

## LOCATIONAL PATTERN AND PHYSICAL FORMS OF GATED COMMUNITIES IN KANO METROPOLIS, NIGERIA

**Mahmud Abba**

*Department of Geography, Bayero University Kano*

**Corresponding Author's email:** [mabba.geog@buk.edu.ng](mailto:mabba.geog@buk.edu.ng)



### Abstract

As emerging residential spaces, gated communities have been in the limelight of urban researches as well as housing and neighbourhood studies since the 1970s. In Nigeria, they are gradually assuming a major expression of the country's urban growth as their increasing emergence is obvious in major cities such as Lagos, Abuja, Kano and Port Harcourt. The aim of this paper is to describe the locations and physical forms of gated residential developments in Kano metropolis. Quantitative data on the location, number, size and distribution of the gated housings were used. These were sourced from structured observations, interpretation of satellite imageries and the use of GPS device. The metropolis was divided into eight major residential areas which were used as sampling units. GIS based Nearest Neighbour Analysis was used to determine the spatial pattern of distribution of the Gated Neighbourhoods. A total of 34 major gated residential developments and a number of gated streets or "privatized public streets" were identified. These are found in almost every part of the city. More than half (57%) of the gated residential areas are located in Nasarawa and Tarauni local government areas. All the identified housings are located either on or close to important streets or roads of the metropolis. With the nearest neighbour index of 0.5 and z-score of -5.1, the gated developments have a cluster spatial pattern of distribution. It is recommended that policies should be in place to provide guidelines and regulations for locating and construction of gated estates in the metropolis.

**Keywords:** Gated Communities, Metropolis, Estates, Cluster, Location, Size.

### Introduction

At the end of the Second World War in the mid 1940s, gated communities emerged in many developed countries of the world (Salah & Ayad, 2018), they continue to developed in number and residents throughout the 1950s and 1960s and are currently the most dominant housing types in these countries (Levent & Gulumser, 2004). While in many parts of the developing world, as a result of the boom in the real estate during the late 1980s, there was a wide spread emergence of modern walled communities as forms of residential neighbourhoods (Ajibola, Oloke & Ogungbemi, 2011); and they are now challenging the spatial, organizational, and institutional order that has shaped modern cities (Webster, Glasze & Frantz, 2002).

Gated communities are generally described as types of residential developments or housing estates having strictly-controlled entrances for pedestrians, bicycles and automobiles often characterized by closed boundary walls and fences (Mahgoub & Khalfani, 2012). Usually consisting of small housing streets and may include a variety of collective amenities (Ajibola *et al.*, 2011); they are members of the bigger family of exclusive residential developments that organized

private governance and social structure with interconnections with their spatial, legal and social system (Macionis & Parillo, 2017).

However, what differentiated these communities from the conventional socially and economically segregated residential neighbourhoods is that, the former is defended by walls with their access being controlled by gates sometimes manned by guards or private security forces (Morgan, 2013; Macionis & Parillo, 2017; Salah & Ayad, 2018). Such types of neighbourhoods accentuate patterns of residential segregation more profoundly than the most exclusive urban neighbourhoods because they separate their dwellers from those living outside them by means of physical barriers (Macionis & Parillo, 2017).

Since the 1970s, gated communities as emerging residential spaces have been in the limelight of urban researches as well as housing and neighbourhood studies. In U.S. cities to be specific, they became subjects of academic discussions in the 1980s–1990s. The plethora of studies on gated residential development around the world will convince one that this housing trend is unavoidable and universal (Boonjubun, 2019).

There is a significantly large body of academic work on the phenomenon of gated communities from different parts of the world. Most systematically studied in the United States by Blakely and Snyder (1997) and later by Morgan (2013), gated communities are now extensively researched in many countries. For instance, studies in Asia on gated communities were carried out by Wang and Pojani (2019) in China; in Turkey by Tanulku (2014) and in Indonesia by Hishiyama (2010); Hapsariniaty, Sidi and Nurdini (2013); Nasution and Zahrah (2015). In Malaysia studies were conducted by Abdullahi *et al.* (2012); Mutalib *et al.* (2012) and Mohd *et al.* (2015). In Africa a number of such researches were undertaken especially in South Africa (Landman 2004; Ramaroka & Tsheola, 2014) and in Egypt by Kessieba (2015), and Salah and Ayad (2018). In Nigeria, even though there is no sufficient comprehensive data on the locations, sizes, populations, forms and characteristics of gated communities, however their increasing emergence is very obvious in the country's major cities such as Lagos, Abuja, Kano and Port Harcourt. They are gradually assuming a major expression of the country's urban growth (Uduku, 2012).

However, most of these researchers were mostly focused on issues such as provision and marketing of gated communities (Leevent & Gulumser, 2004), gated property values (Ajibola *et al.*, 2011); social interactions, fragmentation and exclusion (Tanulku, 2014; Morgan, 2013; Ramaroka & Tsheola, 2014; Boonjubun, 2019). Others were concerned with conceptualising the phenomenon (Blakely & Snyder, 1997) and formulating models and typology for the phenomenon (Coy & Pohler, 2001; Grant & Mittlelsteadt, 2004). However, important geographical issues such as the location of the phenomenon within cities and how it affects its physical characteristics were not adequately studied.

Location is one of the very fundamental features that geographers are interested in. It is one single factor that influences several physical features or characteristics of gated communities such as sizes, type of buildings, density and forms, within a city. Studies have pointed to a relationship amongst some of the features of gated housings such as amenities and facilities, location and size (Araujo & de Queiroz, 2018).

Kano metropolis, to be specific, is one of the largest cities in the country and the primate city of the northern part of the country. Modern gated communities are structurally recognizable urban forms in the metropolis. Today they formed important residential developments or housing types as there are tens of gated housing developments within the metropolis. These contain thousand of housing units that are homes to hundred thousands of the city's population. There are also

several hundred or perhaps thousands of gated streets or privatized road enclosures in almost every section of the city. It can be understood therefore, that gated communities constitute significant physical, spatial and socio-economic realities of the metropolis. The objectives of this paper therefore are to describe the locations of gated communities in Kano metropolis and examine how it influenced the physical forms of the residential developments.

