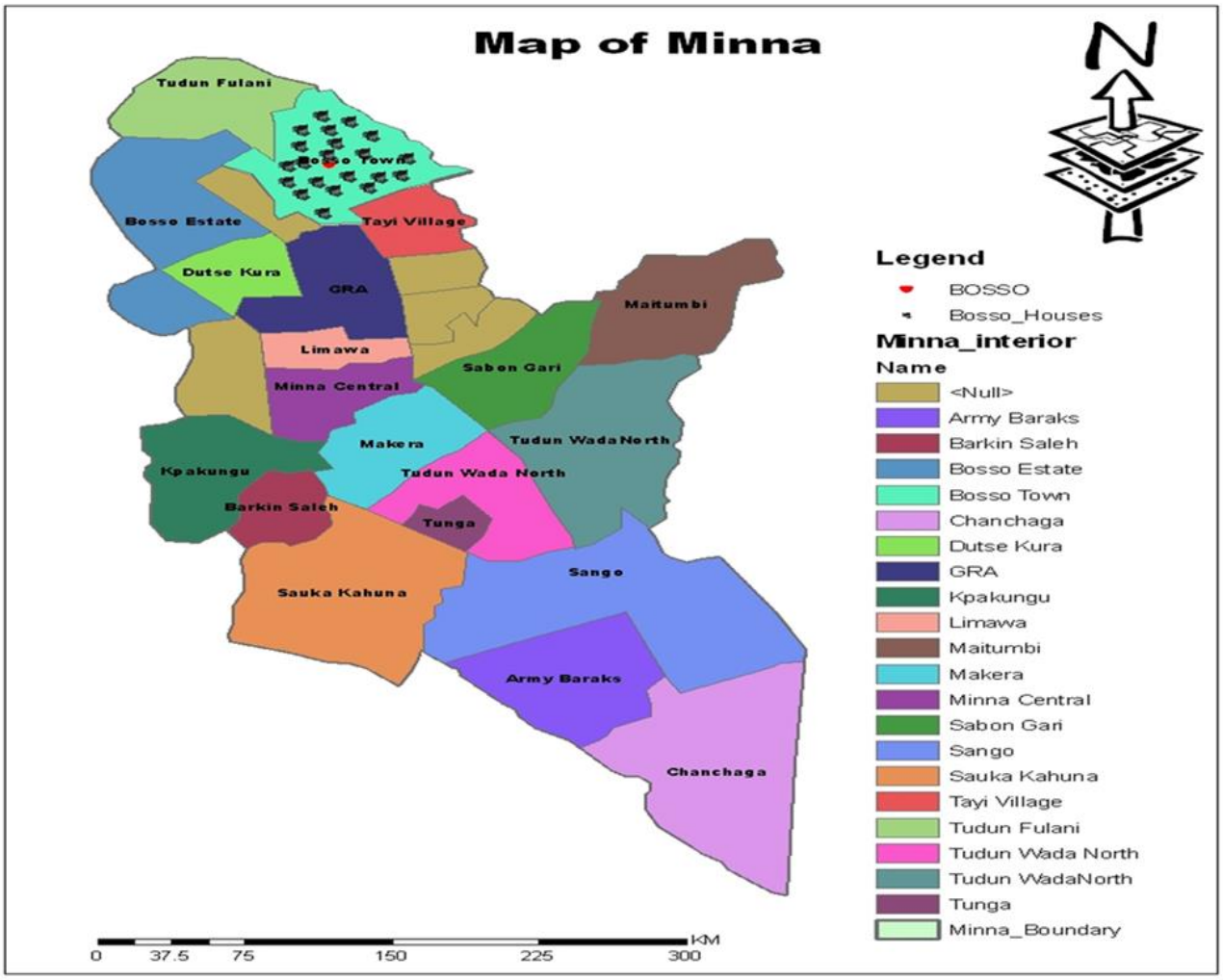



**Figure 1:** *Map of Minna showing the study locations*

Minna covers a total land area of about 885 hectares (i.e. 8.85 million square metres). The key land uses in the city are residential, institutional and commercial land uses. However, there are some light industrial, small and medium scale enterprises within the city. Residential land uses in Minna could be classified as high, medium and low-density areas. In these areas, the high-density neighbourhoods are characterized by tenements. The medium and low-density areas are dominated largely by bungalows, blocks of flats and maisonettes. Agricultural land uses exist mainly at the peripheral parts of the city while small farmsteads are found within the city. The major commercial land uses in the city are shops and offices.

Although private businesses in the city have grown in the past few years due to the privatization policy of the government, the economic base of the city is civil service. Minna hosts the headquarters of the National Examination Council (NECO), one of the major secondary education examination bodies of the federal government of Nigeria. The city also hosts a Federal University of Technology, Newgate University (the only private university in the city as of July, 2022), Niger State College of Education, School of Nursing, Fati Abubakar College of Legal and Islamic Studies and Federal Mortgage Bank of Nigeria Training School. These institutions have brought people from all parts of the country to the city, thereby boosting its economic vitality.

