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Residents' Preference and Satisfaction with Public Infrastructural Facilities in Keffi Metropolis

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ABSTRACT: *The growing concern about non-provision of public infrastructural facilities in accordance to residents' preference in most developing countries and the recognition that people choose to live in an area with their preferred infrastructure provision necessitates this study. The study assessed residents' preference and satisfaction with infrastructural facilities in Keffi Metropolis. A total of 370 questionnaires were administered to household heads randomly selected from six (6) electoral words (Jiwgada, Anguwan Rimi, Iya I, Iya II, Liman Abaji and Sabon Gari) in Keffi Metropolis, and 320 were returned and valid for analysis. The respondents were selected based on stratified random sampling techniques. The data collected were analyzed using bar chart, Frequency distribution and mean ranking of the variables. The results showed that residents in Keffi metropolis preferred the provisions of security, water, education, health, electricity and road facilities. The results also showed that they were not satisfied with the provision of drainage, recreational, solid waste disposal and fire service facilities, while their satisfaction with communication, road, water supply, education, security, health, electricity and landscaping facilities were moderate. The study recommends the consideration of residents' preference and need in provision of public infrastructural facilities, and emphasizes the importance of adequate facilities provision for economic and social functions of the residents.*

Keywords: infrastructural facilities, facilities provision, residents' preference, residents' satisfaction.

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INTRODUCTION

Infrastructure plays a crucial and significant role in the socio-economic and environmental activities of an urban area. Sufficient provision and effective utilization of infrastructure facilities attract productive and profitable uses and influence the willingness of people to live in such areas. Nigeria has its own stock of urban infrastructure facilities just like any country in the world. These include water supply, electricity supply, road network, communication facilities, drainage, waste disposal, security, educational, health and fire service facilities among others. These facilities are normally provided by the federal, state and local government (Ogunbayo, Alagbe, Ajao & Ogundipe, 2016).

In Nigeria, billions of Naira have been expended in the provision of infrastructural, however, the state of these facilities is performing below expectation. Policies and reforms have been made, agencies have been created, and for many decades, foreign aids and assistance have been injected into the country, however, there are cases of death arising from health condition that are easily preventable and the state of road, education, communication, electricity, water and other infrastructural facilities have remained generally poor (Faajir &Zidan 2016). In most developing countries, the consideration of residents' preferences in provision of public infrastructural facilities is alarmingly low despite the impact the provision of these facilities have on well-being and economic development of citizens. The problem is escalating despite the efforts made in tackling the situation (Riazi, & Emami 2018).

Issues of residents' preference in the provision of facilities have remained a promise of successive government without real action or intention of accomplishments. Unfortunately as imperative as infrastructural facilities provision is to the economic and social welfare of a nation, successive governments in the country have neglected their provision and development (Adegoke, 2014).
The resultant effect of inadequate infrastructure provision has been exhausted economy, crippled educational system, cracked health delivery, insecurity, migration and poor communication system (Kentikelenis, 2017). Like other developing countries Nigeria is faced with uncontrollable growth of the urban population caused by lack of provision of infrastructural facilities and poor economic conditions in the rural areas which caused problems of migration, unemployment, slum, insecurity and so on (Nwanna & Umeh, 2019). The challenges of rapid population growth are enormous, especially when it surpasses the financial capability of the government to provide more public infrastructural facilities which is mostly expensive and it surpasses beyond the capacity of the economy to create jobs for the expanding workforce (Brady, 2019).

Herrera and Post (2014) observed that residents' dissatisfaction is caused by unfulfilled needs and preferences of infrastructural facilities deficit among residents. The high rate of dissatisfaction towards infrastructural provision will have an undesirable effect on the welfare of a family (Herrera

& Post 2014). Some of this effect include emigration, lack of good education, unfriendly neighbourhood environment, lack of employment and increase in social vices (Herforth & Ahmed 2015).