### The Study Area

Kano metropolis, lies between latitudes 11° 50' to 12° 07' N and longitude 8° 22' to 8° 47' E, and altitude 472 meters above sea level (Olofin, 2014). Kano metropolis is bordered by Minjibir LGA to the Northeast and Gezawa LGA to the East, Dawakin Kudu LGA to the South East and Madobi and Tofa LGAs to the South West. The metropolis is among the fastest growing cities in Nigeria (Nabegu, 2010) and it encompasses eight local government areas (Figure 1).

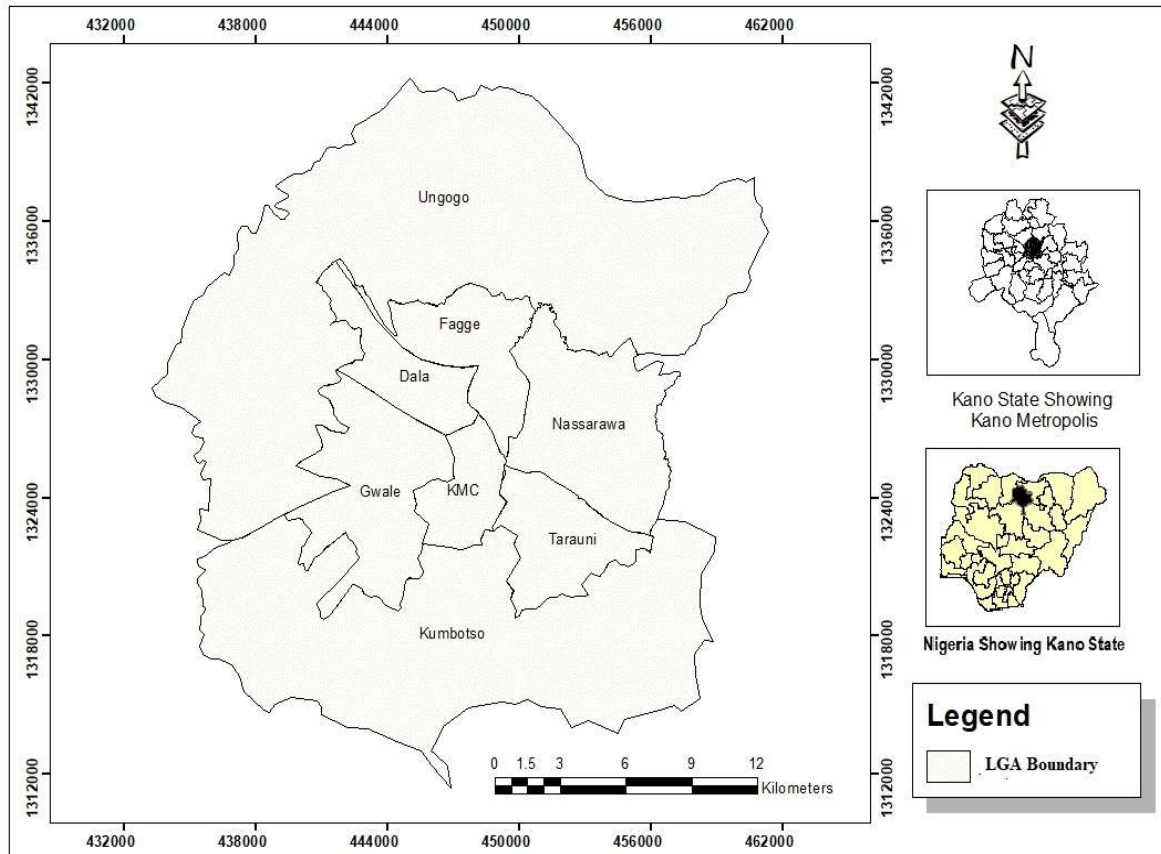


**Figure 1:** Kano Metropolis

**Source:** Cartography Lab. Dept. of Geography, BUK (2023).

By the year 2019, the metropolis is projected to be populated by about 4.5 million people (Mohammed *et al*, 2018), making it second largest after Lagos (Liman, 2015). The rapid increase of population in the metropolis is accompanied by aerial development as more and more adjacent rural areas are absorbed into the urban sphere; there is also in-filling of every available open space within the existing built up areas (Maiwada, 2014). It is located at the central part of Kano closed settled zone, and therefore have the highest density of population and buildings, as a result of

industrialization and other economic development, it has also through time become a cosmopolitan city with several ethnic groups (Ibrahim, 2014).

The residential area, which is the dominant land use in the metropolis, is generally divided into two major clusters (Adamu, 1999; Liman & Adamu, 2003; Liman, 2015). These are: (a) The Kano old city consisting of the space within the wall and the adjoining Fagge settlement just outside it and (b) The Township area which is further subdivided into: (i) Nasarawa G.R.A covering Nasarawa, Bompai and Magwan areas located east of Kano old city; (ii) The Lebanese-Syrian quarters located at Fagge-Ta-Kudu between railway station and Kantin Kwari market is composed of mixed residential and commercial land uses around Beirut Road, Ibrahim Taiwo Road (iii) Sabon Gari area and (vi) Tudun Wada Area: This area comprises Tudun Wada, Gwagwarwa (Gabari), Gama (Brigade), Dakata, Dawakin-Dakata and Kawaji.

Several efforts were made by successive federal and state administrations to meet the ever increasing housing demands in the area. These efforts translated into the creation of a number of housing estates such as the Kundila Housing Estates, Shagari Quaters, Gwammaja Housing, Ja'oji Estate, Kabuga Housing, Danladi Nasidi Housing, Zawaciki Housing and Ibrahim Kunya Estate (Abdullahi, 2004). In 2014 three major estates were constructed mainly for the high income earners. These are the Kwankwasiyya, Amana and Bandirawo estates consisting thousands of housing units with modern infrastructure and amenities. Public organizations such as police, army and air force, Railway Corporation, Universities, Prison, Immigration and Costume Services, hospitals, local governments and a host of others have also provided estates which serve as quarters for their staff (Abdullahi, 2004).

