

Residents' Perception of Importance and Satisfaction with Infrastructure in Selected Public Housing Estates in Osun State, Nigeria

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ABSTRACT

This study examined residents' level of satisfaction with the available infrastructure in Moremi, Oroki and Akoda Estates in Osun State, with a view to enhancing provision of infrastructure. Primary data was used for the study. Questionnaire was used to elicit information from the residents of the three selected public housing estates from the three senatorial districts in Osun State, each public housing estate representing one senatorial district. These public housing estates are under the portfolio of Osun State Property Development Corporation (OSPDC), Osogbo. The public estates include, Moremi Estate in Osun east senatorial district with 416 residential buildings, Oroki Estate in Osun central senatorial district with 816 residential buildings and Akoda estate in Osun West senatorial district with 46 residential buildings. These reflect a total of 1,278 residential buildings where systematic random sampling was adopted in selecting 20% of the residential buildings in the three selected public housing estates. A total of 255 residential buildings were selected, from which a resident was selected for questionnaire administration. The data collected were analyzed using relative importance index (RII) and Residents' Satisfaction Index (RSI) analysis. The result showed that the average Residents' Satisfaction Index (RSI) for the level of satisfaction derived from the infrastructure in the study area was 2.49 which showed that the residents were not satisfied. This study concluded that the residents were not deriving adequate satisfaction from the infrastructure available in the public housing estates. The study recommends that there is need to integrate residents' preferred infrastructure into development policies: The residents' preferred infrastructure identified in this study should be linked and integrated into the development policy designs for the estates.

Keywords: Infrastructure, public housing estates, residents, satisfaction.

1.0. Introduction

Infrastructure is a key factor in achieving the economic and social objectives of a society (Iseh, 2003). It is imperative for enhancing economic growth and development. Infrastructure refers to the summation of all amenities which enable a city to function effectively (Nubi, 2002). These infrastructures include electricity, waste water disposal, road, sewage disposal, drainage, pipe-borne water, health, security, schools among others. It is the framework of services that provide the essential well-being and determine the quality of life of citizens. Infrastructure are the necessary installations on which the growth and continuity of a community depends (Zaira and Ayyub, 1999). No nation can brag of notable development or an improved economy without adequate provision of basic infrastructure for its citizens' well-being.

Developing an understanding of residents' satisfaction is necessary in determining how infrastructure has fulfilled the expectations of the residents. This will help to know the extent to which satisfaction with the available infrastructure has affected citizens' wellbeing. Satisfaction can be defined as a measure of the difference between the actual and expected performances of the services aimed at

meeting the expectations and needs of the end users during or after the consumption or use (Ibem, 2013). Therefore, residents' satisfaction is described as a means whereby there are no complaints about the infrastructure and living conditions since the needs and target of the residents are met; therefore, it is the extent to which individuals' needs are fulfilled (Salleh, 2008).

Contrary to the definition of residents' satisfaction, the condition of infrastructure in conjunction with housing situation has been in a sorry state both quantitatively and qualitatively, which is evident on most infrastructure that are now decayed and damaged, need repair, refurbishment, rehabilitation or replacement (Ajanlekoko, 2001; Nubi, 2000; Oyedele, 2012). This has resulted in adverse effect on human health, security, privacy and the social status of the residents, which can lead to their dissatisfaction. For instance; diseases associated with the intake of poor quality water such as dysentery and diarrhea; poor electricity supply, and wear and tear of cars as a result of bad road network. All these can be avoided if there is adequate provision of quality infrastructure.

Studies on the satisfactory level of tenants with management practices have been documented. For instance, Che-Ani, et al. (2009) examined the level of satisfaction of the management of high-rise residential buildings in Malaysia. The study posited that the level of satisfaction was very low with the quality of management provided. Ayarkwa and Agyekum (2013) evaluated the level of satisfaction of residents with the management of Social Security and National Insurance Trust housing (SSNIT) in Ghana. The study found that the residents were dissatisfied with the management in the areas of maintenance and accessibility to management and therefore requested for routine maintenance. These studies were on the residents' satisfaction with the level of management practice in residential property but not on the infrastructure provided, which will be the focus of this study.

