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# Examination of Housing Quality in The Peri-Urban Areas of Akure, Nigeria

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**Abstract:** *Rapid urban population expansion, high living costs, and a need for affordable housing all encourage migration to Akure's peri-urban districts. This drive has led to increased land utilization for housing development in peri-urban areas. This study evaluated housing quality in the peri-urban areas of Oba-Ile, Oda, and Ibule-Soro in Akure. Households were the unit of analysis, with one household head per building selected for questionnaire administration. Based on an average household size of five people per family and five households per building in Ondo State, the total number of households in the three locations was 47,110. From the 47,110 households, 800 households (1.7%) were randomly selected for the questionnaire administration. Data from the field survey were subjected to statistical analysis. The results revealed that some buildings were structurally unsound; most buildings had corrugated iron roofs and lacked sanitation infrastructure; and open defecation was commonplace, particularly in Ibule-Soro. These findings call for better urban planning and investment in basic amenities to improve housing quality and living standards in peri-urban areas.*
**Keywords:** housing quality, examination, peri-urban areas, Akure

## INTRODUCTION

The role of housing in societal development cannot be understated. It is a vital necessity for human growth and economic development. Good-quality housing enhances households' well-being, creates a livable community, and promotes people's quality of life (Viljoen *et al*., 2020). Providing good-quality housing is one of the major challenges confronting the world's developing nations. These challenges are evident, especially in the cities of developing nations. This is because urbanization, industrialization, commercialization, globalization, and transportation development intensify the propensity for city living. City living, economic activity, land availability, and affordability have fueled outward migration into peri-urban areas (Mabogunje, 2015).

In most peri-urban areas, there is social distinction and service inequality between indigenous people and immigrants (Simon, 2008; Ibem and Aduwo, 2015). Some of the factors driving the

transformation of peri-urban areas of Akure include her roles as the capital city of Ondo State and the headquarters of Akure South Local Government Council since 1976. These dual functions stimulate rapid growth, socioeconomic activities, and a heterogeneous mass of people in the city (Enisan, Fasakin, Basorun & Ojo, 2019). The aforementioned urban dynamism causes congestion, unplanned settlements, and a rapid increase in the price of land and rental value in the city, leading many city dwellers and migrants to peri-urban areas in search of affordable housing units and/or land for housing development.

Peri-urban areas offer the chance for innovative housing solutions for different income groups. As a result, this study examined the state of internal and external housing amenities in peri-urban areas of Oda, Oba-Ile, and Ibule-Soro. This study became necessary because it contributes to the broader discourse on urbanization, sustainable development, inclusive cities, and human settlements. This research's findings will help suggest practicable ways to improve housing quality and residents' well-being.

## LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

### Literature Review

### Housing Quality

Housing quality represents the meanings and values attached to indicators such as comfort and/or quality of life. Comfort and quality of life in this context can be explained or determined using different types of dwelling units, lifestyles, and residents' preferences and expectations (Garg, Dhagat, & Shrivastava, 2014). Housing quality does not only refer to the physical condition of the building but also the quality of the social and physical environment in which the house is located (Krieger and Higgins, 2002). The housing design, functions, utilities, and basic services provided influence the housing quality. In principle, housing quality is context-dependent and varies over time. It lacks objective static standards that allow a common understanding of the concept (Lawrence, 1995). It is a matter of individuals' perception and satisfaction with housing conditions depending on the sets of personal and social attributes each individual holds (Al-Betawi *et al.,* 2021).

### Factors Influencing Housing Quality in Peri-urban Areas

Several factors influence housing quality in peri-urban areas. Notable among these include infrastructure development, land tenure, access to basic internal and external services and amenities, housing environments, socioeconomic variables, governance, planning, and community participation. Some of these are discussed below:

**a. Socioeconomic variables**: Socioeconomic variables such as income, occupation, education, marital status, household size, and religion are important indicators of housing quality in peri-urban environments. Higher-income households likely have access to standard housing and key services (UN-Habitat, 2015). Low-income families live in substandard housing because of financial constraints. In addition, they often live in an overcrowded environment with poor living conditions. Education can be used to assess housing quality. They remark that higher levels of education are linked to a better awareness of housing requirements and the potential

to improve living conditions. Education encourages and sustains healthy lives and positive choices, fosters relationships, and improves personal, family, and community well-being (Raghupathi and Raghupathi, 2020).

**b. Housing environments:** The housing environment greatly influences the quality of housing and the well-being of occupants. These are the physical, social, and economic components of residential communities. Understanding these elements is critical for policymakers, urban planners, and stakeholders looking to enhance living conditions, especially in rapidly expanding urban and peri-urban areas. The physical environment encompasses both natural and built surroundings that influence housing quality. Location, climate, and closeness to natural resources significantly affect the desirability and livability of housing units. The physical state of a person's home and their social and physical surroundings are determined by the quality of building materials used and the replacement and rehabilitation of old and dilapidated housing units and facilities. Housing in accessible locations close to employment opportunities, schools, healthcare, and other vital amenities would be of high quality (Ezeh et al., 2017). Poorly located housing, far from basic amenities, typically results in a lower quality of life due to longer commute times and expenditures (Tacoli, McGranahan, and Satterthwaite, 2015).

**c. Internal and external services and amenities:** The availability of essential infrastructure, such as water, sanitation, electricity, and transportation networks, is critical to housing quality. Houses in locations with reliable infrastructure are often of higher quality, providing a healthier and more comfortable living environment. Housing quality measurement should consider the state of the external and internal structure, internal and external amenities, as well as an assessment of the neighbourhood and environmental sustainability (Fakunle, Ogundare, Olayinka-Alli, Aridegbe, Bello, & Elujulo, 2018). Responses to the question "If you could choose the type of housing unit to live in, what would it be?" may assist in determining the level of unmet quantity and quality of housing demands (Nwogu & Iwueze, 2006). The basic housing units in the border towns of Ogun State have mud-walled, corrugated iron sheets, face-to-face, tenement buildings, and external kitchens and toilets (Ojo et al., 2019).

