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The Effects of Physical and Social Characteristics on Residents' Perception on Neighbourhood Quality in the Urban Environment

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Abstract

There are growing concerns about neighborhood lowliness in public housing developments, which affect residents' wellbeing. Three major neighbourhood components that comprise the socio-economic characteristics of the residents, physical, and social characteristics of neighbourhoods were identified and assessed for this study. A questionnaire survey was used to acquire primary data. Five, representing 16.7% of estates, were randomly selected from thirty public housing estates in the urban area of Ibadan. Subsequently, using a systematic sampling technique, questionnaires were administered to 985 (20%) of households out of a total of 4,922 households in the selected estates. Data collected was analysed using percentages, Relative Importance Indices and Multiple Regression Analyses. The results showed that 74.5% were homeowners, while renters, inheritors, and government allotters had 22.7 and 2.8%, respectively. The results on the perception of physical characteristics indices (PCI) show that Alalubosa estate had the highest value with 4.23 PCI, while the social characteristics indices (SCI) revealed that Old Bodija estate had the highest value of 4.09 SCI. The results of regression analyses show that PCI and SCI were significant to residents' perception of neighbourhood quality where P-value < 0.00 probability level. The study confirmed the linear relationship and level of significance among the three factors.

Keywords: Neighbourhood; Neighbourhood Quality; Determinant; Housing Development.

1. Introduction

Neighbourhood quality in housing development is a multidimensional and many-sided issue, with major influence on housing development; it encompasses direct combat against misconduct, crime, and violence as well as aspects of urban design and land use planning, safety, privacy, infrastructure development, social and community building [1]. Neighbourhood system in many public housing developments bereft of all ingredients of quality; especially, on quality of life matter such as safety, social interaction and health [2, 3]. Policies and strategies that meet the neighbourhood level of acceptability and standard in housing needs and concerns are essential. This study offers valuable insight into technical facts and helps in a better understanding of housing development concerns and local quality of life issues. The assessment of the neighbourhood quality in existing residential area development is relevant in designing the standard layout for housing in Nigeria.

There has been a government and private sector contribution to the housing stock in Nigeria. While several numbers of this form of housing provision abound, their number is increasing [4]. This is due to increased interest on

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the part of the public and private developers to make more economic gains and their economic posture to the government in term of taxes. It is significant to look at the quality of such development in terms of setting the standard to be followed. It is equally significant to look at the characteristics of neighbourhoods in terms of the proximity to commercial areas; the general physical design of neighbourhoods; quality of facilities; quality of safety; privacy; open spaces; and noise pollution from traffic, some of which are not incorporated as criteria in the establishment of some existing public housing developments and those that will be emerging in Nigerian cities.

Research on neighbourhood quality in selected public housing developments in Ibadan is no doubt an important one, considering habitual dissociation of form, function, and structure within neighbourhoods in the estate without guided neighbourhood layout design and planning practice, which is a pointer to urban degeneration. Also, the increasing intellectual importance of space that is intrinsically linked to material shifts in cultural and socio-economic relations in housing development, is important. Also, the situation where the environment in which such development takes place is simultaneously fragmented, homogeneous and hierarchically organized, calls for the examination of this development.

Findings related to Neighbourhood Physical Characteristics (NPCs) especially in the area of design, social processes, cultural factors and their special effects on wellbeing are compelling [5]. This study is intended to help in housing and urban development and contribute significantly to the mounting evidence base at the community level. It recommended policy intervention and relevant environmental strategies that would enhance housing development. The study is expected to make available valuable information for the application of planning policies to neighbourhood layout design, physical infrastructural development, health and environmental improvement. The study explored some important problems and issues related to the development of more sophisticated zoning standards and planning that are more focused on neighbourhood physical and social characteristics in housing development in Ibadan. Finally, understanding these characteristics in Ibadan is necessary to inform relevant housing development policies aimed at improving the quality of life, hence this study.

1.1. The Study Area

The study area consists of five local government areas as revealed in Figure 1. These are Ibadan Southwest, Ibadan South East, Ibadan North West; Ibadan North and Ibadan North East. Though, the larger area of Ibadan extends beyond the boundary of the metropolis, the study area encompassing all the eleven local governments, which also comprises: Akinyele, Egbeda, Ido, Lagelu, Ona-Ara, and Oluyole. The metropolis and the other six local government areas were carved out for this study as shown in Figure 2.

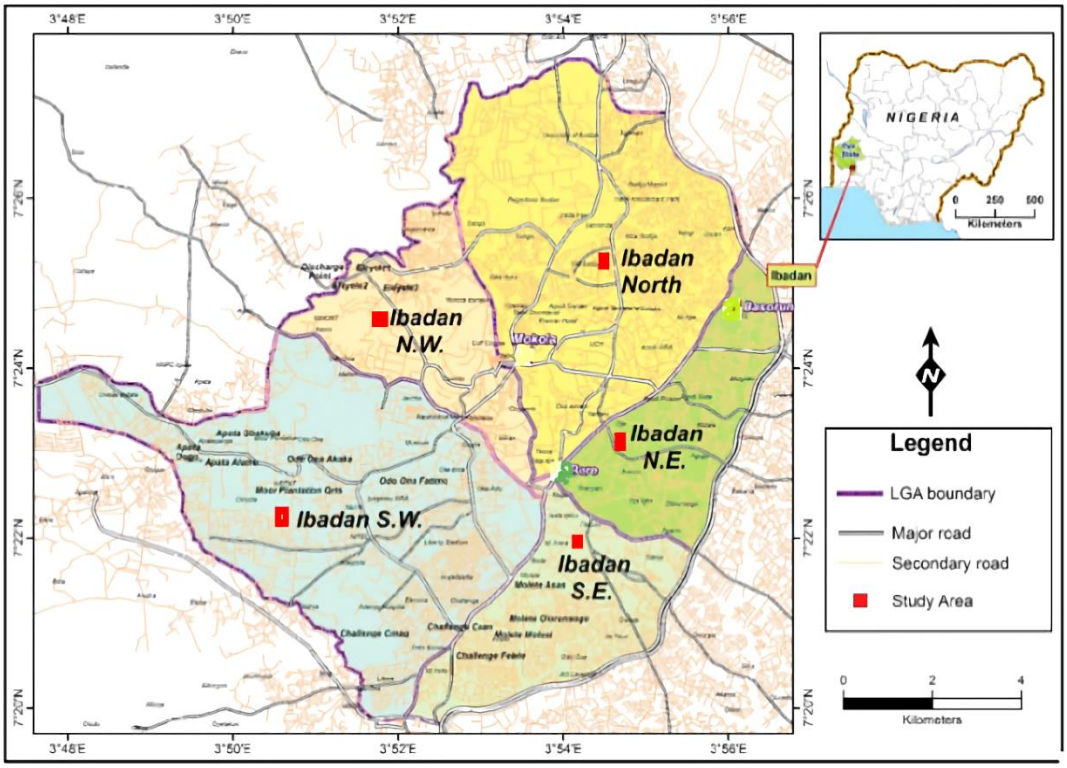

Figure 1. Map of Ibadan Metropolis [6]

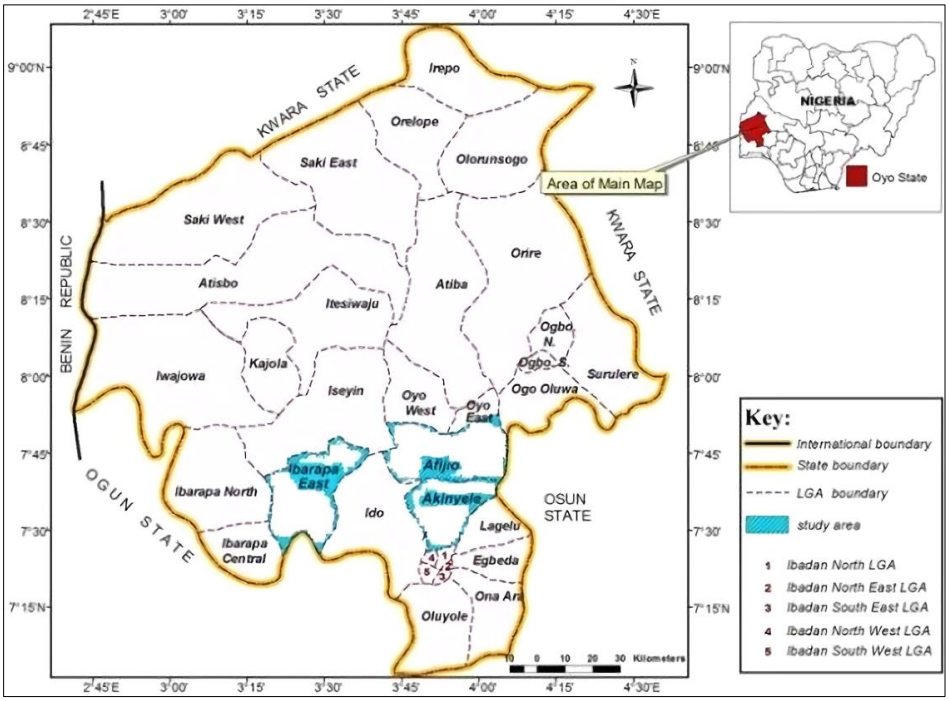

Figure 2. Map of Oyo State Showing Selected Local Government Areas [6]

1.2. Concept of Neighbourhood

A neighbourhood is a defined area within physical confines where residents ascertain their household and where they live and arrange their secluded lives [7]. There are social, physical and psychological barriers among neighbourhoods such as accessibility by road or the occupancy of the housing, or the social structure of inhabitants [8]. A perceptible urban neighbourhood for management, social and design purposes is not often more than 5000 homes and frequently much fewer between 1000-2000 homes, up to 6000 people [9]. It should be feasible to walk through a neighbourhood in fifteen minutes or fewer, which is around three-quarters of a mile. There is no outright proportion of urban neighbourhoods [6, 10]. However, neighbourhoods are ill-defined and complex areas that need clear definition, boundaries and characterisation if their management and running are to be effective [11]. There is a need for a healthy social element in neighbourhoods. Inhabitants associate with their neighbours in several ways these consist of safety, cleanliness, social conduct, the environment, conditions and networks, access to basic amenities and services such as shops, schools and transport [8, 12].