### *3.2 Population for the study and Sample Size*

The population for the study is 124, 785. This was obtained from the State Ministry of Lands and Housing as the estimated population of individual residential land developers in the study area. The sample size was derived from the study population using Yamane's model as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where:
$n$ = the sample size
$N$ = study population
$e$ = the level of significance (0.05)

Thus, $n = \frac{N}{1+Ne^2}$

$$= \frac{124{,}785}{1 + 124{,}785(0.05)^2}$$

$$= \frac{124{,}785}{1 + 124{,}785\ (0.0025)}$$

$$= \frac{124{,}785}{312.96}$$

$$= 398.7$$

$$= 400\ (\text{approx.})$$

### *3.3 Method of Data Collection*

Descriptive and causal research designs were adopted for this study. These were reflected in the research instrument used for the study. Data for the study were obtained from field survey through structured questionnaire administered to 400 private housing developers in the study area using simple random sampling technique. Data collected for the study are primarily categorical data and comprise socio-economic characteristics of the respondents, their responses on the factors perceived to influence access to land for private housing development in the study area, their mode of land acquisition and the duration it takes to acquire land for private housing development. Questionnaires were administered to the 400 respondents in the city, selected through simple random sampling technique. Scaled questions on the factors perceived to influence access to land

for private housing development were structured based on a 5-point Likert Scale(i.e. strongly agree = 5; strongly disagree = 1). A total of 306 questionnaire were properly completed and returned, representing a response rate of 76.5%. The respondents are spread across the 11 wards in the city. The spatial distribution of the population for the study and questionnaire administered are presented in Table 2.

**Table 2: Spatial Distribution of the Population for the study and Questionnaire Administered**

| S/N | Ward | Population | Proportion (%) | Number of Questionnaire Administered |
|---|---|---|---|---|
| 1 | Nasarawa 'A' | 13,726 | 11.0 | 44 |
| 2 | Nasarawa 'B' | 12,479 | 10.0 | 40 |
| 3 | Nasarawa 'C' | 11,231 | 9.0 | 36 |
| 4 | Tudunwada South | 19,966 | 16.0 | 64 |
| 5 | Makera | 6,239 | 5.0 | 20 |
| 6 | Sabongari | 4,991 | 4.0 | 16 |
| 7 | Minna Central | 13,102 | 10.5 | 44 |
| 8 | Minna South | 6,863 | 5.5 | 20 |
| 9 | Tudunwada North | 17,470 | 14.0 | 56 |
| 10 | Limawa 'A' | 8,735 | 7.0 | 28 |
| 11 | Limawa 'B' | 9,983 | 8.0 | 32 |
| | Total | 124,785 | 100.0 | 400 |

**Source:** *Field Survey (2021)*

### *3.4 Data Analysis Techniques*

Data collected for study were analysed with the aid of IBM SPSS software version 25 and Excel 2019. The techniques of data analysis utilised for the study include factor analysis and descriptive statistical methods such as frequency, mean and standard deviation. Factor analysis is a collection of methods used to examine how underlying constructs influence the responses on several measured variables (Fruchter, 1954).

## 4. Results and Discussion

### *4.1 Socio-Economic Characteristics of Respondents*

Data on the socio-economic characteristics of the respondents are presented in Table 3. The respondents are individual private housing developers. A larger proportion of the respondents (58.8%) are males. This indicates that in the sample selected for this study, the male respondents have greater access to land for private housing development in the city than the female respondents. The dominant age group of the respondents is 41 – 50 years (55.9%) and majority of them are civil

servants (76.5%). This implies that the main source of livelihood of the respondents is earnings from civil service. In the aspect of respondents' level of education, about 0.7% are educated only to primary school level and 5.2% to secondary school level . However, majority (97.1%) of the respondents are educated up to the tertiary level. This implies that most of the respondents are well educated, and this will positively affect the validity of the results of this study. The respondents' range of monthly income is also indicated in Table 3. It is however obvious that 55.9% of the respondents who are the majority, earn above ₦60,000 monthly, and 29.45% earn ₦41,000 - ₦50,000, while the rest of the respondents earn below ₦41,000. About 69.7% of the respondents stated that they own residential land as shown in Figure 2, while 30.3% do not own land. Since most of the respondents own residential land, their judgement of factors that affect access to land for private housing development can be evaluated.

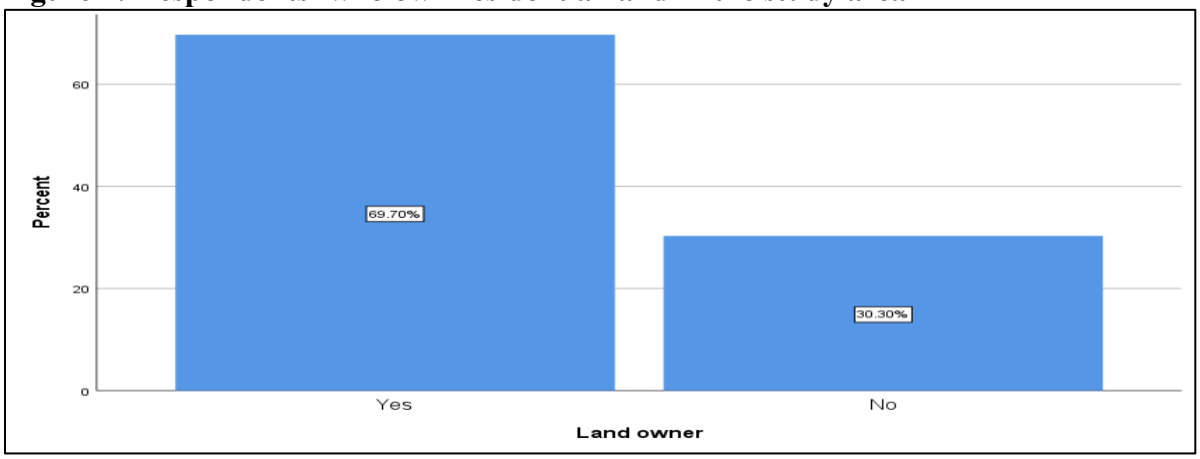
**Table 3: Respondents' Socio - Economic Characteristics**

