



## Effects of Locational Infrastructural Facilities on Residential Property Value in Bori, Rivers State

<sup>1</sup>Deeyah, Christopher L., <sup>2</sup>Kpalap, Elgior M., <sup>3</sup>Kpunpamo Owanate B., <sup>4</sup>Igbara Simeon A., and <sup>5</sup>West, Tamunomiete

<sup>1,3,4</sup>Department of Estate Management, Ken Saro-Wiwa Polytechnic, Bori.

<sup>2</sup>Department of Architecture, Ken Saro-Wiwa Polytechnic, Bori

<sup>5</sup>Department of Urban and Regional Planning Ken Saro-Wiwa Polytechnic, Bori.

Correspondence email: [chrisdeeyah@gmail.com](mailto:chrisdeeyah@gmail.com)

---

**Abstract:** *This paper aims to determine statically the relationship between Locational Infrastructural Facilities and Residential Property Value in Bori, Rivers State. The paper investigates the infrastructural facilities and rental values of residential properties in the selected residential neighbourhoods to ascertain if rent passing on residential properties in the selected streets have link to locational infrastructural facilities. A multi-stage sampling technique is used to identify the residential neighbourhood; number the buildings and household from the selected streets; select household respondents to be studied from the selected streets, while simple random sampling was used to select household respondents to respond to the data collection instruments. The study used closed ended questionnaires designed for household and was administered by the researcher through drop and pick method. Reliability and Validity of data collection instruments was ascertained through the test-retest method. Pearson Product Moment Correlation Coefficient was employed to analyze the data with the aid of statistics using Statistical Package for the Social Science (SPSS). Findings indicate an r-value of 0.914 which shows a positive relationship between the average scores of infrastructural facilities and average rental values; while the t-test results shows that at 0.05 level of significance,  $t\text{-cal} = 3.88$ , and  $t\text{-tab} = 2.78$ . The study infer that rental values tended to peak in location that enjoy one form of infrastructure or the other. It recommended that infrastructural facilities be provided in locations with fewer infrastructures to improve value and encourage movement of people into these locations as an alternative to over-crowding one part.*

**Keywords:** Locational Infrastructural, Available Facilities, Residential Property, Rental Value

---

### 1.0 Introduction

The state of infrastructure is an important parameter for assessment and indicator of status of any urban system (Ajibola, Awodiran and Salu-Kosoko, 2013). Infrastructure covers a wide range of services and facilities which include water, road, waste disposal, drainage, communication, primary health services, schools and housing. (Olaseni and Alade 2012) classified Infrastructures broadly into two: physical (roads, electricity, telecommunication, drainage system, etc.); and social (education, health, recreation, housing etc.). According to

Nubi, 2003), the physical infrastructure is referred to as economic infrastructure. Ajibola *et al.*, (2013) observed that adequate provision and effective management of public infrastructures improved productive and profitable land uses in an urban area. As the effectiveness of any form of human activity in an urban area mainly depends on the provision of efficient infrastructure and services, its significance in the proper functioning of an urban area cannot be underestimated (Babarinde, 1998). According to United Nations, (2010), the quality and coverage of infrastructure services have a significant impact on economic growth and standards of living, yet it is estimated that about two billion people lack access to adequate sanitation and electricity while one billion lack access to clean water. Availability of infrastructure is often one of the factors affecting the demand and choice of residential property as man is a socio-economic being seeking to dwell in residential units that provides maximum supply of necessary facilities at affordable costs. Providing infrastructure that would enhance the living condition of residents within a neighbourhood is thus very essential. Oni (2007), citing Goldberg (1970), said that “real property values tend to increase in areas with expanding transportation networks, and increase less rapidly in areas without such improvements”. He note that rapid and continued rise in property value are expected in cities with infrastructural improvements and rapid economic and population growth.

Rental values of properties also vary from place to place depending on various factors among which availability of facilities stand prominent. Most often, when factors affecting rental values of residential properties are considered, the most commonly discussed factors are location, quality of building, demand and supply rate among others are the most commonly mentioned with little or no regard for the availability of public facilities and infrastructures. Property has no intrinsic value when marketed. Value exists only where the property has a 'beneficial use' that is, use in occupation, or a potential to offer use in occupation. If occupational demand is weak, or lacking, the rent or price that the property can command in the market is lowered. Ihuah and Benebo, (2014) opined that reliant on availability of sufficient infrastructural provisions such as: good road network; portable water supply system; drainage system etc leads to effective economic activities functioning and development level fulfilment in either urban or rural environment and that the significance of their provision, is to enhance real property values, as well as promote the social and economic life of the people in that built environment.

