



# The Impact of Peri-Urbanisation on Housing Development: Environmental Quality and Residents' Productivity in Ibeju-Lekki, Lagos

\*Dr. ADEDIREFUNMILAYO MOKUNFAYO<sup>1</sup>, Dr. ADEGBILEMICHAEL BABATUNDE<sup>2</sup>

<sup>1,2</sup> Department of Architecture, University of Lagos, Akoka, Lagos State, Nigeria

E mail: [funmidire@gmail.com](mailto:funmidire@gmail.com), E mail: [mboadeqabile@yahoo.com](mailto:mboadeqabile@yahoo.com)

## ARTICLE INFO:

### Article history:

Received 30 November 2017

Accepted 14 December 2017

Available online 16 December 2017

### Keywords:

Environmental Quality;  
Housing Development;  
Peri-Urbanisation;  
Residents' Productivity;  
Urbanisation;  
Sustainability.

This work is licensed under a  
[Creative Commons Attribution  
- NonCommercial- NoDerivs 4.0.](https://creativecommons.org/licenses/by-nc-nd/4.0/)

"CC-BY-NC-ND"

## ABSTRACT

*This paper assesses the impact of peri-urbanisation on housing, environmental quality and residents' socio-demography in Ibeju-Lekki peri-urban in Lagos, Nigeria. Primary data was collected through administration of 370 questionnaires to household heads in purposively selected sixteen settlements in the study area while secondary data was sourced from spatial images, land use maps and satellite images of the study area. Quantitative data was analysed using descriptive statistics while qualitative data was analysed using time series and satellite image analysis. The result shows a spatial expansion due mainly to increased housing development, a multi-dimensional environmental and socio-cultural challenges that impacts negatively on the quality of living and a literate, high income group dominance in the selected peri-urban settlements in Ibeju-Lekki. The study recommends a creation of a database to capture the pattern of housing development, residents' socio-economic demography and infrastructure needs for intervention in policy design for a sustainable development.*

JOURNAL OF CONTEMPORARY URBAN AFFAIRS (2018) 2(2), 60-70.

<https://doi.org/10.25034/ijcua.2018.3671>

[www.ijcua.com](http://www.ijcua.com)

Copyright © 2017 Journal Of Contemporary Urban Affairs. All rights reserved.

## 1. Introduction

Housing development in Lagos State peri-urban settlements is mostly characterised by a high level of informal development, poor quality housing and confronted with a multi-dimensional environmental and socio-cultural challenges. Prompted either by forced relocation or voluntary relocation from the central urban area due to housing affordability in the peri-urban, the migrants constituting mainly the low income group and middle income group, and guided by limited economic resources, see the peri-urban, a transition zone between the rural and urban as

the ideal place for personal housing development or rental housing (Allen, 2010). Among many challenges experienced by the migrants are conflict-ridden tenure, neo-customary land rights and arbitrary increase in land prices due to land speculation activities (Pradoto, 2012).

### \*Corresponding Author:

Department of Architecture, University of Lagos, Akoka,  
Lagos State, Nigeria

E-mail address: [funmidire@gmail.com](mailto:funmidire@gmail.com)

Housing deficits in the city centre are a prominent negative effect of urbanisation in the third world (McGranaham and Satterthwaite, 2014), thus greatly influencing housing development in the peri-urban settlements of Lagos. Most housing under the self-help housing development and mostly owner-occupied developments creates a distortion to the master plan because of lack of effective monitoring and limited economic capacity of the low-income group. Disparity in the socio-economic attributes of the residents aided by institutional policy creates a socio-cultural and residential segregation in most peri-urban settlements (Fitra and Pradoto, 2014). Also, housing development in Lagos peri-urban exhibits various characteristics that are not in conformity with existing building regulation in the state. Policy response to the pattern of growth does not correspond to the pace of rapid housing development in Lagos peri-urban settlements.

Although there exists good housing development led by government initiatives and private developers' initiatives, self-help housing in Lagos peri-urban housing developments is generally known to be poor in term of quality (Lawanson et al., 2012). Borne out of terms the varying socio-economic composition of the residents and poor institutional responses, most self-help housing developments in Lagos peri-urban are total deviation from acceptable housing quality standard. In addition, there is an institutional failure which translates to additional challenges in Lagos peri-urban housing developments and ultimately impairs the characteristics of housing in Lagos peri-urban. Contributing also to the chaotic development pattern is the lack of adequate monitoring of the continuous development by the building regulation authority and lack of proper documentation of the pattern of growth as seen in most peri-urban developments in developing countries (Puttal and Ravadi, 2014).

In Lagos peri-urban settlements, government-led housing settlements and private-led housing settlements are better developed in terms of infrastructure than settlements constituting self-help housing in the low-income group. Armed for inadequate knowledge of the socio-economic composition of the migrants, most housing initiatives led by institutional and corporate

bodies are not meeting the needs of the majority of low income and middle-income group because of affordability issues. Therefore, most exclusive gated housing developments in the peri-urban area are not occupied. The various environmental and socio-economic challenges in Lagos peri-urban settlement ultimately affect the quality of living and productivity of the residents.

