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PERCEPTION OF HOUSING QUALITY BY HOUSEHOLDS IN PERI-URBAN NEIGHBOURHOODS OF OWERRI MUNICIPALITY

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ABSTRACT

Basic housing infrastructure influences the comfort of several residents. There are, however, indications that the residents in several urban housing estates in Nigeria are dissatisfied with their housing infrastructures and maintenance. Therefore, this study focuses on evaluating the relationship between the quality of housing infrastructure and the decision of occupants on where to live. This study involved the application of a quantitative approach with the aid of a structured questionnaire to collect data from residents. The survey was conducted in six selected neighbourhoods of Owerri Municipal area with the occupants as respondents (n=399). Moreover, the chi-square test of independence was applied to determine the relationship between the quality of housing infrastructure and the decision to live in either the urban areas or move to the peripheries. The result (χ^2 (39) = 920.41, p < .001) showed a significant association and this implies potential occupants should be consulted more in the conceptualisation and execution of housing projects to ensure their expectations are met.

Keywords: Housing infrastructure; Project stakeholder; Residents; Urban; Urbanization

1. INTRODUCTION

Housing is a necessity of mankind, due to its significant effect on every other activity (Coker, Awokola, Olomolaiye, & Booth, 2007). This is the reason the provision of adequate housing is a precondition to achieving stable communities and ensuring social inclusion (Adeoye, 2016; Oladapo, 2006). However, the increase in population in the area due to migration is exerting pressure on the available housing and infrastructure (Ajala, 2005; Aluko, 2010). It creates accommodation challenges and forces several people to live in low-quality and overcrowded dwellings (Meng, Hall, & Roberts, 2006). Housing quality symbolizes the meanings and values ascribed to variables such as 'comfort' or 'quality of life' provided by different dwelling types, lifestyles, and residents' preferences and expectations (Garg, Dhagat, & Shrivastava, 2014). According to Krieger and Higgins (2002), it does not only refer to the physical condition but also the quality of the social and physical environment the house is located. It is important to note that housing quality can be influenced by the design (Mitchell, Zhang, Sigsgaard, Jantunen, Lioy, Samson, & Karol, 2007), utilities, and the basic services provided (Meng et al., 2006).

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It was, however, reported from empirical studies that housing stocks with the required quality are difficult to provide (Odekoya & Johnson, 2017) despite the fact that the comfort of an occupant in a house has been confirmed to be influenced by the availability of basic infrastructure (AbdulAzeez, Owoicho, & Dahiru, 2015). Moreover, several studies showed that occupants are dissatisfied with poor or substandard infrastructures of urban housing estates and their maintenance in Nigeria (Anofojie, & Kadiri, 2014; Ibem, Aduwo, & Ayo-Vaughan, 2015; Ogunsanya, Fanu, & Oladipo, 2016; Okoye, 2014).

The term "housing infrastructure" is operationalised in this study as the services, facilities, equipment, and devices such as sewage, sanitation, roads, electricity, drainage, waste disposal, and other public transportation systems needed or desired for the physical, mental, health, and social well-being of families and individuals. Meanwhile, urban growth is contextualized as a spatial and demographic process associated with the increased importance of towns and cities in relation to population concentration in the economy and society. It is different from urbanization which indicates the complex change in lifestyles due to the influence of a city on its society (Clark, 2014). Another factor considered in this study is housing affordability. It is explained as the cost of housing services and shelter for both the renters and owner-occupants which is usually influenced by the disposable income of the individual or household (Bieri, 2014). A relationship has been established between the design, functions and amenities, cost of housing, and the income flow of prospective consumers (Onyike, 2007). Moreover, housing has been described as a need competing with fixed household incomes (Ibem *et al.*, 2015; Nnametu & Emoh, 2020). This implies adequate housing in the city requires a huge part of the income earned by occupants, thereby, limiting their chances of attending to other competing needs. This, according to Onyike (2007), can be due to scarcity of accommodation not necessarily due to rural-urban drift but the ineffective implementation of housing programs by the government.

Population growth and urbanization have caused a continuous increase in the demand for housing in the city, but the supply is more or less static. Therefore, it is necessary to study the social issues and trends associated with urban-semi-urban (urban periphery) migration to ensure new housing projects are acceptable to residents (Sarkissian, Walton, Kerr, Hazebroek, Ludher, Shore, Hazebroek, & Humphreys, 2004). This is expected to provide insight into the movement of residents from urban centres to peripheries to serve as a guide for the future development of housing estate projects in Nigeria.

