

Contemporary issues in
the GEOGRAPHY
of Urban & Regional
Planning in Nigeria
(A FESTSCHRIFT IN HONOUR OF PROF. A. S. AGUDA)

Editors

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PROFESSOR AKINOLA
SAMUEL AGUDA

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EDITED BY
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August, 2023.

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FORWARD

This book is a collection of research-based articles written in honour of Professor Akinola Samuel Aguda, to mark his retirement from the Obafemi Awolowo University, Ile-Ife, Nigeria. The focus of Professor Aguda's research in the fields of Urban, Industrial and Development Geography has been on housing problems and spatial growth of cities in Nigeria, Crime, Communal Conflict and Violence on Urban Residential Segregation, Community Development (Home Town Associations and Government Efforts), Urban Growth and Problems in Nigerian Cities, Spatial Pattern of Manufacturing Industries in Nigeria. He also researched extensively on Spatial Distribution and Locational Efficiency of infrastructure and social services as well as Consumer Behaviour regarding social services accessibility in Nigerian Urban Centre. His work also reflected the role of informal Sector in employment generation in the Urban Setting and proffer strategies of achieving, reliable and sustainable infrastructural services in Nigeria's Urban Areas. Most of the studies presented in this book are in the same sub discipline of Geography as Professor Aguda's research. The fact that the book is dedicated to a guru of urban and Industrial Geography in Nigeria underscore the importance of Geography in planning and development. The articles contained in this book have been contributed by scholars and academics many of whom have passed through the tutelage of Professor Aguda. The topics are carefully selected and the book is structured in such a way that contemporary issues in Geography of Urban and Regional Planning are well laid out and discussed.

The book would be of immense value to research students, academics and planners in Nigeria and elsewhere in sub-Saharan Africa in formulating research questions and policies. To the general readers with interest in the urban geography and planning, this book provides a rich source of data and information.

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August, 2023.*

PREFACE

In recent years, Geographers have been writing papers and books in honour of retiring erudite professors. The theme of such papers and books often reflects the retiring scholar field of specialization and in which they have contributed meaningfully to extend the frontier of knowledge while in active service. Consequently, the retirement of Professor Akinola Sam Aguda from the Department of Geography, Obafemi Awolowo University, Ile-Ife, Nigeria affords scholars and his academic sons and daughters (Masters and PhDs graduates) the opportunity to celebrate the erudite urban geographer by contributing papers on different themes in the *Geography of Urban and Regional Planning* that led to the publication of the book.

The book is in 8 sections and 25 chapters. **Section 1** focuses on the biography and career of Professor Akinola Samuel Aguda. **Section 2** is on Urbanisation. In this section Olabamiji and Ajala examined subjective poverty in selected cities of Osun State, Nigeria using geospatial techniques, while Okpuvwie et al, also using geospatial techniques investigated crimes committed against persons in Ughelli Metropolis, Delta State, Nigeria. Areola looked at urban beautification projects in Ibadan Metropolis, Nigeria. While Eludoyin examined domestic water quality and the discriminatory influence of socio-economic stratification on accessibility to safe water in Olorunda local government area in Osun State, Nigeria.

Section 3 focused on transportation and transport planning. Olawole et al, using Lagos-Accra transport corridor to examined service quality of cross-border road transport in West Africa. Aboyeji considered the impact of transport on farmers' accessibility to Agricultural Extension in Kwara South Senatorial District, Nigeria. Ale in his contribution assessed mobility and quality of life of rural elderly in Ondo North Senatorial District, Ondo State, Nigeria. While Yoade and Atoyebi looked at the effects of road expansion and highway development in South-West, Nigeria. Oladepo et al. classified driving behaviour of taxi drivers in Ibadan to include reckless driving, risky driving, distracted driving, self-willed/emotional driving and cautious driving behaviour and found that taxi drivers in the city drive aggressively most of the times. Significant similarity in reckless driving behaviour was observed among taxi drivers in the eleven local government areas in the city.

Section 4 is on urban industrial location dynamics. Abba examined locational pattern and physical forms of gated communities in Kano Metropolis Nigeria. In terms of distribution, Abba found that the gated developments in the city have a cluster spatial pattern. While Olugbamila et al, raised issues the location of Base Transceiver Stations

in Ile-Ife, Nigeria and revealed that availability of power and increased in property value, attraction of other industries, financial gain and population increase are minor economic impact derived from the erection of BTS in a location.