With these characteristics associated with peri-urban settlements in Lagos, there needs to be a case study approach to study the trend of spatial demographic expansion as it relates to residents' quality of life, housing and environmental quality. Though there have been prior works on peri-urban study in Nigeria, none has adequately addressed the characteristics of housing development in Lagos as it should. An analysis of the characteristics of housing development in Lagos peri-urban settlements is vital because the peripheral locations in Lagos accommodate a large share of the urban population. This study focuses therefore on the assessment of spatial expansion and the policy implication on the environmental sustainability and residents' productivity in selected peri-urban settlements in Lagos State.

## 2. Literature Review

Pacione (2009) stated in his research work that one of the attendant problems of contemporary urbanisation in developing countries is the spatial demand for housing in the high population and the increasing globalization-induced socio-economic activities. Urbanisation is the product of movement of people from rural areas to urban areas with population growth not equating urban infrastructuresize (McGranaham and Satterthwaite, 2014). Spatial development in the peri-urban is a product of peri-urbanisation which is a direct consequence of unmanaged urbanisation, the process of agglomeration of multifunctional settlements of relatively substantial size. The level of urbanisation is the ratio of total population living in towns and cities. The rate of urbanisation is the rate of growth of urban population. It is the movement of people from rural areas to urban areas with population growth equating to urban migration (Satterthwaite, 2014).

Investigation by Law *et al.* (2008) indicates that residential land comprised over 50 percent of all major urban land uses in peri-urban settlements, noting that one of the key factors driving peri-urban spatial development is the availability of cheap housing for urban middle class and low-income groups. In addition to the quest for land for housing development, improved transport infrastructure has aided the emergence, development and growth of most peri-urban area settlements (Wu and Zhang, 2012; Lawanson *et al.*, 2012). Major driving forces of the high rate of growth of peri-urban settlements are rapid urban population growth and the need for individuals and households to acquire land for residential development (Opoko and Oluwatayo, 2014). The challenge of housing in the city centre has influenced housing development in the peri-urban. The concept of spatial and demographic change in peri-urban cannot be fully appreciated without capturing the link between peri-urbanisation and urbanisation. The rural-urban linkage theory was adopted by Lawanson *et al.* (2012) in supporting the cause of residential development in their investigation of rural-urban linkages of the Lagos mega city. This theory sufficiently anchors the push and pulls factors in development of Lagos peri-urban settlement. The failure of government intervention in housing and poor planning policy and programmes in Nigeria has manifested in a high rate of self-help housing especially among the low income group in the peri-urban adjoining metropolitan areas. Lagos State is spatially the smallest state in Nigeria with approximately 3, 577 kilometres square out of which 39% are wetlands (Dekolo and Oduwaye, 2011). Lagos land constitutes 0.4% of Nigeria's total land mass (Opoko and Oluwatayo, 2014). Between 1994 and 2008, the built up area of Lagos increased from 397 kilometres square to 610 kilometres square and most of this expansion have been in the peri-urban (Nwokoro and Dekolo, 2012). It was further asserted that Lagos has one of the highest urban growth rates in the world (Jiboye, 2011; United Nations, 2016) and thus is one of the cities most impacted by urbanisation in term of housing. The attraction of immigrants to Lagos is because the state remains the industrial and commercial hub. Hence

expansion in Lagos is not only demographically but also spatially. Going by the claim of LASG Economic Intelligence Unit (2012), an estimate of 2.55 million new homes is required for the next five years to meet housing needs of Lagos State. In the face of limited land supply, housing demand as a result of population increase has led to the creation of satellite towns in the peri-urban of Lagos. The creation of satellite towns in Lagos peri-urban is the existing means of mitigating the unabated housing challenge and spatial demand in Lagos State (Towry-Coker, 2002). Metropolitan Lagos is built up in terms of housing development. It has been suggested that most recent expansion in Lagos has been in peri-urban settlements (Nwokoro and Dekolo, 2012). Housing challenge is dominant in Lagos because of high population growth rate and poor government intervention in housing development for the low-income group (Jiboye, 2011). Dutta (2012) observed that peri-urban areas are usually subjected to diverse physical, socio demographic, morphological, cultural, economic and functional transformations. Housing development in most peri-urban usually exist under three initiatives, government-led housing development, private company-led development and self-help housing development. Each housing initiative varies in building typologies, mode of construction, target users and conformity to standard (Wu, *et al.*, 2013; McGranaham and Satterthwaite, 2014). Housing development in the peri-urban calls for consideration of the socio-economic attributes of the different income groups of the migrants but this is not the case in most peri-urban housing developments (Shen and Wu, 2013). Socio-cultural diversity and the socio-economic characteristics of the residents greatly influence the physical characteristics of housing development in the peri-urban. The socio-demography of the residents in the peri-urban greatly influence the housing typology, quality of housing, and household size. There are challenges to the management of housing development in most peri-urban settlements in developing countries. These challenges can be viewed in three perspectives, institutional challenges, environmental challenges