2. LITERATURE STUDY

Urban periphery or peri-urban area has been reported in previous studies not to be a suburb but a hybrid of urban and rural areas which is usually beyond administrative boundaries (Camagni, 1994; Cattivelli, 2021; Wandl & Magoni, 2017). Its landscape encompasses highly fragmented productive and residential agglomerations associated with more or less dense infrastructural networks and separated by empty agricultural or residual spaces (Wandl & Magoni, 2017). Moreover, Cattivelli (2021) stated that the urban periphery structure is characterized by low population density and is normally preferred by new inhabitants such as pensioners, families, and migrants based on housing-family property. The area is economically integrated into neighbouring urban areas (Aksoylu, 2015) and is considered important to relocated firms and interlinkages with infrastructural hubs.

The consequence of an urban-rural pull in Nigeria is that an increasing proportion of the population now lives in urban areas (Onibokun & Faniran, 1995; United Nations, 2018), either in public or privately owned houses. Moreover, urbanization was viewed as an agglomeration, within a particular spot, of people in a relatively large number (Olotuah, 2005) and its consequential impact has been identified to include unemployment, urban congestion, and

environmental degradation among others (Muhammed, Sabiu, & Khalil, 2015). The upsurge and influx of people continually into the urban cities also have a negative effect on the available infrastructure and basic facilities. Aluko (2010) argued that the pressure of urbanization has affected the dignity, social cohesion, and administrative efficiency of several urban cities in Nigeria. This is evident in the occurrence of environmental pollution, general urban decay, and an overstretch of existing limited facilities (Aluko, 2010; Duru & Anyawu, 2014). Furthermore, the increase in urban population has created insecure and overcrowded residential settlements characterised by poor structural quality, inadequate access to safe water, lack of sanitation and others (UN-HABITAT, 2003). It was further suggested that several housing projects developed in the country failed to adequately consider and provide the necessary infrastructure. It is also important to note that the reasons for the urban transition in the peri-urban landscape include socio-demography, linkages to the metropolises, availability of basic services, availability and affordability of housing for the low-income migrants as well as the state government policy on land use (Mabogunje, 2002; Okeke, 2016). Moreover, Emankhu and Ubangari (2017) noted that peripheral area is not just the transition of land from its rural state to urban use but also involves complex processes such as a change in land ownership pattern, land transfer processes, regulatory measures and their enforcement. This aligns with the views expressed in Calderia (2016) that peripheral urbanization does not necessarily mean expansion to the periphery but rather a way to produce space in other places.

The migration of people to peripheral areas can be argued to be instrumental to the decongestion of urban centres, an extension of development to the outskirts such as rural communities, and the reduction of high congestion in the urban core. It is, however, important to state that these areas have the potential to become inaccessible to the poorest residents due to their improvement over time (Calderia, 2016). The achievement of sustainable and properly managed urban growth in Nigeria requires an effective housing policy framework capable of addressing the tripartite forces of population increase, spontaneous increase in the size of cities, and the acute shortage of habitable dwelling units (Jiboye, 2011). Furthermore, Okeke (2016) suggested that sustainable development can be achieved within urban peripheries through the application of innovative strategies for urban development with due consideration for the socio-economic and cultural setting of the target population. Farrell (2018) also argued the need for more strategic management of urban transition considering its greater speed and magnitude compared to the capacity of governments to provide the necessary housing, infrastructure, and amenities to cope with the growing urban population. Moreover, Sarkissian *et al*. (2004), indicated the need to study the social issues and trends associated with urban-semi-urban or urban periphery migration to ensure new housing projects cause minimal social or environmental problems and are acceptable to residents.

This can be achieved by applying proven project management principles in the conceptualization, planning, and execution of housing projects. Previous studies showed a significant relationship between project failure and the management strategies applied by the stakeholders (Oguzie, Nwakanma, Ogbonna, & Udunwa, 2021). Moreover, Freeman (2010) defined a stakeholder as any group, or individual, with the ability to influence or be influenced by the outcomes of project objectives. This means the occupants of housing estates are major stakeholders. It has also been stated that the involvement of stakeholders in project execution has the ability to increase the effectiveness of project outcomes (Olander & Landin, 2005; Yang, Huang, & Wu, 2011). Furthermore, ensuring the stakeholders are satisfied with project outcomes is a critical aspect of project management as indicated in previous studies (Baccarini, 1999; Chan & Chan, 2004; Lim & Mohammad, 1999).