The neighbourhood comprises the human population with a mixture of resident's social demographic profiles that are being influenced by the surrounding environment [13]. The micro view is the housing units itself while the macro view is the neighbourhood [6]**.** A neighbourhood is a definite geographic area and it functions as a set of social networks. It is a spatial unit with social interactions where inhabitants seek to recognise communal values and sustain effective social control [7]. Neighbourhoods are the spatial units in which head-on social relations occur. The individual settings and circumstances where inhabitants seek to understand mutual values, socialise early life, and preserve effective communal control [14]. The term neighbourhood has been regularly mentioned in the context of traditional and modern public housing development. Ever since the invention of the concept 'neighbourhood unit' in 1929 by Perry, it has turned out to be a regular theme in planning our cities. The planning organizations continue to familiarize and make regular use of the neighbourhood unit when designing and planning a layout for new communities. The physical and social meanings of neighbourhood need to be understood to be able to carry forward its principle for the benefit of planned development efforts [15].

Neighbourhoods have some specific social and physical characteristics that differentiate them from other types of settlement. The conglomerate of these neighbourhoods has transformed into cities, villages and towns. Whittick (1974) defined neighbourhood unit as planned urban area related and integrated to the larger community and consisting of open spaces, residential areas, schools, shopping facilities, industrial and religious buildings among others [16]. The neighbourhood unit as a development and design concept emanated in response to the deteriorated physical, social, cultural, institutional and environmental conditions in the urban area of Ibadan, which is nurtured because of the industrial revolution in the nineties [6]. Nevertheless, it evolved to assist a much wider purpose of providing a visible character for the concept of the neighbourhood and contribution to designers to formulate a blueprint and framework for breaking the city into smaller subareas. This model delivered definite guiding principles for the spatial circulation of streets, businesses, residences and community services [17].

1.3. Neighbourhood Quality

Neighbourhood quality is a complex concept that consists of numerous characteristics. Neighbourhood quality is difficult to measure directly. Quality can be correlated with the cultural, economic, social feature of the resident and physical dimensions of the neighbourhood, which is challenging to capture. Quality has been described as the level to which a thing satisfies the requests require from it, and architectonic quality as a general term. This covers numerous characteristics of quality, for instance, functionality, efficiency, accessibility, safety, privacy, affordability, aesthetic, cultural and symbolic value among others [18]. In the context of the developing world, two major methods had been recommended in the literature for the assessment of neighbourhood and residential quality: the noneconomic and economic dimensions of quality [19].

The economic measure involves property market evaluation, involving the microeconomic trade-off models, neo-classical, for instance, the hedonic price theory. The non-economic dimension to quality assessment may involve methods to assess residents' perception with the neighbourhood; and normative evaluation techniques for appraisal of neighbourhood quality. This may involve the identification of minimum standards or intervention points after which action needs to be taken to avert further decline of the neighbourhood. It was suggested that the use of four major variables to analyse quality such as housing consumption: (occupancy rates and dwelling size); neighbourhood and site characteristics (open spaces, playgrounds, topography and other community facilities and services). Others that comprised: connection to services (intensities of usage of major infrastructures, such as waste disposal and water sanitation) and location characteristics [20].

The management of the housing environment is an aspect that affects the quality of residential neighbourhoods, particularly the management of public facilities and residential neighbourhoods [13, 21]. Physical neighbourhood quality characteristics potentially relevant to residents included: density, land use, transportation availability, street connectivity, infrastructure cycling and pedestrian infrastructure (condition, presence, and bike lanes, maintenance of sidewalks, crosswalks, traffic lights, streetlights,). Others included: green space, access to nature, public open spaces, resources (health care, public services, schools, healthy food, playgrounds, recreational opportunities and commercial functions); street condition and building, maintenance, cleanliness, traffic volume, noise and air quality [22].

1.4. Approaches to the Study of Neighbourhood Quality

Quality in general means standard and level of acceptability of an area. Neighbourhood quality is strictly correlated to neighbourhood standards, worth and the quality feature of a residential area, which reflects and shows urban growth, design and spatial planning and circulation instruments between socio-economic and socio-cultural groups and the quality of life of the inhabitants [17]. Formoso & Jobim (2006) observed that perceived quality denotes concepts to users, which can be associated with the experience. This is a sign that neighbourhood quality is a perception that relates to individual attributes and attitude [23]. Neighbourhood quality comprises the building design and structure, arrangement and internal adequacy and acceptability of dwelling units. Others included: occupancy rate, accessibility of facilities, neighbourhood characteristics and conditions, and the affordability and habitability of neighbourhood [24, 25]. This indicates that neighbourhood quality can be measure as a greatly valued characteristic which neighbourhood has that allows it to meet users' requirements. Characteristics such as structural soundness, spatial adequacy, the durability of construction materials, and accessibility of basic amenities and services such as electricity, water, and sewerage, location with upright networks with other areas of the city [26].

Therefore, neighbourhood quality can be said to include elements of the neighbourhood that enabled it to accomplish the important functions of upholding healthy neighbourhood, enhanced residents living environments, and contributing to residents' social interaction and physical development of the community. The assessment of neighbourhood quality is centre on thinking and conceptions. According to Rapoport (1977), individuals assessed their environment alongside an image of what they would prefer it to be [27]. Such assessment method was inclined and influenced by peoples' earlier experiences, cultural values, adaptation level, religion, gender, age, social role, and ethnicity [28]. An individual's assessment of a neighbourhood is a multifaceted, multidimensional, worldwide evaluation arrangement that combines perceptive, emotional, and interactive facets, along with a collection of both objective and subjective variables [29]. In other words, publics' subjective perceptions of reality influence their opinion of a specific household and its environs [30].

Kaitilla (1993) acknowledged the subjective approach to the assessment of the neighbourhood and the household environment in is study. Thus, subjective assessment approaches method correlates to residents' perception of the quality and grade of contentment with neighbourhood condition and environment [31]. Mohit et al. (2010) substantiated this observation, which stressed that subjective assessment methods comprise: measurement of aspiration, disappointment, satisfaction and perception, which is closely linked to the emotional qualities of an individual [32]. This suggests that one's evaluation of a neighbourhood hinge on how the neighbourhood is perceived in addition to the socio-economic features of the person. Thus, a dwelling, location or environment may be observed by some individuals as being of high quality while for other people it may be of lesser or no quality [33].

The literature also identified the objective approach to the assessment of neighbourhood environment base on the physical condition and characteristics, services, facilities, and environment established on certain predetermined principles and standard of evaluation in contradiction to which the neighbourhood is judged [31, 32]. The objective method of assessment of housing environment evaluates the physical characteristics of neighbourhood, environment and services using physical observation approach. Such assessment is generally lacking in measuring and clarifying the psychological characteristics of perception of quality; therefore, there is the necessity for subjective dimension, which can capture perception, aspiration, disappointment and satisfaction aspects of people [32]. Van Kamp et al. (2003) advocated combined model for reviewing the quality of neighbourhood environment that evaluates the array of concerns connected to subjective perceptions and objective dimensions based on various economic and socio-cultural factors in addition to local conditions [34]. These suggest that the appraisal of users' opinion on the quality of housing environment should be based on method incorporating spatial, environmental, social, cultural and physical characteristics in line with the framework of different local conditions, socio-cultural and economic factors. Therefore, the assessment of neighbourhood environment is a function and meaning of how neighbourhood qualities are perceived by people and the standard position to which such features are equated with [33]. Aliu & Adebayo (2010) corroborated the above view and observed that neighbourhood quality is a multifaceted perceptual term that has economic, cultural, and social meanings [35].

Olotuah (2016) appraised of housing and neighbourhood quality in residential estates [36]. The study examines the quality of housing and the environment in two residential estates in Akure, Nigeria. Babalola et al. (2019) focused on housing quality and its predictors in public residential estates in Lagos, Nigeria. The study investigated the extents to which government-constructed residential estates in urban areas are providing residents with good quality housing environment [37]. Makinde (2020), assessed the design factors as determinants of neighborhood quality in the urban area of Ibadan, Nigeria. The study assessed the residents' and experts' perception of design correlates of neighbourhood quality in the urban area of Ibadan [38]. Ezeanah (2020), examined quality housing based on perception and insights of people in Benin City, Nigeria [39]. The study provides insights on how diverse stakeholders perceive and make sense of quality housing, and these interested parties include: home-owners, tenants, government officials and community development associations in Benin City. These studies are limited in area of exploring neighbourhood quality with special consideration to neighbourhood units and communities in relation to the social and physical characteristics. Hence this study

1.5. The Implications of Neighbourhood Quality in Housing

Concerns for neighbourhood quality have instant everyday consequences. Physical characteristics of neighbourhoods, for instance, the absence or presence of basic facilities, housing quality, dependable public transportation, reliable hospitals, and availability of retail stores are important factors of well-being [19]. Neighbourhoods with inadequate quality housing, little resources, poor design and the unsafe environment will inflict stress on the residents, which affect the quality of life [22].

Neighbourhood quality affects the social, cultural and economic prospect of the people. It has been established to be a significant motivation for coming out of poor health and for proper children upbringing. The quality of the neighbourhood a family live in influences their important social behaviour and residents' quality of life [40]. Neighbourhood quality characteristics affect the possibility that people's social connection will improve [41]. When residential earnings are elevated, the populace is less expected to form relationships. Equally, individuals are not likely to form associations when they reside in neighbourhoods with high social disorder, because they distrust their fellow citizen [42]. Social and physical environments in neighbourhoods can be visibly hazardous; for instance, ethnic conflicts, crime-target or polluted area can strictly limit the options and assets accessible to individuals [43].

2. Research Methodology

2.1. Conceptual Framework

The conceptual framework for the study is as shown in Figure 3. This shows that neighbourhood quality, which is the dependent variable, is a product of the independent variables that comprised; residents' socio-economic characteristics, neighbourhood physical characteristics and neighbourhood social characteristics. The data obtained were analysed by inferential statistical models that comprise: analysis of variance (ANOVA) and Multiple Regression methods using the equation:

$$Y = ax1 + bx2 + cx3 + dx4 \ldots.rxn \quad (1)$$

Where y = perception of neighbourhood quality which is the dependent variable and ax1 – rxn represent the factors which are the independent variables. Such factors include quality of buildings, quality of roads, location, space, privacy, social connectivity, social amenities, site issues, vehicles access and parking, security, energy efficiency, ornamentation, sanitation, drainage, waste and sewage disposal system and ease of movement among others.