The increasing rate of variations on rental values of residential properties among varying residential neighbourhoods in many towns and cities in Nigeria in recent time has continue to dominate discussions within the spheres of practicing estate surveyors and valuers, landlords, investors, tenants, estate brokers, as well as policy makers on property investment and management in Nigeria. Though different studies on housing rentals determination have been carried out internationally, that acknowledged condition of dwelling characteristics, attributes of residential location and neighbourhood attributes as the foremost factors that causes housing rental variations ( Kiel & Zabel, 2008; Ajibola *et al.*,2013). Most of these studies are foreign with only a little of them done in the south west, Nigeria. Hence, this study attempt explores the significance of the various infrastructural facilities on rental values of residential properties in the study area. In doing this, the research will answer the following questions.

- I. What are the infrastructures facilities in the various residential neighbourhoods in Bori?
- II. Are there any variations in infrastructures facilities and rental values in the various residential neighbourhoods in Bori
- III. Is there any relationship between infrastructure facilities and rental value?

### 1.1 Hypothesis

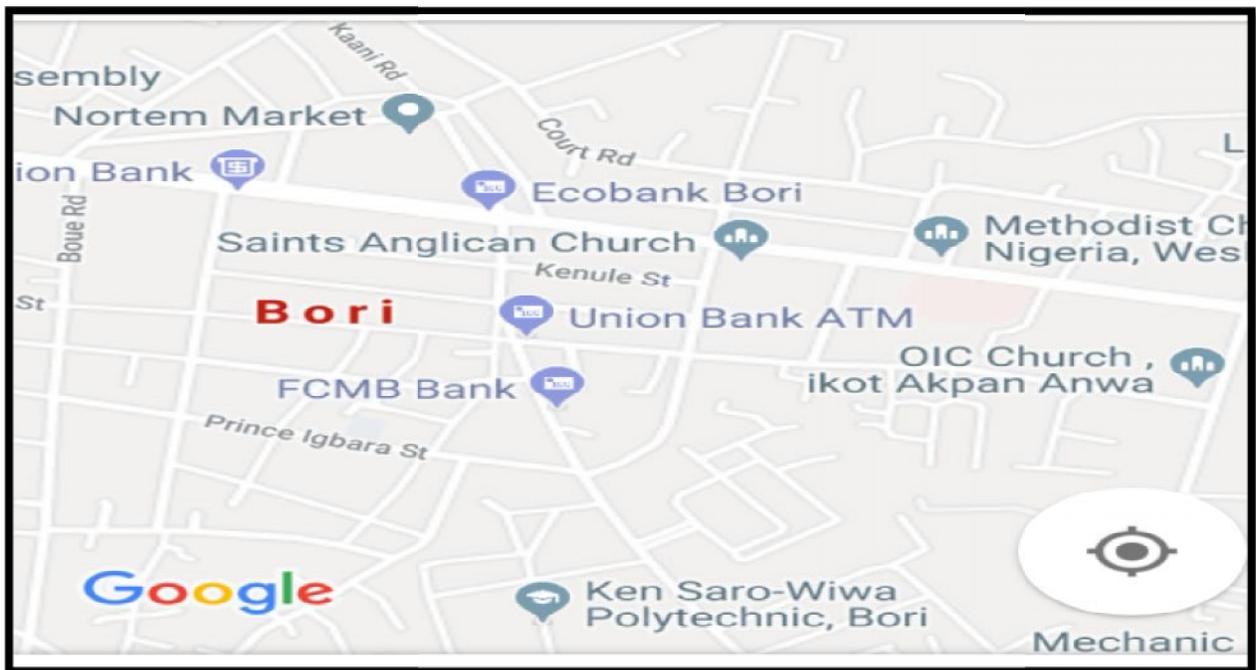
This research is based on the following hypothesis:

H1 - There is statistically significant relationship between between infrastructural provision and rental value in Bori.

H0 - There is no statistically significant relationship between infrastructural provision and rental value in Bori.

### 1.2 The Study Area

Bori the head quarters of Khana Local Government is located on coordinates  $4^{\circ} 40' 22' N$  and  $7^{\circ} 22' 13' E$ . It occupies a total land area of approximately  $50\text{km}^2$  with a population of 250,000 people. Bori also doubles as the traditional headquarters of Ogoni ethnic nationality which consist of four local governments (Eleme, Tai, Gokana, and Khana). It is an ancient community transcending from the capital of the old Bori division to the head quarters of the present Khana Local Government Area. It is bounded to the North by Tai and Gokana Local Governments, to the South by Wiiyaakara, to the East by Kaani and kor and to the West by Zaakpon and Boue communities.