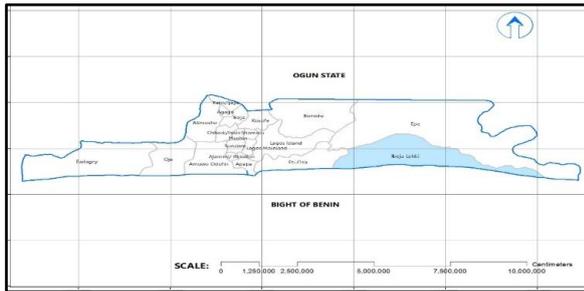
and socio-economic challenges. Institutional challenges are related to the regional government in rising to the governance of the peri-urban. Notable among many institutional challenges are poor zoning, lack of effective planning office and personnel, conflicting land tenure and lack of an updated master plan as shown by Salem (2015). Environmental challenges in the peri-urban include poor infrastructure development, traffic congestion, flooding and poor waste management (Lawanson, *et al.*, 2012). Socio-economic challenges in the peri-urban housing developments manifest in form of land speculation, residential segregation and increasing cost of commodities because of increasing population growth. Occurring challenges can further be supported by the Alonso Access Trade off model which posits that despite land affordability in the peri-urban interface, some benefits to be traded off include high commuting hours because of the distance from the metropolitan areas and likewise the poor infrastructural development pose a problem for the residents.

Nwokoro and Dekolo (2012) worked extensively on peri-urban land use changes in the Lagos Megacity and the policy response to the change in land use. Further work on agricultural land use in Nigerian peri-urban was carried out by Binns *et al.* (2003). A study of rural-urban linkages in Nigeria peri-urban was done by Lawanson *et al.* (2012). Another study on housing quality in Akure peri-urban was also carried out by Olotuah (2006). Other relevant investigation on peri-urban development was done by Dung-Gwom (2008) and Emankhu and Ubangari (2015). Supplementary work on peri-urban development by Lawanson *et al.* (2012) is limited to environmental quality, little was done on characteristics of housing development. All these prior works have references to the general growth in the peri-urban, none of these scholars have addressed housing development in Lagos peri-urban in terms of residents' perception housing characteristics, quality of housing and the locational challenges. There is a gap in knowledge about the performance of the emerging peri-urban settlements, the characteristics of housing, the attributes of the

residents and its influence on the quality of housing and environment in Lagos peri-urban. This study is imperative owing to scanty attention paid to peri-urban housing development in Nigeria. The impact of urban transformation taking place in Lagos peri-urban has not been captured adequately. Therefore, to fill this research gap, this study examines the impact of peri-urban expansion on housing development and the accompanying environmental and socio-cultural challenges in the selected peri-urban settlements for empirical data based on residents' perceptions and observations, to be used for policy design in managing the uncontrolled continuous expansion in Lagos State peri-urban areas.

### 3. The context and scope of the study

The selected case study is Ibeju-Lekki, a Local Government Area of Lagos State, which is one of six South-Western states in the Federal Republic of Nigeria. It is approximately 75 kilometres long and about 20 kilometres wide. Ibeju-Lekki Local Government land area is about 646 kilometres square, equals one quarter of the total land mass of Lagos state. Ibeju-Lekki is located at approximately latitude 40 15' north latitude 40 17' north and longitude 13015' east and 13020' east. The provincial government is part of the four created in Lagos State in 1990, out of the old Epe Local Government, with headquarters at Akodo. According to the National Population Commission (2006) census, Ibeju-Lekki had a population of 117,481 out of Lagos State's total of 9,113,605. The spatial scope of this research is limited to the identified peri-urban settlements recognised by Lagos State Government in Ibeju-Lekki Local Government which covers 646 kilometres square. The temporal scope covers a period from 2006 to 2016. 2006 is selected as a base line because there is an accompanying data on population and housing units by the National Population Commission.



**Figure 1.** Map of Lagos State showing Ibeju-Lekki (study area highlighted in blue). **Source:** Field Survey, 2016

#### 4. Material and Methods

This study employs a case study methodology in the field survey. Citing Webster et al. (2003) adopting the case study strategy makes it possible to show the distinct phenomena of the area under study especially with regard to the spatial and temporal changes in the region. The case study approach was applied by conducting field research covering the three tiers of housing that is, self-help housing, private developer-led housing development and government-led housing development. Data for this study were extracted from the responses in the questionnaire instrument, the analysis of observation chart and the analysis of the spatial data. Quantitative data were obtained through a questionnaire survey of purposively selected 16 settlements in Ibeju-Lekki and the survey was carried out between August and October 2016 in the study area. A total of 366 good and complete questionnaires were retrieved from Ibeju-Lekki. Badly completed questionnaires were regarded as missing system in the analysis. The questionnaires were administered mostly during the weekend to ensure high response rate. Data processing and analysis for this study were carried out using the Statistical Package for Social Sciences (SPSS) 22 for windows for statistical analysis of the quantitative data. Two types of analysis were performed on the data. Firstly, descriptive statistics were used to generate percentages and frequencies of respondents' socio-economic characteristics, characteristics of migrants in the study area, environmental and socio-cultural challenges in the study area and development timeline and land price dynamics. Secondly, spatial data like satellite images of different years were acquired from Google Earth. The sets of satellite images used in this study were obtained