## **Literature Review**

### **Locations, Forms and Sizes of Gated Communities**

Gated communities within cities can generally be classified based on their location; that is whether they are located within the inner-city, the suburban area or at the edge of the city. On the other hand, they can also be categorised according to their existing types of buildings; vertical, horizontal, semi-horizontal or mixed-type development (Coy & Pohla, 2002; Grant & Mittlesteadt, 2004). They can also be classified based on the type of residents and the associated style of living (Coy & Pohla, 2002). Within the inner-city, older exclusive residential areas are regularly transformed into gated communities by adding security features such as road blocks. Thus, location of gated communities within the city can determine several other factors such as building types, size, resident's characteristics and style of living (Table 1).

Such inner-city gated communities range from small developments consisting of five to ten housing units with few shared amenities such as streets and parking spaces, to very large ones which consist of tens or hundreds of units with varieties of amenities and services (Mahgoub & Khalfani, 2012). Even though this model may not represent the reality obtainable in African countries such as Nigeria it however assisted in determining the possible influence of the locations of gated communities within cities on their structural or building forms. It also provided the bases for determining the relationship between locations of gated communities with the type of residents occupying them in Kano metropolis.

**Table 1:** Location and Structural Forms of Gated Communities within the City

| Location Within the City                                | Type of Building                                            | Types of Residents                                      | Description                                                                                                                                      |
|---------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Inner-city close to the Central Business District (CBD) | Vertical developments/<br>Condominium/<br>Gated Towers      | Urban elites                                            | High rise buildings, residences, hotel-houses, integrated with shopping malls and office blocks.                                                 |
| Periphery of the City                                   | Horizontal gated Developments /<br>Gated villa towns        | For upper or upper middle-class families with children. | Detached or attached single dwelling units that require large space                                                                              |
| Either in inner or outer city                           | Semi-Horizontal Developments/<br>Gated apartment blocks.    | They are built for upper or middle class.               | Apartment blocks                                                                                                                                 |
| Edge of the city                                        | Mixed-Type Developments /<br>Gated towns or satellite city. | People of any Class                                     | Towns or satellite city. They constitute two or three of other development types. They are basically self-contained master-planned little towns. |

**Source:** Levent and Gulumser (2004).

### Location, Motives and Consequences Model

This model was developed by Coy and Pohler (2002) based on case studies of some Latin American cities. The model described two major motives that can be linked with the boom-like development of gated communities in the cities of developing countries namely social and economic motives. The model further identified two corresponding consequences of gated residential developments as: consequences for the society and consequences for the city's structure.

However, this review is on the view that the model is very specific and too narrow to provide comprehensive explanations for the causes and consequences of the emergence of gated residential projects in other developing countries like Nigeria. Therefore, for the purpose of clarity and in order to make the model more flexible and more applicable to other cities of the world, the motives can further be broken into three these are; social, economic and locational or spatial motives. Three corresponding consequences that are mutually related to one another are also identified as follows; social and administrative, economic as well as spatial consequences (Ozcan & Kozaman, 2006) (Figure 1).