| Characteristics | Frequency | Percent |
|---|---|---|
| **Gender** | | |
| Male | 180 | 58.8 |
| Female | 99 | 32.4 |
| Total | 279 | 91.2 |
| Missing | 27 | 8.8 |
| Total | 306 | 100.0 |
| **Age Group** | | |
| 18-30years | 18 | 5.9 |
| 31-40years | 63 | 20.6 |
| 41-50years | 171 | 55.9 |
| 51-60years | 36 | 11.8 |
| Above 60 Years | 18 | 5.9 |
| Total | 306 | 100.0 |
| **Educational Level** | | |
| Primary | 2 | 0.7 |
| Secondary | 16 | 5.2 |
| Tertiary | 279 | 91.2 |
| Total | 297 | 97.1 |
| Missing | 9 | 2.9 |
| Total | 306 | 100.0 |
| **Occupation** | | |
| Civil Servant | 234 | 76.5 |
| Artisan/Technician | 27 | 8.8 |
| Farmer | 18 | 5.9 |
| Student | 9 | 2.9 |
| Trader | 18 | 5.9 |
| Total | 306 | 100.0 |

| | | |
|---|---|---|
| **Monthly Income** | | |
| ₦ 1,000 - ₦20,000 | 36 | 11.8 |
| ₦31,000 - ₦40,000 | 9 | 2.9 |
| ₦41,000 - ₦50,000 | 90 | 29.4 |
| Above ₦60,000 | 171 | 55.9 |
| Total | 306 | 100.0 |

**Source**: *Field Survey (2021)*

**Figure 2: Respondents' who own residential land in the study area**

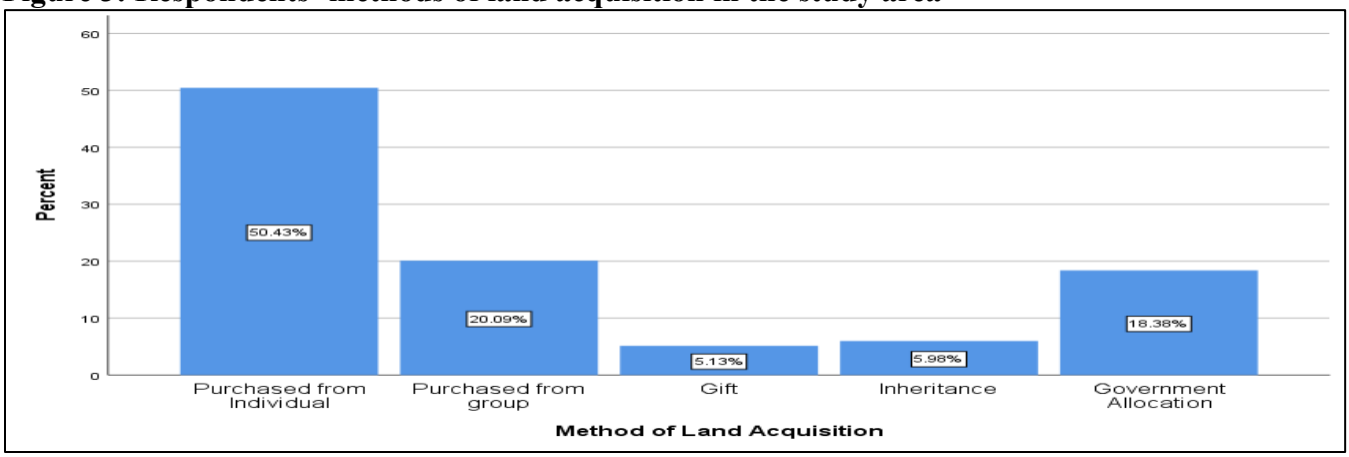



**Source**: *Field Survey (2021)*

### *4.2 Methods of access to urban land in the study area*

The respondents acquired their residential lands through purchase from individuals or groups, government allocation, inheritance, and gift. Figure 3 shows that 50.43% of the respondents purchased their residential lands from individuals. About 20.09% acquired their lands by purchasing from a group like families, 5.1% were gifted, 5.9% inherited their lands and about 18.38% got their lands from government allocation. This result indicates that the informal land market in the city is very active despite the government's formal control of alienation and transfer of land rights in the State. This finding is consistent with those of Kwame and Antwi (2004), Udoekanem (2009), Bichi (2010) and Owoeye and Adedeji (2015) . The implication of this is that private housing delivery in the city is increased informally, leading to the development of informal human settlements (Kuma & Ighalo, 2015).