Previous studies have examined issues related to infrastructure provision such as the relationship between infrastructure provision and property values (Haider & Miller, 2000, Koutroumpis, 2009 , Ajibola, Awodiran & Salu-Kosoko, 2013, Ihuah, Ekenta, Chukwuemeka & Nwokorie, 2014), the negative effect of poor infrastructural provision on education and global economy (Sassen, 2016) the economic effects of government spending on road infrastructure (Sanni & Hashim, 2014) improving critical infrastructure for sustainable development (Uzoh, 2013) relationship between infrastructural facilities provision and real estate development (Ibem, 2011), provision and maintenance of public infrastructure (Gibson & Rioja, 2017).
Review of these studies showed that, there has not been any empirical study in Keffi, Nasarawa State that relates to residents' preference and satisfaction with infrastructure provision. Therefore, to bridge this gap, the study will assessed residents' preference and satisfaction with infrastructural facilities in Keffi Metropolis.

LITERATURE REVIEW

Concept of Infrastructure

Infrastructure has been defined as the collection of facilities, utilities and services which provides for the basic welfare and quality of life (Omagu 2016). Therefore, the term infrastructure relate to health facilities, agricultural facilities, good roads network, telecommunications, electricity and water supply that enhance living condition in any society the technical structures that improve the well-being of any society. Garnett *et al* (2018), further sees infrastructure as services and facilities that serve as a catalyst for the growth and development of a community or state. This means that the smooth functioning of any economy and the progress of any state is largely dependent on infrastructure development. According to the functionalist/structuralist theorists, the development or lack of development of a nation is dependent on the foundational structures of that nation. What this means is that economic development of a state is determined by the structures in the state .To Garnett *et al* (2018), infrastructure is comprised of public utilities such as: electricity, water, telecommunications, sewage and sanitation, waste disposal, gas pipeline, while public works is comprised of transportation network, dams, and artificial water way for irrigation and drainage. More infrastructures are in the transportation section, such as: urban railways, urban road networks, water transport and airports. The character of infrastructural facilities include: huge capital spending with respect to investment, invisibility, low variable cost and long term gestation period. Adegoke (2014) defined infrastructure as a primary good which is originated by anticipated expenditure and regarded as durable and practically indivisible. Infrastructure is divided into two categories, namely, economic and social infrastructure.

Economic infrastructure is seen as a capital stock that support productivity (E.g. railway, road, and airways). This helps to transport items that are consumed by households. Economic infrastructure is further subdivided into: public works (road network and dams, drainage and irrigation), utilities (electricity, gas pipeline, telephone, water and waste disposal), and other transport sub-sectors (subways, ports and urban transport systems). In gross domestic product of national accounts statistics, gas, water and power are found under the secondary sector, while communication, storage and transport are found under the tertiary sector (The World Bank, 2014).

Social infrastructure deals with construction and maintenance of facilities that has direct and indirect effect on the quality of life. These can include healthcare, housing and education. These facilities directly increase the level of production in economic activities, while indirectly streamlining activities and outcome through support services. For example, improving primary health care will indirectly increase productivity which will in effect leads to higher economic growth and real incomes (The World Bank, 2014).

Residents' Preference

Residents' preference is informed by host factors describing an individual's socio-economic condition, current environmental context, recent transportation decision and future aspirations for certain housing and accessibility attributes (Babalola, 2016). Residents' preference studies is concerned with residents' priority for choosing neighbourhood with certain attributes. For instance, residents may choose to live in areas dominated by people of their own colour (Adegoke 2014)). Salzman and Zwinkels (2017) opined that prospective home owners are likely to consider both functional and symbolic aspects in their choice of neighbourhood. Hassan and Lee (2015) found out that people choose to live in low-density areas over high-density areas. The study call our attention to the significant of people point of view and shaped our understanding of residents' preferences.

Wang and Lin, (2014) addresses the issue of neighbourhood preferences by focusing on facilities and services. In studying Chinese youth, the author established that proximity to transportation stations, closeness to place of work, safety, nearby healthcare facilities, and closeness to school facilities were the most determinants of housing need amongst young consumers in Guangzhou. The study of residents' preference had been widely neglected by scholars with the exception of a few studies (Ghani, Suleiman & Malaysia, 2016; Yusuf, Hayati & Faqih, 2018;), The cause of this neglect might be that residents who move out of their parents' home are psychologically prepared for another life and hence, are mostly not to expect accommodations comparable to their own homes. Additionally, some might come to terms that living in their parents' homes is merely temporary and recognize that the preferred environment of residence is dependent on individual social status.