**d. Governance, Planning, and Community Participation:** These influence housing quality in peri-urban environments. Good governance promotes policies that encourage long-term housing development and the provision of essential services (UN-Habitat, 2017). It also ensures that resources are efficiently and equitably allocated, leading to the upgrading of informal settlements that lack essential housing facilities (Huchzermeyer, 2008). Urban planning is essential for land use, infrastructure development, and service provision. Overcrowding and inadequate sanitation are major challenges in peri-urban areas, and effective planning can help minimize them (Ezeh et al., 2017). Strategic zoning and the incorporation of green spaces promote healthier living conditions (Tacoli et al., 2015). Community participation is vital to meeting the needs and preferences of its inhabitants. Housing projects have a better chance of being sustainable and culturally suitable when communities participate in their planning and decision-making processes (Horn, Mitlin, Bennett, Chitekwe-Biti, and Makau, 2018). Community participation creates a sense of ownership and responsibility, resulting in better maintenance, good-quality housing, and associated infrastructure (Kombe, 2005).

**Conceptual Framework**

**Decent and Balanced Housing**

Decent and balanced housing are integral components of sustainable urban development and social well-being. Decent housing refers to living conditions that are safe, healthy, and affordable, providing households with the necessary infrastructure to live with dignity. Decent housing is a basic human right required to fulfill other fundamental rights (United Nations, 2017). It provides access to clean water, sanitation, and energy necessary for human health and community well-being (World Health Organization, 2018). Balanced housing on the other hand is a variety of housing types and tenures that cater to different income levels and family structures in a community. Balanced housing improves social integration and economic stability by reducing poverty concentrations and encouraging diverse, inclusive communities (Taylor, 2007). Affordability is an essential element of balanced housing. It strives to establish a range of housing options that are affordable to people of diverse economic levels. This inclusive approach assures that quality housing is not a privilege for a select few, but a right available to all (Hagen, 2024). Promoting the concept of decent and balanced housing will not only spur qualitative housing development; it will also promote inclusive settlement in human space.

## METHODOLOGY

**Research Locale**

Three peri-urban areas of Oda, Oba-Ile, and Ibule-Soro were selected for this study and their essential features are as follows: Oda is a developing community in the South-Eastern part of Akure, Ondo State. It is about eleven kilometres from the capital and shares boundaries with Idanre and Owo Local Government Areas of Ondo State. It lies on Latitude $7^0$N 10’ 6” N to $7^0$ 10’ 43” N of the Equator and Longitude $5^0$ 13’ 6” E to $5^0$ 14’ 18” E of the Greenwich meridian. Oda has witnessed an influx of migrants and physical development owing to several factors notable among which are the Psychiatric Hospital; Shoprite at Oda Road and government offices/ministries at Alagbaka. Many workers in these offices and other areas of Akure city are moving to Oda town for housing development.

Oba Ile is situated in Akure North Local Government Area of Ondo State. It lies on latitude $7^0$ 16' 0" North of the Equator and longitude $5^0$ 15' 0" East of the Greenwich Meridian. Notable landmarks in Oba Ile include Oba Ile Housing Estate, Sunshine Gardens Estate, NTA, and the Ondo State Oil Producing Area Development Commission (OSOPADEC) office. Also, Akure Local Airport is in close proximity to Oba Ile. This has contributed to the dualization of the main road passing through Oba Ile. Ibule-soro on the other hand is an agrarian community in Ifedore Local Government Area of Ondo State. Its geographical coordinates are latitude $7^0$ 18' 0" North of the Equator and longitude $5^0$ 7' 0" East of the Greenwich Meridian. Akure Ilesha expressway, the Federal University of Technology Akure, and FUTA Annex in Ibule are some of the factors that have contributed to the development of the area.

Aggregately, the three selected peri-urban areas continuously grow in housing development and population based on Akure expansion. The urban area of Akure is physically and functionally expanding to these peri-urban areas with the co-existence of rural-urban features. Markedly, Oda, Oba-Ile, and Ibule-Soro peri-urban areas tend to be transformed fully into

urban space over time due to a combination of factors/processes such as infrastructure provision, rapid population growth, high level of in-migration, land use conversion, expansion, densification, gentrification, globalization process and change in economic structure in Akure and surrounding peri-urban areas. Corroborating the above, Owoeye and Akinluyi (2018) affirmed that Akure has every possibility of becoming a full-grown conurbation by 2034 when it would have subsumed many of its adjoining communities.

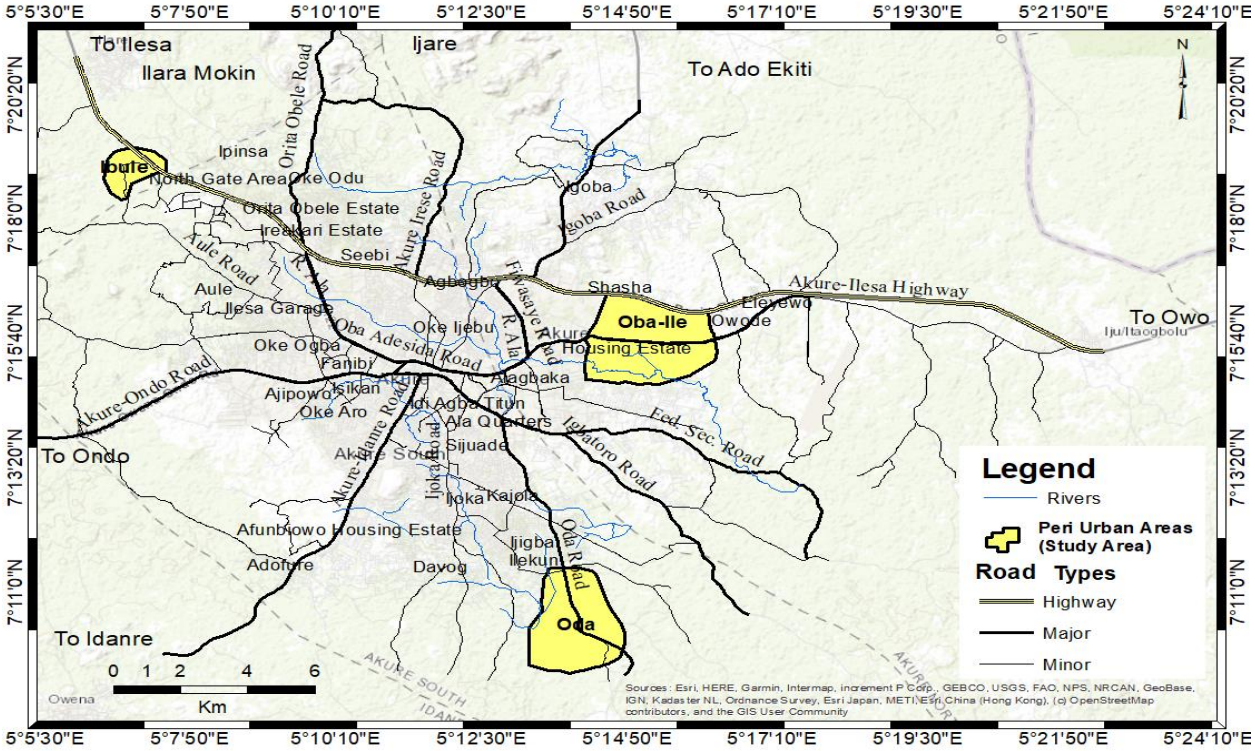


**Figure 1: Locational map of Akure and the selected peri-urban areas**
**Source: Owoeye and Omole, 2012; Updated by the Author**