**Figure 3: Respondents' methods of land acquisition in the study area**

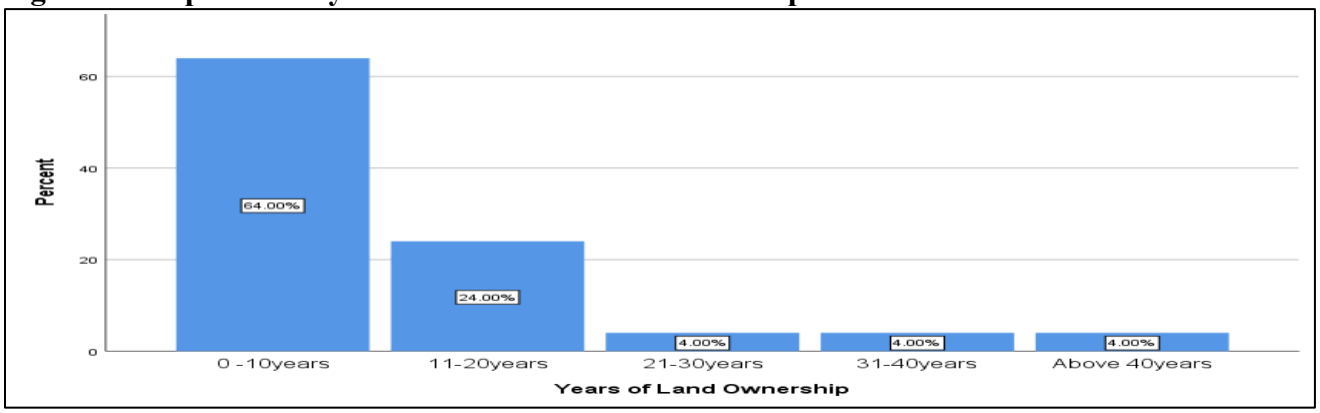



**Source**: *Field Survey (2021)*

### *4.3 Years of residential land ownership*

Figure 4 shows the number of years for which the respondents have owned their lands. Most of the respondents (64%) have owned land for 10 years or less. About 24% have owned land for 11 to 20 years, 12% have owned land for more than 20 years. This suggests that most individual housing developers in the city do not access land on time to develop their houses. This delay may be attributed to the factors explored by this study.

**Figure 4: Respondents' years of residential land ownership**




**Source**: *Field Survey (2021)*

### *4.4 Factors that influence access to land for private housing development in the study area*

The factors examined in this study were obtained from the literature of previous empirical studies on the subject namely Olujimi and Iyanda (2013), Mohammed (2016), Oyedeji (2018) and Adedayo (2018) . These include road accessibility, gender, income level, cost of land, time taken

to acquire land, time taken to receive title document, high cost of titling, multiplicity of charges, access to infrastructure, site topography, neighbourhood development, nearness to work, level of education, marital status, occupation, distance to centre of attraction, double allocation, and encroachment. The descriptive statistics for all the variables under investigation are presented in Table 4.

**Table 4: Descriptive Statistics of Factors that influence access to land for private housing development in the study area**

| Variable | Mean | Std. Deviation | N |
|---|---|---|---|
| Road Accessibility | 3.97 | 1.169 | 297 |
| Gender Factor | 2.71 | 1.468 | 306 |
| Income Factor | 4.00 | 1.075 | 297 |
| Cost of land | 3.91 | 1.069 | 306 |
| Time taken to acquire land | 3.26 | 1.173 | 306 |
| Time taken to receive Title Document | 3.32 | 0.963 | 306 |
| High cost of titling | 2.59 | 1.440 | 306 |
| Multiplicity of charges | 2.94 | 1.629 | 306 |
| Access to Infrastructure | 3.68 | 1.132 | 306 |
| Site Topography | 3.44 | 1.146 | 288 |
| Neighbourhood Development | 3.61 | 1.207 | 297 |
| Nearness to Work | 3.35 | 1.236 | 306 |
| Level of Education | 2.71 | 1.468 | 306 |
| Marital Status | 2.61 | 1.327 | 297 |
| Occupation Factor | 3.29 | 1.127 | 306 |
| Distance to Centre of Attraction | 2.82 | 1.363 | 306 |
| Double Allocation | 3.03 | 1.406 | 306 |
| Encroachment/Trespassing | 3.41 | 1.614 | 306 |

**Source:** *Field Survey (2021)*

To isolate the dominant factors from the variables in Table 4, the factor analysis technique was employed. The result of the test of sampling adequacy for the factor analysis is presented in Table 5.

**Table 5: Result of KMO and Bartlett's Test**

| | | |
|---|---|---|
| **Kaiser-Meyer-Olkin Measure of Sampling Adequacy** | | **0.693** |
| **Bartlett's Test of Sphericity** | Approx. Chi-Square | 3884.380 |
| | Df | 153 |
| | Sig. | 0.000 |

**Source***: Field Survey (2021)*

The KMO measures the sampling adequacy and determines if the responses given with the sample are adequate or not and should be close to 0.6 for satisfactory factor analysis to proceed. Looking at Table 5, the KMO measure is 0.693, which is above 0.6 and is therefore accepted. Bartlett's test

is another indication of the strength of the relationship among variables. This tests the null hypothesis that the correlation matrix is an identity matrix. An identity matrix is a matrix in which all the diagonal elements are 1. Bartlett's test of sphericity is significant (0.000), which is less than 0.05. The significance level is small enough to reject the null hypothesis, which means that the correlation matrix is not an identity matrix. The KMO result indicates that the sample size is large enough for factor analysis and Bartlett's test of sphericity result shows that the original correlation matrix is not an identity matrix, therefore, the data are suitable for factor analysis, that is, the variables are correlated highly enough to provide a reasonable basis for factor analysis.