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Whether the above submission are right or wrong, it is obvious that scholars have less attention on neighbourhood preferences, even though that most people have no privilege to make their own choice of residence because housing is most often determined by factors such as income

Residents' Satisfaction

Satisfaction is a measurement that determines how residents' needs, expectation and preference are met with a neighbourhood product, services and capabilities. If the neighbourhood is performing less than the desired expectations, the resident is will be dissatisfied; if the neighbourhood is performing as the desired expectations, the resident will be satisfied; and if the neighbourhood is performing above the desired expectation, the resident will be delighted.

Resident's satisfaction explained the disposition an individuals have towards a neighbourhood, which has a logical, emotional and behavioural aspects (Addo, 2016). The issue of residents satisfaction has been central to scholars for some years back. Adegoke (2014) sees resident's satisfaction as an attitude individuals have towards a neighborhood environment, which has cognitive, affective, and behavioural aspects (Adegoke, 2014). Due to the complex and cognitive nature of residential satisfaction, it has been explained in different form by many authors. While some see it as a components that is consist of attitude (Gifford, 2014), others authors see it as either cognitive components (Le Berre, 2019) or an affective components (Addo, 2016). The concept of residential infrastructure satisfaction focuses on the difference between individual desired housing situation and the actual housing situation (Gifford, 2014). This showed that residential infrastructural satisfaction is a function of how closely a resident's current housing condition meet their expectations and preference. Following this reasoning, the measurement of satisfaction can be linked to a set of desire, expectation and preference.

Studies on residential infrastructural satisfaction addresses different issues such as the evaluation of residents' current housing situations, needs and preferences (Fallahi & Mehrad, 2015) evaluation of residents' current housing situations and their quality of life (Huang & Du, 2015); the level of success or failure of housing quality (Addo, 2016) and housing projects (Croese & Pitcher, 2019). They also assit in shaping our views of housing adjustment and mobility behaviours of residents (Hassan & Lee, 2015). Therefore, it can be concluded that inspite of the differences of reasoning and purposes of researches on residential satisfaction, the authors increase good understanding of the key sources of dissatisfaction and satisfaction.

In Nigeria, Ibem, Opoko & Aduwo (2017) conducted a study of housing infrastructural satisfaction amongst those who resides in public estate in Abuja. The study reaveled a high level of satisfaction with the facilities provided. The study further revealed that the residents were not satisfied with the spatial and physical features of the estate and housing management. However, the studies of (Babalola, 2016) revealed a high level of satisfaction with spatial and physical features of public

estate in Lagos, and low level of satisfaction with facilities provided. Ibem, Adeboye & Alagbe (2015) also corroborated the ending.

The atitude of residents in their living environment determines thier satisfaction with the provided infrastructural facilities. In this context, environment covers physical features of housing, social factors and economic conditions (Ibem, Opoko & Aduwo, 2017). Etuk (2015) opined deficit of public infrastructure and unfulfilled needs is the cause of prevailing dissatisfaction among households. This has the tendency of negatively impacting the well-being of residents (Etuk, 2015). The negative impact include but not limited to emigration, poor education and poor neighbourhood and community development (Ren & Folmer, 2017). It is apparent that (Etuk, 2015) and Ala-Mantila, Heinonen, Junnila & Saarsalmi (2018) relate infrastructure satisfaction to Maslow's Theory of Needs. The theory has been employed to assessed individual preferences towards infrastructure. İndividuals will indirectly be satisfied with thier neighbourhood when their infrastructure needs is met (Ala-Mantila *et al*., 2018).

METHODOLOGY

The study adopted quantitative research approach. A sample of 370 household heads was randomly selected from six (6) electoral words in Keffi Metropolis, namely Jiwgada, Anguwan Rimi, Anguwan Iya I, Anguwan Iya II, Liman Abaji and Sabon Gari. From the 370 sampled household heads, 62 were selected from Jigwada, 60 from Anguwan Rimi, 84 from Anguwan Iya I, 75 from Anguwan Iya II, 50 from Liman Abaji and 53 from Sabon Gari. The respondents were selected based on stratified random sampling technique. This approach involves a combination of approaches – stratified and random samplings. Stratified random sampling involves the division of the households according to their electoral words. Thereafter, from each words, a random sampling selection was done.