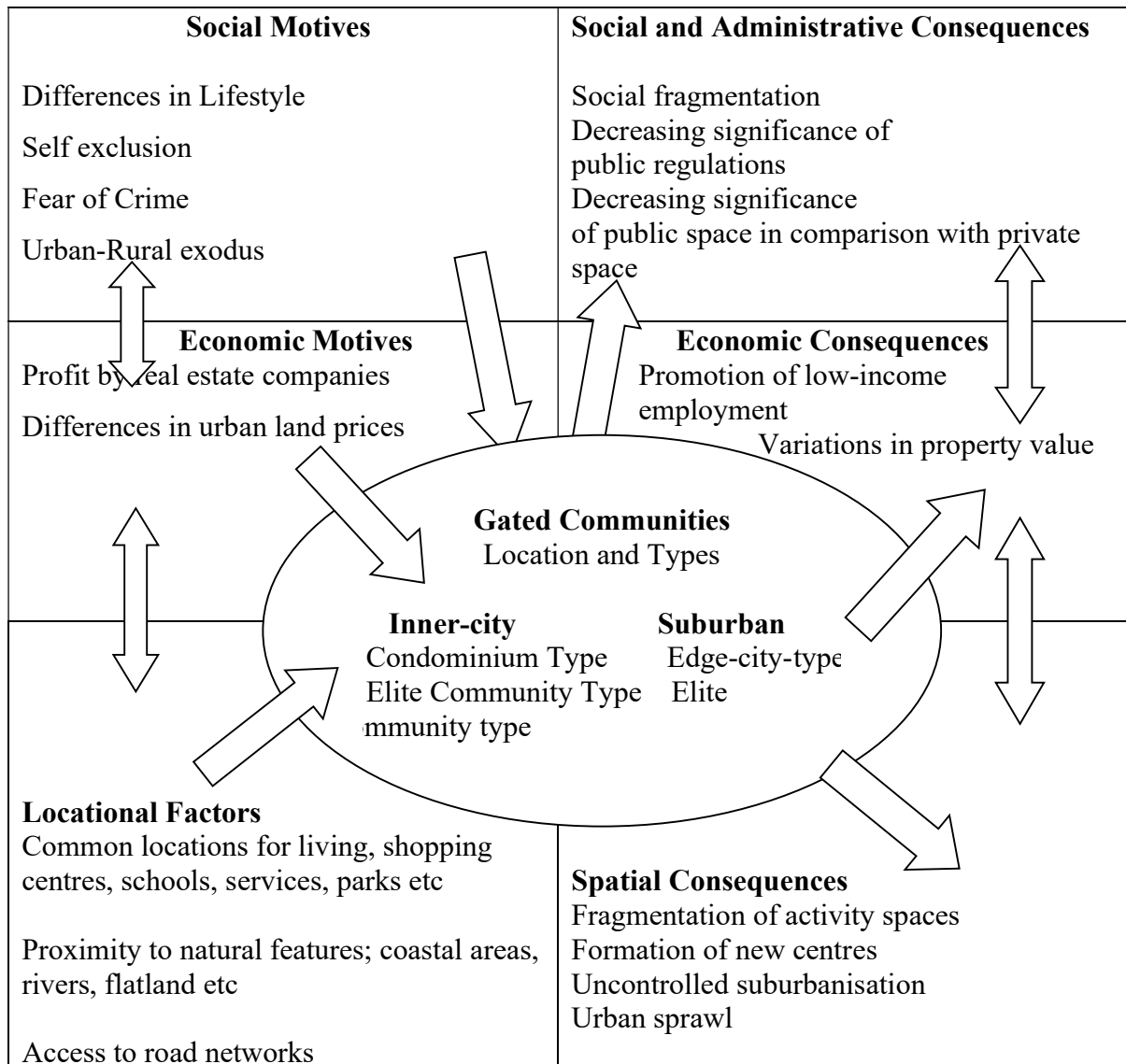


**Figure 1:** Location and Consequences of Gated Communities in Third World Cities

**Source:** Adapted from Coy and Pohler (2002).

The model also elucidates on how the location of gated communities within the city is related to their types (Figure 1). It will form an important theoretical basis for undertaking an empirical study of gated communities in urban centres of developing countries like Nigeria. It helped in understanding how location of the residential communities within a city; whether the inner-city neighbourhoods, the suburbs or the outer limits of the city, determines its type, size and the building structure. It also serves as the background for finding the major drivers for the rise of gated residential estates. In addition, the model is very useful in determining the possible implications of the phenomenon on the socio-economic and spatial development in the present study environment.

### Types and Sources Of Data

Quantitative data were used for the research. These relate to spatial attributes such as location, number, size and distribution of the gated housings. Other quantitative data used relate to the

physical structures of the gated estates such as number of residential units in each estate, number of fences, gates and other forms of physical fortifications. The research also used Google Earth satellite imageries.

Structured observations were carried out to take inventory of gated residential areas and to collect information on their physical and spatial characteristics. Global Positioning System (GPS) device was used to determine the geographical coordinates of the housing developments. Physical and spatial data such as the number of households within the estates, types of apartment buildings (storey, flats, bungalows, detached or semi-detached etc), nature of the walls, fences, gates and other forms of physical fortifications, were collected.

The five major residential areas within the metropolis identified by Adamu (1999), Liman and Adamu (2003) and Liman (2015) as well as additional eight others identified by the present research (Table 2). For the fact that every residential neighbourhood in the metropolis falls within one of these 13 residential areas, thus they were used as sampling units for the research. Beside the main gated communities, there are also a number of gated streets or “privatized public streets” that are found in almost every part of the city. Therefore, three major gated streets were purposively selected, because of their concentration in one neighbourhood, the length of the streets as well as the number of housing units within the streets for inclusion in the analysis.

The coordinates of the gated communities captured using GPS instrument were imported into GIS software (ArcMap 10.2.1) and these were used to determine the locations of the gated communities. GIS based Nearest Neighbour Analysis was employed to determine the spatial pattern of distribution of the neighbourhoods. The Nearest Neighbour Index (NNI), as explained by Clark and Evans (1954) is calculated as the mean of the distance observed between each point and its nearest neighbor with the expected mean distance if the distribution was random:

#### Observed Average Distance

Expected Average Distance

For random pattern,  $NNI = 1$

For clustered pattern,  $NNI = 0$

For dispersed pattern,  $NNI = 2.149$

### **Results and Discussion**

#### **Inventory and Locations of Gated Communities**

There are roughly 34 major gated communities in Kano metropolis and several gated streets or “privatized public streets” that are found in almost every part of the city. Therefore, a total of 37 gated communities were identified (Table 2) viz: three are gated streets and 34 gated residential estates. While some have been developed and occupied for several decades others are still under construction, thus are yet to be occupied.

Using 13 major residential areas identified as sampling units the largest numbers of gated communities are located within the Nasarawa and Hoto/Tarauni areas (Table 2). These neighbourhoods are the Government Reservation Areas of Kano (GRAs), therefore they constitute parts of the core urban Kano and the most modern and well planned parts of the metropolis. That is why all the gated public housings of the 1980s and most of the recently developed exclusive gated communities are located there. Woo and Webster (2014), observed a tendency for the developers of gated communities in Seoul (South Korea), to choose sites endowed with public infrastructure, i.e. close to hospitals, supermarkets, department stores, and schools.

The sub-urban areas such as Zaria Road, Western Bye-pass, Mariri / Farawa areas and Jaba/Panisau areas are also attracting the development of considerable number of gated estates. These areas,

being at the periphery of the metropolis, provide greater space for residential developments. As a result, large-scale public housing projects are taking place there. The ancient city of Kano is one of the residential units with only one gated housing development. This is basically because of the constraints of space for the creation of new housing estates as well as the prevailing Hausa traditional social setting in which people move freely from one location or community to the other without restrictions.

Another important locational attribute of gated communities is their close physical proximity to major roads and streets. All the identified housings are located either on or close to important streets or roads of the metropolis. In fact, a number of the gated estates and gated streets are named after the streets or the roads on which they are located e.g Burma Road Estate, Oyo Street Estate, Alu Avenue Estate, Sokoto Road Estate, Borno Avenue, Batawa Close Estate etc.

Others gave names to the roads or streets on which they are located e.g UDB road and CBN Quarters road (Table 3). This is because to both the estate developers and the residents, ease of access to the gated communities from other parts of the city is a crucial factor for the success of the housing, as daily commuting within the metropolis is an everyday reality. Ozcan and Kozaman (2006) found similar effect of transportation as one of the main determinants of the location of gated communities in Istanbul, Turkey where most of the estates are located adjacent to main transportation axes and the secondary axes.