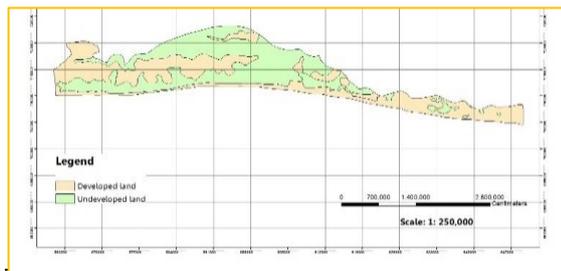
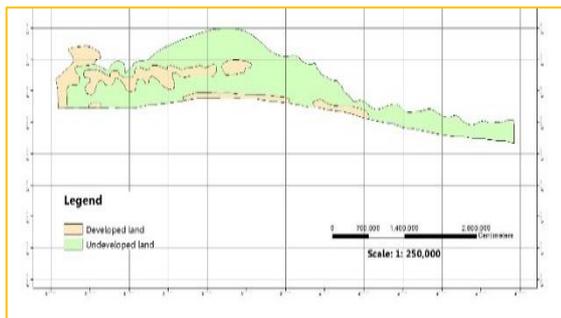
from Google Earth archive between 2006 and 2016 respectively. This was done through Geographic Information Systems applications namely QGIS, Elshayal Smart Web online Software and ArcGIS. Analogue maps were subjected to spatial data conversion from analogue to digital to enhance spatial analysis operation. Converted maps in digital format were further brought into ArcGIS environment by geo-referencing to aid in assigning datum to the maps appropriately. The datum assigned to these sets of maps reads WGS\_84\_Zone 31.

#### 5. Results and discussion

##### 5.1 Development trend in the study area between 2006 and 2016

The spatial expansion of the peri-urban is a direct encroachment into areas originally marked for agricultural land use, thus lacking in infrastructure development and often embroiled in informality. A greater percentage of Ibeju-Lekki is still undeveloped (Figure 2), though there has been a surge in spatial demography development within the study timeline. Findings show a departure from the primary settlement pattern in the study area. Noted emerging settlement patterns in the study area are linear, cluster, leapfrog the pioneering development, dispersed settlements and massive mixed-use development settlements. Linear settlements in the study area are pioneer settlements. They were limited to housing development along the highways having been limited by poor infrastructure development. Linear settlements also came to be because of the marshy vegetation in the study area. Housing development was restricted by the thick mangroves in early settlements. These settlements are inhabited mostly by the natives and are also along the coastline where the indigenous residents fishing activities thrive. Some of these settlements developed as a result of the development of Lekki-Epe expressway while other linear settlements mentioned earlier grew in line with secondary roads in the study area. Dispersed settlements in the study area are not compact. They are dispersed away from the highways and do not comply with development patterns. Most of these settlements in Ibeju-Lekki are characterised by low income migrants. They have

poor infrastructure development and are a high level of informal developments. Massive mixed-use development shows a continuous development by government, private developers and wealthy individuals. There exist a development of mixed-use development usually in enclaves and segregated from other peri-urban settlements. Such settlements are well serviced and designed primarily for high middle income and high income class. Cluster settlements in the study area are organised around public facilities and commercial activities. Most are usually inhabited by the middle income class and by migrants. Corroborating prior studies by Binns et al. (2003) and Lawson et al. (2012), Lagos State like other rapidly urbanizing metropolitan regions have areas periphery usually experiencing expansion due to direct impact of population growth and housing challenges in the urban areas.



**Figure 2.** Extent of housing development in Ibeju-Lekki in 2006 and 2016 respectively. Source: Field Survey, 2016.

**5.2 Housing development and population trends in the study area from 2006-2016.**

Data from the National Population Commission (2006) census as analysed in Table 1 shows a huge leap in housing development in the study area by the year 1991. A total of 1,635 units of housing was recorded in 1991, a sum of 7,701 was captured by the 2006 national census and 10,128 residential developments were identified in year 2012 according to LASG Ministry of Economic

Planning and Budget (2013). A surface counting of residential developments during the field work in September, 2016 shows a total of 11,746 units of housing in the selected sixteen peri-urban settlements in the study area. Alsolbeju-Lekki grew from a sleeping settlement of 24,937 populations in 1991 to 117,481 and 179,187 in year 2006 and 2016 respectively.



**Figure 3.** Mixed-type government-led housing scheme in the study area.



**Figure 4.** Self-help housing development and Private developer-led housing.

**Table 1.** Housing population in the study area between years 1991- 2016.

Year	Population	Identified properties
1991	*24,937	1,635
2006	*117,481	7,701
2012	**154,507	10,128
2016	***179,187	11,746

**Sources:** \*National population commission  
 \*\* LASG Ministry Of Economic Planning And Budget  
 \*\*\* Field Survey, 2016.