## METHOD

This study adopted the survey research design. The peri-urban areas or settlements in the three local government areas of Akure were identified using criteria established in the literature. From the identified peri-urban areas, a Random Number generator developed by calculator.net was used to select one peri-urban area in each local government for questionnaire administration. The choice of one peri-urban area per local government was predicated on having data sets that are manageable, time-efficient, and cost-effective. Based on the above, the peri-urban areas randomly selected are Oda in Akure South, Oba-Ile in Akure North, and Ibule-Soro in Ifedore Local Government areas. To determine the total population, the number of residential buildings was obtained through Google Earth Imagery. The imagery was digitized and the number of residential buildings was counted using GIS and validated by ground truthing.

From the digitized map, there were six hundred and eighty-two (682) residential buildings in Ibule-Soro, three thousand four hundred and sixty-eight (3468) residential buildings in Oda;

and five thousand two hundred and seventy-two (5272) residential buildings in Oba-Ile. Altogether, there were nine thousand four hundred and twenty-two (9422) residential buildings in the three areas. Using the average household size of five people per family (5ppf) and five households per building (5hpb) in Ondo State (Ondo State Bureau of Statistics, 2012), the estimated households and population (residents) for the study were forty-seven thousand one hundred and ten (47110), and two hundred and thirty-five thousand five hundred and fifty (235550), respectively. For this study, the number of households in the selected peri-urban areas was considered as the unit of analysis. Using a simple random sampling technique, eight hundred (800) copies of questionnaires representing 1.7% of the unit of analysis were administered to household heads in the peri-urban areas. This proportion was adequate, reliable, and valid because it was consistent with a 100-1000 population sample suggested by Casley and Lury (1991) in a district and regional study.

For ease of questionnaire administration, eight hundred (800) copies of the questionnaires were distributed randomly to household heads across residential buildings in the study area. From the digitized maps, two hundred and ninety-five (295) residential buildings in Oda; four hundred and forty-seven (447) in Oba-Ile; and fifty-eight (58) in Ibule Soro were sampled. For clarity, the digitized maps were modified in Arc Map Software to randomly select 800 households for questionnaire administration. Thereafter, the X and Y coordinates of the selected residential buildings were sorted out. The researcher cum recruited field assistants inputted the coordinates in a Global Positioning System and Google Maps on Phones. The GPS guided the enumerators to the residential buildings whose coordinates had been predetermined for questionnaire administration. Where selected buildings were not suitable for questionnaire administration, simple random sampling with replacement using the nearest building was used.

The household questionnaires were administered Monday to Friday 4:00 pm-7:00 pm for three months. Also, all heads of government Ministries saddled with physical planning and urban/community/housing development were interviewed to elicit information using a structured interview guide. Data obtained from the field survey were subjected to univariate and bivariate analyses such as frequency tables, charts and correlation analyses. The Hypothesis examining the differences in the quality of housing in the three selected peri-urban areas was tested using Analysis of Variance (ANOVA). All analyses were computed using Statistical Package for the Social Sciences (SPSS) version 22 and Microsoft Office Excel (2019).

**Table 1: Selected Peri-Urban Areas and Questionnaire Administration**

| Peri-urban Areas | Distance from the City (Km) | Residential Buildings | Estimated Households | Estimated Population | Sample Size (1.7% of H/hs) |
|---|---|---|---|---|---|
| Oda | 10.9 | 3468 | 17340 | 86700 | 295 |
| Oba-Ile | 6.8 | 5272 | 26360 | 131800 | 447 |
| Ibule-Soro | 11.7 | 682 | 3410 | 17050 | 58 |
| **Total** | | **9422** | **47110** | **235550** | **800** |

**Source**: **Author's Field Survey, 2023**

## RESULTS AND DISCUSSION

This section investigates the materials used in building construction, floor and wall materials, roofing materials, window, and door design, type of toilet facility, location of toilet, and kitchen. To complement the above, using a five-point Likert scale of very bad, bad, fair, good, and very good, the perception of the sampled respondents was sought concerning the quality of the bathroom, water closet (PWC), corridor/exit light, in-house tap, kitchen, burglary installation, interior and exterior painting, floor, external and internal wall, building beam and column, window, door, and roof in their dwelling units

### Materials Used in Building Construction

The durability of a building structure is directly linked to the composition of the materials it is made of. From the field survey, identified building construction materials in the study area were cement blocks, muck bricks, burnt bricks, and a combination of cement blocks and mud bricks. Specifically, 72.4% of the residential buildings in Ibule-Soro were constructed with cement blocks, 25.9% with mud bricks, and 1.7% with a combination of cement blocks and mud bricks. In Oda, 85.1% of the buildings were constructed using cement blocks, 9.5% with a combination of cement blocks and mud bricks, 4.7% with mud bricks, and 0.7% with burnt bricks. In Oba-Ile, 96% of the residential buildings were erected with cement blocks, 1.8% with mud bricks and a combination of cement blocks and mud bricks, respectively, and 0.4% with burnt bricks. Across the peri-urban areas, 90.3% of the residential buildings were constructed with cement blocks, 4.6% with mud bricks and a combination of cement blocks and mud bricks, respectively, and 0.5% with burnt bricks.

The above shows that majority of the buildings were constructed with cement blocks. This is consistent with the findings of Peter et al. (2017) that most of the houses in Okpoko peri-urban settlements in Anambra State, Nigeria, were constructed using modern cement blocks. Similarly, a study by Griet *et al*. (2020) established that houses in the Soba peri-urban settlements of Khartoum, Sudan, were constructed using both mud blocks and modern cement blocks. Comparing the three locations under study, Ibule-Soro had a significant number of its residential buildings constructed with mud bricks compared to the other two locations. Mud brick is an affordable, low-cost building material, and its compressive strength is low compared to fired clay bricks and concrete. According to the United States Agency for International Development and Mercy Corps (2022), the identified issues with mud brick include compressive strength and water resistance, which lead to durability problems, for instance, perforation of the walls and a gradual erosion of the brick building. By inference, the significant usage of mud bricks in housing construction in Ibule-Soro may not be unconnected to the fact that 67.2% of the respondents lived below the poverty line, as already established under the socio-economic characteristics of respondents.