**Table 2:** Inventory and Locations of Gated Communities

| S/N | Residential Area             | Gated Communities                                                                                                                                                     |
|-----|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | The Kano old city            | Dantata Estate.                                                                                                                                                       |
| 2.  | Nasarawa G.R.A               | Nigerian Airways Estate, <i>Gida Tara</i> Estate, Alu Avenue Estate, Abubakar Rimi Estate, Sokoto Road Estate, Borno Avenue, G.T.C Quarters, President Avenue Estate. |
| 3.  | Sabon Gari area              | Burma Road Estate and Oyo Street Estate                                                                                                                               |
| 4.  | Kawaji / Sauna Area          | Ishaq Rabi'u Estate and Hassan Estate.                                                                                                                                |
| 5.  | Hotoro / Tarauni Area        | UDB Quarters, NTA Quarters, Hadejia/Jama'are Quarters, CBN, Quarters, Sabo Nanono Estate, Shehu Musa Estate, NIPOST Quarters and Bank of the North Quarters.          |
| 6.  | Yankaba / Hadejia Road Area  | <i>Batawa</i> Quarters                                                                                                                                                |
| 7.  | Gandu / Hausawa/ Court Road  | Hausawa Gated Streets and BUK Staff Quarters                                                                                                                          |
| 8.  | Na'ibawa /Darmanawa          | Ado Bayero Royal City                                                                                                                                                 |
| 9.  | Sharada / Dorayi Area        | Sahelian Ranch Estate ( <i>Gidan Sarkin Dutse</i> ).                                                                                                                  |
| 10. | Janbulo / Rijiyar Zaki Area  | <i>Janbulo</i> Gated Streets                                                                                                                                          |
| 11. | Mariri / Farawa Area         | Ibrahim Kunya Estate and Abba Maikwaru Estate.                                                                                                                        |
| 12. | Jaba / Panisau Area          | Divine Estate, Unity Estate, NCCA Quarters and Aviation Quarters.                                                                                                     |
| 13. | Zaria Road /Western Bye-pass | Kwankwasiyya City, Al'Mukab City and Wailari Quarters.                                                                                                                |

**Source:** Field work (2019).

### Spatial Distribution of Gated Communities

Results from the Nearest Neighbour Analysis show that the nearest neighbour index 0.5 is less than 1 and z – score (-5.1) is less than 1.96. Thus the spatial pattern of distribution of the gated estate is cluster. Also, because the p – value is 0.00 means the pattern is significantly different from random at 99% confidence level. Reasons for this pattern of distribution are:

- (a) Because half of the gated estates are concentrated in the Government Reservation Areas of Nasarawa and Hotoro / Tarauni.
- (b) Considerable numbers of the estates (31 %) are located within the sub-urban areas of Mariri/Farawa area, Zaria Road and Jaba/Panisau areas
- (c) Lastly, all the gated estates are located along road transportation lines. This makes the phenomenon to be found in clusters along the major roads and streets of the city.

A close observation of the distribution of the gated housings across the local government areas of the metropolis shows that 35% of them were located in Nasarawa Local Government Area and 22% are found within Tarauni Local Government Area (Table 3). This implied that over half of the gated estates were located within the two local government areas. This can be attributed to the fact that gated communities in Kano originated within the oldest GRAs at Nasarawa, Hotoro and Tarauni, located within the two local government areas. These areas also have some of the finest infrastructure, amenities and services therefore many gated estates were subsequently located within the area. The two local government areas are also the most modern and most urbanized in the metropolis and the entire state, thus attracted several gated estates. No any gated estate was found within Kano Municipal and Dala local government areas (Table 3). These are some of the oldest, traditional and most densely residential areas of the metropolis as such attracted no any gated residential development.

**Table 3:** Distribution of the Gated Communities by Local Government Areas

| S/N | Gated Community            | Location                 | Local Government Area |
|-----|----------------------------|--------------------------|-----------------------|
| 1   | Gida Tara                  | Ahmadu Bello Way         | Nasarawa              |
| 2   | Bank of the North Quarters | Tarauni Maiduguri Road   | Tarauni               |
| 3   | NIPOST Quarters            | Tarauni Maiduguri Road   | Tarauni               |
| 4   | Ishaq Rabi'u Estate        | Kawaji                   | Nasarawa              |
| 5   | Hadejia Jama'are Estate    | UDB Road, Hotoro         | Tarauni               |
| 6   | NTA Quarters               | UDB Road, Hotoro         | Tarauni               |
| 7   | Central Bank Quarters      | CBN Quarters Road        | Tarauni               |
| 8   | Sabo Nanono Estate         | CBN Quarters Road        | Tarauni               |
| 9   | Nigerian Airways Quarters  | Kwairanga road           | Nasarawa              |
| 10  | Aviation Quarters          | Jaba / Panisau Road      | Ungogo                |
| 11  | Batawa Quarters            | Batawa Ave. Hadejia Road | Nasarawa              |
| 12  | GTC Quarters               | State Road               | Nasarawa              |
| 13  | Lamido Crescent Estate     | Lamido Crescent          | Nasarawa              |
| 14  | Abba Maikwaru Quarters     | Farawa, Maiduguri Road   | Kumbotso              |
| 15  | Shehu Musa Estate          | CBN Quarters Road        | Tarauni               |
| 16  | Hassan Estate              | Sauna / Kawaji area      | Nasarawa              |
| 17  | Dantata Estate             | Aminu Kano Way           | Gwale                 |
| 18  | Sahelian Ranch             | Sheik Jafar Road, Dorayi | Gwale                 |
| 19  | Ibrahim Kunya Estate       | Farawa, Maiduguri road   | Kumbotso              |
| 20  | Divine Estate              | Panisau Road             | Ungogo                |
| 21  | Unity Estate               | Panisau Road             | Ungogo                |
| 22  | NCCA Quarters              | Panisau Road             | Ungogo                |
| 23  | BUK Quarters               | Court Road               | Tarauni               |

|    |                         |                           |          |
|----|-------------------------|---------------------------|----------|
| 24 | Kwankwasiyya City       | Kano - Zaria Road.        | Kumbotso |
| 25 | Sokoto Road Estate      | Sokoto Road               | Nasarawa |
| 26 | Abubakar Rimi Estate    | Lugard Road               | Nasarawa |
| 27 | Almukab City            | Tamburawa, Zaria Road     | Kumbotso |
| 28 | Alu Avenue Estate       | Alu Avenue                | Nasarawa |
| 29 | Almukab City            | Tamburawa, Zaria Road     | Kumbotso |
| 30 | Oyo Street Estate       | Oyo Street, Sabon Gari    | Nasarawa |
| 31 | Burma Road Estate       | Burma Road, Sabon Gari    | Fagge    |
| 32 | Ado Bayero Royal City   | Darmanawa Quarters        | Kumbotso |
| 33 | Wailari Quarters        | Wailari, Zaria Road       | Kumbotso |
| 34 | Janbulo Gated Streets   | Kabuga, Gwarzo Road       | Gwale    |
| 35 | Borno Avenue            | Borno Avenue, Sokoto Road | Nasarawa |
| 36 | Hausawa Gated Streets   | Hausawa Quarters          | Gwale    |
| 37 | President Avenue Estate | President Avenue          | Nasarawa |

**Source:** Field work (2019).

### **Physical Forms of Gated Communities**

Most inner-city gated communities are large condominium complexes, walled and with stringent security measures. While at the edge of the cities, very vast residential areas with high security and exclusivity exist. These are equipped with all the essential amenities and often supplied with abundant leisure facilities (Coy & Pohler, 2002).