The study used the judgemental approach to establish the content validity of the variables from exhaustive literature reviews to extract the significant items. Also, the study used a panel of experts that are familiar with the construct to carry out the evaluation. Construct and content validity of the instrument is checked by regression analysis and analysis of variance (ANOVA). Testing for the reliability of the research instrument is significant as it shows the consistency through the parts of the measuring tool. The study used Likert scales of 1-5 to have high internal consistency reliability. The study obtained the Cronbach Alpha coefficient of 0.70, equivalents to high reliability. This is viewed as an appropriate measure of the reliability of research tools. Data collection for the study was performed between June 2018 and December 2019.

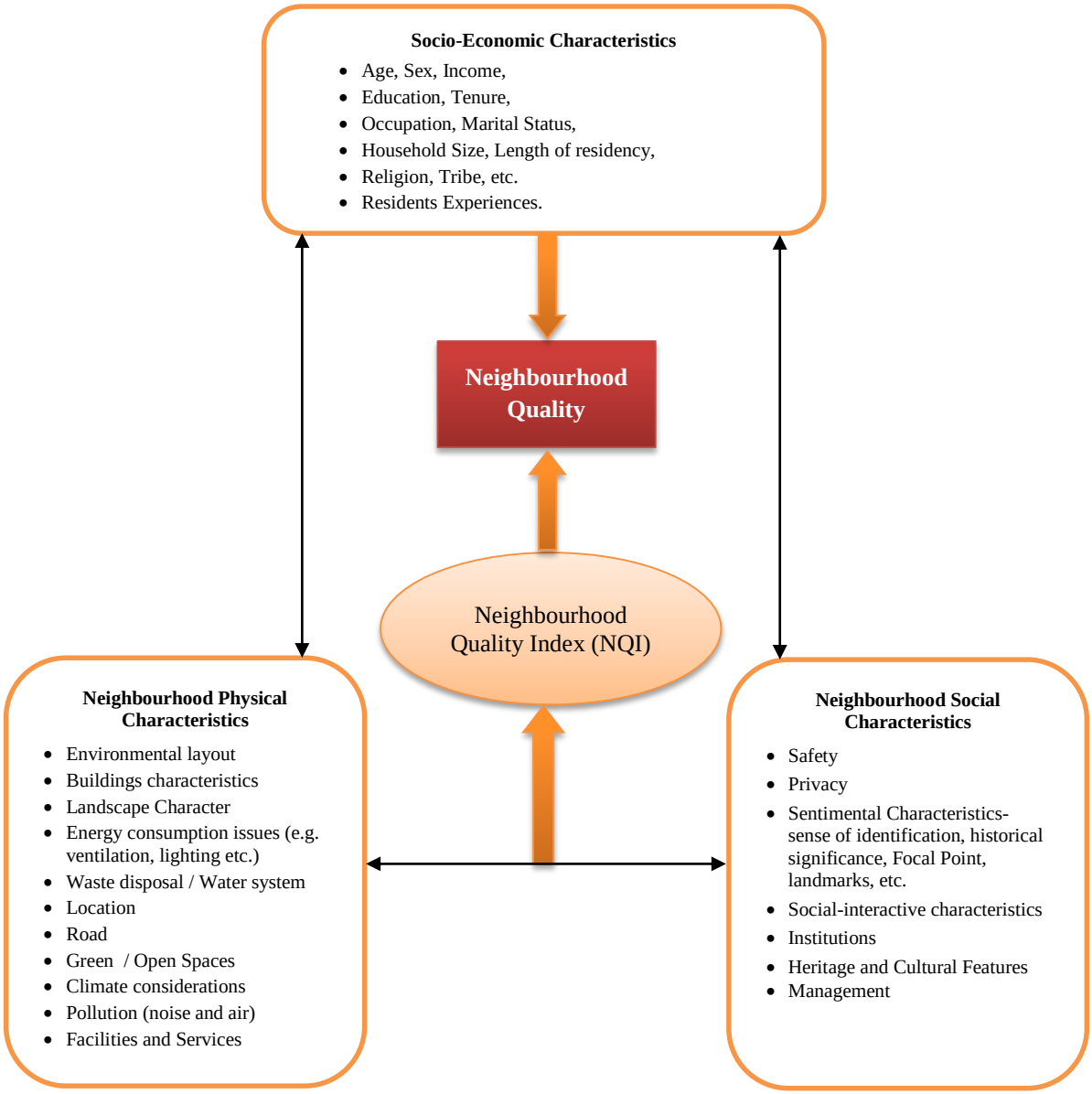

Figure 3. Conceptual Framework for the Study

2.2. Method of Data Collection

There are thirty (30) areas with at least residential housing estate in Ibadan out of which five areas (16.7%) were randomly selected. These include the Agodi Government Reservation Area, New Bodija scheme, Old Bodija Scheme, Kolapo Ishola Scheme and Alalubosa Government Reservation Area. In the five residential areas there were four thousand, nine hundred and twenty-two (4,922) residential buildings. Nine hundred and eighty-five (985) representing 20% of the residential buildings were sampled. Systematic sampling technique was used to select one of every 5th buildings after the first house has been selected randomly. Data collected were analysed using appropriate descriptive and inferential statistics.

Table 1. Target Population for the Study

S/N	The Study Population (16.7% of the target population selected randomly)	Sampling Frame (No of houses)	Sampling Size (20% of the household head selected using systematic sampling)
1	Old Bodija Scheme	2,495	499
2	Agodi GRA	492	99
3	New Bodija scheme	800	160
4	Kolapo Ishola Scheme	300	60
5	Alalubosa GRA	835	167
	Total	4,922	985

The questionnaires were designed for the inhabitants of the housing units. The questionnaire covered every section of the study goals. These include the residents' social-economic characteristics, the social and physical characteristics. The assessments included both open-ended and closed-ended surveys. The close-ended questions obtained precise view while the open-ended ones allowed the respondents to give more intricate clarifications and answers where appropriate. For close ended questions a Likert scale 1-5 was make use as the scale of appraisal.

As demonstrated in Table 1, the total sample frame was four thousand and nine hundred and twenty-two (4,922). The sample size adopted was nine hundred and eighty-five. According to previous studies, mostly the number of respondents adequate for a study hinge on the type of research involved. For qualitative research, the sample should be 20% of the population. This shows that 80.4% (792) were returned and retrieved. Table 2 shows the distribution of returned questionnaires across the study area.

Table 2. Distribution of Administered and Returned Questionnaires

S/N	The Study Population	Number of Administered Questionnaires	Percentage of Questionnaires Administered	Number of Questionnaires Returned	Percentage of Questionnaires Returned
1	Old Bodija	499	50.7	404	41.0
2	Agodi GRA	99	9.9	78	7.9
3	New Bodija	160	16.2	128	13.0
4	Kolapo Ishola	60	6.1	48	4.9
5	Alalubosa	167	17.0	134	13.6
	Total	985	100	792	80.4

Considering the response rates to sampled size of the study groups, the response rate was 792 representing 80.4% of the residents that responded to the survey. This response rate is adequate for the study.

3. Results and Discussion

3.1. Socio-economic Characteristics of Residents

The study examined the socio-economic characteristics of the residents in the selected public housing development in Ibadan as demonstrated in Table 3. Findings revealed that the study areas were almost evenly balanced in terms of gender classification. The study also indicated that an overwhelming majority of residents are young people between the age of forty-one and fifty (41 – 50) and that age is not differentiated by area. Also, findings showed that ethnicity is not a factor in deciding where people live in the study areas; although, the entire areas have a good representation of major ethnic groups. The study observed that among residents, the Yorubas have the highest percentage followed by people of Igbo extraction; this is in line with the demography characteristics of the entire Ibadan metropolis. On education, the finding showed that an overwhelming majority of residents had at least a Higher National Diploma (HND) or Bachelor of Science degree (BSC) across all areas. As to the place of work, the majority of residents of the areas worked in the organized private sector, while students were the least percentage of the population. On the occupation of the residents, the highest percentage belongs to the self-employed while the lowest percentage was pensioners.

For the income level, the findings indicated that the majority of residents earn more than ₦300, 000 per month while the lowest income group are those earning less than ₦18, 000. Also, findings showed that homeowners are the majority as opposed to renters. The study also showed that most households have between 1 and 5 people per household. On social indicators, a simple majority of residents spend just about1-2 hours per day in the house during the day suggesting a highly mobile and active population, this tally with the fact that majority of residents are young

people who are in their very active years. The study also indicated that a simple majority of residents had been living in the study areas between 6 and 10 years. In summary, the high level of education, homeowners and income level among other factors of residents attribute in the study areas could significantly influence their neighbourhood quality assessment of their residential area.

The Study Areas are: Old Bodija Scheme = (1), Agodi GRA = (2), New Bodija Scheme = (3), Kolapo Ishola Scheme = (4), Alalubosa GRA = (5).