Oloyede (2016) examined residents' satisfaction with public housing estate in Osun State, Nigeria. However, the study did not examine the condition of the available infrastructure and the importance the residents attached to the available infrastructure. The study posited that residents were satisfied with the management of the estates with respect to the level of privacy and the method of collection and allocation of ground rent and they were satisfied with only electricity, security and water supply among other infrastructure in the estates.

Furthermore, studies were carried out on the residential satisfaction with private housing estates and organized private sectors. These included Waziri, Yusof and Salleh (2013), and Agbola and Adegoke (2017). Waziri, Yusof and Salleh (2013) examined residential satisfaction with private housing estate development in Abuja, Nigeria where residents generally expressed low satisfaction with their dwelling unit features but were neither satisfied nor dissatisfied with the overall housing. Agbola and Adegoke (2017) investigated the residential satisfaction and the organised private sector housing in Nigeria and it was revealed that residents of organised private sector housing estates in Nigeria had high level of satisfaction with most of their building components, in-house services and neighbourhood infrastructure.

In addition, studies outside Nigeria have been carried out on the satisfaction of the residents. These include Karim (2008); Lee, You and Huang (2013) and Lundgren (2013). Karim (2008) examined the satisfaction of residents on community infrastructure in Shah Alam, Malaysia. The study posited that availability and accessibility of infrastructure are important factors that can determine the level of satisfaction of residents. In another dimension, Lee et al. (2013) investigated the influence of public infrastructure and environmental quality on residential satisfaction in Taiwan. These studies are offshore, as such; their findings may not be immediately applicable to the Nigerian environment. Apart from the broad importance of infrastructure to the economy, the importance attached to infrastructure is also reflected in businesses and households. For businesses, infrastructure can help to lower fixed costs of production, especially transportation costs, which are often a central determinant of where businesses are located (Romp and de Haan, (2007). For households, a wide variety of final goods and services are provided through infrastructure services, such as water, energy, and telecommunications (Straub, 2011). Hence, infrastructure is generally understood to be a key driver in

the economic well-being of not just the country, but also a critical factor in attracting businesses and enhancing property values within a given neighbourhood. This is particularly germane to the overall business concerns within the study area (Moremi, Oroki and Akoda housing estates in Osun State).

Apparent from the foregoing, there is a compelling need to examine the importance of infrastructure within the selected public estate for the reason that the quality of infrastructure has influence on property investment. It is also evident that residents' satisfaction with the quality of infrastructure provided in public estates under the portfolio of Osun State Property Development Corporation (OSPDC) has not been sufficiently empirically documented; hence this study.

2.0. Review of Literature

2.1. Importance of infrastructure

Infrastructure is of great importance ranging from promoting economic growth to poverty alleviation. It allows the unit to perform its function of creating an efficient platform for the occupants to organize themselves (Akinloye, 2009). Road infrastructure helps in fast accessibility to destinations and increased productivity in the economy. It also helps in reducing poverty in the sense that it provides reliable access to markets for goods to be sold in their fresh state and at lower prices. This also reduces the rate of accidents. In case of Water and Sanitation, economic growths are enhanced at the long run and reduced poverty through improved health, reduction in health-related spending and thereby have the potential to increase the income savings of the residents. Telecommunication as part of infrastructure helps in the improvement of access and transfer of data which leads to reduction in travel times and increased productivity, information which help in decision making are accessed easily thereby reducing poverty. Infrastructure is important for the services it provides rather than for its own sake, it is the main factor behind cultural, social and economic opportunities and quality of life. It is the major pointer to the desired utility derived by occupiers in residential property. The availability of quality infrastructure such as electricity, water supply, road, security and other types of infrastructure is very important as it raise the quality and standard of living of the residents which will enhance the socio-economic characteristics of the residents leading to creativity in the mind, innovations, gainful employment, comfortability, self-reliance, create wealth and above all ensure reduction in crime and security issues (Anthony and Pre-ebi, 2017).

2.2. Types of infrastructure

Zakout (2006) classified infrastructure into basic infrastructure components (BIC) and the supportive infrastructure components (SIC). The examples of the basic infrastructure components are storm water drainage, access and paving, water supply, power supply, wastewater treatment and disposal, sewage system, security lighting and telecommunication; and the examples of supportive infrastructure components are community market, Parks and green spaces, Health infrastructure, educational infrastructure and religious center.