The sampling frame in this study is the total household heads in the six (6) words (14,060), 810 from Jigwada, 1,440 from Anguwan Rimi, 3,230 Anguwan Iya I, 2,670 from Anguwan Iya II, 3,180 from Liman Abaji and 2,730 from Sabon Gari. The sample frame was gotten from the directory of National Population Commission (2022). Krejcie & Morgan (1970) suggest a sample size of 370 for a population of 14,060. Out of the 370 closed-end distributed questionnaires, 324 were returned and 320 were considered valid for the analysis.

A pilot survey was conducted before the actual survey to test the questionnaire instrument. All the constructs were tested reliable with Cronbach's alpha above the recommended value of 0.7 (Awang, 2014). Specifically, the questionnaires seek respondents' perception or opinion on residents' preference and satisfaction with infrastructural provision in Keffi metropolis. Response on the variables was obtained using a 5-point Likert scale. The questionnaire is divided into three (3) sections. Section A is the demographic information of the respondents, section B is questions

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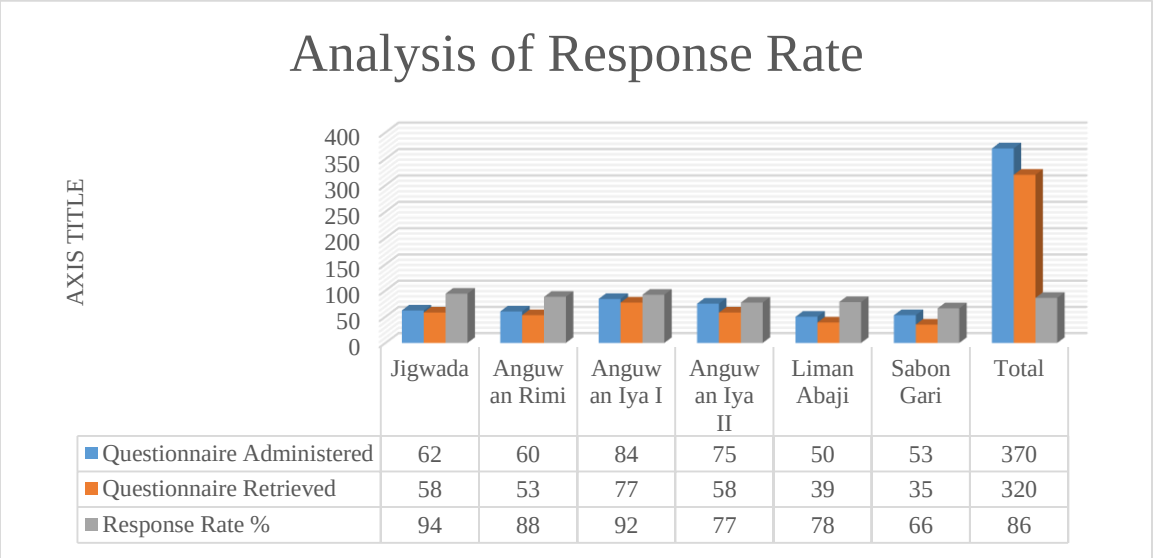
on residents' preference and section C is questions on residents' satisfaction. The data collected were analyzed using frequency distribution and mean ranking of the variables.

RESULTS AND DISCUSSION

Figure 1: Analysis of response rate



Out of the 370 sets of questionnaires that were administered to the six (6) electoral wards within Keffi metropolis (Table 1), a total number of three hundred and Twenty (320) questionnaires with 86% response rate were retrieved. From the questionnaires distributed to each of the words, a responds rate of 94 percent was achieved in Jigwada being the highest, Anguwan Iya I being the second has a response rate of 92 percent, followed by Anguwan Rimi with 88 percent being third. The forth is Liman Abaji with 78 percent. This is followed by Anguwan Iya II with 77 percent being fifth, and the least is from Sabon Gari with 66 percent.