Table 3. Socio-economic Characteristics of Residents

i) Gender of Respondents												
The Study Areas	Male		Female		Total							
	Freq.	%	Freq	%	Freq.	%						
1	242	59.9	162	40.1	404	100.0						
2	62	79.5	16	20.5	78	100.0						
3	76	59.4	52	40.6	128	100.0						
4	38	79.2	10	20.8	48	100.0						
5	81	60.4	53	39.6	134	100.0						
ii) Ages of Respondents												
	18-30	%	31-40	%	41- 50	%	51- 60	%	Above 61	%		
1	24	5.90	72	17.8	128	31.7	124	30.7	56	13.9		
2	8	10.3	10	12.8	26	33.3	22	28.2	12	15.4		
3	18	14.1	36	28.1	40	31.2	24	18.8	10	7.8		
4	2	4.2	4	16.7	20	41.7	18	33.3	2	4.2		
5	10	7.5	30	22.4	36	26.9	42	31.3	16	11.9		
Total	**62**	**7.8**	**156**	**19.7**	**250**	**31.6**	**228**	**28.8**	**96**	**12.1**		
	18-30	%	31-40	%	41- 50	%	51- 60	%	Above 61	%		
iii) Level of Education of Respondents												
	Pry School		Sec School		OND/NCE		HND		B.Sc. /B.A		Others	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	0	-	0	-	20	5.0	112	27.7	218	54.0	54	13.4
2	0	-	0	-	6	7.7	24	30.8	34	43.6	14	18.9
3	4	3.1	8	6.3	30	23.4	42	32.8	36	28.1	8	6.3
4	0	-	0	-	2	4.2	16	19.0	22	45.8	4	1.6.7
5	0	-	6	4.5	10	7.5	30	22.4	64	47.8	24	17.9
Total	**4**	**0.5**	**14**	**1.8**	**68**	**8.6**	**224**	**28.3**	**374**	**47.2**	**108**	**13.6**
iv) Occupation of Respondents												
	Student		Civil service		Self-Employed		Unemployed		Retiree		Other	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	14	3.5	112	27.7	156	38.6	16	4.0	56	13.9	50	12.4
2	2	2.6	26	33.3	42	53.8	4	5.1	2	2.6	2	2.6
3	6	4.7	34	26.6	62	48.3	6	4.7	10	7.8	10	7.8
4	0	-	14	29.1	32	66.7	0	-	2	4.2	0	-
5	0	-	28	35.8	62	46.3	6	4.5	12	9.0	6	4.5
Total	**22**	**2.8**	**234**	**29.5**	**354**	**44.7**	**32**	**4.0**	**82**	**10.4**	**68**	**8.6**
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
v) Household size of respondents												
The Study Areas	1-2		3-4		5-6		7–8		Above 8		Others	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	50	12.4	122	30 .2	156	38.6	44	10.9	20	5.0	12	3.0

2	6	7.7	24	30.8	38	48.7	6	7.7	2	2.6	2	2.6
3	6	4.7	52	40.6	48	37.5	12	9.4	8	6.2	2	1.6
4	0	0	14	29.1	24	50.0	8	16.7	2	4.2	0	0
5	2	1.5	40	29.9	62	46.3	12	9.0	14	10.4	4	3.0
Total	**64**	**8.1**	**252**	**31.8**	**328**	**41.4**	**82**	**10.4**	**46**	**5.8**	**10**	**2.5**
vi) Average Monthly Income Level												
	Less than #18,000	%	#18,000-#50,000	%	#51,000 - #150,000	%	#151,000 - #300,000	%	above #300,000	%		
1	0	0	50	12.4	62	15.3	134	33.2	158	39.1		
2	0	0	8	10.3	12	15.4	22	28.2	36	46.2		
3	2	1.6	14	10.9	24	18.8	24	18.8	64	50		
4	0	0	2	4.2	6	12.5	8	16.7	32	66.7		
5	2	1.5	6	4.5	14	10.4	24	17.9	88	65.7		
Total	**4**	**0.5**	**80**	**10.1**	**118**	**14.9**	**212**	**26.7**	**378**	**47.7**		
vii) Year of Residency												
	Less than a year		1-5 years		6-10 years		11-15 years		Over 15			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
1	10	2.5	38	9.4	152	37.6	122	30.2	82	20.3		
2	0	0	6	7.7	30	38.5	20	25.6	22	28.2		
3	2	1.6	2	1.6	46	35.9	42	32.8	36	28.1		
4	6	12.5	30	62.5	12	25.0	-	-	-	-		
5	6	4.5	42	31.3	70	52.2	16	11.9	-	-		
Total	**24**	**3.0**	**118**	**14.9**	**310**	**39.1**	**200**	**25.3**	**140**	**17.7**		
viii) Hours Spent During the Day at Home												
The Study Areas	1 -2hrs		3 – 4hrs		5 – 6hrs		7 – 8hrs		Above 8hrs			
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%		
1	130	32.2	122	30.2	56	1	76	13.9	20	5.0		
2	26	33.3	26	33.3	10	12.8	14	17.9	2	2.6		
3	40	31.3	44	34.4	16	12.5	24	18.8	4	3.1		
4	14	29.1	14	29.1	8	16.7	8	16.7	4	8.3		
5	46	34.3	42	31.3	18	13.4	20	14.9	8	6.0		
Total	**256**	**32.3**	**248**	**31.3**	**108**	**13.6**	**142**	**17.9**	**38**	**4.8**		
ix) Ethnicity of Respondents												
	Ibo	%	Hausa	%	Yoruba	%	Urhobo	%	Itse-Kiri	%		
1	64	7.9	44	5.4	636	78.7	12	1.5	4	1.0		
2	28	17.9	12	7.7	108	69.2	-	-	-	-		
3	32	12.5	28	10.9	176	68.8	4	1.6	2	1.6		
4	12	12.5	16	16.7	56	58.3	4	4.2	2	4.2		
5	36	13.4	28	10.5	184	68.7	2	1.5	2	1.5		
Total	**176**	**11.1**	**124**	**7.8**	**1160**	**73.2**	**12**	**1.5**	**10**	**1.3**		
x) Types of Ownership												
	Owner	%	Rented	%	Other	%	Total					
1	244	60.4	150	34.1	10	2.5	404					
2	68	87.2	8	10.3	2	2.6	78					
3	106	82.8	18	14.1	4	3.1	128					
4	48	100	0	0	0	0	48					
5	124	92.5	4	3.0	6	4.5	134					
Total	**590**	**74.5**	**180**	**22.7**	**22**	**2.8**	**792**					

3.2. Physical Characteristics of Neighbourhoods in the Study Area

The study looked at the physical characteristics of the study areas. The study showed that the major types of building in the study area comprised: duplex, detached and semi-detached. The study revealed that 32.9% are duplex; followed by semi-detached with 19.9%. The detached, bungalow, terrace and block of flat were 19.1, 11.9, 7.7 and 7.6% respectively. Figure 4 illustrated the types of building in the study area. It could be inferred that in all the study area neighbourhoods within the areas provided for choice and diversity from a mix of building types and compatible housing. This is by the guidelines of planning edict that established the study areas.

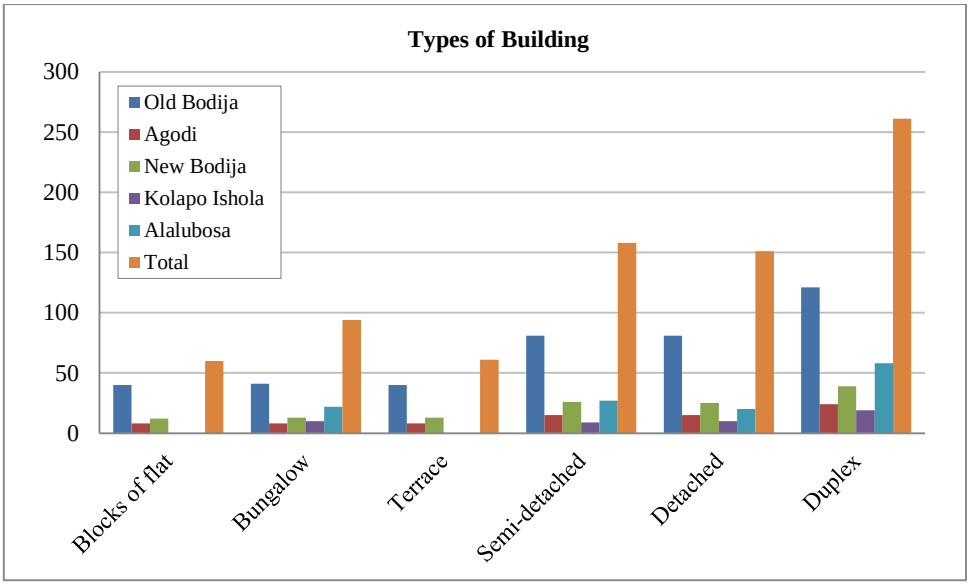

Figure 4. Types of Building

The study also investigated the age of buildings as an important characteristic of the neighbourhood quality in the study area. As shown in Table 4, the study indicates that 14.5% (115) of the buildings were less than 10 years in age, 16.9% (134) were between 10 and 20 years, 29.7% (235) were between 21 and 30 years, and 22.9% (181) were between 31 and 40 years, while 19.1% (122) were above 40 years. Most of the houses in the study area, especially from Old Bodija Scheme, Agodi GRA, and New Bodija Scheme had been built more than three decades ago. The structural stability and physical appearance of these houses had deteriorated because of their ages compared with the newly built ones from Kolapo Ishola Scheme and Alalubosa GRA that have good quality in terms of the usage of latest building material and construction and design method.

Table 4. Ages of the Buildings

The Study Areas	Less than 10 years	%	10-20 years	%	21-30 years	%	31-40 years	%	Above 40 years	%	Total
Old Bodija	40	9..9	41	10.1	120	29.7	123	30.4	80	19.8	404
Agodi GRA	7	9.0	8	10.3	23	29.5	24	30.8	16	20.5	78
New Bodija	12	9.4	13	10.2	38	29.7	39	30.5	26	20.3	128
Kolapo Ishola	29	60.4	19	39.6	-	-	-	-	-	-	48
Alalubosa GRA	27	20.1	53	39.6	54	40.3	-	-	-	-	134
Total	115	14.5	134	16.9	235	29.7	181	22.9	122	15.4	792

This study further investigated the streets and buildings orientation as important characteristics of the neighbourhood quality in the study area. The results indicated that 33.5% of the respondents have their streets and buildings orientated into North-South direction. 16.5% of the respondents have their streets and buildings orientated into Northeast-Southwest direction, 24.6% have their buildings orientated into Northwest-Southeast direction and 25.4% have their buildings orientated into East-West direction. The implication of this is that only 33.5% of the buildings and streets are properly oriented and are not having their building affected by unwanted climatic elements that can affect buildings and the built environment as shown in Table 5. Their street and building orientation to North-South will reduce direct sunrise and sunset from the East and West direction. Also, it will enhance the effective utilisation of NE trade wind and SW trade wind effects and maximize sunlight on the building.