**5.3 Development timeline and land price dynamics in the study area.**

The development timeline as presented in Table 2 and Figure 5 indicates that in Ibeju-Lekki, 44.3%, the highest of development has been between 5-10 years, 30.9% of the development has been less than five years and 24.9 %, the least of development have been over ten years ago. It can be deduced from this analysis that the greater part of housing development in the study area has been within the past ten years. The land

price dynamics (Figure 6) also show the highest at 5-10% annual increase which was claimed by 65.6% of the respondents. 16.4% of the respondents' population identified 1-5% yearly increase, 18% identified with above 10% yearly increase, 0.3% noted unidentified price increases and 3.4% were missing system.

**Table 2.** Development timeline and land price dynamics.

	N=366	%
<b>Development Timeline</b>		
Less than 5 years	113	30.9
5years-10years	162	44.3
Over 10 years	91	24.9
others	0	0
<b>Land Price dynamics</b>		
1-5% yearly increase	60	16.4
5-10% yearly increase	240	65.6
10% above yearly increase	66	18
Others	1	0.3
Missing System	13	3.4

Source: Field survey, 2016.

#### 5.4 Socio-economic characteristics of the respondents.

Through the field survey presented in Table 3, there are five recognised household sizes in the study area. Household size of 1-2 persons constitutes 13.1% of the households, more than 13 persons (3.3%) and 10-12 persons (2.2%). Household sizes of 3-5 persons are the commonest, having 55.2% of the respondents' population. Trading and commercial enterprises are the commonest occupation of the peri-urban residents. 36.6% of the population is engaged in this category of occupation. 19.1% of the population is in civil service because of the location of many government parastatals in the peri-urban. Professional practices and artisan work constitute the third of the population having 16.7% and 15.3% respectively. Students comprise 5.7% and retirees 3.6%. Unemployed (0.5%) and farmers (0.3%) have almost insignificant contribution in the occupational capacity in the peri-urban. Illiteracy level in Ibeju-Lekki is very low. The total is 2.2% of the respondents. People with secondary school education are 30.1% and constitute the highest. Highest level of literacy is the first degree, diploma and secondary school

certificate having 32.7%, 20.8% and 34.3% respectively. Predominant monthly income of household heads as captured by the survey instrument is above N150, 000 monthly. This constitutes 44.6% of the entire population. The low-income group with monthly earnings of N25, 000-N50, 000 is 36.3% and the middleincome earning N50, 000-N150, 000 constitute 19.1%. Tenure analysis reveals that 37.1% of the respondents have lived in Ibeju-Lekki for more than ten years. This trend shows that rapid development has been primarily within the past ten years in the study area.

**Table 3.** Socio-economic characteristics of the residents.

		N=366	%
Household size	1-2 persons	48	13.1
	3-5persons	202	55.2
	6-9persons	96	26.2
	10-12persons	8	2.2
	More than 13 persons	12	3.3
Occupation of head of household	Civil service	70	19.1
	Trading/business	134	36.6
	Professional practice	61	16.7
	Unemployed	2	0.5
	Retired/pensioner	13	3.6
	Artisan	56	15.3
	Student	21	5.7
	Farming	1	0.3
	others	8	2.1
Literacy level of head of household	Postgraduate	56	15.3
	BSc/Higher diploma	105	28.7
	National diploma	62	16.9
	High School	110	30.1
	Primary	25	6.8
	None	8	2.2
Monthly income of head of household in naira(N)	Low income N25,000-N50,000	133	36.3
	Middle income N50,001-N150,000	70	19.1
	High income N150,001-Above	163	44.6
Tenure	Less than 5 years	114	31.1
	5-10years	116	31.7
	More than 10 years	134	36.6
	Others	2	0.5

Source: Field survey, 2016.

**5.5 Characteristics of migrants and linkage pattern in the study area**

The immigration pattern as shown in Table 4 shows that the greater portion of residents are drawn from central Lagos and surrounding urban areas around Ibeju-Lekki. 42.3% are drawn from central Lagos and 39.9% are from surrounding urban areas. Immigration from other states constitutes about 9.3% while people from neighbouring rural areas constitute 8.5%. Most of the residents in Ibeju-Lekki were home owners, to 74.6%, while 22.7% and 2.5% were tenants and enterprise owners respectively. Few people also were pulled to the peri-urban for commercial purpose (5.8%). Housing initiatives were primarily of three types in peri-urban settlements of Ibeju-Lekki. Self-help housing is the commonest housing initiative in the study area constituting 81.7% of the housing development. Among the household heads, 34.2% of the respondents travel to the urban centres daily, 33.3% commute to the city centre weekly and 31.4% travel as the needs arise. 42.6% of the respondents travel for work related purpose, 30.3% travel to either the city centre and neighbouring peri-urban for groceries while 27% travel to the city centre for supply of materials for their enterprises (Table 4). The highest commuting time to and from places of work daily in the peri-urban is three hours while the least commuting time is thirty minutes. 35.2 % spends an average of sixty minutes (one hour) daily commuting, 24.6 % spend ninety minutes, 15.6 % spends less than 30 minutes, 14.2 % spends almost 180 minutes (three hours) while 10.4 % spend an average of 120 minutes (two hours) commuting daily. This commuting trend indicates the linkages between the city centre, peri-urban and the rural areas. The peri-urban cannot function in isolation. There are strong dependencies on the urban centres for socio-economic purposes. Findings on the linkages consolidates the investigation by Lawanson *et al.* (2012), showing the dependency of the peri-urban on the neighbouring metropolitan regions.