**Table 6: Total variance of factors that influence access to land for private housing development in the study area**

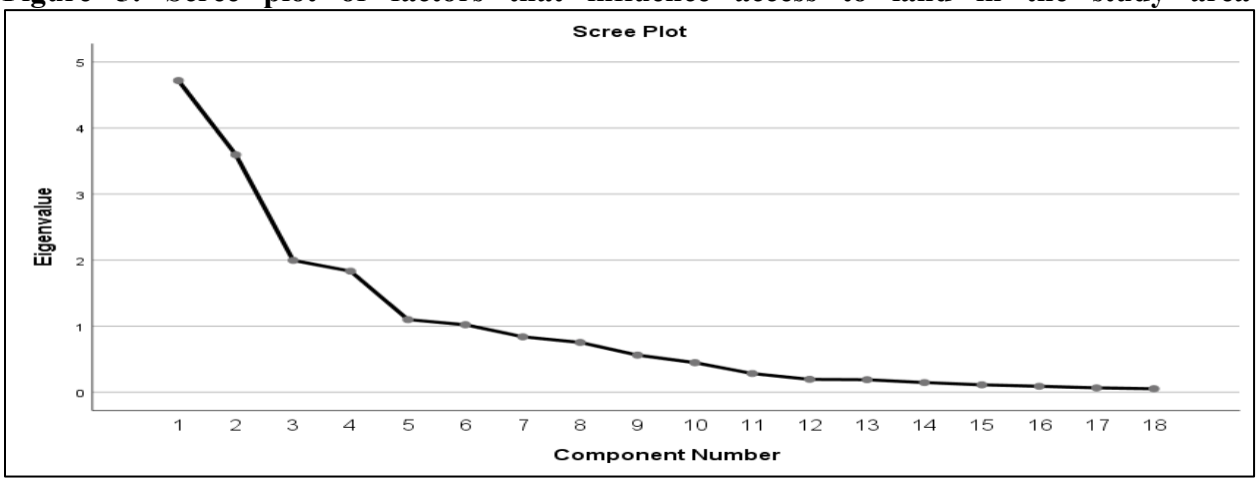
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| **1** | 4.717 | 26.208 | 26.208 | 4.717 | 26.208 | 26.208 | 3.606 | 20.031 | 20.031 |
| **2** | 3.595 | 19.970 | 46.177 | 3.595 | 19.970 | 46.177 | 2.845 | 15.804 | 35.835 |
| **3** | 1.996 | 11.090 | 57.268 | 1.996 | 11.090 | 57.268 | 2.553 | 14.184 | 50.019 |
| **4** | 1.832 | 10.180 | 67.448 | 1.832 | 10.180 | 67.448 | 2.263 | 12.575 | 62.594 |
| **5** | 1.099 | 6.108 | 73.556 | 1.099 | 6.108 | 73.556 | 1.592 | 8.843 | 71.437 |
| **6** | 1.022 | 5.678 | 79.234 | 1.022 | 5.678 | 79.234 | 1.404 | 7.798 | 79.234 |
| **7** | 0.839 | 4.660 | 83.895 | | | | | | |
| **8** | 0.754 | 4.188 | 88.083 | | | | | | |
| **9** | 0.562 | 3.121 | 91.204 | | | | | | |
| **10** | 0.448 | 2.488 | 93.691 | | | | | | |
| **11** | 0.283 | 1.571 | 95.263 | | | | | | |
| **12** | 0.195 | 1.083 | 96.346 | | | | | | |
| **13** | 0.190 | 1.054 | 97.400 | | | | | | |
| **14** | 0.147 | 0.815 | 98.215 | | | | | | |
| **15** | 0.112 | 0.623 | 98.838 | | | | | | |
| **16** | 0.090 | 0.501 | 99.339 | | | | | | |
| **17** | 0.066 | 0.368 | 99.707 | | | | | | |
| **18** | 0.053 | 0.293 | 100.000 | | | | | | |

**Extraction Method: Principal Component Analysis.**

**Source**: *Field Survey (2021)*

From the result in Table 6, the first six components have eigenvalues greater than 1 and they were able to explain about 79.23% of total variability in the model. This implies that the first six common factors are required.

**Figure 5: Scree plot of factors that influence access to land in the study area**




**Source**: *Field Survey (2021)*

The scree plot is a graph of the eigenvalues against all the factors. The graph is useful for determining how many factors to retain. The point of interest is where the curve starts to flatten, which can be seen between factors 6 and 7. Note also that factor 7 onwards have an eigenvalue of less than 1, so only six factors have been retained.

**Table 7: Component matrix of factors that influence access to land for private housing development in the study area**

| | Component | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| **Multiplicity of charges** | 0.799 | | 0.305 | | | |
| **Double Allocation** | 0.790 | | 0.320 | | | |
| **Encroachment/Trespassing** | 0.764 | | | | | |
| **High cost of titling** | 0.716 | | 0.525 | | | |
| **Income Factor** | 0.654 | | -0.316 | -0.369 | | |
| **Cost of land** | 0.489 | 0.356 | -0.355 | -0.436 | 0.403 | |
| **Time taken to acquire land** | 0.314 | 0.752 | | | | -0.426 |
| **Marital Status** | -0.484 | 0.654 | 0.344 | | | |
| **Time taken to receive Title Document** | 0.321 | 0.633 | | | | |
| **Level of Education** | -0.495 | 0.609 | | | | |
| **Site Topography** | | 0.603 | | | -0.415 | |
| **Gender Factor** | -0.352 | 0.540 | 0.506 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Distance to Centre of Attraction** | 0.338 | | 0.577 | 0.489 | | -0.321 |
| **Road Accessibility** | 0.552 | | -0.556 | | 0.337 | |
| **Nearness to Work** | | 0.414 | | 0.642 | 0.319 | 0.317 |
| **Neighbourhood Development** | | 0.547 | | 0.562 | | |
| **Access to Infrastructure** | 0.479 | 0.352 | | | -0.514 | |
| **Occupation Factor** | -0.326 | 0.461 | 0.300 | | | 0.528 |