Table 5. Buildings Orientation

The Study Areas	North-South	%	Northeast-Southwest	%	Northwest-Southeast	%	East-West	%	Total
Old Bodija Scheme	136	33.7	66	16.3	99	24.5	103	25.5	404
Agodi GRA	26	33.3	13	16.7	19	24.4	20	25.6	78
New Bodija Scheme	42	32.8	22	17.2	32	25.0	32	25.0	128
Kolapo Ishola Scheme	16	33.3	8	16.7	12	25.0	12	25.0	48
Alalubosa GRA	45	31.2	22	15.3	33	22.9	34	23.6	134
Total	265	33.5	131	16.5	195	24.6	201	25.4	792

Since building form is probably one of the single largest factor shaping neighbourhood space and physical character, which has a considerable effect on neighbourhood quality. The survey showed that the major types of building forms in the study area comprised: the circular, broad with deep interior spaces, compact, compact enclosing courtyard and linear form. The study observed that 8.3% reported that their building forms are circular, 16.4% reported that their building forms are broad with deep interior spaces, while 24.7% respondents reported that the types of building form they occupied were compact. Furthermore, 16.4% of respondents resided in building form that is compact enclosing courtyard. Also, 34.1% had a building form that is linear (see Table 6). It can be deduced that the majority of the respondents resided in linear and compacts forms, while the few respondents have circular building forms. Despite the absence of specific building forms attributes in the study area. The various building forms differ and show the rhythm of building components. The building forms adopted created spaces with a sense of local and neighbourhood identity. It can be inferred that most of the study area utilised an appropriate range of building forms that have the potential of cross ventilation and penetration of sunlight and increased land efficiency by the planning guidelines regarding building code.

Table 6. Building forms

The Study Areas	Circular	%	Broad with deep interior spaces	%	Compact	%	Compact enclosing courtyard	%	Linear	%	Total
Old Bodija Scheme	33	8.2	66	16.3	99	24.5	66	16.3	140	34.7	404
Agodi GRA	7	9.0	13	16.7	19	24.4	13	16.7	26	33.3	78
New Bodija Scheme	11	8.6	21	16.4	33	25.8	21	16.4	42	32.8	128
Kolapo Ishola Scheme	4	8.3	8	16.7	12	25.0	8	16.7	16	33.3	48
Alalubosa GRA	11	8.2	22	16.4	33	24.6	22	16.4	46	34.3	134
Total	66	8.3	130	16.4	196	24.7	130	16.4	270	34.1	792

To create a united appearance, the architect must pay close attention to wall colour consistency, which could help create environmental harmony without boring side effects. The study also assessed the various wall colour used in the study area. The majority 41.2% (326) used cool colour paint for their wall and 33.5% (265) of the respondents used bright colour for their wall as demonstrated in Figure 5. It was observed that the wall had been coloured successfully for individual building without the consideration of the neighbourhood as a whole. Also, the colour finishes in all the study areas are not centrally coordinated. It was established that most respondents used inconsistent colour schemes and without cautious colour selection.

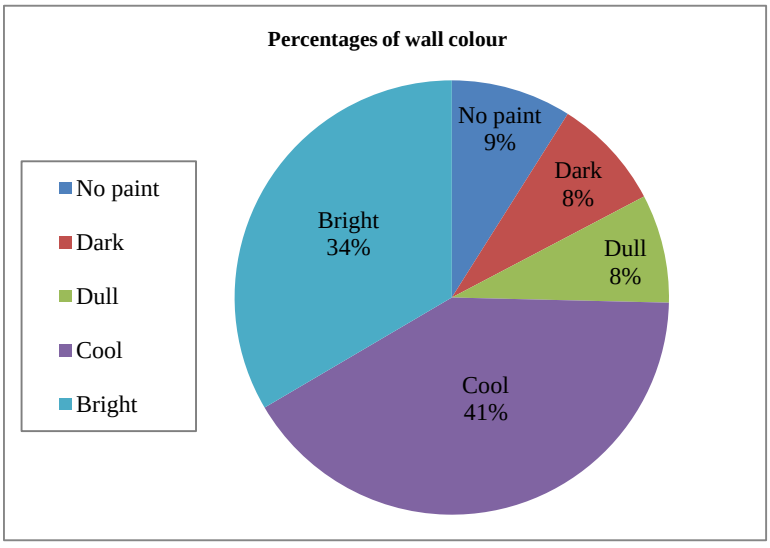

Figure 5. Percentages of wall colour in the study area

The information for construction materials for walls in the study area showed that 7.8% (62) of the sampled respondents used stone for walls construction, 61% (488) of the respondents used Sandcrete Block, 7.8% (62) of the respondents used bricks, while 22.7% (180) of the respondents used others types materials for the construction of the walls. The result obtained is as shown in Table 7. The Sandcrete Block represents the highest percentage of the construction materials used for the wall. The type of construction material used for the construction of the buildings determines the quality it possesses. Never the less, stones, sand, bricks and cement are local material for construction available in the study area.

Table 7. Wall Materials

The Study Areas	Stone	%	Mud	%	Sandcrete Block	%	Bricks	%	Others	%	Total
Old Bodija	41	10.1	-	-	202	50.0	41	10.1	120	29.7	404
Agodi GRA	8	10.3	-	-	39	50.0	8	10.3	23	29.5	78
New Bodija	13	10.2	-	-	65	50.8	13	10.2	37	28.9	128
Kolapo Ishola	-	-	-	-	48	100.0	-	-	-	-	48
Alalubosa GRA	-	-	-	-	134	100.0	-	-	-	-	134
Total	62	7.8	-	-	488	61.6	62	7.8	180	22.7	792

The information on construction materials for roofing showed that 10.1% of the respondents used Corrugated iron sheet. Also, 23.5% of the respondents used aluminium. Furthermore, 15.7% of the respondents used Asphalt shingles, while 40.5% used corrugated asbestos for roofing, which marks the highest percentage. Also, 10.2% of the houses used other roofing materials for the construction of the roof as shown in Figure 6. Materials used for roofing is important in dictating the neighbourhood quality of building estates. It is important to note that some of the older areas that included: Old Bodija Scheme, Agodi GRA and New Bodija Scheme made use of asbestos roofing sheet. This is expected because about three-decade ago when they were being built this was the type of roofing material that was commonly used by the affluent. It is important to signal that some of the old areas had their roof changed from asbestos to aluminium. In the new area that included; Kolapo Ishola Scheme and Alalubosa GRA, aluminium and asphalt shingle roofing materials are frequently used and these materials are in vogue presently.

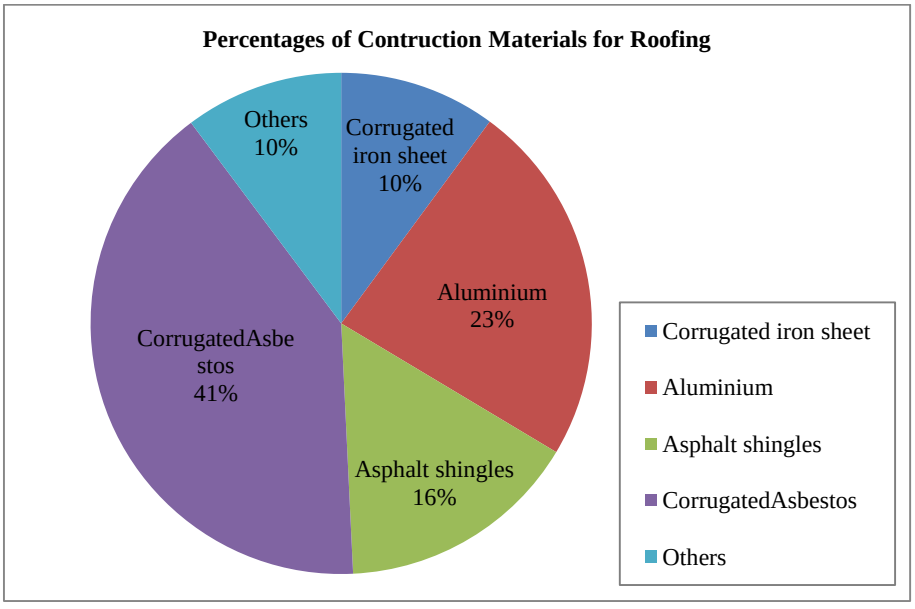

Figure 6. Percentages of Construction Materials for Roofing

The study also assessed the construction materials for windows and it indicated the total percentage of buildings that used Louver Blades as the material for the window were 30.8%. Also, 32.2% used of Glassed Sliding Window, 29.4% of the respondents used, Glassed Casement Window, 3.9% (31) made use of wood shutters and 3.7% used of other window materials as shown in Table 8. Majority of the buildings in the study area used louvre blades, Glassed Sliding window, Glassed Casement Window as the material for their windows. It can be observed that louvre blades as construction materials for the window are more pronounced in the old housing schemes that comprised: the Old Bodija Scheme, Agodi GRA, and New Bodija Scheme. While in Kolapo Ishola Scheme and Alalubosa GRA used Glassed Sliding window and Glassed Casement Window only as construction materials for the window.

Table 8. Window Materials

The Study Areas	Louvre blades	%	Glassed Sliding window	%	Glassed Casement Window	%	Wood Shutters	%	Others	%	Total
Old Bodija	161	39.9	122	30.2	81	20	20	5.0	20	5.0	404
Agodi GRA	32	41.0	23	29.5	16	20.5	4	5.1	3	3.9	78
New Bodija	51	39.8	38	29.7	26	20.3	7	5.5	6	4.7	128
Kolapo Ishola	-	-	19	39.6	29	60.4	-	-	-	-	48
Alalubosa	-	-	53	39.6	81	60.4	-	-	-	-	134
Total	244	30.8	255	32.2	233	29.4	31	3.9	29	3.7	792

Safety is a basic factor of neighbourhood quality, and crime is likely to have a significant negative effect on neighbourhood quality. From Table 9, 23.0% indicated that the presence of vigilante in the community could ensure safety. Also, to gating house/neighbourhood in the study areas, 31.8% indicated that the presence of a security agent in the community could ensure safety. In addition to gating house and neighbourhood in the study areas, 15.7% used guards, 10.6% made use of security dog, also 10.6% used alarm or monitoring system and 8.3% used others method respectively. These indicated that the presence of any of the options in the community could ensure safety in addition to gating house and neighbourhood in the study areas. From the study, it was observed that the respondents believe more in the presence of security agents and the vigilante (54.8%) in the neighbourhood out of the other option that included: auto opener entry, patrolling guards, surveillance cameras, devices in the roadbed, card entry, code entry and house alarms among others. This submission is in consistent with the study by Makinde (2020) [44].