Infrastructure was classified into two in the study of Okoye (2014) which are Basic Infrastructure which consists of roads, water supply, non- sanitary facilities which are known as drainage, sanitary facilities known as sewerage, waste and disposal system, transport, electric supply; and Non-Basic Infrastructure comprising of education, hospital, telecommunication, security, fire-fighting services, social-cultural recreation parks, banks. The major human needs that sustain life is the Basic Infrastructure.

Other classifications of infrastructures are Economic Infrastructure according to Torissi (2009) which gives direct support and help in having productive performance these are roads transport, highways, airports, marine transport, sewer networks, aqueducts, gas networks etc; Social Infrastructure

according to Hansen (1965), which increase the social comfort and act on the economic productivity this include schools, structures for public safety, hospitals; Aschauer (1989) & Mastromarco (2006) classified infrastructure into core and not-core infrastructures; core infrastructures include roads and highways, airports, public transport, electric and gas networks, network for water distributions and sewer network while the not-core residual component.

Infrastructure is divided into two types according to Kumar (2005) these are Hard infrastructure and Soft infrastructure. Hard infrastructure refers to the physical networks that are large and necessary for the modern industrial nation to function well and soft infrastructure refer to the institutions needed to maintain the economic, health and cultural and social standards of the country which include the health, education, judiciary systems and security. Infrastructure can also be classified into horizontal and vertical. Roads, bridges, dams, buildings, rail and telecommunication are horizontal, while policies, laws, rules and orders are vertical. Despite the roles of infrastructure in nation building, developing countries are still backward in provision of infrastructures.

2.3. Residents' satisfaction with housing infrastructure

Parker and Mathews, (2001), Ueltschy, Laroche, Eggert and Bindl (2007) and Hanif, Hafeez and Riaz (2010), described satisfaction as the evaluation (that is based on individual judgement and perspective) of the products and services' performance in meeting the expectations and needs of the users or residents. Salleh (2008) described satisfaction as state whereby there are no complaints about the infrastructure and living conditions since the needs and target of the residents are met.

The quality of neighbourhood where people live in have influence on the manners and experience of its residents (Danquah and Afram, 2014), this will also enhance their satisfaction. Such satisfaction in a residential property includes shelter, health, privacy, protection, comfort, convenience, and dignity (Oladapo & Adebayo 2014). Residents should be able to withdraw and rest from the day to day stressful demands of life. This is a reflection of a conducive housing unit (Ndubueze, 2001).

Therefore, the economic, physical and environmental needs of the occupants should be satisfied by habitable housing units. However, when the needs of the residents in terms of quality infrastructure are not met, this result to dissatisfaction and this will cause a negative impact on the well-being of the residents (Husna and Nurizan, 1987). Ramdane and Abdullah (2000) and Galster (1985) established four major objectives of which satisfaction on housing has been used these are; first, for prediction of the quality of life's perception of the individual generally. Second, influences the changes in the surrounding areas as a result of residents' mobility. Third, the success of the development of the private sector can be measured through it. Fourth, to measure the individual's acceptance based on the existing inadequacies in the development of surrounding area and to determine the relationship between the background of the residents and their attitude towards movement.

Mohit, Ibrahim and Rashid (2010) found that in Malaysia, most of the households in the public low-cost housing that were newly constructed were most satisfied with the estates' social environment and the housing units' support services, while based on their housing conditions and its environment, they were moderately satisfied. Findings from the study of Mohit and Azim (2012) revealed that more than half of the Hulhumale and Maldavies public housing residents were not that satisfied based on their present buildings but they have higher satisfaction level with the services and public facilities than the housing estates social environment and dwelling units' physical space.

3.0. Materials and methods

Primary data was collected from the residents in respect of their socio-economic characteristics such as importance the residents attached to the available infrastructure and the level of residents' satisfaction with the available infrastructure. This was obtained through questionnaire administration.

The Study population for this research consists of the selected public housing estates under the portfolio of Osun State Property Development Corporation (OSPDC). The multistage sampling technique was adopted in this study. The first stage involved the identification of the public estates under the portfolio of Osun State Property Development Corporation. There are fifteen estates under the portfolio of Osun State Property Development Corporation (Table 1).

The second stage involved the selection of the public estates where the research was carried out. In this regard one public estate was purposively selected in each senatorial district using purposive sampling. In this wise, three estates were surveyed which include Moremi Estate, Ile-Ife in Osun East, Oroki Estate, Osogbo in Osun Central and Akoda Estate, Ede in Osun West.