Table 1: Residents' Preference with Public Infrastructure Provision in the study area

Infrastructures	Mean	Std. Deviation	Rank	Remark
Security facilities	4.35	0.94	1st	Very high
Water facilities	4.35	1.02	2nd	Very high
Education facilities	4.33	0.94	3rd	Very high
Health facilities	4.31	1.03	4th	Very high
Electricity facilities	4.31	1.13	5th	Very high
Road facilities	4.29	0.96	6th	Very high
Fire service facilities	3.08	1.30	7th	Moderate

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Drainage facilities	3.05	1.36	8th	Moderate
Market facilities	2.91	1.31	9th	Moderate
Solid waste disposal	2.86	1.22	10th	Moderate
Communication facilities	2.86	1.36	11th	Moderate
Landscaping facilities	2.77	1.32	12th	Moderate
Recreational facilities	2.70	1.19	13th	Moderate

A mean ranking was conducted on the general preference from the public infrastructure provision by the respondents in the study area. The result showed that the residents most preferred facilities include security; water, education; health; electricity and road facilities which were very high and ranked 1st, 2nd, 3rd, 4th, 5th and 6th respectively. The residents' preference to provision of fire service, drainage, market, solid waste, communication landscaping and recreational facilities were moderate and ranked 7th to 13th in that order. This is as a result of the design of the city as these facilities were not given appropriate attention. The result support the findings of Oladiran (2013) which revealed that residents in Lagos preferred the provisions of security; water, education and health facilities, which represent the opinion of majority of the respondents in Keffi metropolis.

Table 2:Residents' Satisfaction with Infrastructure Provision in the Study area

Infrastructures	**Mean**	**Std. Deviation**	**Rank**	**Remark**
Market facilities	3.22	1.34	1st	Moderate
Communication facilities	3.13	1.31	2nd	Moderate
Road facilities	2.99	1.30	3rd	Moderate
Water facilities	2.92	1.36	4th	Moderate
Education facilities	2.91	1.22	5th	Moderate
Security facilities	2.89	1.36	6th	Moderate
Health facilities	2.73	1.24	7th	Moderate
Electricity facilities	2.71	1.24	8th	Moderate
Landscaping facilities	2.65	1.25	9th	Moderate
Drainage facilities	2.40	1.26	10th	Low
Recreational facilities	2.40	1.19	11th	Low
Solid waste disposal	2.32	1.21	12th	Low
Fire service facilities	2.27	1.20	13th	Low

Table 2 shows the level of satisfaction with public infrastructure provision in Keffi metropolis. The results showed that the residents' were moderately satisfied with market, communication, road, water supply, education, security, health, electricity and landscaping facilities which were ranked 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th respectively. The results also showed that the residents

were not satisfied with the provision of drainage, recreational, solid waste disposal and fire service facilities. This results is consistent with the findings of Adriaanse (2007) which revealed that residents were satisfied with provisions of market, communication, road, water supply and education facilities. These results are also in consonance with the findings of Hadden and Lager (1999). The authors revealed that there is acute shortage of infrastructural facility and service provision in the city of Benin, Nigeria. This implies that cities should stop from total dependence on government for finance and provision of infrastructural facilities and services, they should source money from other means to solve the problem of infrastructural services and facilities provision' shortages. The findings in this study is also in agreement with the work of Fang (2006) who noted that the inadequate basic infrastructural services and facilities for the delivery of qualitative development and other services caused dissatisfaction among residents. The findings of this study is also in line with the study carried out by Lu (1999) on residents' facilities satisfaction, where the study established that there are gross inadequacy of solid waste disposal service, fire emergency response, security services provision, and market in the study areas. This is a pointer to the fact that there is a need for improvement upon the state of facilities in residents' neighborhood in the study area, so as to create a favorable environment which is good for physical and social integration. This study also concurs with the research by Fang (2006) and Hong (2011) who reported that a greater number of residents were either partially satisfied or not satisfied with the provision of communication services in their neighborhoods in Nigeria.

CONCLUSION AND RECOMMENDATION

The study assessed residents' preference and satisfaction with infrastructural facilities in Keffi Metropolis. Findings from the study have shown that residents in Keffi metropolis preferred the provisions security; water, education; health; electricity and road facilities. Findings from the study have also shown that the residents were moderately satisfied with communication, road, water supply, education, security, health, electricity and landscaping facilities and were not satisfied with the provision of drainage, recreational, solid waste disposal and fire service facilities. This has adverse effect on the willingness of resident's to live longer in the area or recommend the area for prospective residents

Attention should be given to residents' preference and need in the provision of infrastructure facilities. This will lead to the optimal utilization of facilities provided and influence the willingness of resident's to live longer in the area. There is need for effective policy implementation to address the problems of inadequate infrastructural facilities. Inadequate infrastructural facilities provision have adverse effect on resident satisfaction. Such problems can be solved by increasing the number of inadequate facilities.

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