In Kano metropolis, gated housing developments vary in their sizes; from as small as 5 – 10 houses, to medium size estates containing 11 – 40 housing units, large gated estates comprising 50 - 100 housing units. Majority of the gated housings fall within the small size category having just between 5 – 10 housing units. Examples include Gida Tara estate, Abubakar Rimi Memorial Estate, Sokoto Road Estate, Alu Avenue Estate etc. The medium size gated communities include, Abba Maikwaru Legislative village, Sabo Nanono Estate and Shehu Musa Estate (Table 4).

Just like the arrangement of human settlements described by the Christeller's Central Place Theory (1933), while there are many small and medium size estates, however there are few large gated estates in the metropolis (Table 4). This is because large estates require large urban space which is very scarce within the city. Thus, with the exception of Ado Bayero Royal City, all the large and very large estates are located within the sub-urban and peri-urban areas of the metropolis. Conversely, most of the small and medium estates are found within the core city areas (Table 4). As explained by Araujo and Alfredo (2018), small gated estates without leisure equipment, are more likely to be located near the city centre to allow their residents free access to public infrastructures and assets.

However, large gated communities with private leisure infrastructures tend to be located far from the central areas, increasing the attractiveness of the location to private enterprises and increasing the political demand for public goods provided by the government. Additional methodologies were employed, as alternative to mapping, to analyse gated communities based on their morphological and physical characteristics (Araujo & Queiroz, 2018). Even though there are no official data on gated communities in Kano metropolis despite their increasing importance, however the analyses of the physical forms of gated communities in the area cannot be over

emphasized. For in the long run, these may have significant impacts on the internal structure and morphology of the city at large.

**Table 4:** Number of Houses and Sizes of Gated Housings

| S/N | Gated Housings             | Number of Houses | Size       | Location within the city |
|-----|----------------------------|------------------|------------|--------------------------|
| 1   | Ibrahim Kunya Estate       | 90               | Large      | Sub-urban area           |
| 2   | Abba Maikwaru              | 41               | Medium     | Sub-urban area           |
| 3   | Ishaq Rabi'u Estate        | 34               | Medium     | Urban                    |
| 4   | Dantata Estate             | 6                | Small      | Urban                    |
| 5   | Kwankwasiyya City          | 576              | Very Large | Sub-urban area           |
| 6   | Sokoto Road Estate         | 16               | Small      | Urban                    |
| 7   | Abubakar Rimi Estate       | 10               | Small      | Urban                    |
| 8   | Alu Avenue Estate          | 20               | Small      | Urban                    |
| 9   | Oyo Street Estate          | 12               | Small      | Urban                    |
| 10  | Burma Road Estate          | 22               | Small      | Urban                    |
| 11  | Ado Bayero Royal City      | 310              | Very Large | Urban                    |
| 12  | President Avenue Estate    | 6                | Small      | Urban                    |
| 13  | Sabo Nanono Housing        | 24               | Medium     | Urban                    |
| 14  | Shehu Musa Estate          | 24               | Medium     | Urban                    |
| 15  | UDB Quarters               | 20               | Medium     | Urban                    |
| 16  | CBN Quarters               | 30               | Medium     | Urban                    |
| 17  | NIPOST Quarters            | 40               | Medium     | Urban                    |
| 18  | Nigerian Airways Quar.     | 85               | Large      | Urban                    |
| 19  | Hadejia Jama'are Quar.     | 12               | Small      | Urban                    |
| 20  | NTA Quarters               | 7                | Small      | Urban                    |
| 21  | Lamido Crescent Estate     | 12               | Small      | Urban                    |
| 22  | Gida Tara Estate           | 10               | Small      | Urban                    |
| 23  | Batawa Estate              | 10               | Small      | Urban                    |
| 24  | Al'mukab City              | 30               | Medium     | Peri-urban               |
| 25  | Wailari Estate             | 50               | Large      | Peri-urban               |
| 26  | BUK Staff Quarters         | 64               | Large      | Urban                    |
| 27  | Sahelian Ranch Estate      | 210              | Very Large | Urban                    |
| 28  | GTC Quarters               | 72               | Large      | Urban                    |
| 29  | Divine Estate              | 60               | Large      | Sub-urban                |
| 30  | Unity Estate               | 87               | Large      | Sub-urban                |
| 31  | NCCA Quarters              | 63               | Large      | Sub-urban                |
| 32  | Aviation (FAAN) Estate     | 16               | Small      | Urban                    |
| 33  | Janbulo Streets            | 167              | Very Large | Urban                    |
| 34  | Borno Avenue               | 33               | Medium     | Urban                    |
| 35  | Hausawa Gated Streets      | 95               | Large      | Urban                    |
| 36  | Hassan Estate              | 40               | Large      | Sub-urban                |
| 37  | Bank of the North Quarters | 32               | Large      | Urban                    |

**Source:** Field Work (2019).

As shown in Table 5, on the basis of their physical forms or structure, gated communities in Kano metropolis can be broadly categorized into six groups as follow:

- (a) **Storey Apartments:** Gated storey apartments consist of units of houses on different levels of stairs that are separated from one another. These may consist of small apartments with only one storey such as Batawa Quarters and Hadejia-Jama'are estate or bigger apartments with more than one storey as in Abba Maikwaru Legislative quarters, Abubakar Rimi Memorial estate and Ishaq Rabi'u Estate
- (b) **Detached storey apartments:** These are gated housings consisting of single dwelling units or houses that are stand alone. These may include series of detached storey buildings with a number of apartments as in BUK staff quarters, Burma Road estate, Nigerian Airways quarters and NIPOST staff quarters. There are also stand alone, single family, one storey buildings such as Gida Tara Estate and Dantata Estate.
- (c) **Bungalows:** Some gated housing developments such as Hassan Estate, Ibrahim Kunya Estate and NCCA Quarters have detached small to medium size, single storey houses.
- (d) **Small apartment Houses:** NTA quarters, Oyo Street Estate and President Avenue Estate are small buildings that are divided into flats or apartments on different floors.
- (e) **Mixed physical structures:** Some gated estates have multiple housing structures, which are a combination of storey buildings, duplexes, flats and bungalows. Examples: Ado Bayero Royal Estate, Al'mukab City, Ibrahim Kunya Estate and Kwankwasiyya City.
- (f) **Gated streets:** Gated residential streets are public roads, lanes, boulevards with gates or other forms of barricades at their entrances aimed at restricting access for pedestrians and automobiles, designed to privatized public spaces. Examples of gated streets are Janbulo gated streets, Divine Estate and Unity Estate.