**Table 4.** Characteristics of migrants in the study area.

	N=366	%
<b>Source of migration</b>		
Central Lagos	155	42.3
Surrounding Ibeju-Lekki	146	39.9
Neighbouring village	31	8.5
Another state in Nigeria	34	9.3
<b>Ownership status</b>		
Home owner	273	74.6
Tenant	83	22.7
Business owner	9	2.5
Others	19	0.3
<b>Housing Initiative</b>		
Self-help housing	309	84.4
Private developer/Cooperative	53	14.5
Government allocation	4	1.1
<b>Car ownership</b>		
Yes	169	46.2
No	197	53.8
Neither	0	0
<b>Average Time of commuting</b>		
Daily	125	34.2
Weekly	122	33.3
Others (specify)	115	31.4
Not applicable	1	0.3
<b>Purpose of commuting (Linkage)</b>		
Work	156	42.6
Groceries	111	30.3
Supply for business	99	27
Others	0	0
<b>Average daily commuting time</b>		
Less than 30 minutes	57	15.6
31-60mins (1hr)	129	35.2
61-90min (1 & half hrs.)	90	24.6
91-120mins (2hrs)	38	10.4
121-180mins (3hrs)	51	13.9
Others	1	0.3

**Source:** Field survey, 2016

**5.6 Environmental and socio-cultural challenges in the study area**

Analysis of the research instrument in Table 5, provides evidence of the environmental and socio-cultural challenges in the study area. As stated by Alonso access trade off model, there are benefits to trade off by virtue of residential location in the peri-urban which is primarily driven

by economical cost of land for housing development. The major environmental challenge in Ibeju-Lekki is poor infrastructure development. This constitutes about 33.1%. Observation through field survey shows that the areas under the control of self-help housing development are lacking in infrastructure. Poor environmental condition is another noted challenges by the respondents (13.7%), attached to this particular challenge are poor drainage facilities and poor waste management (3.0%).

Waste management is carried out illegally and it involves indiscriminate discharge to water bodies and open dumps are commonplace in the study area. Locational related challenges are the absence of health facility (2.5%) and lack of good schools for children (2.2%). Health facilities are sparsely situated in the peri-urban. Other challenge come in form of water scarcity (0.8%). Most residents' rely on borehole and wells as their source of water because of lack of a central water system. Due to the closeness of Ibeju-Lekki to the coastal areas, the quality of water is salty and mostly contaminated by illegal sewage disposal. Further notable challenges are poor road condition comprising 21.9%. Most feeder roads in the study area are earth roads and sandy roads. The only areas with good roads are government reserved areas and all private developers estates in Ibeju-Lekki. What is typically obtainable in the study area is selective infrastructural development. Only the primary major link road of Lekki-Epe expressway is well maintained.

High cost of daily transportation is also another challenge in Ibeju-Lekki peri-urban and this constitutes 12.3%. Settlements are located far from one another thus causing arbitrary transport fare charges by the transport operators in the peri-urban. Daily commuting is a herculean task for residents having no car ownership. Also mono-directional primary roads coupled with high possession of automobiles contribute to high traffic congestion (3.0%) in Ibeju-Lekki peri-urban. Finally, the major socio-cultural challenge connected to living in the peri-urban is residential segregation creating a forced disparity between one economic group and the other. This constitute about 3.6% and is notably evidenced

through gated housing and exclusivity of the government-led and developer-led housing initiatives in Ibeju-Lekki peri-urban. Other socio-cultural challenges are poor security of lives and properties, constituting 0.8% and limitation by traditional livelihood or religion (0.3%) which often bring about restriction in movement in the affected areas in the peri-urban.

**Table 5.** Environmental and socio-cultural challenges in the study area.

Challenges	N= 366	
Poor environmental condition	50	13.7
Poor infrastructure	121	33.1
Poor waste management	11	3
High cost of daily transportation	45	12.3
High traffic congestion	11	3
Poor health facility	9	2.5
Water scarcity	3	0.8
Lack of good schools for children	8	2.2
Security problems	3	0.8
Poor road condition	80	21.9
Segregation by the middle class	13	3.6
Traditional Livelihood/religion	1	0.3
Others	11	3
Total	366	100