3. METHODS

3.1 Study Area

This study focuses on Owerri Municipal area located within latitudes 4° 23′ N and 7° 15′ N and longitudes 6° 50′E and 7° 25′E as indicated in Figure 1. The area covers a landmass of 104 km^2 (40.2 sq miles) and serves as the administrative capital of Imo State with a projected population of 908,109 people based on a 4.07% growth rate (World Population Review). The city is characterized by high population density, increasing population growth, high immigration, high costs and value of developed and undeveloped properties, as well as high income and employment disparities. In Owerri, the housing problems such as the intensity and complexity in the urban centres are generally more severe and profound than in rural areas due to rural-urban drift (Nnametu & Emoh, 2020). Moreover, the city has flat land, a maximum temperature range of 33.4°C and minimum of 21.2°C, and the highest recorded rainfall of 19mm (AC-Chukwuocha, Uchechukwu, Chizoba, & Nnedinma, 2016) which explains the flooding tendencies whenever there is a heavy downpour. The inhabitants of the urban areas are predominantly civil servants, traders, artisans, and native farmers. Furthermore, the economy of Owerri is sustained through commercial, financial, industrial production and services, undertaken by the formal and informal sectors. The formal sector is dominated by the services and manufacturing sub-sectors while the informal sector has been thriving due to the indigenous involuntary survival response of the city's residents to urban poverty and unemployment. Owerri was selected as the study area because it houses about 85% of both Federal and state tertiary institutions including universities, polytechnics, and colleges as the administrative capital. Therefore, there is a high concentration of public and private funded housing developments initiated to solve the lingering problem of housing demand.

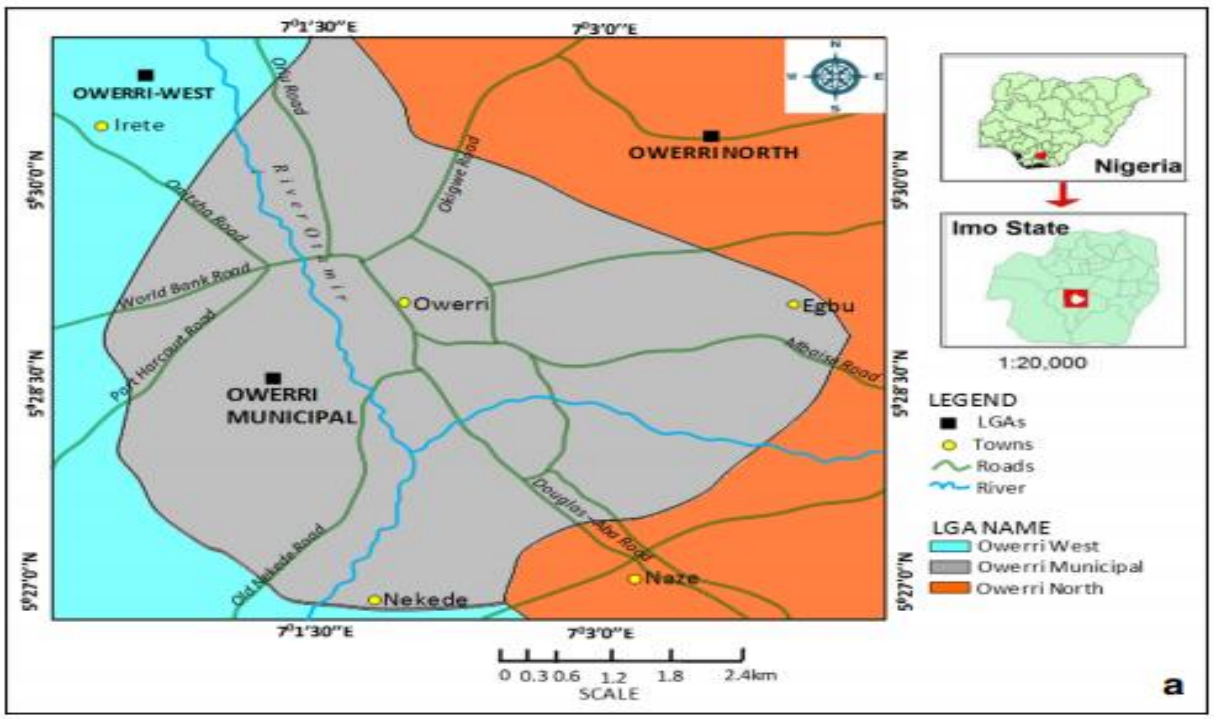

Figure 1 Location of Owerri Municipal. (Source: Ibe et al. (2018))