**Table 5:** Physical Forms of Gated Communities in Kano

| S/N | Gated Housings            | Status                | Physical Forms                      |
|-----|---------------------------|-----------------------|-------------------------------------|
| 1   | Abba Maikwaru             | Fully occupied        | Storey apartments                   |
| 2   | Abubakar Rimi Memorial    | Fully occupied        | Storey apartments                   |
| 3   | Ado Bayero Royal City     | Occupied              | Mixed, storey/duplex/detached flats |
| 4   | Al'mukab City             | Fully occupied        | Storey apartments/detached upstairs |
| 5   | Alu Avenue Estate         | Partially occupied    | Storey apartments                   |
| 6   | Aviation Quarters         | Fully occupied        | Small detached houses               |
| 7   | Bank of the North         | Partly used dormitory | Storey apartments                   |
| 8   | Batawa Estate             | Fully occupied        | Small storey apartments             |
| 9   | BUK Staff Quarters        | Fully occupied        | Detached storey buildings           |
| 10  | Burma Road Estate         | Fully occupied        | Detached storey buildings           |
| 11  | Borno Avenue              | Fully occupied        | Gated streets                       |
| 12  | CBN Quarters              | Partially occupied    | Storey apartments                   |
| 13  | Dantata Estate            | Periodically used     | Detached upstairs                   |
| 14  | Divine Estate             | Fully occupied        | Gated streets                       |
| 15  | Gida Tara Quarters        | Fully occupied        | Detached upstairs                   |
| 16  | Lamido Crescent Quart.    | Fully occupied        | Storey apartments                   |
| 17  | GTC Quarters              | Fully occupied        | Mixed storeys & flats               |
| 18  | Hadejia Jama'are Quarters | Fully occupied        | Small storey blocks                 |
| 19  | Hassan Estate             | Fully occupied        | Bungalows                           |

|    |                         |                    |                                    |
|----|-------------------------|--------------------|------------------------------------|
| 20 | Hausawa Gated Streets   | Fully occupied     | Gated Streets                      |
| 21 | Ibrahim Kunya Estate    | Fully occupied     | Bungalows / detached apartments    |
| 22 | Ishaq Rabi'u Estate     | Not occupied       | Storey apartments                  |
| 23 | Janbulo Gated Streets   | Fully occupied     | Gated Streets                      |
| 24 | Kwankwasiyya City       | Not occupied       | Mixed storey/duplex/detached flats |
| 25 | NCCA Quarters           | Fully occupied     | Bungalows / detached flats         |
| 26 | Nigerian Air Quarters   | Partially occupied | Detached storey buildings          |
| 27 | NIPOST Quarters         | Fully occupied     | Detached storey buildings          |
| 28 | NTA Quarters            | Fully occupied     | Small apartments                   |
| 29 | Oyo Street Estate       | Fully occupied     | Small apartments                   |
| 30 | President Avenue Estate | Fully occupied     | Small apartments                   |
| 31 | Sabo Nanono Housing     | Fully occupied     | Mixed storeys & detached flats     |
| 32 | Sokoto Road Estate      | Partially occupied | Blocks of upstairs                 |
| 33 | Sahelian Ranch Estate   | Fully occupied     | Mixed duplex/detached flats        |
| 34 | Shehu Musa Estate       | Fully occupied     | Storey apartments                  |
| 35 | UDB Quarters            | Partially occupied | Mixed storeys & flats              |
| 36 | Unity Estate            | Fully occupied     | Gated streets                      |
| 37 | Wailari Estate          | Fully occupied     | Storey apartments                  |

**Source:** Field Work (2019).

### **Conclusion and Recommendations**

The phenomenon of gated residential development is a contemporary trend of housing development in Kano metropolis. There are presently a considerably large number of gated developments in the metropolis and still almost every new public and private multi unit residential project is in form of gated development. The major factors that determine the location of gated communities in the metropolis are proximity to the city centre, access to good city plan and infrastructure, enough space for buildings and proximity to major roads and streets.

The size of the gated developments is controlled by their locations within the city. Therefore, while the medium and large gated estates are found at the outskirts of the city, the small gated developments are located right inside the city. The gated developments also come in different physical structure and architectural designs. This may have profound implications on the morphology and physical form of the city.

Because of their possible spatial and physical implications on the metropolis, it is recommended that policies should be in place to provide guidelines and regulations for locating and construction of gated estates. Also Planning authorities should efficiently monitor and control the development of gated residential development within the ambit of the extant town planning regulations.