**Source:** Field survey, 2016.



**Figure 5.** Flooded road due to lack of drainage



**Figure 6.** Unregulated waste disposal.

## 6. Conclusion and recommendation

Peri-urban expansion in the study area which has been mainly for housing development, has given rise to the creation of diverse housing schemes to serve the heterogeneous population of migrants to the peri-urban of Ibeju-Lekki. The dominance of the high-income group in the study area has led to the increase in development of exclusive gated residential estates often segregated from the low income group housing and in turn encouraging disparity in infrastructural development. However, the pace of development outweighs the regional development thus creating a multi-dimensional challenge expressed in form of poor environmental quality, poor access to infrastructural services and locational limitation which impact negatively on the productivity of the residents. The high commuting time is as a result of dispersed locations of settlements, lack of public transport which confers right on informal service providers that operate in the peri-urban without price control. Linkages has established that most peri-urban settlements are not self-sustaining with extreme reliance on the neighbouring metropolitan regions for services and resources. It can thus be concluded from the findings that peri-urban expansion has not only altered the spatial demography of the study area, but it is accompanied with a pace and pattern of development that is not matched with the available regional planning control and socio-economic development, thus creating environmental vulnerability and reduced residents' productivity.

## Acknowledgments

This research did not receive any specific grant from funding agencies in the public, commercial, or non-for-profit sectors.

## References

- Allen, A. (2010). *Neither Rural nor Urban: Service Delivery Options That Work for the Peri-urban Poor*. In: *Peri-urban Water and Sanitation Services*. Springer Netherlands, Netherlands. [https://doi.org/10.1007/978-90-481-9425-4\\_2](https://doi.org/10.1007/978-90-481-9425-4_2)
- Binns, J; Maconachie, R. and Tanko, A.(2003). 'Water, land and health in urban and peri-urban food production: the case of Kano, Nigeria', *KANO water LDD revised*, Vol. 14, No. 5, pp. 431–444. <https://doi.org/10.1002/ldr.571>
- Dekolo, S. and Oduwaye, A.(2011) *Managing the Lagos megacity and its geospatial imperative*. Delft, The Netherlands, International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XXXVIII-4/C21, pp. 28–30. <https://doi.org/10.5194/isprsarchives-xxxviii-4-c21-121-2011>
- Dung-Gwom, J. Y. (2008) The Nature of Peri-Urban Developments in Jos, Nigeria.. *World Congress on Housing XXXVIIAHS*. <http://www.eajournals.org/wp-content/uploads/The-Nature-of-Peri-Urban-Development-in-Lafia-Nasarawa-State.pdf>
- Dutta, V. (2012) 'Land Use Dynamics and Peri-urban Growth Characteristics: Reflections on Master Plan and Urban Suitability from a Sprawling North Indian City,' *Journal of Environment and Urbanization ASIA*, Vol. 3, No. 2, pp. 277–301. <https://doi.org/10.1177/0975425312473226>
- Emankehu, S. E. and Ubangari, A. Y. (2015) 'The Nature Of Peri-Urban Development In Lafia, Nasarawa State', *International Journal of Geography and Regional Planning Research*, Vol. 1, No. 3, pp. 1–8. <http://www.eajournals.org/journals/international-journal-geography-regional-planning-research-ijgrpr/vol-1-issue-3-december-2015/the-nature-of-peri-urban-development-in-lafia-nasarawa-state/>
- Fitra, H. A. and Pradoto, W. (2014) 'The Influence of Social Behavior to The Emergence Residential Segregation in Sleman Regency D.I Yogyakarta', *Jurnal Pembangunan Wilayah dan Kota*, 10(3).pp. 235–247. <https://doi.org/10.14710/pwk.v10i3.7782>
- Jiboye, A. D. (2011) 'Urbanization challenges and housing delivery in Nigeria: The need for an effective Policy framework for Sustainable Development', *International Review of Social Sciences and Humanities*, Vol. 2, No. 1, pp. 176–185. <https://www.ighhub.org/resource/urbanization-challenges-and-housing-delivery-nigeria-need-effective-policy-framework>
- LASG Economic Intelligence Unit (2012) *Meeting Housing Needs in Lagos*, Lagos State