Section 5 is on urban management. Adeniyi and Olayiwola evaluated traders' participation in weekly environmental sanitation in Osogbo and concluded that ignorance on the part of space users and ineffective environmental laws are the reasons for the poor participation of space users in weekly environmental sanitation. Dankani, Dankani, Dankani and Mustapha explored the nature and challenges of urban agricultural practices in Kano Metropolis, Nigeria. The study found out that urban agriculture is bedevilled with challenges ranging from lack of support, non-recognition by the state, small land holding and insecurity of tenure, pressure from land owners and developers which requires serious policy change and concludes that government need to recognize and give legitimacy to urban agricultural practices in metropolitan Kano as it is now commonly adopted in many countries of the world in line with the goals, targets and indicators of Sustainable Development Goals. Odunjo, contribution is on urbanisation and sustainable housing provision in Nigeria. Oladimeji. Abubakar-Kamar, Odunjo and Adeoye examined mass housing schemes delivery strategies and the challenges of maintenance in Nigeria. Olaniyan, Medayese and Kasim look at green city interventions for sustainable urban ecology in Nigeria. Olawuni, Popoola and Adeyemi examined hazard reduction strategies in flood prone area of Ibadan Oyo State, Nigeria. The study recommends flood control and management policies, that incorporate public participation among other mitigation measure.

Section 6 focusses on urban and regional planning strategies. Omolade and Agun examined grassroots participation as a veritable pathway to sustainable national development using Ondo Development Committee (ODC) as a case study. While Ajila. and Farinde examined the contributions of textile extension services in rural development in Nigeria. While Akinloye examined the effect of land acquisition on peasantry in Ifelodun Local Government Area, Osun State Nigeria

Section 7 is on urban ecology. Sylvanus, Ajibuah, and Akinwumi looked at the role of armed banditry on land use and Land cover changes in Chikun LGA, Kaduna State, Nigeria and study concludes that the incidence of armed banditry in the LGA poses a threat to human habitation and agricultural productivity and therefore, call for a concerted effort by the government and relevant stakeholders in taking back the spaces occupied by armed bandits and also stop the bandits from further destruction of Land use and Land cover in Chikun LGA. Ismaila, Sirajo and Yusuf looked at land values and spatial structure in Sokoto Metropolis

Section 8 concludes on geospatial applications in urban and regional planning. Nwaezeigwe evaluated the application of Radar and Optical Sensors in road feature extraction in Ikorodu Urban, Lagos State, Nigeria and linear features especially road network can be extracted with ease without the rigour of digitization from Radar and Optical imageries. The study also showed that Radar image provided more efficiency than the optical image. While, Makinde and Abdul explore the use of machine learning for feature detection and land cover dynamics assessment using Ohafia Abia, Abia State, Nigeria and a case study.

Given the coverage of the papers, the simple ways the issues of urban space were treated, this book would be an invaluable resource to both undergraduate and graduate students in Universities and consultants interested in all the major sections addressed in the book.

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August, 2023.

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CHAPTER 9

Effects of Road Expansion and Highway Development in South-West, Nigeria

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INTRODUCTION

Transportation infrastructural development is undertaken to improve accessibility at a regional or urban level and to relieve traffic congestion in these areas (Afolabi, Oyetubo and Oluwaji, 2018; Xu, Qiu, Li, Liu, Zhang, Li and Luo, 2022; Okwakpam and Okere, 2023). This development is evaluated by property owners and residents in the affected areas; however, the effect of new roads or highways in particular, may have both positive and negative effects on the housing. Improved accessibility may shift housing prices upwards, whereas higher traffic noise levels and increase in traffic density may reduce prices in houses that are adjacent to the new road (Cooper, Lamberg and Lagh, 1998; Mfungahema, 2020; Oyesiku, 2002; Yoade, 2022). The significance of road transport infrastructure has long been recognized as crucial to promoting growth and development. This is obvious considering its wide range of influence and increase productivity, generation of income and improved quality of life. However, this role depends largely on the extent to which road infrastructure is adequately provided, distributed over space and maintained (Yoade, 2016; Adedokun, Oladokun, and Fayomi, 2018; Mulyano, Rahadi, and Amaliah, 2020; Yang, Luo, Ding, Liu, and Gu, 2022).