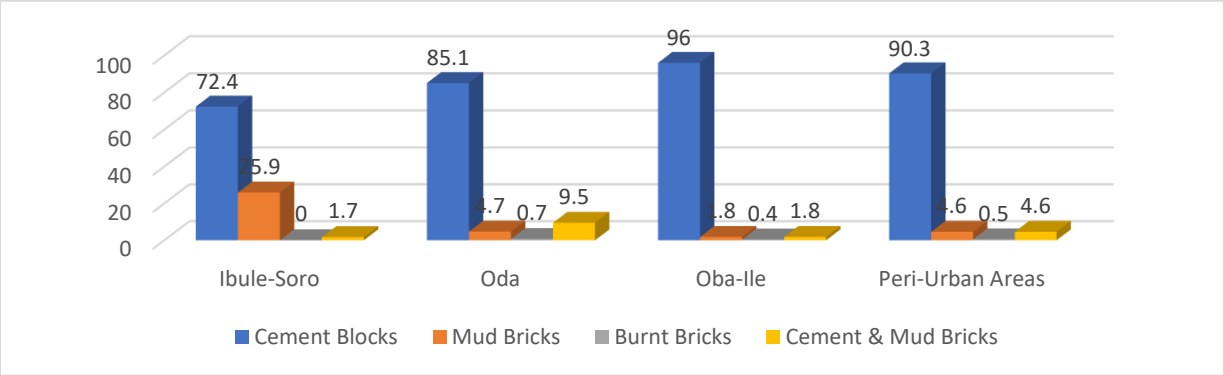


**Figure 2: Materials Used for Building Construction**
**Source: Author's Field Survey, 2023**

**Flooring Materials**

The finishing material applied over the floor structure of residential buildings to provide a walking surface in the study area was determined. In Ibule-Soro, majority (67.2%) of the residential buildings had cement or concrete floors, 24.1% had earth or mud floors (not cemented), and 8.7% had ceramic/marble tiles. In Oda, most (86.1%) of the buildings had cement or concrete floors, followed by earth or mud (not cemented) (8.2%), and ceramic or marble tiles (5.7%). In Oba-Ile, many (89.2%) of the buildings had cement or concrete floors, followed by ceramic or marble tiles (4.5%), earth or mud (not cemented) (4%), and vinyl tiles (2.2%). Comparatively, Ibule-Soro had a significant number (24.1%) of residential buildings that were not cemented compared to the other two locations. Generally, majority (86.5%) of the buildings had cement or concrete floors, 7% had earth or mud floors (not cemented), 5.3% had ceramic or marble tiles, and 1.2% had vinyl tiles. From the above, concrete was the most common flooring material used in the study area. Concrete was used not only because it was suitable and durable for their type of dwelling units, but also because it was cheaper and more affordable for the residents compared to other types of flooring materials.

**Table 1: Flooring Materials**

| | Ibule-Soro | | Oda | | Oba-Ile | | Total | |
|---|---|---|---|---|---|---|---|---|
| Flooring Materials | Freq | % | Freq | % | Freq | % | Freq | % |
| Earth/Mud/ | 14 | 24.1 | 24 | 8.2 | 18 | 4 | 56 | 7.0 |
| Cement/Concrete | 39 | 67.2 | 254 | 86.1 | 399 | 89.2 | 692 | 86.5 |
| Vinyl Tiles | 0 | 0.0 | 0 | 0.0 | 10 | 2.2 | 10 | 1.2 |
| Ceramic/Marble Tiles | 5 | 8.7 | 17 | 5.7 | 20 | 4.5 | 42 | 5.3 |
| **TOTAL** | **58** | **100** | **295** | **100** | **447** | **100** | **800** | **100** |

**Source: Author's Field Survey, 2023**

**Wall Finishing Materials**

The wall is one of the essential components of a residential building. The material used for the wall contributes to its durability and compressive strength. The observation schedule and the analysis of the structured questionnaires presented in Table 2 show that a substantial number (72.4%) of the buildings in Ibule-Soro had cement, concrete, or brick walls, while 27.6% had mud walls. In Oda, 89.2% of the buildings had cement, concrete, or brick walls, and the

remaining 10.8% had mud or reed walls. In Oba-Ile, substantial proportions (94.9%) had cement, concrete, or brick walls; 2.5% had stone walls; 1.3% had mud walls; 0.9% had vinyl tile walls; and the least (0.4%) had ceramic or marble tile walls. Altogether, the majority (91.1%) of the sampled buildings had cement, concrete, or brick walls; 6.8% had mud or reed walls; 1.4% had stone walls; 0.5% had vinyl tiled walls; and the least (0.3%) had ceramic or marble tiled walls. The above revealed that most buildings were plastered with cement, and a few others were unplastered (the mud blocks used were not cemented). This suggests trends towards modernization in housing development in peri-urban areas. The mud structures can be linked to the old buildings built using traditional methods.

**Table 2: Wall Finishing Materials**

| | Ibule-Soro | | Oda | | Oba-Ile | | Total | |
|---|---|---|---|---|---|---|---|---|
| Wall Materials | Freq | % | Freq | % | Freq | % | Freq | % |
| Mud/Reed | 16 | 27.6 | 32 | 10.8 | 6 | 1.3 | 54 | 6.8 |
| Stone | 0 | 0.0 | 0 | 0.0 | 11 | 2.5 | 11 | 1.4 |
| Cement/Blocks/Bricks | 42 | 72.4 | 263 | 89.2 | 424 | 94.9 | 729 | 91.1 |
| Vinyl Tiles | 0 | 0.0 | 0 | 0.0 | 4 | 0.9 | 4 | 0.5 |
| Ceramic/Marble Tiles | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 | 2 | 0.3 |
| **TOTAL** | **58** | **100** | **295** | **100** | **447** | **100** | **800** | **100** |