- Government, Lagos. [http://www.sparc-nigeria.com/RC/files/1.1.14\\_Meeting\\_Housing\\_Needs\\_Lagos.pdf](http://www.sparc-nigeria.com/RC/files/1.1.14_Meeting_Housing_Needs_Lagos.pdf)
- Lawanson, T., Yadau, O. and Salako, I. (2012) 'An investigation of rural-urban linkages of the Lagos megacity, Nigeria', *Journal of Construction Project Management and Innovation*, Vol. 2, No. 2, pp. 464–581. <https://www.ingentaconnect.com/content/sabinet/jcpmi/2012/00000002/00000002/art00010?crawler=true>
- Law, D. et al. (2008) *Emerging Typologies*. In: *Emerging Typologies and Density*, London School of Economics, London, pp. 58–86. [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&uact=8&ved=2ahUKewi9i8297q7fAhUDx4sKHcTwC0IQFjADegQlCBAC&url=http%3A%2F%2Fwww.southend.gov.uk%2Fdownload%2Fdownloads%2Fid%2F2509%2Fhousing\\_quality\\_review\\_2011.pdf&usg=AOvVaw1NS1D4Wt9V1rSgOsFsbnnj](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&uact=8&ved=2ahUKewi9i8297q7fAhUDx4sKHcTwC0IQFjADegQlCBAC&url=http%3A%2F%2Fwww.southend.gov.uk%2Fdownload%2Fdownloads%2Fid%2F2509%2Fhousing_quality_review_2011.pdf&usg=AOvVaw1NS1D4Wt9V1rSgOsFsbnnj)
- McGranaham, G. and Satterthwaite, D. (2014) *Urbanisation concepts and trends*. Institute for international Economics and Development, London. <http://pubs.iied.org/pdfs/10709IIED.pdf>
- Nwokoro, I. I. C. and Dekolo, S. O. (2012). 'Land use change and environmental sustainability: the case of Lagos Metropolis', *The Sustainable City VII: Urban Regeneration and Sustainability*. RSA: WIT Press, pp. 157–167. <https://doi.org/10.2495/sc120141>
- Olotuah, A. O. (2006) 'Housing Quality In Suburban Areas An Empirical Study of Oba-Ile, Nigeria', *Dimensi Teknik Arsitektur*. <http://dimensi.petra.ac.id/index.php/ars/article/viewFile/16545/16537>
- Opoko, A. P. and Oluwatayo, A. (2014) 'Trends in Urbanisation: Implication for Planning and Low-income Housing Delivery in Lagos', *Architecture Research*, Vol. 4, No. 1A, pp. 15–26. <http://article.sapub.org/10.5923.s.arch.201401.03.html>
- Pacione, M. (2009). *Urban geography: A global perspective*, Routledge, USA. <https://strathprints.strath.ac.uk/8830/>
- Pradoto, W. (2012) *Development patterns and socioeconomic transformation in peri-urban area*, Univerlagtuberlin, Berlin. [https://books.google.com.tr/books/about/Development\\_Patterns\\_and\\_Socioeconomic\\_T.html?id=b46AMwEACAAJ&redir\\_esc=y](https://books.google.com.tr/books/about/Development_Patterns_and_Socioeconomic_T.html?id=b46AMwEACAAJ&redir_esc=y)
- Puttal, V. and Ravadi, N. (2014) 'Role of Urban Planning as Tool to Mitigate the Environmental Repercussions Due To Peri-urbanisation', *Journal of Civil Engineering and Environmental Technology*, Vol. 1, No. 3, pp. 96–102. [http://www.krishisanskriti.org/vol\\_image/13Jun201502062422.pdf](http://www.krishisanskriti.org/vol_image/13Jun201502062422.pdf)
- Salem, M. (2015) 'Peri-urban dynamics and land-use planning for the Greater Cairo Region in Egypt' *Journal Sustainable Development*, Vol. 1, pp. 109–119. <https://doi.org/10.2495/sd150101>
- Satterthwaite, D. (2014) Urbanisation in low and middle income nations in Africa, Asia, and Latin America, In: *The companion to development studies*, Routledge, London, pp. 279. <https://www.routledge.com/The-Companion-to-Development-Studies-3rd-Edition/Desai-Desai-Potter/p/book/9781444167245>
- Shen, J. and Wu, F. (2013) 'Moving to the suburbs: demand-side driving forces of suburban growth in China' *Environment and Planning*, Vol. 45, No. 8, pp. 1823 – 1844. <https://doi.org/10.1068/a45565>
- Towry-Coker, L. (2002) 'Megacities: The Lagos example/Nigeria', *Konrad-Adenauer-Stiftung e. V. United Nations (2016). Urbanisation and Housing*, United Nations, New York. [https://www.researchgate.net/profile/Funmilayo\\_Adedire/publication/325805544\\_Factors\\_Influencing\\_Housing\\_Development\\_in\\_Lagos\\_Peri-Urban\\_Settlements\\_Cases\\_of\\_Ibeju-Lekki\\_And\\_Ikorodu\\_By/links/5b2516d0458515270fd39a01/Factors-Influencing-Housing-Development-in-Lagos-Peri-Urban-Settlements-Cases-of-Ibeju-Lekki-And-Ikorodu-By.pdf?origin=publication\\_detail](https://www.researchgate.net/profile/Funmilayo_Adedire/publication/325805544_Factors_Influencing_Housing_Development_in_Lagos_Peri-Urban_Settlements_Cases_of_Ibeju-Lekki_And_Ikorodu_By/links/5b2516d0458515270fd39a01/Factors-Influencing-Housing-Development-in-Lagos-Peri-Urban-Settlements-Cases-of-Ibeju-Lekki-And-Ikorodu-By.pdf?origin=publication_detail)
- Wu, F., Zhang, F. and Webster, C. (2013) 'Informality and the Development and Demolition of Urban Villages in the Chinese Peri-urban Area', *Journal of urban studies*, Vol. 50, No. 10, pp. 1919–1934. <https://doi.org/10.1177/0042098012466600>
- Wu, K. Y. and Zhang, H. (2012) 'Land use dynamics, built-up land expansion patterns, and driving forces analysis of the fast-growing Hangzhou metropolitan area, eastern China (1978-2008)', *Applied geography*, Vol. 34, No. 1, pp. 137–145. <https://doi.org/10.1016/j.apgeog.2011.11.006>