The importance of transport infrastructure to a nation cannot be overemphasized as efficient transport infrastructure facilities act as catalysts for development. There is therefore cause for concern while considering the transport infrastructure base in Nigeria today which compares unfavorably with those of several African nations both in terms of quality and service coverage. In particular, the rural areas, where the bulk of the population resides, are largely deprived of basic pieces of transport infrastructure (Olomola, 2003; Oni, 2007; Tillema, Hamersma, Sussman, and Arts, 2012; Ekung, Okonkwo and Odesola, 2014). As a matter of fact, the sustainability of an urban area has to do with the ease of commuting within the various areas and this

depends on the level of road network within the city. Development projects are intended to modify social and natural environments in order to create or enhance the economic wellbeing and livelihood and other benefits that are valued by society (Colsaet, Laurans and Levrel, 2018; Wang, Shi, and Zhou, 2020; Yoade, Adeyemi and Adeyemi, 2020). This goal, however, can be denied through unanticipated or unintended negative social or environmental impacts that reduce desired benefits or, if severe enough, threaten the sustainability of the project. Socio-economic benefits provided by road and highway projects include all-weather reliability, reduced transportation costs, and increased access to markets for local produce and products, access to new employment centers, employment of local workers on the project itself, better access to health care and other social services, and strengthening of local economies (Olokesusi, 2010; Deinibiteim, and Godstime, 2019).

Inadequate provision of transport infrastructure and services provide a basis for explaining the incidence of poverty across various Nigerian communities in both urban and rural areas. It is clearly established that inadequate transport facilities and services as well as the constraints imposed on the mobility and accessibility of people to facilities such as markets, hospitals and water sources have grave implications on deepening poverty levels (Olokesusi, 1997; Martínez, and Viegas, 2009). Thus, there is need for urgent policy measures to address the prevailing travel and transport problems. The importance of transport infrastructure to a nation cannot be overemphasized as efficient transport infrastructure facilities act as catalysts for development (Furlan, Petruccioli, Major., Zaina, Zaina, Al Saeed, and Saleh, 2019; Cracknell, 2000).

There is therefore cause for concern while considering the transport infrastructure base in Nigeria today which compares unfavorably with those of several African nations both in terms of quality and service coverage. In particular, the rural areas, where the bulk of the population resides, are largely deprived of basic pieces of transport infrastructure (Olomola, 2003).

For instance, Mabogunje (1980) documented that the history of road transport in Nigeria dates back to 1904 when Lord Luggard attempted the construction of a mule road linking Zaria and Zungeru in the Northern States of Nigeria. The road was later extended from Zaria to Sokoto, Katsina and Maiduguri. However, the road linking Ibadan and Oyo constructed in 1906 is recorded to be the first motorable road ever constructed in Nigeria. At independence in 1960, the Nigerian landscape was dotted with a skeletal network of trunk roads as well as secondary and feeders' roads that exhibited the characteristics which reflected the purpose of their construction. They were narrow and winding, being simply meant to facilitate the evacuation of agricultural produce from the interior to the ports for exports in addition to serving as links between

scattered human settlements thus permitting ease of administration (Hao and Ma, 2022).

As a matter of fact, the sustainability of an urban area has to do with the ease of commuting within the various axes and this depends on the level of road network within the city. Development projects are intended to modify social and natural environments in order to create or enhance the economic wellbeing and livelihood and other benefits that are valued by society (Adebayo, 2006; Zhao, Pengjun, and Jie 2021). This goal, however, can be denied through unanticipated or unintended negative social or environmental impacts that reduce desired benefits or, if severe enough, threaten the sustainability of the project (Aderamo, 2003; Badejo, 2014; Yoade, 2019a, 2019b; Ibrahim, Daud, Ismail, Maimun and Yusoff, 2022). Socio-economic benefits provided by road and highway projects include all-weather reliability, reduced transportation costs, and increased access to markets for local produce and products, access to new employment centers, employment of local workers on the project itself, better access to health care and other social services, and strengthening of local economies. The aim of this paper is to contribute to existing literature with more nuanced and context-related empirical investigations of effects of road expansion and highway development on residents in South-West, Nigeria.