Table 1: Public Estates under the Portfolio of Osun State Property Development

S/N	Senatorial Districts	Name of Estate	Estates Sampled
1	Osun East	Ajaka Estate	Moremi Estate
		Owa-Ooye Estate	
		Owamiran Estate	
		Ipetumodu Estate	
		Moremi Estate	
2	Osun Central	Agunbe Estate	Oroki Estate
		Oroki Extension	
		Okuku Estate	
		Okinni Estate	
		Oroki Estate	
3	Osun West	Olufi Estate	Akoda Estate
		Oluwo Estate	
		Ile-Ogbo Estate	
		Aiyegunle Estate	
		Akoda Estate	

Source: Field Survey, 2019

The third stage is the selection of residential buildings in the selected public estates where questionnaire was administered on the residents. Preliminary survey revealed that Moremi estate has four hundred and sixteen (416) occupied residential buildings, Oroki estate has eight hundred and sixteen (816) occupied residential buildings while Akoda estate has forty-six (46) occupied residential buildings, making a total of one thousand two hundred and seventy-eight (1,278) occupied residential buildings as shown in table 2. Systematic random sampling was adopted in selecting every 5th building in the three housing estates after the first building have been randomly selected, which represented 20% of the buildings which is 83 residential buildings in Moremi estate, 163 residential buildings in Oroki estate and 9 residential buildings in Akoda Estate. This gives a total of 255 copies of questionnaire that was administered on the residents as shown in Table 2.

The last stage is the administration of questionnaire on the respondent each from the 255 residential buildings.

Table 2: Number of Residential Buildings Surveyed in Moremi, Oroki and Akoda Public Estates

Estate	Location	Number of Residential Buildings	Percentage	Sample Size
Moremi Estate	Ile-Ife	416	20	83
Oroki Estate	Osogbo	816	20	163
Akoda Estate	Ede	46	20	9
Total		1278		255

Source: Field Survey, 2019

The data collected were analysed using the Mean, Residents’ Importance Index (RII) and the Residents’ Satisfaction Index (RSI). The mean was used in the estimation of respondents rating of the relevant variables. These respondents rating was extracted from responses collected using Likert scale. Mean analyses were employed to arrive at different indices in the study such as Residents’ Importance Index (RII) and Residents’ Satisfaction Index (RSI).

To determine these indices, for the Residents’ Importance Index (RII) for example, residents were requested to rate the variables using 5-point Likert Scale of “Very Important” (VI-5), “Important” (I-4), “Just Important” (JI-3) “Not Important” (NI-2) and “Not at All Important” (NA-1) for each of the identified variables.

To arrive at Mean Weight Value (MWV), the Afon (2005) and Taiwo (2014) steps were adopted: Weight values of 5,4,3,2 and 1 were respectively attached to each rating of VI, I, JI, NI and NA. Summation of Weight Value (SWV) was calculated. The SWV is the addition of the product of the value attached to a rating and respective number of respondents to the rating. SWV was divided by the number of respondents.

This is expressed mathematically as:

$$SWV = \sum_{i=1}^5 X_i Y_i \tag{1}$$

where:

SWV = Summation of Weight Value,

X_i = number of respondents to rating i;

Y_i = the weight assigned a value (i = 1, 2, 3, 4, 5).

The SWV divided by the number of respondents gives the Mean Weight Value (MWV)

$$MWV = \frac{SWV}{\sum_{i=1}^5 i = X_i} \tag{2}$$

The average level of importance attached to the variables in the study area is arrived at by the ratio of the sum of the MWV to all variables and total number of variables rated. Hence, MWV is given by:

$$MWV = \sum MWV_{i,j} / n \tag{3}$$

where: MWV = Mean Weight Value for the study area, n = number of variables.