Source: Google Map showing Selected Streets in Bori.

The people engage in subsistence agriculture and fishing. They are also involved in diverse business ranging from petty trading to complex and commercial ventures such as super market and standard restaurants, hotels and recreational outfits. Bori is fast growing from a rural area

into an urban area. The presence of Ken Saro-Wiwa Polytechnic, has led to an increase in the rate of development of residential and commercial properties which connects people across all parts of Bori. The availability of Ken Saro-Wiwa Polytechnic, central market, hospitals secondary and primary schools, road networks, drainages, water supply, parking space, security network and other infrastructural facilities has also led to the attraction of students from all walk of life and population from the neighborhood communities to Bori. This development has led to increase demand for residential accommodation and upsurge in rental values in different neighbourhoods in Bori hence the choice of the location for the study, so as to determine whether rent passing in the various street have link to locational infrastructural facilities.

## **2.0 Literature Review**

### **2.1 Concept of Urban Infrastructure**

The Longman online dictionary (2014) defines infrastructure as the basic systems and structures that a country or organization needs in order to work properly, for example roads, railways, banks etc. The term typically refers to the technical structures that support a society, such as roads, water supply, sewers, electrical national grids, telecommunications, and so forth, and can be defined as "the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions" (Fulmer, 2009). Infrastructure is the aggregate of all facilities that allow a city function effectively Nubi (2003). Nwuba and Salawu, (2010) see infrastructure as a key element in the generation of economic growth and development and the main driver of urban activities. It is the economic and social underpinnings of a society and the life wire of the urban system. Patunola (2013) describe infrastructure as the sectors of transport, water and sanitation, power, telecommunication and others which represents a large portfolio of expenditure in all countries, ranging from a third to one-half of the public investment (equivalent is roughly 3-6 percent of GDP). Infrastructure covers a wide range of economic and social facility crucial to creating an enabling environment for economic growth and enhances quality of life which includes housing, electricity, pipe-borne water, drainage, roads sewage, health, education, telecommunication and institutional structures like police station, fire fighting station, banks and post office. It is simply the engine that drives the development of any city (Bello, Adeniji, Arowosegbe, 2013).

### **2.2 Effects of Infrastructure on Rental Values**

Economies require the development of infrastructure, such as water, energy, roads development, transport networks, information, and communication technology for sustainability and these urban services also positively influence the value of real estate as they improve housing conditions and quality (Famuyiwa and Otegbulu, 2012). Different scholars have variously stressed the relevance of infrastructure in all spheres of life. Previous studies, including Burgess (1925), Keeble (1969), Odudu (2003), Johnson, Davies and Shapiro (2005) have considered the effect of location on property values. Their various findings established location as a major determinant of property value. Location is important in relation to proximity to the target market and sources of supplies; conditions and facilities are important in relation to attracting optimal rentals, and security is important in relation to tenant safety. Keeble (1969) affirmed that properties in areas that are well serviced with pipe-borne water enjoy

higher rental values compared to areas where the service is non-existence. Odudu (2003), in examining the Significance of Infrastructure in Determining Land and Rental Values in an Urban Area of Lagos metropolis observed that rental values tended to peak in those locations that enjoyed one form of infrastructure or the other. Collaborating this, Johnson, Davies and Shapiro (2005) affirm that the presence of infrastructure often leads to appreciation in property values while its absence affects neighbourhood properties adversely.

Olajide (2010) carried out a study of urban poverty and environmental conditions in informal settlements of Ajegunle, Lagos, Nigeria established that, one of the basic factors that determine property values especially residential property is the reliability of physical security of the neighborhood as well as that of the property. She argued that, residential restates that are pruned to robbery attacks usually suffer reduction in both capital and rental value. She further said that, the rate of turnover of properties suffering from inadequate security is usually low thereby rendering such properties unattractive and unprofitable. Ajibola, et al (2011) while studying the effects of Infrastructure on Property Values in Unity Estate, Lagos, Nigeria maintain that where properties are accessible through good road networks, it would enjoy high rental values.

Ibrahim,(2013) x-ray the influence of location on property values and business development in Nigeria using Ilorin metropolis as a case study. Findings indicate that Business development concentrated and grows more intensively in neighbourhoods with highest level of accessibility. He maintained that rent skyrocketed on the properties in the areas which may eventually give rise to gentrification whereby important but less financially rewarding businesses are forced to relocate elsewhere. The study recommends that the government should provide infrastructures in the less developed areas to encourage people move into the area rather than over-crowding one part of the city.