STUDY AREA

The South-West, Nigeria is predominantly and traditionally dominated by a large group of people called the 'Yoruba's'. Many scholastic arguments have attempted to explain the origin of the Yoruba tribe (Figure 9.1 and 9.2). Some argue that Ife is the homeland of all the Yoruba's. Scholars in this line of thought believe that that was why all Yoruba accepted Ile-Ife as their place of origin and this made the word 'Ile' meaning home to be attached to the name of Ile-Ife town. Others argued that the Yoruba's migrated from Egypt due to certain conflicts as common to many empires in the past (Johnson, 2001). Their argument is that Yoruba as a tribe is not only found in Nigeria, but also in parts of Republic of Benin, Egypt and Brazil in Africa and America respectively (Johnson, 2001; Mabogunje, 1980).

The Southwestern Region of Nigeria lies between longitude 300 and 7⁰E and latitude 40 and 9⁰N of the Greenwich meridian and thus, west of the lower Niger and south of the Niger Trough. States in this region are Osun, Oyo, Ogun, Lagos, Ondo and Ekiti States (Fig. 9.1). The total land area is about 191,843 square kilometers. As in the other parts of the country, the climate of south-western Nigeria is dominated by the influence of

METHODOLOGY

Data for this study were from both primary and secondary sources. The primary data were collected through field observation and administration of questionnaires. Case study approach was used in this research. Therefore, the states in the southwest were categorized into three homogeneous groups (based on their contiguity, proximity, spill-over, legal history and planning laws); namely: Lagos/Ogun, Oyo/Osun and Ondo/Ekiti. Therefore, one state was randomly selected from each group to make three states of Ogun, Osun and Ondo states. Pilot study revealed that most urban renewal projects in these states were concentrated in their capitals. Thus, selected cities for this study are Abeokuta, Osogbo and Akure which invariably are the capital cities of the selected states of Ogun, Osun and Ondo as the case may be. The target populations were the residents of the project areas in these capital cities.

In all, there are seventy-eight political wards in the study area; out of which thirty-one (ten in Abeokuta; ten in Akure and eleven in Osogbo) political wards fall under areas where urban renewal projects have been executed and these become the sample frame. Systematic sampling technique was used in selecting residents to be sampled. The first building was chosen randomly. Subsequent unit of investigation was every 20th residential building in each ward, representing 5% of all residential buildings in the selected wards of the study area. Based on the pilot study, there are 33,302 residential buildings in the sampled wards of the selected cities. These comprised of 11,352 in Abeokuta; 10,160 in Akure; and 11,790 in Osogbo. Therefore, a total of 1,671 copies of questionnaires were administered out of which 1,555 copies were retrieved for the study. The questionnaires were used to gather information from resident chosen through simple random sampling from the study area. The questionnaire sought information on the socio-economic attributes, the present state of highway development, the level of road expansion, the effect of road expansion on traffic flow, the effect of road expansion of value of houses, the effect of road expansion on rents and leases and the solutions to the problems facing highway development and road expansion in the study area. Secondary data collected include map of political wards from INEC, maps from Ministry of Physical Development, Ministry of Works, Ministry of Housing and Urban Development of their respective states, number of residential buildings from National Population Commission (NPC) as well as relevant government departments and private establishments. Data collected were analyzed using both the descriptive and inferential statistics based on the set objectives.

Further, the Road Infrastructure Index (RII) was used to analyze residents' assessment of the incremental housing development delivery performance. However, the underlying principle is essentially the same as what obtains in the more popular Relative Importance Index (RII). Consequently, the computation of follows a process similar to the RII's. Literature abounds with many other similar applications. Examples include Afon (2000, 2006), Sambasivan and Soon (2007) and Olojede et al. (2017). The respondents were guided through the rating of the two variables of interest following the principle of the Likert-type scale (Likert, 1961; Vagias, 2006). In each case, the scale was from 5 through 1 in a descending order of significance. Each of the challenges were rated using one of the five likert scales as follows: Excellent (E), Very Good (VG), Good (G), Fair (F) and Poor (P). The total weight value (TWV) for each variable was obtained through the summation of the product of the number of responses for each rating of the variable and the respective weight value. The mathematical expression for this is:

$$TWV = \sum_{i=1}^5 (N_i \times W_i) \text{----- (i)}$$

Where N_i = the number of respondents rating the variable, and W_i = the average weight value assigned to the variable by the respondents. Thus, the RII was computed by dividing the summation of all the responses to each of the five ratings on it by the total number of respondents who rated the road infrastructure facility (N). The mathematical expression for this is:

$$RII = \frac{TWV}{N} \text{----- (ii)}$$

The closer the RII of a facility is to 5, the higher the residents' rating of it; the farther it is from 5, the weaker the rating of respondents of such challenges.