**Extraction Method: Principal Component Analysis.**

**a. 6 components extracted.**

**Source:** *Field Survey (2021)*

The result in Table 7 shows the factors that have significant influence on each variable, out of the six factors determined based on the 6 extracted factors using the principal component analysis. The loadings close to -1 or +1 indicates that the factor strongly influences the variable. Whereas loadings close to 0 shows that the factor has a weak influence on the variable. The result shows that: multiplicity of charges (0.799), double allocation (0.790), encroachment/trespassing (0.764), high cost of titling (0.716), income factor (0.654), and road accessibility (0.552) all have high loadings on factor 1 and indicates a strong influence.

**Table 8: Rotated component matrix of factors that influence access to land for private housing development in the study area**

| | Component | | | | | |
|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** |
| **Double Allocation** | **0.894** | | | | | |
| **High cost of titling** | **0.843** | | | | | |
| **Encroachment/Trespassing** | **0.838** | | | | | |
| **Multiplicity of charges** | **0.745** | | 0.465 | | | |
| **Gender Factor** | | **0.838** | | | | |
| **Marital Status** | | **0.806** | | | | |
| **Occupation Factor** | | **0.762** | | | | |
| **Cost of land** | | | **0.928** | | | |
| **Time taken to acquire land** | | | **0.721** | 0.480 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Income Factor** | | | **0.581** | | | -0.561 |
| **Time taken to receive Title Document** | | 0.434 | 0.494 | | | |
| **Access to Infrastructure** | | | | **0.806** | | |
| **Site Topography** | | | | **0.749** | | |
| **Neighbourhood Development** | | | | **0.724** | 0.406 | |
| **Nearness to Work** | | | | | **0.859** | |
| **Road Accessibility** | | -0.441 | 0.494 | | **0.538** | |
| **Distance to Centre of Attraction** | **0.594** | | | | | **0.685** |
| **Level of Education** | -0.453 | 0.463 | | | 0.349 | 0.474 |

**Extraction Method: Principal Component Analysis.**
**Rotation Method: Varimax with Kaiser Normalization.[a]**
**a. Rotation converged in 7 iterations.**

**Source**: *Field Survey (2021)*

The result presented in Table 8 shows varimax rotation result performed on the data which can be interpreted as follows: double allocation (0.894), high cost of titling (0.843), encroachment/trespassing (0.838), multiplicity of charges (0.745) and distance to centre of attraction (0.594) have a large positive loading on factor 1, and this factor can be described as a titling and locational factor. Gender (0.838), marital status (0.806) and occupation factor (0.762) have large positive loadings on factor 2 and can be described as socio-economic factor. Cost of land (0.928), time taken to acquire land (0.721) and income (0.581) have large positive loadings on factor 3 and can be described as acquisition factor. Access to infrastructure (0.806), site topography (0.749) and neighbourhood development (0.724) have a high and positive loading on factor 4, which can be categorised as land condition. Furthermore, nearness to work (0.859) and road accessibility (0.538) which can be described as accessibility have large and positive loadings on factor 5. Lastly, distance to centre of attraction has a large positive loading on both factor 1 (0.594) and factor 6 (0.685) and can be described as locational suitability factor. Together, all six factors were able to explain about 79.23% of the total variance. Two of these factors (land titling and acquisition factors) validate those of Adedayo (2018), Oyedeji (2018), Lawal and Adekunle (2018). Thus, concerted efforts should be made by relevant authorities to mitigate these factors to facilitate effective access to residential land by private developers in the city.

## 5. Conclusion and Recommendations

Most private developers in Minna acquired land for housing development through purchase from individuals, based on private treaty. This indicates that the informal land market in the city is very active despite the government's formal control of alienation and transfer of land rights in the State. This outcome affirms the findings of Udoekanem (2009), Bichi (2010), Owoeye and Adedeji (2015), Kuma and Ighalo (2015) that informal land delivery channel is the major source of access to land for private housing development in various parts of Nigeria. Also, titling and locational factor, socio-economic factor, procedural bottlenecks, land condition and accessibility are the significant factors in land purchasing from individuals for private housing development in the city. The results indicate that the most important of these factors are land titling factor (EV = 4.717), socio-economic factor (EV = 3.595) and land acquisition factor (EV = 1.996) with very strong factor loadings from double allocation (0.894), gender (0.838) and cost of land (0.928) respectively. The study concludes that these factors hinder effective access to land for private housing development in the city. These findings corroborates those of Adedayo (2018) and Oyedeji (2018). Thus, stakeholders in land administration and management in the city should consider these factors in the land administration system to facilitate private developers' access to land for private housing development in the city. These include the government, developers and land administrators.