Udoka, (2013) while studying the imperatives of the provision of infrastructure and improved property values in Nigeria beamed its light on the relationship between property values and the development of infrastructure; the factors that influence property values; and trend of infrastructural development in Akwa Ibom State in recent past observed that the closer a residential area is to new infrastructural projects, the higher the increase in its values.

Ihuah, Ekenta, and Nwokorie, (2014) carried out investigation on the impacts of inadequate infrastructures provision on real property value, using Agbama and Ehimiri Housing Estate located in Umuahia City of Nigeria. The study uses an open and closed ended questionnaire designed with multiple choice test questionnaire survey on a total of 400 households and landlords reveal that there were lack of or inadequate good road network, electricity supply; portable water; drainage system; waste management system; recreational facilities; particularly in Agbama housing estates and that these inadequate infrastructures and its weak correlation contribute to increasing negative impacts on real property and its rental value.

Ankeli et al (2015) are of the opinion that, the determination of residential property value is a complex and major challenging task facing both practitioners and intellectual in the real estate profession in Nigeria as the exercise involves the collection and analysis of comprehensive and accurate data on the property characteristics, neighborhood

characteristics, landlord and tenant characteristics and market conditions which are not readily available and concluded that, properties with better conditions in terms of infrastructures and physical soundness command higher rental values.

Ankeli , et al (2016) while examining the available infrastructural facilities in residential properties in Osogbo with the aim of evaluating their impact on the rental values of residential properties in the study area divided Osogbo Metropolis into four residential zones and administered a total of 450 questionnaires on the respondents using systematic random sampling techniques. With 95% response rate, the study revealed that, properties with better conditions in terms of infrastructures and physical soundness command higher rental values. It recommends the need for the provision of essential basic infrastructure by government and its agencies and schedule sustainable maintenance programmes for the infrastructure facilities provided.

### **3.0 Research Methodology**

This section discusses the methodological approach used for the collection of the relevant data, analysis and discussions of findings. The research design adopted in this study is the Survey design. This is because the study variables are not subjected to manipulation and can be generalized to larger population. The target population for this study were basically household members. A multi-stage sampling technique is used to select household respondents for the study. Multi-stage sampling is normally used to overcome problems associated with a geographically dispersed population when face-to-face contact is needed or where it is expensive and time consuming to construct a sampling frame for a large geographical area (Saunders, Lewis and Thornhill, 2009). The technique involves taking a series of cluster samples, each involving some form of random sampling. The sampling phases include:

Phase 1 carrying out a reconnaissance survey to identify the residential neighbourhood within Bori. A total of 52 streets were identified within the study area.

Phase 2 Selecting 6 streets for building counts/ numbering of the buildings and household from the selected streets.

Phase 3 Selection of household to be studied from the selected streets.

Phase 4 selections of household respondents using simple random sampling.

The Taro Yamane's formula for finite population was used to determine the sample size from the population of households to be studied. This gave a sample size of two hundred and seventy four respondents. The formula is given thus:

$$n = \frac{N}{1+N(e)^2}$$

Where, n = the sample size; N = the finite population; e = level of significance (0.05 limit of tolerance error); 1 = unity (a constant)

**Table 1: Sampling Information on Studied Households**

Name of street	Total No. of Buildings	No. of Households Listed	Sample Size
Hospital Road	103	175	64
Poly Road	38	65	39
Prince Igbara	44	75	43
Faith Way	28	53	35
Kaani Road	55	94	48
Court Road	48	82	45
<b>Total</b>		<b>544</b>	<b>274</b>

Using the Taro Yamane Formula @ 10% Level of Precision

#### 4.0 Results and Discussion of Findings

The findings of this research work are presented below in figures and tables for easy communication and interpretation. The questionnaire used a 5-point Likert scale to measure the functionality, efficiency and adequacy of the facilities in these locations; the rating on the scale is as follows:

- 1 = Strongly Disagree,
- 2 = Disagree,
- 3 = Neutral,
- 4 = Agree, and
- 5 = Strongly Agree

Thereafter, descriptive statistics tool were used to analysed the data in order to determine the Weighted mean (WM) score for various locations.

#### 4.1 Identification of infrastructure in the locations

The researcher sought to identify the type of infrastructure available in the study area. Respondents were required to express their opinion regarding the type of infrastructural facilities in Bori. Their responses are presented in Table 2 below. Table 2 shows that respondents agree that all the listed items of Infrastructure School, Road, Drainage, Water supply, Parking space and Security are available in Bori with a mean score of above 3.00.