RESULTS AND DISCUSSION

Socio economic profile of the respondents

Findings revealed that both genders were well represented across the study area as, 81.2% of the residents were males while 18.8% were females. In disaggregated manner, in Osogbo, 76.6% were males while the remaining 23.4% were females. In Akure, 85.3% were males while the remaining 14.7 were females. Also in Abeokuta, 82.1% were males while the remaining 17.9% were females. Data on residents' age distribution were

grouped into four young people for: those with less than 20 years; young adults for those within the age of 20 to 39 years; elderly adults for those within the age of 40 to 59 years and old people for those with 60 years and above. Findings revealed that majority (59.1%) of the respondents were between ages of 60 years and above, 18.6% were between 40 and 59 years, 14.7% were between 20 and 39 years while the remaining 7.4% are less than 20 years of age.

Marital status was categorized into three: single, married and those that are married but not more in any relationship as they were either widowed or divorced. Findings revealed that most (94.8%) of the residents were married, 2.5% of the respondents are single while 2.1% are either widows or widowers. Only .6% of the respondents are either separated or have divorced. In disaggregated manner, the pattern looks similar as 94.3%, 93.6% and 96.5% claimed to be married in Osogbo, Akure and Abeokuta respectively.

Findings revealed that majority (77.7%) have tertiary education, 14.9% claimed to have secondary school certificates while just 7.4% are leaving school certificate holders. It was revealed that there was a significant association between the selected cities and the educational attainment of residents. This proportional representation of respondents with tertiary education may influence the residents' response in the evaluation of the urban renewal projects in the study area. This is because education tends to create awareness. There is every tendency to believe that a well-educated person may perceive his immediate environment differently from a less well educate fellow and this is reflected in the result of the analysis.

Findings revealed that 48.0% of the respondents earned ₦50,000 to ₦99,999, 26.0% earned ₦100,000 to ₦149,999, 11.1% earned ₦150,000 to ₦199,999, 7.5% earned less than ₦50,000 while the remaining 7.4% earned ₦200,000 and above. There is the tendency that respondents with higher income may support urban renewal projects because they can get accommodation in another location if affected by renewal projects whereas, respondents with lower income may not be able to, due to financial constraint.

Findings established that 33.2% of the respondents are from the private sector, 25.9% are business men and women, 15.0% are artisans, 14.9% are public servants while the remaining 7.3% are students in the study area (Table 9.1). Generally, a cursory look at the socioeconomic characteristics of the respondents is sufficient to establish it that they quite understood what the assessment was about.