## References

- Abdullah, A., Salleh, M. N. M. and Sakip, S. R. M. (2012), Fear of crime in gated and non-gated residential areas. *Procedia - Social and Behavioral Sciences* 33: 63 - 69
- Adamu, M. U. (1999), *Confluences and Influences: The Emergence of Kano as a City- State*. Kano: Munawwara Books Foundations.
- Abdullahi, A. (2004), Spatial Variation of Housing Rent in Kano Metropolis. Unpublished M.Sc Dissertation Land Resource (Administration). Geography Department, Bayero University, Kano.
- Ajibola, M. O., Oloke, O. C. and Ogungbemi, A. O. (2011), Impacts of Gated Communities on Residential Property Values: A Comparison of Onipetesi Estate and its Neighbourhoods in Ikeja, Lagos state, Nigeria. *Journal of sustainable development* 4 (2): 72 – 79
- Araujo, A. S. and Alfredo, P. Q. (2018), Spatial Characterization and Mapping of Gated Communities. *International Journal of Geo-Information*, 28 (7): 1 – 22
- Boonjubun, C. (2019), Also the Urban Poor Live in Gated Communities: A Bangkok Case Study *Social Sciences*. 219 (8): 1 – 16
- Blakely, E. J. and Snyder, M. G. (1997), *Fortress America: Gating communities in the united states*. Washington, DC: Brookings institution press and Lincoln institute of land policy.
- Christeller, W. (1933), *Central Places in Southern Germany*. Englewood Cliffs: Prentice-Hall.
- Clark P. J and Evans F. C. (1954), Distance to Nearest Neighbour as a Measure of Spatial Relationships in Populations, *Ecology*, 35, 445 - 453.
- Coy M. and Pohler, M. (2002), Gated Communities in Latin American Megacities. *Environment and Planning B: Planning and Design* 29: 355 – 370
- Grant, J. and Mittelsteadt L. (2004), Types of Gated Communities *Environment and Planning b: Planning and Design*. 31: 913 – 930
- Hapsariniaty, A. W. Sidi, B. D. and Nurdini, A. (2013), Comparative analysis of choosing to live in gated communities: A case study of Bandung metropolitan area. *Procedia –social and behavioral sciences*. 101: 394 – 403
- Hishiyama, K. (2010), Uneasy society in Indonesia: with special attention to the gated community and CCTV in Bali. *Procedia social and behavioral sciences*. 2:14–23
- Ibrahim, A. M. (2014), Population growth in the Kano Region. In Tanko, A.I and Momale S.B (eds.) *Kano, Environment and Society* London: Adonis and Abbey Publishers. pp. 106 – 116.
- Kesseiba, K. (2015), Cairo’s Gated Communities: Dream homes or unified houses. *Procedia - Social and Behavioral Sciences*. 170: 728 – 738
- Landman, K. (2004), Gated communities in South Africa: Comparison of four case studies in Gauteng. Pretoria: CSIR cross-case study report
- Levent, T. B. and Gülümser, A. A. (2004), Production and Marketing of Gated Communities in Istanbul. 44<sup>th</sup> European Congress of the European Regional Science Association, Regions and Fiscal Federalism. Portugal, 25-29 August, 2004.

- Liman, M. A. (2015), A Spatial Analysis of Industrial Growth and Decline in Kano Metropolis, Nigeria. Unpublished PhD thesis, Department of Geography, ABU Zaria.
- Liman, M. A. and Adamu, Y. A. (2003), Kano in Time and Space: From a City to a Metropolis. In Hambolu, M.O (ed.) *Perspectives on Kano-British Relations*. Kano: Pyramid Text Prints. pp. 144 – 169
- Macionis, J. J. and Parrillo, V. N. (2017), *Cities and Urban Life*, 7<sup>th</sup> Edition, London: Pearson
- Maiwada, A. D. (2014), Urban planning in the context of rapid growth. In Tanko, A. I. and Momale, S.B (eds.) *Kano, Environment, Society*. London: Adonis and Abbey Publishers. pp. 401 – 410.
- Mahgoub, Y. and Khalfani, F. (2012), Sustainability of Gated Communities in Developing Countries. *Developing Country Studies*, 2 (6): 53 - 63
- Mohammed, M. U., Hassan, N. I. and Badamasi, M. M. (2019), In Search of Missing Links: Urbanisation and Climate Change in Kano Metropolis, Nigeria. *International Journal of Urban Sustainable Development*. 11 (3): 1 – 10
- Mohd, T. Johari, N. Abdul Ghani, R. and Rahman, N. A. Y. (2015), The impact of gated and guarded development concept from the social aspect: Non resident perspective. *Procedia - Social and Behavioral Sciences*. 170: 567 – 574
- Mutalib, N. F. A., Aziz, W. N. A. W. A., Noor, N. A. M., & Eves, C. (2012), Gated and guarded community (GACOS) in Malaysia: Worth or not?" *International Conference on real estate 2012. INTEREC 2012* Kuala Lumpur. <http://eprints.qut.edu> Accessed 10/11/2015.
- Morgan, L. J. (2013), Gated Communities: Institutionalizing Social Stratification. *The Geographical Bulletin*, 54: 24 – 36
- Nabegu A. B. (2010), An Analysis of Municipal Solid Waste in Kano Metropolis, Nigeria. *J. Hun Ecol, Kamla-Raj* 31(2): 111 -119
- Nasution, A. D. and Zahrah, W. (2015). The space is not ours, the life of public open space in gated community in Medan, Indonesia. *Procedia - Social and Behavioral Sciences*. 202: 144 – 151
- Olofin, E. A. (2014), Location, Relief and Landforms. In Tanko, A.I, and Momale S.B (eds.) *Kano, Environment and Society* London: Adonis and Abbey Publishers. pp. 21 - 32.
- Ozkan, E. and Kozaman, S. (2006), Gated Communities As an Efficient Force in the Fragmentation Process of Istanbul, 42<sup>nd</sup> ISoCaRP Congress, Istanbul, Turkey. <http://hurarsiv.hurriyet.com.tr/goster/haber.aspx?id+146646&yazadarid=10> Accessed 24/8/2022
- Ramoroka. T. and Tsheola, J. (2014), Gated communities and the privatization of public spaces in urban South Africa: Democratic social integration or exclusion? *Journal of geography and regional planning*. 7 (4): 58 – 68
- Salah, N. M. and Ayad, H. M. (2018), Why People Choose Gated Communities: A case Study of Alexandria Metropolitan area. *Alexandria Engineering Journal* 57: 743 – 753

- Tanulku, B. (2014), Gaining access into gated communities: Reflections from a fieldwork in Istanbul, Turkey. Field Research Method Lab at LSE.
- Uduku, O. (2012), Lagos: Urban Gating as the Default Condition. In: Bagaeen, S. and Uduku, O. (eds.) *Gated Communities: Social Sustainability in Contemporary and Historical Gated Developments*. Second Edition, London: Routledge pp. 39 - 47.
- Wang, H. and Pojani, D. (2019), The Challenge of Opening up Gated Communities in Shanghai, *Journal of Urban Design* 22 (4): 505 – 522
- Webster, C., Glasze, G. and Frantz, K. (2002), The Global Spread of Gated Communities. *Environment and Planning B: Planning and Design* 29 (3): 315 – 320.
- Woo, Y. and Webster, C. (2014), Co-evolution of Gated Communities and Local Public Goods. *Urban Studies* 51 (12): 539 – 554