**Table 2: Infrastructure in the Locations**

Available infrastructure	5	4	3	2	1	Sum	Mean	Decision
School	160	71	43	0	0	1,213	4.43	Agree
Road	157	70	20	11	16	1,163	4.24	Agree
Drainage	138	67	47	13	09	1,134	4.14	Agree
Water supply	80	74	67	40	13	990	3.61	Agree
Parking space	60	80	70	22	42	916	3.34	Agree
Security	53	65	80	24	20	833	3.04	Agree

**Legend:** <3.00 = Inadequate >3.00 = Adequate

**Source:** Field Survey, 2019

#### 4.2 Availability and functionality of facilities

The researcher sought to determine the level of availability and functionality of the identified infrastructure in the selected streets in Bori. Respondents' household were required to rate identified facilities in their neighbourhood whether they were available and functional. Responses of the respondents' household are shown in table 3 below:

**Table 3: Availability and Functionality of Facilities**

Option	5	4	3	2	1	N	SUM	MEAN
<b>Road</b>								
Hospital Road	37	20	5	2	0	64	277	4.33
Poly Road	12	22	5	0	0	39	163	4.18
Prince Igbara	21	18	4	0	0	43	189	4.40
Faith Way	7	6	12	9	2	36	115	3.19
Kaani Road	0	0	9	18	21	48	84	1.75
Court Road	20	12	7	9	0	45	187	4.16
<b>Drainage</b>								
Hospital Road	12	29	16	4	3	64	235	3.67
Poly Road	13	25	1	0	0	39	168	4.31
Prince Igbara	5	10	19	9	0	43	140	3.26
Faith Way	0	0	20	10	6	36	86	2.39
Kaani Road	0	0	18	12	18	48	96	2.00
Court Road	15	12	12	5	0	45	169	3.76
<b>Security</b>								
Hospital Road	16	13	20	10	5	64	217	3.39
Poly Road	12	8	19	0	0	39	149	3.82
Prince Igbara	14	22	7	0	0	43	179	4.16
Faith Way	14	10	10	2	0	36	144	4.00
Kaani Road	0	0	14	22	12	48	98	2.04
Court Road	0	0	26	13	9	45	113	2.51
<b>Water Supply</b>								
Hospital Road	2	10	34	11	7	64	181	2.83
Poly Road	5	22	5	7	0	39	137	3.51
Prince Igbara	0	10	16	17	0	43	122	2.84
Faith Way	20	8	3	5	0	36	146	4.05
Kaani Road	0	0	0	8	40	48	56	1.17
Court Road	4	6	12	10	16	45	116	2.58
<b>School</b>								
Hospital Road	20	22	5	17	0	64	237	3.70
Poly Road	20	18	1	0	0	39	175	4.49
Prince Igbara	15	19	9	0	0	43	178	4.14
Faith Way	22	10	6	0	0	36	143	4.39
Kaani Road	0	0	15	19	14	48	97	2.02

---

Court Road	3	5	16	14	10	45	121	2.69
<b>Parking Space</b>								
Hospital Road	18	22	8	10	6	64	228	3.56
Poly Road	0	6	10	16	7	39	93	2.38
Prince Igbara	2	7	12	14	8	43	110	2.59
Faith Way	25	6	4	0	0	36	161	4.47
Kaani Road	0	3	13	20	12	48	103	2.14
Court Road	1	3	20	15	7	45	100	2.22

---

**Legend:** <3.00 = Inadequate >3.00 = Adequate

**Source:** Field Survey, 2019

#### **4.21 Availability and Functionality of Road Infrastructure**

The results on road infrastructure shows that Prince Igbara street was ranked highest with a mean score of 4.40, followed by Hospital road with mean score of 4.33, Poly Road and Court Road came third and fourth respectively with a mean score of 4.18 and 4.16 respectively, while faith way came a distant fifth with a mean score of 3.19, while Kanni road came last with a mean score of 1.75. Respondents' responses in Prince igbara street, Hospital road, Poly road, Court road and Faith-way confirm the availability and functionality of road infrastructure in these streets while those in Kaani Road confirm that road infrastructure provision are inadequate.

#### **4.22 Availability and Functionality of Drainage Infrastructure**

On the availability and functionality of drainage infrastructure in the selected streets. The findings in Table 3 above reveal Drainage infrastructure are available and functional in Poly road, Court road, Hospital road, and Prince Igbara street. The results reveal that poly road enjoys a better drainage with a mean score of 4.31 than all. This is followed by court road with a mean score of 3.76, while hospital road and prince igbara with a mean score of 3.67 and 3.26 came third and fourth respectively. With a mean score of 2.39 and 2.00 for faith-way and kaani road respectively, the result indicated that the drainage conditions in these streets are poor.