Source: Author's Field Survey, 2023

**Materials Used for Roofing**

According to the literature, the main roofing materials used in Nigeria include slate, asbestos sheets, corrugated iron, and aluminium sheets (Olorunnisola, 2013). In addition, stone-coated (Gerrard), Swiss, and fibre-britment roofing sheets, among others, have been used in recent times. Equipped with this knowledge, the types of roofing materials used in the study area were investigated. Data obtained and presented in Figure 3 shows that most (60.3%) of the dwelling units in Ibule-Soro were roofed using iron sheets, 37.9% were roofed with aluminium sheets, and 1.7% had stone coats (Gerrard). In Oda, majority (53.6%) of the housing units were roofed using iron sheets, 42.7% were roofed with aluminium sheets, 3.1% had stone coats (Gerrard), and the least (0.7%) were roofed with asbestos sheets. In Oba-Ile, more than half (51.7%) of the housing units were roofed using iron sheets, 41.4% were roofed with aluminium sheets, 3.6% had stone coats (Gerrard), and the least (3.4%) were roofed with asbestos sheets. Altogether, the majority (53.4%) of the housing units across the peri-urban areas were roofed using iron sheets, 41.6% were roofed with aluminium sheets, 3.3% had stone coats (Gerrard), and a few (2.1%) were roofed with asbestos sheets.

The data clearly showed that the majority of the sampled residential buildings in the peri-urban areas of Akure were roofed with iron sheets, which was in contrast with the survey of Visigah (2016), where the majority (56%) of the dwelling units in the peri-urban settlements of Port-Harcourts were roofed with Aluminium sheets. However, iron sheets as prominent roofing materials in the study area toed the line of the findings of Olajuyigbe (2016) that majority (89.9%) of the residential buildings in Ekiadolor peri-urban areas of Benin City were roofed with zinc-coated corrugated iron sheets. The major use of corrugated iron sheets in the peri-urban settlements of Akure may not be unconnected to the fact that most of the sampled

respondents were low- and middle-income households. These iron sheets are relatively cheaper and easier to install in residential buildings compared to other roofing sheets. The major defects of corrugated iron sheets are that they are prone to rust, noisy when it is raining (Olorunnisola, 2019), and not as durable as other roofing materials. Hence, they are not suitable for high-end applications.

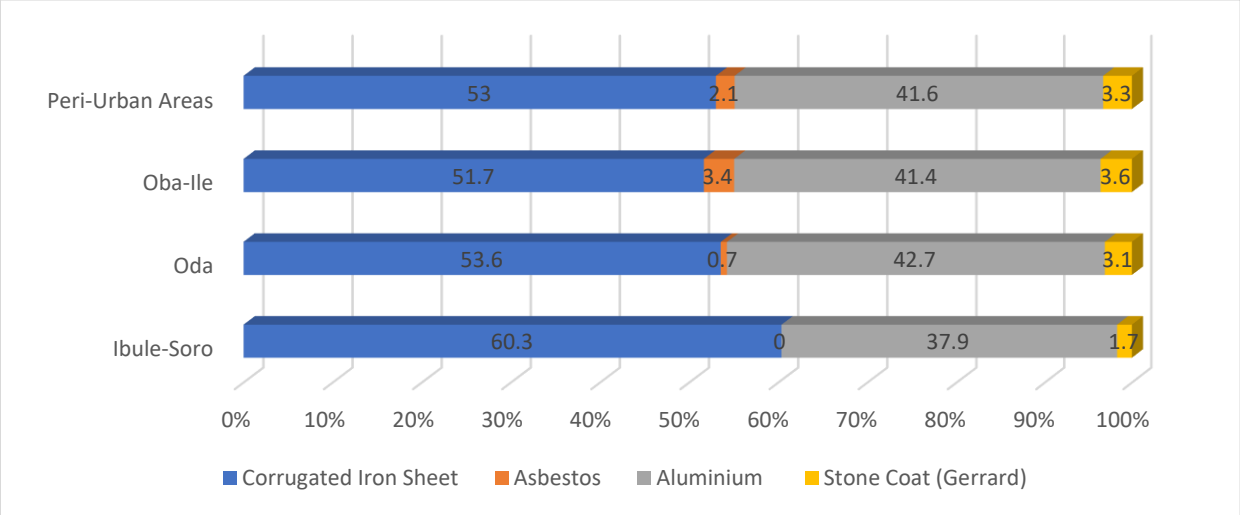


**Figure 3: Materials Used for Roofing**
**Source: Author's Field Survey, 2023**

**Materials Used for Window**

The analysis of the data presented in Figure 4 depicts that most of the sampled residential buildings in Ibule-Soro had wooden windows, followed by aluminium widows (32.8%), louvre windows (25.8%), casement windows (5.2%), and iron sheet-covered windows (1.7%). In Oda, most (67.8%) of the dwelling units had aluminium windows, 16.6% had wooden windows, 12.9% had louvre windows, and 2.7% had casement windows. In Oba-Ile, significant proportions (66.7%) of the sampled dwelling units had aluminium windows, 19.7% had louvre windows, 6% had casement windows, 5.8% had wooden windows, and 1.8% were covered with iron sheets. Comparatively, while most windows in Oda and Oba-Ile had aluminium windows, those in Ibule-Soro were furnished with wooden windows. The quality of the windows used reflected the financial capability of the homeowners. Wooden windows were more pronounced in Ibule-Soro because 67.2% of the inhabitants lived below the poverty line. Generally, majority (64.6%) of the buildings across the peri-urban areas had aluminium windows, 17.6% had louvre windows, 11.9% had wooden windows, 4.8% had casement windows, and 1.1% had iron sheet-covered windows.