3.2 Data Collection and Analysis

This study utilised quantitative data collected over three months using a structured questionnaire divided into different sections which include sex, marital status, age, occupation and qualification

of respondents, quality of infrastructure, building design and condition, materials and elements, and social problems faced in the central and peripheral areas of Owerri. A total of 399 respondents were randomly sampled through a face-to-face interview. This sampling approach was employed because it allows the interviewer to clarify questions, probe responses, and assess respondent fatigue (Bowers, 2008). Moreover, the survey was conducted in six selected neighbourhoods which include Tetlow, Douglas, Royce, Obinze, Egbu, and Egbada in Owerri Municipal area. It is important to restate that the focus of this study is to determine the relationship between the quality of housing infrastructure and the decision of occupants in selecting a residence area. The objective is to ascertain the perception of residents on available infrastructure and services, and how this influences the choice of where they reside. This was statistically analysed through the following hypotheses:

H_0: there is no association between the decision to live in an urban or peripheral area and the quality of housing infrastructure

H_1: there is an association between the decision to live in an urban or peripheral area and the quality of housing infrastructure

Descriptive statistics were used to analyse the occupant's responses while the Chi-Square Test of Independence was employed to determine the association between the decision to live in urban or peripheral areas and the quality of housing infrastructure using SPSS statistical tools. The decision rule is that the null hypothesis is rejected when the *p*-value is less than the 0.5 significance level (α).

4. RESULTS AND DISCUSSION

4.1. Socio-Demographic Profile of the Respondents

A total of three hundred and thirty (330) valid responses were received out of the 399 questionnaires administered and this indicates an 82.7% response rate. Moreover, the socio-demographic profile of the respondents presented in the following Table 1 showed that 41.8% were male and the remaining 58.2% were female.

Table 1 Socio-Demographic Profile of Respondents

Variable	Frequency	Per cent	Valid Percent	Cumulative Percent
Gender				
Male	138	41.8	41.8	41.8
Female	192	58.2	58.2	100.0
Total	330	100.0	100.0	
Age Range				
18-30	52	15.8	15.8	15.8
31-40	92	27.9	27.9	43.6
41-50	68	20.6	20.6	64.2
51-60	118	35.8	35.8	100.0
Total	330	100.0	100.0	
Marital Status				
Single	64	19.4	19.4	19.4
Married	238	72.1	72.1	91.5
Separated/Divorced	28	8.5	8.5	100.0
Total	330	100.0	100.0	

The higher number of female respondents is possibly due to the fact that more women were at home when the questionnaires were administered while the men had gone to work. It was also discovered that 52 (15.8%) were in the 18-30 years age range, 92 (27.9%) in the 31-40 years range, 68 (20.6%) in the 41-50 years range, and the highest, 118 (35.8%), in the 51-60 years range. This age distribution mirrors the realities of the labour market. Furthermore, the majority, 72.1%, were married, 19.4% single, and 8.5% either divorced or separated.

The respondents were segregated according to their marital status and age to determine the status of the relocated occupants as shown in Table 2. The results showed that a higher number of married respondents either live in or plan to relocate to the periphery compared to both the single and separated/divorced. More of the single respondents specified they were not residents at the periphery. A similar pattern was also observed for respondents between the 31 and 60 age range that are either residing at or planning to relocate to the periphery.

Table 2 Marital Status and Age of Respondents living at the periphery

Periphery resident	Marital Status			Age			
	Single	Married	Separated/Divorced	18-30	31-40	41-50	51-60
Yes	4	92	27	3	33	24	63
No	21	4	1	6	7	2	11
Will	39	142	0	43	52	42	44
	64	238	28	52	92	68	118

Table 3 distributes the respondents according to their place of residence and it was discovered that 37.3% (123) live at the periphery while a cumulative 62.7% (207) live in the urban area out of which 87.4% have plans to relocate to the periphery while the remaining 12.6% do not intend to move.