Table 9.1: Socio-economic profile of the respondents

Source: Field Survey, 2016

Gender	Osogbo Freq. (%)	Akure Freq. (%)	Abeokuta Freq. (%)	Total Freq. (%)
Male	420 (76.6%)	425 (85.3%)	418 (82.1%)	1263 (81.2%)
Female	128 (23.4%)	73 (14.7%)	91 (17.9%)	292 (18.8%)
Age				
Less than 20	1 (0.2%)	56 (11.2%)	58 (11.4%)	115 (7.4%)
20-39	127 (23.2%)	15 (3.0%)	90 (17.7%)	232 (14.9%)
40-59	144 (26.3%)	27 (5.4%)	118 (23.2%)	289 (18.6%)
60-Above	276 (50.4%)	400 (80.3%)	243 (47.7%)	919 (59.1%)
Marital status				
Single	11 (2.0%)	20 (4.0%)	8 (1.6%)	39 (2.5%)
Married	517 (94.3%)	466 (93.6%)	491 (96.5)	1474 (94.8%)
Divorce/Separated	06 (1.1%)	1 (0.2%)	3 (0.6%)	10 (0.6%)
Widow/Widower	14 (2.6%)	11 (2.2%)	7 (1.4%)	32 (2.1%)
Educational achievements				
Primary	71 (13.0%)	0 (0.0%)	44 (8.6%)	115 (7.4%)
Secondary	81 (14.8%)	74 (14.9%)	77 (15.1%)	232 (14.9%)
Tertiary	396 (72.3%)	424 (85.1%)	388 (76.2%)	1208 (77.7%)
Income (₦)				
Less than 50000	99 (18.1%)	15 (3.0%)	2 (4.0%)	116 (7.5%)
50000-99999	245 (44.7%)	335 (67.3%)	167 (32.8%)	747 (48.0%)
100000-149999	148 (27.0%)	120 (24.1%)	136 (26.7%)	404 (26.0%)
150000-199999	56 (10.2%)	0 (0.0%)	117 (23.0)	173 (11.1%)
200000 & Above	0 (0.0%)	28 (5.6%)	87 (17.1%)	115 (7.4%)
Occupation				
Schooling	1 (0.1%)	40 (8.1%)	73 (14.3%)	114 (7.3%)
Public Sector	151 (27.6%)	33 (6.6%)	47 (9.2%)	231 (14.9%)
Private Sector	169 (30.8%)	241 (48.4%)	107 (21.0%)	517 (33.2%)
Business	155 (28.3%)	126 (25.3%)	121 (23.8%)	402 (25.9%)
Artisanhip	72 (13.1%)	43 (8.6%)	118 (23.2%)	233 (15.0%)
Total	548 (100.0%)	498 (100.0%)	509 (100.0%)	1555 (100.0%)

Effect of road expansion on rent, and leases

Further, vehicle ownership of the respondents was deemed very relevant to the study as the bulk of road infrastructure serves vehicles. People who have their own vehicles are

likely to assess road infrastructure delivery performance differently from those who do not have any vehicle. Meanwhile, 63.1% of the respondents indicated that they have vehicle in the study area. However, we can safely consider their opinion relevant as there is no way they can do without using the road infrastructure for commuting and other economic activities. Residents' responses shown that 29.3% of the respondents said the traffic flow in the study area is excellent, 55.7% said it is very good, 6.8% said good, 5.4% said fair while just 3.0% said poor. From this we can conclude that the traffic flow in the study area is very good. Findings established that majority (72.0%) agreed that road expansion has effect on rents and leases in the study area, 18.8% disagreed while 9.2% of the respondents are indifference in the study area (Table 9.2).

Table 9.2. Effect of road expansion on rent, and leases

Elements	Frequency	Percentage (%)
Vehicle ownership		
None	104	6.7
Bicycle/motorcycle/tricycle	425	27.3
Car/bus	981	63.1
Others	45	2.9
Purpose of visit		
Excellent	456	29.3
Very good	864	55.7
Good	105	6.8
Fair	84	5.4
Poor	46	3.0
Road expansion have increased rent and lease		
Agreed	1119	72.0
Disagreed	293	18.8
Indifference	143	9.2
Total	1,555	100.0

Source: Filed Survey, 2016

Road infrastructure in the study area

Prior to assessing the road infrastructure delivery performance in the study area, the respondents were asked to assess the state or condition of road infrastructure in the city with focus on fourteen distinct facilities. Table 9.3 gives the summary of their assessment of the state of these road infrastructure elements.

According to Table 9.3, on the average, the condition of road infrastructure elements provided by the governments in the study area is generally good. Even with an average score of 2.4 out of 5, carriageways topped the assessment as the best road infrastructural facilities. Street light, bridges/ culverts, drainage, parking lots, bus stop/laybys and overhead bridges ranked next with 4.4, 4.3, 4.3, 4.2, 4.1 and 3.9, respectively. Further, a mean score of 3.6 was obtained for all the elements taken together. This shows that the respondents rated the state of road infrastructure in the study area is high.

Table 9.3: Road Infrastructure Index

Facilities	Weighing					RII	Rank
	5	4	3	2	1		
Carriage ways	1200	121	132	81	21	4.5	1
Street lights	1189	88	146	-	132	4.4	2
Zebra crossing	51	50	35	1007	448	1.9	14
Drainage	962	342	23	159	69	4.3	4
Road marking	57	149	223	916	324	2.4	13
Parking lots	1002	113	215	202	25	4.2	5
Over-head bridge	459	708	349	39	-	3.9	7
Bus stops/laybys	1023	396	68	54	14	4.1	6
Round-about	17	303	41	1154	40	2.4	12
Pedestrian bridge	431	654	318	102	50	3.9	9
Bridges/culvert	668	741	2	99	45	4.3	3
Pedestrian walkways	514	516	219	101	205	3.7	8
Traffic lights	306	210	970	62	7	3.5	10
Road signs	89	109	345	1001	11	2.5	11

RII: Road Infrastructure Index.