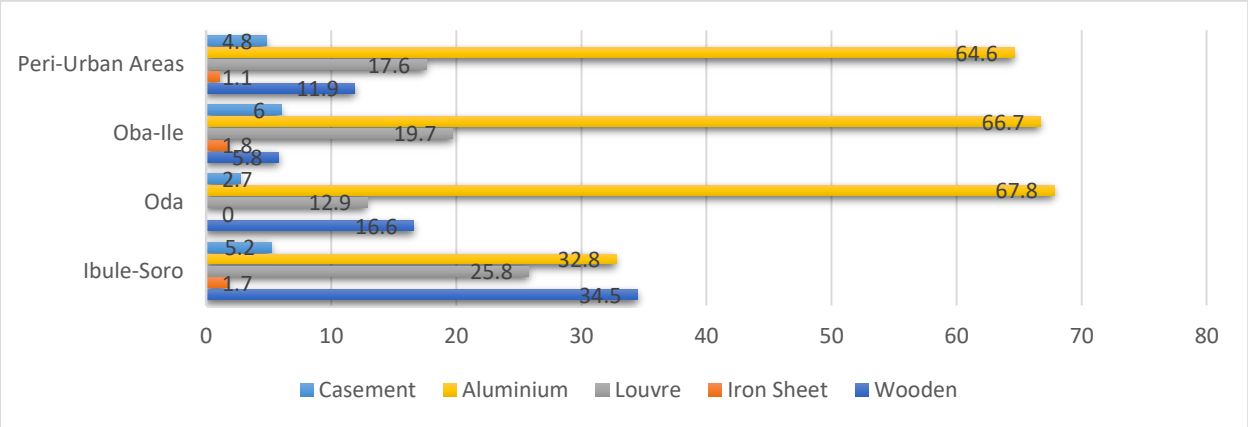


**Figure 4: Materials Used for Window**
**Source: Author's Field Survey, 2023**

**Materials Used for Door**

Wooden and steel-iron doors were the predominant types in the peri-urban settlements of Akure. Specifically, in the data presented in Table 3, the majority (53.4%) of the buildings in Ibule-Soro were furnished with steel or iron doors, and the remaining (46.6%) with wooden doors. In Oda, majority (75.3%) of the buildings were furnished with steel or iron doors, and the rest (24.7%) with wooden doors. In Oba-Ile, a high proportion (83.9%) of the buildings were furnished with steel or iron doors, 14.8% with wooden doors, and 1.3% with other categories of doors. Generally, a significant percentage (78.5%) of the buildings were furnished with steel or iron doors, 20.8% with wooden doors, and the least (0.8%) with other categories of doors. The above findings were at variance with the findings of Adedire, Iweka, and Adebamowo (2017) in the Ibeju-Lekki peri-urban settlement, Lagos State, Nigeria, where the majority of the residential buildings surveyed were furnished with wooden doors (62.6%), followed by steel iron doors (35.5%).

**Table 3: Materials Used for Door**

| | Ibule-Soro | | Oda | | Oba-Ile | | Total | |
|---|---|---|---|---|---|---|---|---|
| Door Materials | Freq | % | Freq | % | Freq | % | Freq | % |
| Others | 0 | 0.0 | 0 | 0.0 | 6 | 1.3 | 6 | 0.8 |
| Wooden | 27 | 46.6 | 73 | 24.7 | 66 | 14.8 | 166 | 20.8 |
| Steel/Iron | 31 | 53.4 | 222 | 75.3 | 375 | 83.9 | 628 | 78.5 |
| **TOTAL** | **58** | **100** | **295** | **100** | **447** | **100** | **800** | **100** |

**Source: Author's Field Survey, 2023**

**Type of Toilet Facility**

Sanitation and hygiene practices are fundamental to child survival, socio-economic development, and the well-being of society at large. Recognizing the above, the types of toilet facilities used in the peri-urban areas were investigated. This was carried out to determine the extent of sanitation and hygienic practices in the areas. As presented in Figure 5, (56.9%) of the respondents in Ibule-Soro used water closet toilets, 22.4% practised open defecation, and 20.7% used pit latrines. In Oda, a lot (84.1%) of the sampled respondents used water closet toilets, 12.5% used pit latrines, 2.7% used ventilated improved pit (VIP) latrines, and 0.7%

practised open defecation. In Oba-Ile, nearly all (91.9%) of the respondents used water closet toilets, 6.7% used pit latrines, 0.9% used ventilated improved pit (VIP) latrines, and 0.4% practised open defecation.

Comparatively, Ibule-Soro residents were more deficient in sanitation and hygienic practices compared to the other two locations. This was evidenced in the data analysis, where over 22.4% practised open defecation. It is worth mentioning that Oba-Ile had the best-improved sanitation and hygienic practices, followed by Oda. Altogether, the majority (86.5%) of the respondents used water closet toilets, 9.9% used pit latrines, 2.1% practised open defecation, and 1.5% used ventilated improved pit (VIP) latrines. The above findings were an improvement on the findings of Olajuyigbe (2016) in the Ekiadolor peri-urban community of Benin City, where most households (65.7%) utilized pit latrines. However, going by the data presented above and coupled with field observation, the drive by the Federal Ministry of Water Resources and other stakeholders to eliminate open defecation by 2025 across the landscape of Nigeria (Adeoti, Akinola, Ogundare, and Awe, 2021) may not be feasible.

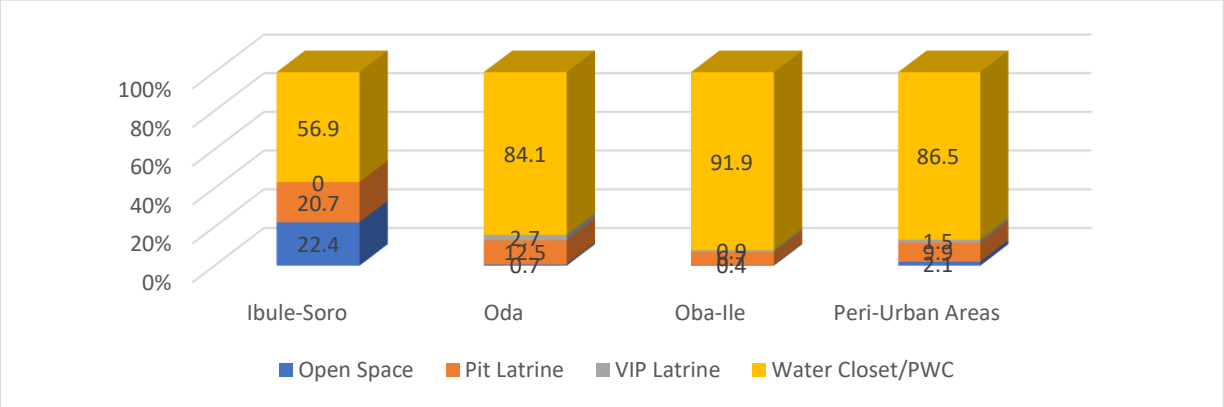


**Figure 5: Toilet Facilities Used**
**Source: Author's Field Survey, 2023**

**Quality of Internal and External Housing Amenities**

Descriptive and inferential statistics were used to analyze the perceptions of the respondents on the quality of existing internal and external housing amenities in the peri-urban areas. A six-point Likert scale was used to rate the views of the respondents as follows: not available = 1, very bad = 2, bad = 3, fair = 4, good = 5, and very good = 6. Each coded response was multiplied by the number of respondents to arrive at the weighted value (WV). The sum of the weighted values (∑WV) was divided by the number of respondents (n) to arrive at each component Mean Weighted Value (MWV). The Mean Weighted Value (MWV) was then obtained by dividing the sum of the Mean Weighted Value (∑MWV) by the total number of internal and external housing amenities and/or elements (y) examined in the study. This gave the overall conditions. Thus, MWV = ∑WV/n, where n is the population of respondents. Overall condition = Mean of MWV = ∑MWV/y, y is the total number of variables.