#### **4.23 Availability and Functionality of Security**

When respondents were asked to state their opinion on the availability and functionality of security in the six selected streets, the responses indicate that respondents in prince igbara and faith way rated the security of their neighbourhoods as functional with a mean score of 4.16 and 4.00 respectively, followed by residents in poly road with a mean score of 3.82 and hospital road with a mean score of 3.39 while those in Court road and Kaani road with a mean score of 2.51 and 2.04 shows that there is a breakdown of security apparatus.

#### **4.24 Availability and Functionality of Water Supply**

On availability and functionality of water supply, the results reveal that residents in faith way rated water supply in the neighbourhood very high with a mean score of 4.05, followed by residents in poly road with a mean score of 3.51. The study reveal that the landlords provide alternative source of water in their builders to make subscribers who are mainly students comfortable by sinking boreholes as a result of government inability to do so. Responses of the residents of Prince igbara, Faith way, Kaani road, Court road and hospital road with a mean

score of less than 3.00 shows that water supply in the neighbourhood are inadequate and not functional. Our investigation reveals that most of the buildings had no supply of water and the resident had to walk a distance to buy.

#### **4.25 Availability and Functionality of Schools**

On availability and functionality of school, the study indicated that Poly road with a mean score of 4.49, faith way with a mean score of 4.39, and Prince Igbara with a mean of 4.14 all enjoys the availability of schools. The study revealed that these streets enjoys close proximity a tertiary institution – Ken Saro-wiwa Polytechnic and several public and private secondary schools. Hospital road, Kaani Road, Court Road that are far from the Ken Saro-wiwa polytechnic were rated very low.

#### **4.26 Availability and Functionality of Parking Space**

Finally, the result on the availability and functionality of parking space were found to be adequate particularly in faith way with a mean score of 4.47. Findings indicate that this settlement is an entirely new. This was followed by hospital road with a mean score of 3.56. However, with a mean of 2.59 for prince igbara, 2.38 for poly road, 2.69 for court road and 2.02 for kaani road, the findings confirm the inadequacy of parking space.

The results in table 3 above were averaged to get the average weighted mean score of the respective infrastructure in the different streets. The average weighted mean is indicated in table 4 below.

**Table 4: Average Weighted Mean of Locational Facilities**

Name of Street	Road	Drainage	Security	Water Supply	School	Parking Space	AWM
Hospital road	4.33	3.67	3.39	2.83	3.70	3.56	3.58
Poly road	4.18	4.31	3.82	3.51	4.49	2.38	3.78
Prince igbara	4.40	3.26	4,16	2.84	4.14	2.59	3.57
Faith way	3.19	2.39	4.00	4.05	4.39	4.47	3.75
Kaani road	1.75	2.00	2.04	1.17	2.02	2.14	1.85
Court road	4.16	3.76	2.51	2.58	2.69	2.22	2.99

**Legend:** <3.00 = Inadequate >3.00 = Adequate

**Source:** Field Survey, 2019

The results in table 4 above indicate the weighted average mean of the scores of the various locational infrastructures in six selected streets. The result shows that Poly road has the highest level of infrastructural facilities with an average weighted mean score of 3.78, followed by Faith way with an average mean score of 3.75, then Hospital road with 3.58 average mean score and Prince igbara with 3.57. Court road and Kaani road were lowest with an average mean score of 2.99 and 1.85 respectively. This confirms that there is a variation in the various items of infrastructure in the selected streets.

#### **4.3 Rental Trends and Mean of the Various Locations**

Trends in rental values of single room residential properties in the various streets gathered over

a period of five years from 2015 to 2019 were collated and used in the study to analyse variation. Table below presents the results.

**Table 5: Rental Trends from 2015 to 2019**

Name of Street	2015	2016	2017	2018	2019	Average
Hospital road	50,000	55,000	55,000	60,000	60,000	56,000
Poly road	45,000	45,000	50,000	50,000	50,000	48000
Prince igbara	45,000	50,000	50,000	60,000	65,000	54000
Faith way	45,000	45,000	45,000	50,000	50,000	47000
Kaani road	28,000	38,000	30,000	30,000	40,000	31000
Court road	30,000	35,000	35,000	40,000	36,000	36000

Source: Field Survey, 2019

The results indicate that there is a variation in the average rental values. As indicated in table 5 above, one can see that residential property values are higher in hospital road is worth an average rent of N56,000, Poly road N48000, Prince Igbara street N54000, Faith way N47000, while, those in Kaani road and Court road is worth N31000 and N36000 respectively. An objective evaluation of these findings referenced in table 3 and 4 confirm that infrastructural provisions are more available and functional in Hospital road, Poly road, Prince Igbara street, and Faith way as compared to inadequate and non-functional infrastructural provisions established in Kaani road, and Court road and therefore confirms to the study circumstance that the above identified infrastructures are indispensable and contributes to the increasing rental value of the residential property types in Hospital road, Poly road, Prince Igbara street, Faith way than as experienced in Kaani road, and Court road.