4.0. Results and Discussion

4.1. Importance and satisfaction derived from the available infrastructure

Satisfaction is usually measured through different indicators (Salleh 2008; Lee & Park 2010; Amole, 2012). Such indicators do have social, economic, and environmental attributes. The importance attached to each of these indicators is a measure of how it influences satisfaction. To this end, residents were instructed to determine the importance of some indicators (infrastructure) in measuring their satisfaction. Each indicator was rated using five-point Likert scale: 'Not at all important (Likert Scale=1), ' Not important' (Likert Scale=2), 'Fairly important', '(Likert Scale=3) Important' (Likert Scale=4) and 'Very important'(Likert Scale=5). The analysis of the data obtained resulted in the generation of an index tagged Relative Importance Index (RII). While RII showed the importance attached to each indicator by the residents' in the determination of their satisfaction; the actual satisfaction could be determined by the satisfaction residents enjoyed on each indicator. Therefore, respondents also rated their level of satisfaction on each indicator using the five-point Likert of 'Not at

all satisfied,' 'Not satisfied', 'Fairly satisfied', 'Satisfied' and 'Very satisfied'. The level of satisfaction is measured by an index called Residents' Satisfaction Index (RSI).

With the above explanation, the mean RII for the whole study area was computed to be 4.49 (Table 3). An index that was close to 4 (that is, important). However, the level of satisfaction derived on these indicators for the study area was 2.49 (Table 3). An index close to 2 (that is, not satisfied). The three most important infrastructure to residents and their corresponding satisfaction derived from the infrastructure were electricity supply during the night (RII = 4.82; RSI = 3.10), security during the night (RII = 4.81; RSI = 3.02) and communication (RII = 4.80; RSI = 2.69), as presented in Table 3. This could have a far-reaching implication for policy formulations on the importance of having more electricity supply, enhanced security and good communication networks particularly during the night.

In addition to the RII determined for each infrastructure in each of the public housing estate, the mean RII for each estate was also obtained. These were 4.42, 4.55 and 4.57 for Oroki, Moremi and Akoda public housing estates respectively (Table 4), indices that were close to 4, meaning they are important. Similarly, the average RSI for each estate was determined. These were 2.54, 2.43 and 2.62 for Oroki, Moremi and Akoda public housing estates respectively. Of importance to this study were the infrastructures with indices greater than the average index of the study area and those below it.

Indicators that were of more importance (that is, above the study area average index) included: electricity supply during the night (RII = 4.82), security during the night (RII = 4.81), road network (RII = 4.75), among others. However, those below it included civic centre (RII =4.13), paved walkway (RII =4.02) and religious centre (RII=3.95).

Table 3: Importance Attached to Available Infrastructure and Residents' Level of Satisfaction with Available Infrastructure in the Study Area

Importance attached to available infrastructure in the study area			Residents' level of satisfaction with available infrastructure in the study area		
Infrastructure	RII	Ranking	Infrastructure	RSI	Ranking
Electricity supply during the night	4.82	1	Electricity supply during the day	3.11	1
security during the night	4.81	2	Electricity supply during the night	3.10	2
Communication	4.80	3	security during the night	3.02	3
Security during the day	4.77	4	Security during the day	2.94	4
Road network	4.75	5	Borehole	2.89	5
Drainage	4.73	6	Communication	2.69	6
Borehole	4.71	7	Road network	2.54	7
Refuse disposal	4.70	8	hand dug well	2.51	8
Electricity supply during the day	4.69	9	Religious centre	2.50	9
Hospital	4.60	10	Internet	2.47	10
Street light	4.59	11	School	2.46	11
Internet	4.53	12	Refuse disposal	2.38	12
School	4.53	12	Pipe borne water	2.33	13
Pipe borne water	4.48	14	Perimeter fencing	2.33	13
Parking space	4.33	15	Drainage	2.29	15
Well	4.23	16	water tanker	2.25	16
Perimeter fencing	4.20	17	Paved walkway	2.25	16
water tanker	4.18	18	Parking space	2.22	18
Recreation centre	4.13	19	recreation centre	2.19	19
Civic centre	4.13	19	Street light	2.16	20
Paved walkway	4.02	21	Civic centre	2.10	21
Religious centre	3.95	22	Hospital	2.08	22
Mean RII	4.49		Mean RSI	2.49	

Presented in Tables 4 and 5 are the summary of the importance residents attached to the satisfaction derived from infrastructure and Residents expressed satisfaction derived from infrastructure in each of the estates respectively. In Oroki estate, the mean RII and RSI indices were 4.42 and 2.54 respectively. This implies that while the infrastructures are important to the residents in the estate, residents were not satisfied with them. Infrastructures that were very important to the residents in Oroki estate included road network, communication, electricity supply during the day and night, security during the night, drainage and security during the day. Others were refuse disposal, street light, borehole, hospital, school, pipe borne water and internet. On the other hand, facilities that were low in importance to them included civic centre, water tanker, fire fighter, recreation centre, waste water treatment and disposal, perimeter fencing and religious centre.