Interpreting the result of the computation presented in Table 4, it is evident that the water closet (PWC), in-house tap, burglary installation, and state of exterior and interior paintings in Ibule-

Soro were rated below the benchmark of 2.28. This suggests that these amenities were either nonexistent or in a very bad state. Equally, the scale of 2.28 indicates that the overall conditions of the internal and external amenities examined were very bad. In Oda, in-house tap, burglary installation, and state of exterior and interior paintings were rated below the cut-off point of 3.29. This implies that these amenities were not provided or not in good condition. In addition, the cut-off point of 3.29 suggests that the overall conditions of the internal and external amenities were bad. Notwithstanding, some outliers (decent and well-furnished buildings with modern amenities) in the peri-urban areas were insufficient to change the overall perception of housing amenities.

In Oba-Ile, the in-house tap as well as the state of exterior and interior paintings were rated below the satisfactory value of 4.43. This implies that these amenities were non-existent or defective. Furthermore, the scale of 4.43 connotes that internal and external housing amenities in Oba-Ile had a fair rating. The fair rating suggests that these amenities are still decent, functional, and comfortable for human use. Notwithstanding, some amenities in the area were out of use and/or required major repair. A relative few required minor repairs to improve their ratings by the respondents. Generally, in-house tap and the state of exterior and interior paintings were rated below the acceptable scale of 3.89 across the peri-urban areas investigated. By implication, these amenities were not provided, fit for human use or defective. The overall benchmark of 3.89 suggests that the existing internal and external amenities were in bad condition. Though there were many deluxe edifices complemented with necessary supporting facilities across the peri-urban areas, they were not sufficient to positively influence the overall perception of the respondents on the quality of existing amenities.

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**Table 4: Quality of Internal and External Housing Amenities**

| | Ibule-Soro | | | Oda | | | Oba-Ile | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | SD. | N | Mean | SD. | N | Mean | SD. | N | Mean | SD. |
| Bathroom | 58 | 2.55 | .597 | 295 | 3.66 | .579 | 447 | 4.73 | .545 | 800 | 4.18 | .881 |
| Water Closet | 58 | 2.19 | .907 | 222 | 3.45 | .984 | 447 | 4.64 | .834 | 800 | 4.03 | 1.177 |
| Corridor Exit Light | 58 | 2.40 | .724 | 295 | 3.44 | .859 | 447 | 4.63 | .810 | 800 | 4.03 | 1.093 |
| In House Tap | 58 | 1.66 | .849 | 295 | 2.19 | 1.405 | 447 | 3.53 | 1.866 | 800 | 2.90 | 1.800 |
| Kitchen | 58 | 2.47 | .706 | 295 | 3.53 | .769 | 447 | 4.70 | .646 | 800 | 4.10 | 1.000 |
| Burglary Installation | 58 | 2.16 | .875 | 295 | 3.32 | 1.050 | 447 | 4.52 | 1.063 | 800 | 3.91 | 1.285 |
| State of Exterior Painting | 58 | 1.76 | 1.490 | 295 | 2.73 | 2.011 | 447 | 3.21 | 2.159 | 800 | 2.92 | 2.099 |
| State of Interior Painting | 58 | 1.90 | 1.662 | 295 | 2.97 | 2.040 | 447 | 3.46 | 2.159 | 800 | 3.16 | 2.123 |
| Floor | 58 | 2.47 | .537 | 295 | 3.73 | .503 | 447 | 4.77 | .542 | 800 | 4.22 | .842 |
| External Wall | 58 | 2.43 | .500 | 295 | 3.73 | .523 | 447 | 4.74 | .476 | 800 | 4.20 | .848 |
| Internal Wall | 58 | 2.45 | .502 | 295 | 3.71 | .510 | 447 | 4.77 | .462 | 800 | 4.21 | .851 |
| Support (Beam & Column) | 58 | 2.45 | .502 | 295 | 3.69 | .530 | 447 | 4.77 | .508 | 800 | 4.21 | .874 |
| Window | 58 | 2.45 | .502 | 295 | 3.70 | .540 | 447 | 4.72 | .546 | 800 | 4.18 | .872 |
| Door | 58 | 2.47 | .503 | 295 | 3.68 | .555 | 447 | 4.76 | .477 | 800 | 4.19 | .868 |
| Roof | 58 | 2.41 | .497 | 295 | 3.40 | .735 | 447 | 4.53 | .598 | 800 | 3.96 | |
| **TOTAL** | | **34.22** | | | **50.93** | | | **66.48** | | | **58.4** | |
| **CUT-OFF POINT: MEAN OF ∑MWV/y** | | **2.28** | | | **3.39** | | | **4.43** | | | **3.89** | |

**Source: Author's Field Survey, 2023**

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**Structural Condition of Building**

The perceptions of the respondents, complemented by field observation, were used to judge the structural and physical condition of the residential buildings. In Ibule-Soro, 3.4% of the respondents declared that their dwelling units were not habitable (structurally deficient beyond human habitation), 20.7% felt their housing units required major repairs, 22.4% said their buildings required minor repairs, and 53.4% believed that their housing units were habitable (structurally sound). In Oda, 1.0% of the respondents declared that their dwelling units were not habitable (structurally deficient beyond human habitation), 10.5% felt their housing units required major repairs, 18.3% believed their buildings required minor repairs, and 70.2% stated that their housing units were habitable (structurally sound). In Oba-Ile, none of the residential units sampled were structurally deficient beyond human habitation; 2.2% felt their housing units required major repairs; 8.1% opined that their buildings required minor repairs; and 89.7% stated that their housing units were habitable (structurally sound). Comparatively, Ibule-Soro had more old and defective buildings, lacking in basic amenities and safety standards compared to the other two locations. (see Figure 4.41 to Figure 4.44). Generally, 0.6% of the respondents declared that their dwelling units were not habitable (deficient beyond human habitation), 6.6% felt their housing units required major repairs, 12.9% said their buildings required minor repairs, and 79.9% stated that their housing units were habitable (sound).