Table 3 Distribution of Respondents according to Location of Residence

Location of Residence	Frequency	Per cent	Valid Percent	Cumulative Percent
Live at Periphery	123	37.3	37.3	37.3
Will Not Relocate to Periphery	26	7.9	7.9	45.2
Will Relocate to Periphery	181	54.8	54.8	100.0
Total	330	100.0	100.0	

4.2. Condition of Public Utilities

The concept of housing is beyond the mere provision of a shelter, it encompasses social services and utilities usually combined to make a community or neighbourhood liveable. Table 4 presents the conditions of the public utilities in the study area and it was discovered that the public infrastructures at the periphery are more efficient and effective than those in the central part of Owerri. This implies the availability of public utilities and services such as water, power supply, drainage systems, condition of the street, and waste disposal services influence the decision on the selection of the place to live. Moreover, the results indicated that the residents in the peripheral area have better access to potable water sources and a steady power supply. This further shows that the residents of the peripheral areas have better service provisions than those in the central areas as evidenced by the presence of good waste disposal methods, drainage systems, as well as street conditions.

Table 4 Condition of public utilities

Indicator	Central area		Peripheral area	
	Number of responses	Share of total responses (%)	Number of responses	Share of total responses (%)
Water supply source				
Pipe Bore Water from Central Place	29	8.79	8	2.42
Pipe Bore Water from Near Compound	99	30.00	14	4.24
Personal Well or Borehole	50	15.15	102	30.91
Vendors	20	6.06	8	2.42
Power supply				
Not available	49	14.85	6	1.82
Available but not stable	149	45.15	110	33.33
Available and stable	0	0	16	4.85
Waste collection				
Service provided by the government agency	39	11.82	26	7.88
Service provided by a contractor	97	29.39	20	6.06
Waste disposed of in the dung pit	15	4.55	8	2.42
Waste disposed of by burning	47	14.24	78	23.64
Drainage system				
The drainage system is very poor	20	6.06	0	0
The drainage system is poor	68	20.61	15	4.55
The drainage system is fair	62	18.79	41	12.42
The drainage system is good	48	14.55	65	19.7
The drainage system is very good	0	0	15	4.55
Condition of street				
Tarred and in good condition	59	17.88	46	13.94
Tarred but in bad condition	75	22.73	20	6.06
Adjacent street is not tarred	49	14.85	27	8.18
There is no adjacent street	15	4.55	39	11.82
Total	198		132	

Several residents in the central part of the town do not have parking spaces for vehicles inside their compounds with most observed to be parking along the street as indicated in Figure 2. This affects the environment and health conditions of the area. However, the periphery areas have different situations due to the availability and provision of parking spaces in the residents' yards.

Figure 2 Street parking in Central Areas of Owerri Municipal

4.3. Ownership and Physical Conditions and Quality of Houses

Table 5 shows there is a higher number of blocks of flats in the central area than in the periphery. This suggests that there are more tenants than homeowners in the central area and this possibly explains the reason several respondents said they would be moving to the peripheries soon, perhaps, when their houses are ready. Moreover, it was discovered that more people in the peripheries live in duplexes or detached bungalows designed and built specifically to satisfy their needs. This suggests that more homeowners than tenants live in the peripheral areas and this ownership status can also be the reason the houses are maintained better than those in the central areas. Furthermore, the poor power situation in the central areas leads to the regular use of generators which subsequently causes a higher carbon monoxide gas pollution and suffocation due to reduced oxygen availability.