Findings showed that residents of Oroki estate (Table 5) were satisfied with infrastructures such as electricity supply during the day (3.23), electricity supply during the night (3.17), security during the night (3.11), security during the day (3.05), borehole (2.88). Others were road network (2.69), communication (2.65), bank (2.64) hand dug well (2.57) and religious centre (2.55). In the same vein, the findings revealed that residents were not satisfied with the drainage (2.29), which they perceived as being very important to them. The least three indicators that residents were not satisfied with in Oroki estate were hospital, civic centre and pipe borne water.

Summary of the importance attached to infrastructure and satisfaction index computed for the residents of Moremi estate are also presented in Tables 4 and 5 respectively. The mean RII for the estate was 4.55 while the average RSI was 2.43. This implies that generally within the estate, residents perceived the rated infrastructure as important. However, the average satisfaction level on the infrastructure was not satisfactory. Also in Moremi Estate, the study showed that the following indicators (Table 4) have the respective indices such as electricity supply during the night (4.92), security during the day (4.89), security during the night (4.89), borehole (4.88), communication (4.83), refuse disposal (4.79), road network (4.77), drainage (4.77), internet (4.67), hospital (4.67), electricity supply during the day(4.61), street light(4.60), school (4.55) and pipe borne water (4.49).. Findings showed that what residents perceived to be of importance among the indicators were not very satisfactory. These indicators were refuse disposal, drainage, street light and hospital. The highest level of satisfaction was expressed on indicators such as electricity supply during the day (3.11) electricity supply during the night (3.10), security during the night (3.02), security during the day (2.94), borehole (2.89), communication (2.69), road network (2.54) and hand dug well (2.51). Other facilities include religious centre (2.50), internet (2.47) and schools (2.46).

The mean RII for Akoda estate was 4.57 while its mean RSI was 2.62. This indicated that the perception held of the importance of indicators was far higher than the satisfaction enjoyed on related infrastructure within the estate, similar to findings from Oroki and Moremi estates. The study concluded that residents' level of satisfaction was very low with the indicators rated to be of high importance. These were security during the night, borehole, refuse disposal, security during the day, hospital and parking space.

A common observation was the fact that most of the indicators rated important were with the least satisfaction. The five indicators on which residents had a high level of satisfaction in Akoda public housing estate were communication (3.33), electricity supply during the night (3.11), electricity supply during the day (3.00), pipe borne water (3.00) and internet (3.00) (Table 5). It can generally be concluded that residents of the estates were less satisfied with most of the indicators that were of greater importance to them.

Table 4: Importance attached to available infrastructure in Oroki, Moremi and Akoda (Source: Author’s Field Survey (2019))

Oroki			Moremi			Akoda		
Infrastructure	RII	Ranking	Infrastructure	RII	Ranking	Infrastructure	RII	Ranking
Road network	4.81	1	Electricity supply during the night	4.92	1	Pipe borne water	4.89	1
Communication	4.78	2	Security during the day	4.89	2	security during the night	4.89	1
Electricity supply during the day	4.76	3	security during the night	4.89	2	Electricity supply during the day	4.78	3
Electricity supply during the night	4.73	4	Borehole	4.88	4	Electricity supply during the night	4.78	3
security during the night	4.73	5	Communication	4.83	5	borehole	4.78	3
Drainage	4.69	6	Refuse disposal	4.79	6	Communication	4.78	3
Security during the day	4.66	7	Road network	4.77	7	Drainage	4.78	3
Refuse disposal	4.61	8	Drainage	4.77	7	Refuse disposal	4.78	3
Street light	4.61	8	Internet	4.67	9	Security during the day	4.78	3
Borehole	4.54	10	Hospital	4.67	9			
Hospital	4.54	10	Electricity supply during the day	4.61	11	Hospital	4.67	10
School	4.51	12	Street light	4.60	12	Parking space	4.67	10
Pipe borne water	4.42	13	School	4.55	13	Internet	4.56	12
Internet	4.41	14	Pipe borne water	4.49	14	school	4.56	12
Parking space	4.25	15	Perimeter fencing	4.45	15	Perimeter fencing	4.44	14
Well	4.19	16	Parking space	4.37	16	Street light	4.33	15
Civic center	4.14	17	Well	4.23	17			
Water tanker	4.13	18	Recreation center	4.23	18	Civic center	4.22	16
Recreational center	4.04	19	Water tanker	4.21	19	Road network	4.11	17
Perimeter fencing	3.95	19	Paved walkway	4.17	20	Religious centre	4.11	17
Religious centre	3.89	21	Civic center	4.11	20	Paved walkway	4.00	19
Paved walkway	3.89	22	Religious center	4.00	22			
Mean RII	4.42		Mean RII	4.55		Mean RII	4.57	