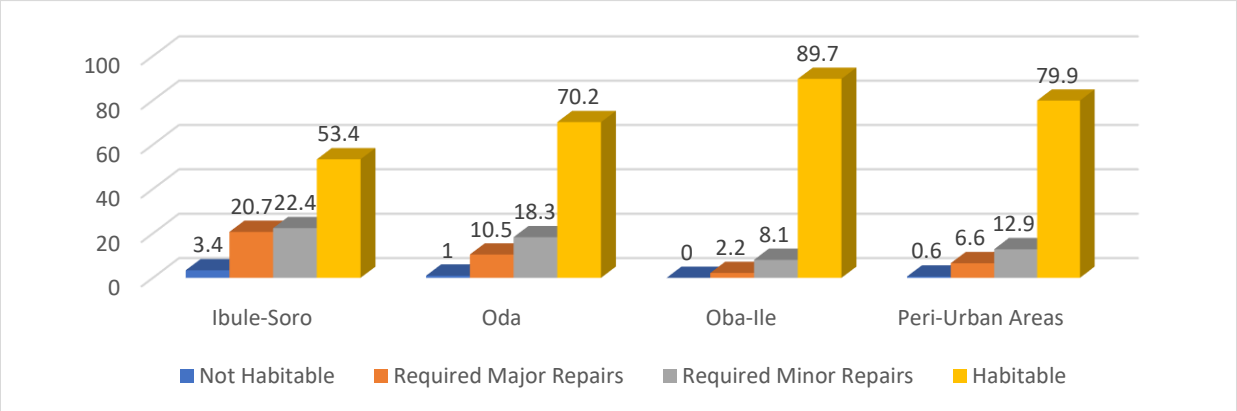


**Figure 6: Condition of Building**
**Source: Author's Field Survey, 2023**

**Figure 7: Decrepit buildings in Ibule-Soro and home requiring major facelift in Oba-Ile**

**Testing of Hypothesis: Differences between Housing Quality across the Peri-urban Areas**
The hypothesis stated below was tested using the analysis of variance (ANOVA) test of measurement.
$H_0$: There is no significant difference between the housing quality across the peri-urban areas.
$H_1$: There is significant difference between the housing quality across the peri-urban areas.

The results of the test of measurement as presented in Table 5 show that F (2,797) = 483.573 is significant at 0.000 probability. This suggests that there were significant differences in housing quality among the three peri-urban areas of Akure. The above may not be unconnected to the dichotomy in the socio-economic attributes of the respondents. Earlier findings brought to the fore the level of inequalities in earnings, education, and employment status across the peri-urban areas. These, among others, no doubt explained the differences in housing quality in the study area.

**Table 5: ANOVA**

| | Quality of Housing | | | | |
|---|---|---|---|---|---|
| | Sum of Squares | Df | Mean Square | F | Sig. |
| Between Groups | 2.361 | 2 | 1.180 | 483.573 | .000 |
| Within Groups | 1.946 | 797 | .002 | | |
| Total | 4.307 | 799 | | | |

Source: Author's Field Survey, 2023

In addition to the above, multiple comparisons (Tukey post-hoc test of the mean values) presented in Table 6 were used to compare the overall housing quality between and among the selected peri-urban areas. The essence was to determine the level of variation, and at the same time, the settlement with the highest level of housing quality. The mean difference of (mean diff. (I-J) =-.07659*, significant at P<.000) between Ibule-Soro and Oda; (mean diff. (I-J) =-.09003*, significant at P<.000) between Oda and Oba-Ile; and (mean diff. (I-J) =.16661*, significant at P<.000) between Oba-Ile and Ibule-Soro revealed that there is a significant difference in housing quality among the peri-urban areas. This aligns with the earlier findings on the housing quality index in the study area, where Oba-Ile was more provided with quantitative and qualitative housing compared to the remaining two locations. In addition, the mean difference of 1.6661* and.09003*, significant at the 0.000 probability level, revealed that Oba-Ile had the most qualitative housing, followed by Oda, and Ibule-Soro in decreasing order of residential quality. These findings brought to the fore that housing quality in the peri-urban areas of Akure varies from one residential area to another. The marked differences in housing quality can succinctly be captured with the statement of Simon (2008) that a dynamic of two types of settlements co-exist in the built environment. One is prosperous and integrated into the city with good transportation, while others are isolated, deficient in essential amenities, and overpopulated.

**Table 6: Multiple Comparisons**

| (I) Settlement | (J) Settlement | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| Ibule-Soro | Oda | -.07659* | .00710 | .000 | -.0933 | -.0599 |
| | Oba-Ile | -.16661* | .00690 | .000 | -.1828 | -.1504 |
| Oda | Ibule-Soro | .07659 | .00710 | .000 | .0599 | .0933 |
| | Oba-Ile | -.09003* | .00371 | .000 | -.0987 | -.0813 |
| Oba-Ile | Ibule-Soro | .16661* | .00690 | .000 | .1504 | .1828 |
| | Oda | .09003* | .00371 | .000 | .0813 | .0987 |

* The mean difference is significant at the 0.05 level.
Source: Author's Field Survey, 2023

## CONCLUSION AND POLICY RECOMMENDATIONS

The study established that peri-urban areas becoming increasingly filled with various housing developments. For this study, low-quality housing outweighs high-quality housing units. Thus, it is appropriate to revitalize some of the internal and external amenities assessed. The government should assist households in peri-urban areas with financial support or grants to change old, worn-out, rustic, and leaking corrugated iron roofing sheets to modern and highly durable roofing sheets. Also, the assistance should be extended to those whose homes were not or poorly painted, had old wooden perforated doors, and iron sheets covered windows. This will not only enhance the building's aesthetics but will also promote human and property safety. Also, open defecation, especially in Ibule-Soro, should be discouraged. Since over 50% of their households lived below the poverty line, efforts should be made by the government and other stakeholders in the peri-urban areas to build blocks of modern toilet facilities in strategic locations. Where possible, grants should be given to households lacking toilet facilities to enable them to construct one in their dwelling unit. In addition, structurally defective, old, waned-out, and abandoned residential buildings should be demolished. This should be supervised by the Ministry of Physical Planning and Urban Development, in collaboration with the community development associations in the peri-urban areas. This should be timely executed to guide against the issue of building collapse that may pose a risk to households in the peri-urban communities.

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