#### 4.4 Correlation of the Infrastructures and Rental Values in Selected Streets

The study sought to determine whether there is a statistically significant relationship between the Infrastructures and rental values in selected streets of Bori. The average weighted mean (AWM) scores of the locational facilities and the average mean (AM) scores of rental values of the selected streets in Bori were extracted and tabulated in table 6

**Table 6: Average Scores of Infrastructural Facility and Rental Values**

Name of Street	Average Weighted Mean of Facility Scores	Average Mean of Rental Values
Hospital road	3.58	56,000
Poly road	3.78	54000
Prince igbara	3.57	48000
Faith way	3.75	47000
Kaani road	1.85	31000
Court road	2.99	36000

Source: Field Survey, 2019

Table 6 above shows the average mean score and average rental values of the selected streets in Bori.. The results indicate that there is a variation in the average rental values and average facility scores of the selected streets. The relationship between the average rental value and average mean score can best be demonstrated statistically. This was tested using Pearson Product Moment Correlation Coefficient at 95% confidence level and findings presented in Table 6 below:

**Table 7. Pearson’s Correlation Analysis**

Variables	$\Sigma X$	$\Sigma X^2$	$\Sigma XY$	r-cal
	$\Sigma Y$	$\Sigma Y^2$		
Infrastructure (X)	19.52	16.27	917,200	0.914
Rental Value (Y)	272,000	12,822,000,000		

\*\*Correlation is significant at 0.05 levels (2- tailed)

\*Pearson Correlation Sig. (2-tailed)

The findings in Table 6 indicate a r-value of 0.914 which shows a positive relationship between the average scores of infrastructural facilities and average rental values. To check for the validity and reliability of the relationship of the effect of infrastructure on rental value, a test for significance was carried out using the T-test. The T-test result shows that at 0.05 of significance,  $t(cal)=3.88$ , while the  $t(tab)=2.78$ . The decision criterion is that the null hypothesis should be rejected, if the t-calculated value is greater than its critical value, otherwise it should be accepted. Since the calculated value ( $t-cal=3.88$ ) is greater than the critical value( $t-tab=2.78$ ) at 0.05 level of significance, we reject the null hypothesis and conclude that there is statistically significant relationship between between infrastructural provision and rental value in Bori. This findings is in agreement with similary findings by Odudu (2003), observed that rental values tended to peak in those locations that enjoyed one form of infrastructure or the other. It also conform to the findings of Johnson, Davies and Shapiro (2005) that the presence of infrastructure often leads to appreciation in property values while its absence affects neighbourhood properties adversely.

### **5.0 Conclusion**

The study has examined the various infrastructural facilities available in the study location, their functionality and the rent commanded by residential property. It found out that locations like Hospital road, Poly road, Prince Igbara street and faithway enjoy more infrastructure than court road and kaani road. Average rental values of residential properties in Hospital road, Poly road, Prince Igbara and Faithway were all above N45,000 while those in court road and Kaani road that did not enjoy more infrastructure are below N35,000. The findings of the hypothesis revealed that there exist a significant relationship between locational infrastructure and residential rental values in Bori. The positivity of the r-value here means that where infrastructure is functional in a location, the rental value increases. Hence the null hypotheses

formulated were rejected. The study recommends that infrastructural facilities be provided in locations with fewer infrastructures to improve value and encourage movement of people into these locations as an alternative to over-crowding locations with functional infrastructure.