Table 9. Safety features in addition to gating house/neighbourhood

The Study Areas	Vigilante		Security agent		Guards		Security dog		Alarm or Monitoring system		Others, specify		Total
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
Old Bodija Scheme	76	18.8	122	30.2	82	20.3	46	11.4	42	10.4	36	8.9	404
Agodi GRA	22	28.2	30	38.5	6	7.7	4	5.1	6	7.7	10	12.8	78
New Bodija Scheme	20	15.6	56	43.6	18	14.1	16	12.5	14	10.9	4	3.1	128
Kolapo Ishola Scheme	20	41.6	12	25	4	8.3	2	4.2	6	12.5	4	8.3	48
Alalubosa GRA	44	32.8	32	23.9	14	10.4	16	11.9	16	11.9	12	9.0	134
Total	182	23.0	252	31.8	124	15.7	84	10.6	84	10.6	66	8.3	792

3.3. Assessment of the Neighbourhood Quality

The neighbourhood quality in the study area was categorised into residents' perception of overall neighbourhood physical and social characteristics. The physical characteristics were assessed with thirty-one variables, while the social characteristics were assessed using eighteen variables. The result as contained in Table 10 shows the residents' perception of the NPCs in Old Bodija Scheme from the viewpoints of residents. The results show that 19 variables out of 31 identified had the PCI above the average of 4.12, which were considered as major physical characteristics influencing neighbourhood quality in positive ways.

The result shows the residents' perception of the neighbourhood physical characteristics (NPCs) in Agodi GRA from the viewpoints of residents. The study showed that 16 variables out of 31 identified had PCI above the average of 3.42 in this area. The study revealed the level of acceptability and adequacy of physical characteristics in the New Bodija Scheme as contained in Table 10, 18 variables out of 31 identified had PCI above the average of 3.64. These variables were considered as acceptable and adequate by the residents as the major NPCs positively influencing neighbourhood quality. Presented in Table 10 was the perceived level of acceptability and adequacy of physical characteristics in Kolapo Ishola Scheme. The average mean on the perceived level of adequacy of the physical characteristics in this area was 4.21 PCI. This implied that the physical characteristics in the study area were in good situation and qualities of available conveniences and expediencies are upright as the index of 4.21 PCI was close to very good. It can be observed that 20 variables out of 31 identified had PCI above 4.21. These were measured as acceptable and adequate by the residents as the major NPCs influencing neighbourhood quality in positive ways.

Presented in Table 10 was the perceived level of acceptability and adequacy of physical characteristics in Alalubosa GRA. The average PCI on the perceived level of adequacy of the physical characteristics in this area was 4.23. This implied that the physical characteristics in the study area were in good situation and qualities of available conveniences and expediencies are upright as the index of 4.23 was close to very good. It can be observed that 17 variables out of 31 identified had PCI above the average, which was measured as acceptable and adequate by the

residents as the major NPCs influencing neighbourhood quality in positive ways. The implication of this is that the perception of physical characteristics by the residents is very good.

Table 10. Level of Residents' Perception of the NPCs in all the Study Areas

S/N	Identified Variables	Old Bodija Scheme		Agodi GRA		New Bodija Scheme		Kolapo Ishola Scheme		Alalubosa GRA	
		TWV(b)	TWV/n= PCI(Y)	TWV(b)	TWV/n= PCI(Y)	TWV(b)	TWV/n= PCI(Y)	TWV(b)	TWV/n= PCI(Y)	TWV(b)	TWV/n= PCI(Y)
1	Quality of buildings setback	1991	4.93	320	4.10	574	4.48	232	4.83	664	4.95
2	How well defined individual compound/ house/ flat.	1963	4.86	314	4.03	574	4.48	232	4.83	664	4.95
3	Natural surveillance	1942	4.81	313	4.01	562	4.39	230	4.79	662	4.94
4	Overall housing environment	1927	4.77	312	4.00	562	4.39	230	4.79	654	4.88
5	Pollution level (noise and air)	1871	4.63	312	4.00	550	4.30	228	4.75	650	4.85
6	The layout of the neighbourhood (the design in relation to daily life)	1841	4.56	312	4.00	550	4.30	228	4.75	648	4.84
7	Safety measures in neighbourhood	1838	4.55	310	3.97	522	4.08	226	4.71	646	4.82
8	Parking space/parking lots	1823	4.51	308	3.95	510	3.98	222	4.63	644	4.81
9	impressions of the overall design of the neighbourhood	1804	4.47	308	3.95	504	3.94	222	4.63	642	4.79
10	Access control in the neighbourhood	1801	4.46	303	3.89	498	3.89	216	4.50	638	4.76
11	building ratio to green areas	1791	4.43	300	3.85	492	3.84	216	4.50	636	4.75
12	Quality of streets design	1778	4.40	300	3.85	492	3.84	214	4.49	630	4.70
13	Ventilation in your building or apartment	1775	4.39	297	3.81	484	3.78	214	4.46	592	4.42
14	Size of spaces in your building	1763	4.36	288	3.69	484	3.78	212	4.42	578	4.31
15	Safety features in your building	1733	4.30	283	3.63	482	3.77	212	4.42	578	4.31
16	quality of materials used for wall, ceilings and roof	1704	4.22	277	3.55	472	3.69	208	4.33	570	4.25
17	The functionality of spaces in your building	1680	4.16	265	3.40	472	3.69	208	4.33	570	4.25
18	The aesthetic appearance of the neighbourhood	1672	4.14	263	3.37	472	3.69	208	4.33	558	4.16
19	Colour quality of paint in the neighbourhood	1670	4.13	263	3.37	454	3.55	208	4.33	554	4.13
20	Emergency/escape route	1658	4.10	260	3.33	454	3.55	206	4.29	552	4.12
21	Water system	1644	4.07	258	3.31	454	3.55	194	4.04	538	4.02
22	Design of building	1630	4.04	243	3.12	450	3.52	194	4.04	530	3.96
23	General cleanliness of the environment	1604	3.97	240	3.08	426	3.33	194	4.04	516	3.85
24	Quality of drainage system	1550	3.84	207	2.65	426	3.33	192	4.00	514	3.84
25	quality of dwellings in the neighbourhood	1464	3.62	204	2.62	388	3.03	190	3.96	500	3.73
26	Waste disposal	1394	3.45	204	2.62	388	3.03	188	3.92	482	3.60
27	The general state of primary schools	1337	3.31	203	2.60	370	2.89	182	3.79	480	3.58
28	The general state of health facilities	1320	3.27	203	2.60	350	2.73	144	3.0	480	3.58
29	The general state of recreational facilities	1289	3.19	199	2.55	346	2.70	144	3.00	478	3.57
30	The level of lighting on the streets	1244	3.08	195	2.50	342	2.67	144	3.00	396	2.95
31	The general state of secondary schools	1087	2.69	193	2.47	340	2.66	124	2.58	329	2.46
			127.71/31		105.87/31		112.85/31		130.48/31		131.13/31
	Average		4.12		**3.42**		**3.64**		**4.21**		**4.23**

TWV: Total Weight Value; PCI: Physical Characteristics Index.

3.3.1. Summary of the Perception of the NPCs in the Study Areas

To summarize the residents' perception of the neighbourhood physical quality in all the study areas as shown in Table 11 and Figure 7 shows the comparative means of the Physical quality Indices in the five study areas. It revealed that Alalubosa GRA had the highest value of perception of the physical characteristics index at 4.23 PCI closely followed by Kolapo Ishola Scheme having 4.21, while old Bodija Scheme and New Bodija Scheme were having 4.12 and 3.64 respectively. Agodi GRA had the least value at 3.42. This shows that based on residents perception on quality of physical characteristics, Alalubosa GRA scheme had better organised and quality neighbourhoods, which were reflected with the strong neighbourhoods profile exhibited. Based on the aggregate average of 3.92 PCI, the study area exhibited a good level of perception of physical characteristics.

Table 11. Summary of the Perception of the Neighbourhood Physical Quality in the Study Areas

Indicator	Physical Characteristics Indices					Average
	Old Bodija Scheme	Agodi GRA	New Bodija Scheme	Kolapo Ishola Scheme	Alalubosa GRA	
Perception of Physical Characteristics	4.12	3.42	3.64	4.21	4.23	3.92

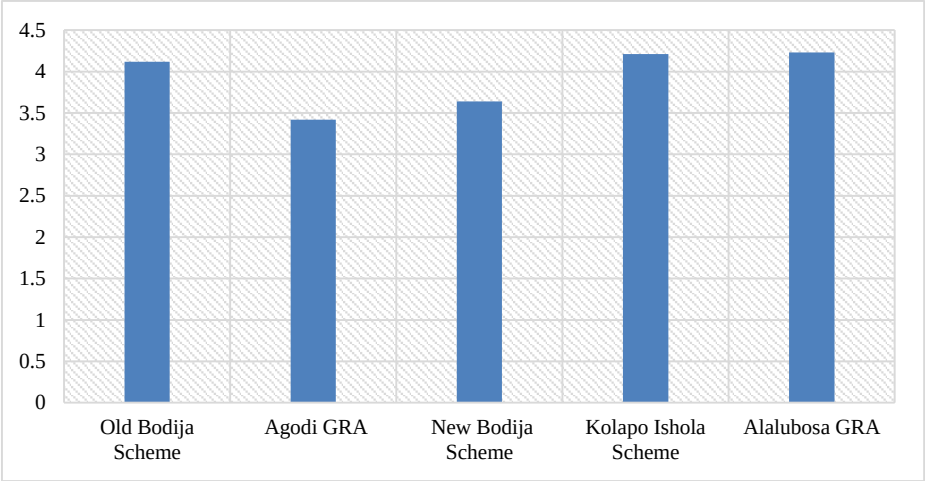

Figure 7. The comparative means of the Physical Quality Indices in the five study areas

3.4. Residents' Perception of Neighbourhood Social Characteristics (NSCs)

The study examined the residents' perception of NSCs in the study area. It is believed that the level of adequacy of social characteristics in the study area will influence neighbourhood quality grade and acceptability. Presented in Table 12 is residents' perception of overall NSCs in Old Bodija Scheme with SCI of 4.09 that is very good. It was observed that the highest SCI was recorded for the level of privacy with SCI of 4.93 followed by a level of safety with SCI of 3.51, which indicated that the residents had some level of safety within the residents. The implication is that these neighbourhood quality variables generally contributed positively to residents' quality of life. Generally, while most NSCs variables contributed effectively to neighbourhood quality, seven variables made ineffective contributions to residents' quality of life. The implication is that the residents of this area have very good social characteristics within their area. Similarly in respect of computation of Social Characteristics Index (SCI) of the area, ten (10) of the seventeen (17) variables had SCI that were above the average of 4.02. It shows that residents' perception of overall NSCs in this area is very good.