Based on the findings of this study, it is imperative for the government to amend sections of the Land Use Act to accommodate the formal registration of customary land titles. This will curtail the incidence of double allocation of land as all lands in the city would be duly registered and titled, thereby boosting land tenure security in the city. On the other hand, it will enhance the supply of customary lands into the formal land market and consequently, the reduction in the cost of land in the city. These two latent variables — double allocation and cost of land — strongly correlate with titling and locational factor (0.894) and land acquisition factor (0.928) respectively as revealed by the study. Also, since most land transactions in the city are informal (0.52%) as found by this study, these informal titles are customary land rights. If they are formally registered, land transactions in the city would be more transparent as any prospective buyer could easily verify the ownership details of such land at the Lands Registry in the State Ministry of Lands and Housing to avoid the incidence of double allocation.

Furthermore, the outcome of this study is very valuable to private housing developers in Niger state. Since developers need cost-effective land to develop affordable houses in the city, such land should be free from legal encumbrances posed by titling issues. These issues lead to a multiplicity of charges and has significant loading on titling and locational factor (0.745) as found by this study. To this end, private housing developers in the city through the Real Estate Developers Association of Nigeria (REDAN) should partner with the State government to acquire suitable sites for private housing development at appropriate locations within the city. Such sites should be duly serviced with basic amenities such as good road network, police station, health care centre,

bank, electricity and water supply and then re-allocated to private individuals to develop their houses. This initiative will minimize the cost of land for housing development and also eliminate the issue of double allocation of plots as the title would be issued directly by the State government through its Ministry of Lands and Housing.

Finally, the land titling factors which influence access to land for private housing development in Minna can be mitigated through efficient land administration and management. To achieve this, land officers in the State Ministry of Lands and Housing should be retrained in contemporary land administration systems. Such training should focus on the application of geospatial technologies in land administration in a developing city. This will improve the efficiency of the government's land titling process as well as minimize the challenges encountered by private developers in obtaining titles to land acquired for housing development in the city.

**References**

Adedayo, A. M. (2018). Evaluation of factors influencing access to residential land in Lokoja metropolis, Kogi State, Nigeria. *FUTY Journal of the Environment*, 12(1), 1-10.

Ajayi, M. A. & Adebayo, M. A. (2017). Socio-economic factors affecting residential land accessibility in Akure Nigeria: A gender perspective. *International Journal of Built Environment and Sustainability*, 4(3), 165-171.

Akeju, A.A. (2007). *Challenges to providing affordable housing in Nigeria*. Paper presented at the 2nd Emerging Urban Africa International Conference on Housing Finance in Nigeria held at Shehu Yar Adua Centre, Abuja, 17-19 October.

Aluko, B. T., Olaleye, A. & Amidu, A. (2004). Problems of land delivery for housing development in Lagos State, Nigeria. *Conference Proceedings, International Symposium on Globalisation and Construction*, Rotterdam (Netherlands).

Bichi, A. M. (2010). *Land accessibility and implications for housing development in Kano Metropolis, Nigeria*. Unpublished PhD Thesis submitted to the Department of Geography, University of Sheffield, UK.

CAHF (2019). *Africa Housing Finance Yearbook 2019*. Retrieved from www.housingfinanceafrica.org on Monday 25th July, 2021.

Durand-Lasserve, A. & Selod, H. (2009). The formalisation of urban land tenure in developing countries. In Lall, S. V. *et al*. (Eds). *Urban land markets*. Washington D. C: World Bank.

Ekpo, A. (2019). Housing deficit in Nigeria: Issues, challenges and prospects. *Central Bank of Nigeria Economic and Financial Review*, 57(4), 177-188.

Enisan, G. & Aluko, E. (2015). Process of urban land use in Nigeria. *International Journal of Education and Research*, 3 (8), 87-100.

Fadairo, G. (2006). Erosion crisis and its effects on housing in Akure. In Fadamiro, J. A; Olujimi, J. A. and Atilagbe, A. M. O (Eds.). *Urban Environmental Sustainability: Interventions and*

*Responses*, pp160-168.

Farvacque, C. & McAuslan, P. (1992). *Reforming urban land policies and institutions in developing countries*. UMP Paper5. Washington, D.C: World Bank

Fruchter, B. (1954). *Introduction to factor analysis.* Van Nostrand.

Gan, X., Zuo Jian, Wen Tao & She Yujuan (2019). Exploring the adequacy of massive constructed public housing in China. *Sustainability*, 11, 1-17.

Payne, G., Piaskowy A. & Kuritz L. (2014). *Land tenure in urban environments*, United States Agency for International Development, Cloudburst Consulting Group.

Kuma, S.S. & Ighalo, J.I. (2015). Effect of access to land on housing delivery in the North Central States of Nigeria. *ATBU Journal of Environmental Technology*, 8(1),26-36.

Kwame, S. O. & Antwi, F. (2004). *The impact of land delivery and finance in the supply of residential accommodation in Ghana: The case of Accra, Tema and Kumasi*. Unpublished M.Sc. Thesis submitted to the Department of Real Estate and Construction Management, Royal Institute of Technology, Stockholm.

Lawal, A. O. & Adekunle, I. A. (2018). Access to land and the delivery of affordable housing in Nigeria: An assessment of the Federal Housing Authority (FHA) in Abuja, 1991 to 2013. *SAGE Open*, April – June, 1 – 7. DOI: 10.1177/2158244018777281

Lipman B. & Rajack R. (2011). Improving access to urban land for all residents: Fulfilling the promise. *Urban Development Series*, Urban Development and Local Government Unit Sustainable Development Network the World Bank, Washington DC.

Mabogunje, A.L. (2002). *Land management in Nigeria: Issues, opportunities and threats*. Lead paper at the National Conference on "Land Management and Taxation", University of Lagos, Lagos, July 16th, 1-7.