### **Referencing**

- Ajibola, M.O., Awodiran, O.O. and Salu-Kosoko.O. (2013). Effects of Infrastructure on Property Values in Unity Estate, Lagos, Nigeria. *International Journal of Economy, Management and Social Sciences*, 2(5), 195-201.
- Ankeli, A.I, Dabara, D.I, Oyeleke O. O, Guyimu, J and Oladimeji, E.J (2015b). Housing Condition and Residential Property Rental Values in Ede Nigeria. *International Journal of Arts & Sciences*, 8(1), 53–61
- Ankeli A. I, Dabara D.I, Gambo, M. D and Lawal K. O(2016) Residential Housing Rental Values And Infrastructural Development In Osogbo, Nigeria. *Conference of the International Journal of Arts & Sciences*, 9(1), 29–40
- Babarinde, J. A. (1998), Analysis of Industrial Relocation in Relation to Housing and Infrastructural Services in Metropolitan Lagos. *The Lagos Journal of Environmental Studies*, 1 (1), 97-108.
- Bello, I. K, Adeniji, W and Arowosegbe, O. S (2013): The effects of urban infrastructural development on property value. *Merit Research Journal of Art, Social Science and Humanities*, 3(3), 35-40.
- Burgess, E. W. (1925). *The Growth of the City* in Park, R. E. et al. The City: University of Chicago Press.
- Famuyiwa, F., and Otegbulu, A. C. (2012). Public water infrastructure in property prices: an environmental valuation approach. *Elixir Infrastructure Management Journal*, 51, 11034-038.
- Fulmer, J. (2009). What in the world is infrastructure. *PEI Infrastructure investor*, 1(4), 30-32.
- Ibrahim, T. A (2013) .The impact of location on property values and business development in Ilorin Metropolis, Nigeria *International Journal of Current Research*. 5,(10), 2735-2738,
- Ihuah, P.W. and Benebo, A. M. (2014), An Assessment of the Causes and Effects of Abandonment of Development Projects on Property Value in Nigeria, *International Journal of Research in Applied, Natural and Social Sciences*, 2( 5), 25-36
- Ihuah, P W, Ekenta, C and Nwokorie, B.(2014). Impacts Of Inadequate Infrastructures Provision On Real Property Value: A Comparative Study Of Agbama And Ehimiri Housing Estate, Umuahia, Nigeria. *International Journal of Environment, Ecology, Family and Urban Studies (IJEEFUS)* , 4,( 4), 9-20
- Johnson, T., Davies, K. and Shapiro, E. (2005) . *Modern Methods of Valuation of Land, Houses and Buildings*. , London: Estate Gazette.
- Keeble, L. (1969), *Principles and Practice of Town Planning'* London : Estate Gazette Limited.

- Kiel, K. A., and Zabel, J. E. (2008). Location, location, location: The 3L Approach to house price determination. *Journal of Housing Economics*, 17(2), 175-190.
- Nubi, T.O (2003). 'Procuring, Managing and Financing Urban Infrastructure: Towards an Integrated Approach' Land Management and Property Tax Reform in Nigeria, In `Omirin et al. (ed.) Department of Estate Management, University of Lagos, Akoka.
- Nwuba, C.C and Salawu, B.M (2010): Planned and integrated approach to maintenance of urban infrastructure in Nigeria. *Environ-Tech, Journal of the College of Environmental Studies, Kaduna Polytechnic, Kaduna, Nigeria*, 1( 1), 1-19.
- Odudu, C. (2003). Significance of Infrastructure in Determining Land and Rental Values in an Urban Area-The Case of Lagos Metropolis. Land Management and Property Tax Reform in Nigeria- Proceedings of a National Workshop organized by the Department of Estate Management, University of Lagos, Nigeria.
- Olajide, O. (2010). *Urban poverty and environmental conditions in informal settlements of Ajegunle, Lagos Nigeria*. Retrieved from: [https://www.programm.corp.at/cdrom2010/papers\\_2010\\_/CORP2\\_010\\_148.pdf](https://www.programm.corp.at/cdrom2010/papers_2010_/CORP2_010_148.pdf)
- Oni, A.O. (2007). A Study of the Accessibility and Connectivity of Ikeja Arterial Roads, *Journal of Land Use and Development Studies*. 3(1), 108-122
- Patunola-Ajayi, B.J (2013): Infrastructure Development and Economic Empowerment. A paper presented at the 43rd Annual Conference held in Benin, Edo. 12th – 16th March
- Saunders, M., Lewis, P., and Thornhill, A. (2009), *Research Methods for Business Students*, Fourth Edition. Essex: Person Education Limited.
- Udoka, I.S. (2013). The Imperatives of the Provision of Infrastructure and Improved Property Values in Nigeria. *Mediterranean Journal of Social Sciences*, 4(15), 21-33.
- The Longman online dictionary. (2014). Retrieved from: <http://www.ldoceonline.com/spellcheck/?q=%ednfrastructure>
- United Nations (2002), A United Nations Report on Human Settlement: The Changing Shelter Policies in Nigeria,, Retrieved from: [www.un-habitat.org](http://www.un-habitat.org).