The result as contained in Table 12 shows the residents' perception of overall NSCs in Agodi GRA with SCI of 3.66 that is good. It was observed that the highest SCI was recorded for the sense of identification with the neighbourhood with SCI 4.03 followed by strength of social control forces with SCI 4.01, which indicated that the residents had some strength of social relations and social capital within the residents. These were followed by social-interactive level with SCI 4.00, level of safety with SCI 3.97, level of privacy with SCI 3.95 among others. Eight variables made less contribution to residents' quality of life. This result implies that the residents of this area have good social characteristics within their area. Similarly, in respect of computation of Social Characteristics Index (SCI) of the area, nine (9) of the seventeen (17) variables had SCI above the mean SCI (3.66). This shows that residents' perception of overall NSCs in this area is on a positive side. Although this index is low compared to other areas, these variables are important in helping to determine neighbourhood quality when residents' social characteristics views were taken into account. These neighbourhood variables are also dominant issues affecting the levels of neighbourhood quality.

Table 12 shows the residents' perception of overall NSCs in New Bodija Scheme with SCI of 3.53 that is good. It was observed that the highest SCI was recorded for the level of safety with SCI 4.39 followed by the level of privacy with SCI 4.30. These indicated that the residents have some strength in the level of safety and privacy within the residents. Seven variables made less contribution to residents' quality of life. The implication is that the residents of this area have good social characteristics within their area with a mean deviation of 3.53. Similarly in respect of computation of Social Characteristics Index (SCI) of the area, ten (10) of the seventeen (17) variables had SCI above the mean SCI (3.53). This shows that Residents' Perception of overall NSCs in this area is on the positive side. Although this index is low, compare to other areas.

The result shows the residents' perception of overall NSCs in Kolapo Ishola Scheme with SCI of 3.55 that is good. It was observed that the highest SCI was recorded for the level of privacy with SCI 4.83 followed closely by the level

of safety with SCI 4.79. These indicated that the residents have some strength in the level of privacy and safety within the residents. In contrast, the principal variables with SCI that were less than the average of 3.55 comprised: historical significance with SCI 3.0, quality of focal point and recreation facilities with SCI 3.00, heritage and cultural features quality with SCI 2.58 among others. In general, it was observed that while some NSCs variables largely contributed positively to neighbourhood quality, eight variables made less contribution to neighbourhood quality; these social factors are central and dominant to determine neighbourhood quality in the study area. The implication is that the residents of this area have good social characteristics in their area with a mean deviation of 3.55.

Table 12 shows the residents' perception of overall NSCs in Alalubosa GRA with SCI of 3.79 indicated that social quality is good. It was observed that the highest SCI was recorded for the level of privacy with SCI 4.31, followed closely by the level of safety with SCI 4.25, which indicated that the residents have some strength in the level of privacy and safety within the residents. These were followed by quality of management with SCI 4.25. In contrast, the principal variables with SCI that is lower than 3.79 comprised: Historical significance with SCI 3.73, the strength of social control forces with SCI 3.60, Heritage and cultural features quality with SCI 3.58 among others. Other variables with SCI that is lower than 3.79 comprised: level of neighbourhood associations with SCI 2.95, friend and family networks in the neighbourhood with SCI 2.46. These social variables made negative contributions to neighbourhood quality in the study area. It is important to note that this particular area had only one variable that is less than 2.5 SCI, which was a friend and family network in the neighbourhood with SCI 2.46. In general, it can be observed that while some NSCs variables mostly contributed positively to neighbourhood quality, seven variables made negative contributions to neighbourhood quality.

Table 12. Level of Residents' Perception of the Neighbourhood Social Characteristics in all the study areas

S/N	Identified Variables	Old Bodija Scheme		Agodi GRA		New Bodija Scheme		Kolapo Ishola Scheme		Alalubosa GRA	
		TWV(b)	TWV/n= SCI(Y)	TWV(b)	TWV/n= SCI(Y)	TWV(b)	TWV/n= SCI(Y)	TWV(b)	TWV/n= SCI(Y)	TWV(b)	TWV/n= SCI(Y)
1	Level of privacy	1991	4.93	314	4.03	562	4.39	232	4.83	578	4.31
2	Level of safety	1963	4.86	313	4.01	550	4.30	230	4.79	570	4.25
3	Quality of management	1942	4.81	312	4.00	510	3.98	228	4.75	570	4.25
4	Quality of social institutions such as churches, mosques, schools etc.	1804	4.47	310	3.97	504	3.94	226	4.71	558	4.16
5	Sense of identification with the neighbourhood	1801	4.46	308	3.95	498	3.89	222	4.63	554	4.13
6	Neighbourhood lifestyle	1775	4.39	303	3.89	492	3.84	216	4.50	552	4.12
7	Quality of landmarks features in the neighbour.	1763	4.36	300	3.85	484	3.78	216	4.50	538	4.02
8	Class status characteristics of the population	1733	4.30	297	3.81	482	3.77	214	4.49	530	3.96
9	The existence and quality of local services	1704	4.22	288	3.69	472	3.69	188	3.92	516	3.85
10	Quality of Focal Point and recreation facilities	1680	4.16	283	3.63	454	3.55	144	3.0	514	3.84
11	Historical significance.	1604	3.97	277	3.55	450	3.52	144	3.00	500	3.73
12	Strength of social control forces	1550	3.84	265	3.40	426	3.33	124	2.58	482	3.60
13	Heritage and cultural features quality.	1464	3.62	263	3.37	388	3.03	109	2.27	480	3.58
14	Social-interactive level	1394	3.45	263	3.37	370	2.89	103	2.15	480	3.58
15	Community Activities	1337	3.31	260	3.33	350	2.73	103	2.15	478	3.57
16	Level of neighbourhood associations	1320	3.27	258	3.31	346	2.70	101	2.10	396	2.95
17	Friend and family networks in the neighbourhood	1320	3.27	243	3.12	342	2.67	91	1.90	329	2.46
			69.69/17		62.28/17		60.00/17		60.27/17		64.36/17
	Average		**4.09**		**3.66**		**3.53**		**3.55**		**3.79**

TWV: Total Weight Value; SCI: Social Characteristics Index.

3.4.1. Summary of the Perception of the NSC in the Study Areas

To summarize the residents' perception of the NSCs in all the study areas as shown in Table 13 and Figure 8 revealed the comparative means of the Social Characteristics Indices in the five study areas. The study revealed that Old Bodija Scheme seems to have the highest value of perception of the social characteristics index of 4.09 SCI closely followed by Alalubosa GRA having 3.79 SCI, while Agodi GRA and Kolapo Ishola Scheme were having 3.66 and 3.55 SCI respectively. New Bodija Scheme had the least value at 3.53 SCI. This shows that based on residents perception on quality of social characteristics, Old Bodija Scheme had better organised and quality neighbourhoods, which was reflected with the strong Neighbourhoods social profile exhibited. Based on the aggregate average of 3.72 SCI, the study area exhibited a good level of perception of social characteristics.

Table 13. Summary of the Perception of the Social Characteristics Indices (SCI) in the Study Areas

Indicator	Social Characteristics Indices (SCI)					Average
	Old Bodija Scheme	Agodi GRA	New Bodija Scheme	Kolapo Ishola Scheme	Alalubosa GRA	
Social Characteristics Indices	4.09	3.66	3.53	3.55	3.79	3.72

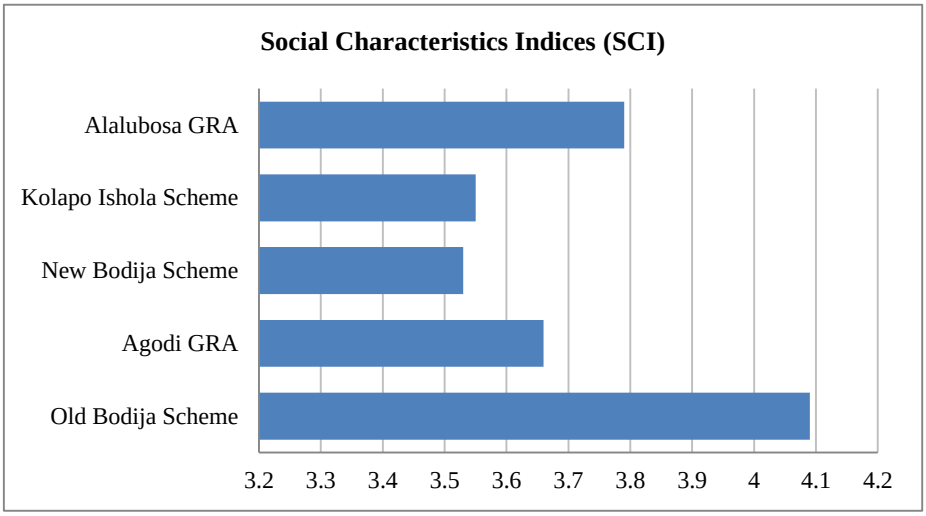

Figure 8. The comparative means of the Social Characteristics Indices in the five study areas

3.4.2. Summary of the Neighbourhood Quality Indices (NCI) in the Study Areas

Table 14, clearly shows the summary of the Neighbourhood Quality Indices (NCI) in the study area. It can be deduced that the Old Bodija Scheme as the highest with 4.04 NCI. With this index, this area of neighbourhood quality can be classified has very good and thriving since the index is close to 5. Alalubosa GRA and Kolapo Ishola Scheme both closely followed this having NCI 4.01 and 3.88 respectively, which can be classified, as good and flourishing since the index is close to 4. New Bodija Scheme is having 3.59 NCI while Agodi GRA is having the least with 3.54 NCI. These two areas can be classified as fairly good and prosperous since the index is more than 3. As indicated in Table 14, there were variations on the indices obtained from the physical and social characteristics indices in the study areas. These accounted for the variation in Neighbourhood Quality Indices (NCI) in the study area. The variation could also be attributed to the socio-economic differences and years of establishment of each area and other neighbourhood quality determinants.