Mabogunje, A.L. (2003). *Land management in Nigeria*. Proceedings of a National workshop on Land Management and Property Tax Reform in Nigeria, The Department of Estate Management, University of Lagos, Akoka, Lagos. 4-5th November.

Mohammed, A. (2016). *Assessment of statutory land acquisition in Minna Niger State, Nigeria*. Unpublished M. Tech. Thesis in Sustainable Urban Development, Federal University of Technology Minna, Nigeria.

Moore, E. A. (2019). Addressing housing deficit in Nigeria: Issues, challenges and prospects. *Central Bank of Nigeria Economic and Financial Review*, 57(4), 201-222

Morakinyo, K.O., Okunola, A.S., Ogunrayewa, M.O. & Olanrewaju, D. (2015). A review of private sector's involvement in urban housing provision in Nigeria. *International Journal of Civil Engineering, Construction and Estate Management*, 3(2), 36-47.

National Bureau of Statistics (2011). *Annual Abstract of Statistics*. Abuja: National Bureau of Statistics

NTWG (2009). *Report of the vision 2020 National Technical Working Group on Housing*. Abuja: The Presidency.

Nubi, T. G. & Ajoku, C. (2011). Nexus between effective land management and housing delivery in Lagos. *Environment and Urbanization*, 23(1), 285 – 303.

Ogu, V. I. & Ogbuozobe, J. E. (2001). Housing policy in Nigeria: Towards enablement of

private housing development. *Habitat International*, 25(4), 473-492.

Okoth-Ogendo, H.W.O. (1993) . Agrarian Reform in Sub-Saharan Africa: An Assessment of State Responses to the African Agrarian Crises and their Implications for Agricultural Development. In Bassett, T. and Crummey, D. (eds). *Land in African Agrarian Systems.* Madison: The University of Wisconsin Press.

Olujimi, J. A. B. & Iyanda, A. (2013). *Physical planning implications of access to residential land and legal security of tenure in Lagos metropolis*, Nigeria, Environment for Sustainability, FIG Working Week, Abuja, 6 – 10 May.

Omirin, M.M. (2002). Issues on land accessibility in Nigeria, *Proceedings of the National Conference on Land Management and Taxation*, University of Lagos, Lagos, 16th & 17th July, pp18-27.

Omirin, M. M. (2003). Issues in land accessibility in Nigeria. *Proceedings of a National workshop on land management and property tax reform in Nigeria*, The Department of Estate Management, University of Lagos, Akoka, Lagos. 4-5th November.

Olayiwola, L.M. & Adeleye, O. (2006). *Land reform, experience from Nigeria*. Paper presented in 5th FIG Regional Conference with the theme "promoting land administration and good governance", held at Accra, Ghana.8-11th March.

Owoeye, O. J. & Adedeji, Y. M. D. (2015). Urban land acquisition for sustainable housing delivery in Akure, Nigeria. *International Journal of Developing Societies*, 4(1), 10 – 20.

Oyedeji, J. O. (2018). Land accessibility for private housing delivery in Lagos, Nigeria. *Journal of Geography and Planning Sciences*, 3 (1), 50 – 63.

Oyediran, O. S. (2019). Institution and housing development: Mirage, magic and miracle of low-cost housing in Nigeria. *Central Bank of Nigeria Economic and Financial Review*, 57(4), 37-68.

Oyedokun, T.B., Adewusi, A.O., Ojo, B., Onakoya, B.O., and Akinbogun, S.P. (2012). Constraints to land accessibility by urban residents in Akure, Nigeria. In Laryea, S., Agyepong, S.A., Leiringer, R., and Hughes, W. (Eds.) *Proceedings of the 4th West Africa Built Environment Research (WABER) Conference*, Abuja, Nigeria, 1249- 1260.

Quan, J. (2006). *Land access in the 21st century: Issues, trends, linkages and policy options*. United Kingdom: Natural Resources Institute, University of Greenwich.

Samaniego, P. A. H., Martínez, R. L. E., & Huylenbroeck, G.V. (2017). Factors affecting land use decisions in the Peninsula of Santa Elena, Ecuador: A transaction costs approach, Compendium, 4(7), 20 – 34.

Stebek E.N. (2015). Access to urban land and its role in enhancing business environment: Multi-track versus mono-route land-use markets, *Mizan Law Review, 9(1),1-36*.

United Nations (2003). *The challenge of slums: Global report on human settlements*. Nairobi: United Nations Human Settlements Programme (UN-HABITAT)

United Nations (2017). *New urban agenda*, United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, Ecuador, on 20 October.

Udoekanem, N. B. (2009. Land policy as a constraint to sustainable housing delivery in the Niger

Delta Region of Nigeria. *Ife Journal of Environmental Design and Management*, 2 (1), 30 – 39.

Udoekanem, N. B., Adoga, D. O. & Onwumere, V.O. (2014). Land ownership in Nigeria: Historical development, current issues and future expectations. *Journal of Environment and Earth Sciences, 4(21), 182 - 188*.

USAID (2014). *Land tenure in urban environments*. United States Agency for International Development's Division of Land Tenure and Property Rights. Retrieved from https://www.Landcontent/uploads/2016/09/USAID_Land_Tenure_Urban_Brief_061214-1.pdf

World Bank (2016). *Inclusive cities and access to land, housing and services in developing countries*. Washington, D.C: The World Bank Group.