The regression analysis was used to find the extent of relationship between number of highway expansion and effect on neighborhoods in the study area. In Table 9.4, number of highway expansion, accounts for 23% of the total variance in the settlement in the

study area with a level of significance of 0.00 at 5% level of significance. This percentage is significant, thus, number of highway expansion has a relationship with the settlements in the study area; this means that when the highway is expanded and in good shape there will be significant increase in the study area.

Table 9.4: ANOVA Result I

R=0.512; R Square=0.234; Adjusted R Square=0.233; Standard error=0.782						
Model	Sum of squares	Df	Mean square	F	Sig.	Remarks
1 Regression	53.456	1	39.021	270.034	0.000 ^b	Significant P<0.00
Residual	334.679	349	2.098			
Total	382.005	451				

Furthermore, regression analysis was used to find the extent of relationship between traffic flow and effect on development in the study area. In Table 9.5, traffic flow, accounts for 56% of the total variance in the development in the study area with a level of significance of 0.00 at 5% level of significance. This percentage is significant, thus, traffic flow has a relationship with development in the study area; this means that when traffic flows ceaselessly there will development in the study area.

Table 9.5. ANOVA Result II

R=0.232; R Square=0.569; Adjusted R Square=0.567; Standard error=0.554						
Model	Sum of squares	Df	Mean square	F	Sig.	Remarks
1 Regression	53.456	1	29.021	370.024	0.000 ^b	Significant P<0.00
Residual	234.619	378	1.098			
Total	282.004	431				

Also, regression analysis was used to find the extent of relationship between highway development and value of houses in the study area. In Table 9.6, highway development and road expansion, accounts for 88% of the total variance in the value of houses with a level of significance of 0.00 at 5% level of significance. This percentage is significant, thus, highway development and road expansion has a strong relationship with value of houses; this means that when there is highway development and road expansion there will be increase in the value of houses.

Table 9.6. ANOVA Result III

R=0.641; R Square=0.886; Adjusted R Square=0.884; Standard error=0.919						
Model	Sum of squares	Df	Mean square	F	Sig.	Remarks
1 Regression	63.456	1	79.022	670.034	0.000 ^b	Significant P<0.00
Residual	494.673	347	5.091			
Total	462.004	581				

Hence, socio-economic factors remain prominent determinants in road infrastructure delivery especially in the developing nations like Nigeria. It is thus confirmed findings by Afolabi, Oyetubo and Oluwaji (2018) that the expansion of roads has opened up the areas for more businesses which now cause high-cost effect on rent and leases in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study examined effects of road expansion and highway development in South-West, Nigeria. It was revealed that many roads have been rehabilitated/reconstructed across the selected cities of the study area by the state governments to improve mobility, enhance the beauty of the cities, prevent flooding and impact positively on the lives of the people. More neighbourhood and homes are now accessible thereby improving community ownership of development initiatives and promoting the sense of security. Also, the road improvement incorporates wider road carriageway, street lighting, bus shelters, off-street car park and greening.

However, good road projects clearly contribute to poverty reduction by improving the living conditions of people and by augmenting the opportunities available for trade and employment. The economic development of Nigeria has reflected the development of her transport systems. This is particularly true of the road transport system, which is by far the most widely used mode of transport in the country. Of all commodity movements to and from the sea-ports, at least two-thirds are now handled by road transport while majority of all other internal movements of goods and persons take place by roads. Transport can contribute to the economy directly through addition to capital stock via increases in transport infrastructure. Transport provides the arteries through which the economic life of the people, information and raw materials as well as finished products can be moved from one place to the other. This therefore helps to build and maintain the society thereby leading to economic growth. It is essential to state that, the huge fund sunk into the construction, rehabilitation, and maintenance of

roads in Nigeria in the last three decades is badly reciprocated by the poor and deplorable current state of these roads.

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