Table 5: Residents expressed satisfaction on available infrastructure in Oroki, Moremi and Akoda (Source: Author’s Field Survey (2019))

Oroki			Moremi			Akoda		
Infrastructure	RSI	Ranking	Infrastructure	RSI	Ranking	Infrastructure	RSI	Ranking
Electricity supply during the day	3.23	1	Electricity supply during the night	3.01	1	Communication	3.33	1
Electricity supply during the night	3.17	2	security during the night	3.00	2	Electricity supply during the night	3.11	2
security during the night	3.11	3	Electricity supply during the day	2.99	3	Electricity supply during the day	3.00	3
Security during the day	3.05	4	Borehole	2.95	4	Pipe borne water	3.00	3
Borehole	2.88	5	Security during the day	2.89	5	Internet	3.00	3
Road network	2.69	6	Communication	2.65	6	Drainage	2.67	6
Communication	2.65	7	Pipe borne water	2.51	7	school	2.67	7
Hand dug well	2.57	8	Hand dug well	2.48	8	Paved walkway	2.67	7
Religious center	2.55	9	School	2.47	9	Borehole	2.56	9
Refuse disposal	2.48	10	Internet	2.45	10	Civic center	2.56	10
School	2.43	11	Religious centre	2.43	11	Religious center	2.56	11
Internet	2.42	12	Road network	2.39	12	Road network	2.44	12
Parking space	2.41	13	water tanker	2.31	13	Security during the night	2.44	12
Paved walkway	2.39	14	Perimeter fencing	2.29	14	Hospital	2.44	12
Perimeter fencing	2.37	15	Refuse disposal	2.27	15	Parking space	2.44	12
Drainage	2.34	16	Drainage	2.19	16	Refuse disposal	2.33	16
Streetlight	2.25	17	recreation centre	2.16	17	Security during the day	2.33	16
Water tanker	2.19	18	Streetlight	2.08	18	Perimeter fencing	2.22	18
Recreational center	2.18	19	Paved walkway	2.04	19	Street light	2.00	19
Hospital	2.17	20	Parking space	1.97	20			
Civic center	2.16	21	Civic center	1.97	21			
Pipe borne water	2.16	22	Hospital	1.93	22			
Mean RSI	2.54		Mean RSI	2.43		Mean RSI	2.62	

5.0. Conclusions

The study revealed that the level of satisfaction residents derived from available infrastructure in the study area was relatively low. This study has provided information on what should be considered and/or put in place by government in framing development policies aimed at addressing the problem of residents of public housing estates, such as policies involving government intervention programs and integrating residents' preferred infrastructure into urban development policies. For instance, government could capitalise on residents' preferred period particularly the night period to supply more electricity, enhance security and good communication networks.

Findings from this study revealed that public housing estates have a lot of potentials to enhance the satisfaction level of dwellers and also with great multiplier effects that can go a long way in alleviating poverty and save enough resources for development.

Finally, findings from this study can provide information that could enhance policy formulation towards proffering solutions to the problems associated with low level of residents' satisfaction with available infrastructure, particularly in the identified public housing estates in Osun State. In order to achieve this, the following recommendations are made as policy guidelines for decision makers toward a sustainable development of housing estates, particularly public estates. This study hereby recommends that there is need to integrate residents' preferred infrastructure into development policies: The residents' preferred infrastructure identified in this study should be linked and integrated into the development policy design for the estates. The identified specific needs of the residents are extremely important in order to achieve rapid development in the area, with the resultant improvement on the quality of life of the residents. These development policies could dovetail into development programmes championed by government. The recommendations can also be employed by other developing nations of the world in urban settings that have similar residential characteristics with the study area, in a bid to minimize the problems inhibiting residents' satisfaction with available infrastructure.

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