Table 5 Type, ownership, and physical condition of housing units

Indicator	Central area		Peripheral area	
	Number of responses	Share of total responses (%)	Number of responses	Share of total responses (%)
Type of house				
Joint bungalow	19	5.76	12	3.64
Block of Flats	131	39.70	27	8.18
Self-contained	21	6.36	7	2.12
Detached bungalow or Duplex	27	8.18	86	26.06
Ownership of house				
Own House	29	8.79	88	26.67
Rented House	154	46.67	44	13.33
Squatting	15	4.55	0	0.00
Condition of house				
Good condition	40	12.12	113	34.24
Deteriorated	88	26.67	12	3.64
Dilapidated	70	21.21	7	2.12

The perception of the respondents about the quality of building materials used in their houses was analysed and the results are presented in Table 6. It was discovered that the quality of materials and elements used in constructing the houses at the peripherals was better than those used in the central areas. For instance, a total of 113 (34.24%) peripheral area respondents out of 330 felt the materials and elements used ranged from good to very good quality while only 49 (14.85%) respondents in the central area had a similar perception. This is believed to have contributed to the decision to relocate to the peripheries for a better serene environment with quality houses. The observation is in line with the findings of Meng et al. (2006) that residents assess housing quality based on the construction materials employed and this, in turn, influences the acceptability.

Table 6 Perception of Respondents about Quality of Building Materials used

Indicator	Central area		Peripheral area	
	Number of responses	Share of total responses (%)	Number of responses	Share of total responses (%)
Very poor	13	3.94	2	0.61
Poor	55	16.67	5	1.52
Fair	81	24.55	12	3.64
Good	46	13.94	36	10.91
Very good	3	0.91	77	23.33
Total	198		132	

4.4. Housing Environment and Social Problem

Another factor likely influencing the choice of residence is the level of social problems encountered and the differences observed between the central and peripheral areas are presented in Table 7. The results showed the existence of social problems in all parts of Owerri municipal but those in the central areas have greater experiences of social vices such as robbery, prostitution, kidnapping, and cultism than those at the periphery.

Table 7 Social Problems faced by Respondents

Indicator	Central area		Peripheral area	
	Number of responses	Share of total responses (%)	Number of responses	Share of total responses (%)
Robbery Attacks	69	20.91	11	3.33
Prostitution	19	5.76	0	0.00
Kidnapping	6	1.82	0	0.00
Cultism	51	15.45	0	0.00
None	53	16.06	121	36.67
Total	198		132	

4.5. Decision to Live in Urban Core or peripheral area and the Quality of Housing Infrastructure

The result of the hypothesis test conducted to determine the association between the decision to live in urban or peripheral areas and the quality of housing infrastructure is presented in Table 8. It was discovered that some cells have less than 5 expected cell counts but this does not affect the result because they are not more than 20% as indicated in existing works in statistical analysis (Conover, 1980; Conover, 1999; Yates, Moore, & Mccabe, 1999). Moreover, the Chi-Square test of independence is χ^2 (39) = 920.41, $p < .001$ showed that there is an association between the decision to live in the urban or peripheral area and the quality of housing infrastructure. This is indicated by the p-value (0.000) which is less than the 0.05 significance level, thereby, leading to the rejection of the null hypothesis and acceptance of the alternate hypothesis.

Table 8 Result of Chi-square test of Independence

Test	Statistic	Df	P-Value
Chi-Square	920.41	39	0.0000

2 cell(s) with expected cell counts less than 5

These findings are in line with conclusions drawn from earlier studies on the non-provision of housing stocks with the required quality of infrastructure (Odekoya & Johnson, 2017). They also reinforce the observation from existing studies that the comfort of an occupant is influenced by the availability of basic housing infrastructure (AbdulAzeez *et al*., 2015). Moreover, it has been previously reported that occupiers of houses are dissatisfied with poor or substandard housing infrastructure provisions and maintenance in several urban housing estates in Nigeria (Anofojie *et al*., 2014; Ibem *et al*., 2015; Ogunsanya *et al*., 2016; Okoye, 2014), thereby, leading to the preference to build houses to satisfy their taste at the peripheries of these urban areas. Torrey (2004), however, noted that this migration trend has consequential health, social, and environmental challenges such as prostitution, squalor settlements, as well as the number of people engaged in odd and menial jobs for survival (Nweke, 2019).

5. CONCLUSION

This study was conducted to ascertain the association, if any, between the decision to live in urban or peripheral areas and the quality of housing infrastructure and the results showed the existence of a significant association. An inference drawn was that the housing units at the peripheries were designed with the active involvement of the occupants and this made it possible to address their needs and tastes. It is, therefore, necessary to engage potential occupants of public housing estates in the design and execution of housing projects to stem undue migration to the peripheries which can lead to an encroachment on the ecology of the area such as the possible reduction in agricultural production. This is important because peripheries are usually green belt zones normally used to boost agricultural production and safeguard the natural environment.

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