The inference of this is that architects and other building professional engaged in the implementation, redevelopment, restructuring and upgrading of existing residential estates, should involve suitable design principles in conceiving neighbourhood that meets users need and level of neighbourhood quality, which is in agreement with study by Babalola et al. (2019) and Makinde (2020) [37, 40]. This suggested that more consideration should be given to the aspects that include: physical, design and social characteristics of the neighbourhood in the study area.

Table 14. Summary of the Neighbourhood Quality Indices (NCI) in the Study Areas

Indicator	Neighbourhood Quality Indices (NCI)					Average
	Old Bodija Scheme	Agodi GRA	New Bodija Scheme	Kolapo Ishola Scheme	Alalubosa GRA	
Physical Characteristics Indices (PCI)	4.12	3.42	3.64	4.21	4.23	3.92
Social Characteristics Indices (SCI)	4.09	3.66	3.53	3.55	3.79	3.72
Total	8.21	7.08	7.17	7.76	8.02	
Average	**4.11**	**3.54**	**3.59**	**3.88**	**4.01**	

3.5. The Relationship between Variables of NPCs and Neighbourhood Quality in all the Study Areas

To determine the relationship between NPCs and neighbourhood quality in the study areas, Multiple Regression Analysis was used. Nineteen variables were identified and used as independent variables. They are building types, buildings ages, buildings orientation, building forms, wall colour, window protection, foundation materials, and wall materials, roofing materials, flooring materials and ceiling materials. Others included: window materials, entrance door materials, special design features, safety features, waste storage, wastes disposal methods, method of evacuating waste, and time interval in disposing of waste. It should be noted that neighbourhood quality was identified as the

dependent variable. It was regressed (Multiple Regression) on nineteen identified NPCs. It should be noted that the variables used for this analysis were obtained mostly as either nominal or ranking data (scale of measurement). Percentages and means were thereafter computed to obtain tertiary data (as ratio scale) to make them amenable to parametric tests (Multiple Regression). This was made possible through the computation of means of variables concerned with the spatial units (streets/neighbourhood). The results of multiple regression analysis are shown in Table 15.

The Multiple Regression Analysis results of the relationship between physical characteristics and neighbourhood quality show an F value of 703.005 and P-value of 0.000. Therefore, the relationship between physical characteristics and neighbourhood quality is significant. Moreover, with correlation coefficient R of 0.813and coefficient of Multiple Determination (R^2) of 0.789; this indicates that there is a strong relationship between the dependent and the independents' variables. It was observed that about 78.9% of the variation in neighbourhood quality may be attributed to a magnitude change in residential physical characteristics. In other words, 78.9% of the variability in observed residential physical characteristics is explained by neighbourhood quality in the study area. The residential physical characteristics observed is a major factor influencing neighbourhood quality. Apart from this, other factors that affect neighbourhood quality included; climatic factors, residents' socio-economic characteristics among others. To determine the weight of each of the components/factors of a physical characteristic, reference is made to their regression coefficients as shown in Table 15.

The results of regression coefficients factors 1 – 19 are; -1.646, -1.160, 1.178, -0.530, 0.196, 1.731, 0.072, 1.243, 0.224, 0.262, 0.164, -0.402, -0.446, 0.494, -0.333, -0.013, -0.230, -0.016 and -0.013 respectively. Those with P-values that were less than 0.05 comprised: building types (Beta = 1.646), buildings ages (Beta = -1.160), buildings orientation (Beta = 1.178), building forms (Beta = -0.530), wall colour (Beta = 0.196), window protection (Beta = 1.731), wall materials (Beta = 1.243), roofing materials (Beta = 0.224) and flooring materials (Beta = 0.262). Others included: ceiling materials (Beta = 0.164), window materials (Beta = -0.402), entrance door materials (Beta = –0.446), special design features (Beta = 0.494) and safety features (Beta = -0.333) with P-values of 0.000, 0.000, 0.000, 0.000, 0.005, 0.001, 0.000, 0.003, 0.003, 0.028, 0.013, 0.015, 0.000 and 0.29 respectively; indicating that there were statistically significant relationship between neighbourhood quality (dependent variables) and these fourteen variables (independents) in the study areas. These were the strong and significant predictors of neighbourhood quality in the study areas.

Furthermore, the result of regression coefficient also implies that for a one-unit change neighbourhood building types, neighbourhood quality will change with a unit of 1.646, then concerning a one-unit change in buildings ages, buildings orientation, building forms, wall colour, window protection, foundation materials, wall materials, roofing materials, flooring materials and ceiling materials. Others comprising; window materials, entrance door materials, special design features, safety features, waste storage, wastes disposal methods, method of evacuating waste, and time interval in disposing waste neighbourhood quality will change with a unit of -1.160, 1.178, -0.530, 0.196, 1.731, 0.072, 1.243, 0.224, 0.262, 0.164, -0.402, -0.446, 0.494, -0.333, -0.013, -0.230, -0.016 and -0.013 respectively.

Table 15. Aggregate of Regression Analysis Showing Relationship between variables of NPCs and Neighbourhood Quality

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.813[a]	0.789	0.768	0.00102

ANOVA [b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.745	19	0.087	703.005	0.000[a]
	Residual	0.001	10	0.000		
	Total	1.747	29			

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.737	0.196		-3.762	.004
	building types	1.077	0.189	1.646	5.702	.000
	buildings ages	-0.467	0.058	-1.160	-8.003	.000
	buildings orientation	0.750	0.095	1.178	7.912	.000

building forms	-0.255	0.050	-0.530	-5.099	0.000
Wall Colour	0.109	0.030	0.196	3.621	0.005
window protection	1.133	0.243	1.731	4.657	0.001
foundation materials	0.027	0.021	0.072	1.293	0.225
wall materials	0.791	0.118	1.243	6.700	0.000
roofing materials	0.157	0.039	0.224	3.990	0.003
flooring materials	0.184	0.047	0.262	3.880	0.003
ceiling materials	0.090	0.035	0.164	2.573	0.028
window materials	-.168	0.056	-0.402	-2.998	0.013
entrance door materials	-0.248	0.085	-0.446	-2.939	0.015
special design features	0.281	0.048	0.494	5.805	0.000
safety features	-0.185	0.073	-0.333	-2.545	0.029
waste storage	-0.009	0.032	-0.013	-0.292	0.776
wastes disposal methods	-0.152	0.173	-0.230	-0.877	0.401
method of evacuating waste	-0.006	0.021	-0.016	-0.300	0.771
the time interval in disposing of waste	-0.005	0.013	-0.013	-0.419	0.684

a. Dependent Variable: Neighbourhood Quality

3.6. Relationship between Physical Characteristics and Neighbourhood Quality Using Pearson's Correlation Co-efficient (r) in all the Study Area

Table 16 (iii) shows that the computed Pearson's correlation (r) among pairs of the twenty (20) identified relevant neighbourhood variables in the study area. The result of finding in column (A) reveals that variable neighbourhood quality with correlation coefficient of 0.809 has a positive and significant correlations with variables that comprised: buildings ages (PCC = 0.744), building forms (PCC = 0.684), foundation materials (PCC = 0.808), wall materials (PCC = 0.931), roofing materials (PCC = 0.423) and ceiling materials (PCC = 0.446). Others include: special design features (PCC = 0.999), safety features (PCC = 0.419), waste storage (PCC = 0.656), wastes disposal methods (PCC = 0.470), method of evacuating waste (PCC = 0.632) and time interval in disposing waste (PCC = 0.747) that are significant at either 0.05 or 0.01 levels.

Column (B) shows that neighbourhood quality with correlation coefficient of 0.871 which has positive and significant correlations with variables that comprised: buildings orientation (PCC = 0.641), building form (PCC = 0.566), window protection (PCC = 0.612) foundation materials (PCC = 0.586), wall materials (PCC = 0.799) and roofing materials (PCC = 0.618). Others included: flooring materials (PCC = 0.375), special design features (PCC = 0.741), waste storage (PCC = 0.587), wastes disposal methods (PCC = 0.592), method of evacuating waste (PCC = 0.681) and time interval in disposing waste (PCC = 0.744) that are significant at either 0.05 or 0.01 levels. Additionally, column (D) shows that neighbourhood quality with correlation coefficient of 0.793 has positive and significant correlations with variables that comprised: window protection (PCC = 0.585), wall materials (PCC = 0.727), roofing materials (PCC = 0.675), flooring materials (PCC = 0.448) and window materials (PCC = 0.553). Others included: entrance door materials (PCC = 0.381), special design features (PCC = 0.689), wastes disposal methods (PCC = 0.834), method of evacuating waste (PCC = 0.667), time interval in disposing waste (PCC = 0.523) that are significant at either 0.05 or 0.01 levels.

In addition, column (I) shows that neighbourhood quality with correlation coefficient of 0.792 has a positive and significant correlations with variables that comprised: flooring materials (PCC = 0.653), window materials (PCC = 0.786) and entrance door materials (PCC = 0.605). Others included: special design features (PCC = 0.420), wastes disposal methods (PCC = 0.812), method of evacuating waste (PCC = 0.630) and time interval in disposing (PCC = 0.571) that are significant at either 0.05 or 0.01 levels.

Furthermore, Column (M) shows that neighbourhood quality with a correlation coefficient of 0.169 that is not significant but has significant correlations with variables that comprised: wastes disposal methods (PCC = 0.451) and method of evacuating waste (PCC = 0.418). It has a negative but significant correlation (r) with variable waste storage (PCC = -0.549) that are significant at either 0.05 or 0.01 levels. Column (O) shows that neighbourhood quality with a correlation coefficient of 0.526 that has a positive and significant correlation with variable waste storage (PCC = 0.490) that is significant at 0.01 levels. Column (P) shows that neighbourhood quality with a correlation coefficient of 0.416 that has positive and significant correlations with variables that included: method of evacuating waste (PCC = 0.430) and time interval in disposing of waste (PCC = 0.465) are significant at either 0.05 or 0.01 levels.

Column (Q) shows that neighbourhood quality with a correlation coefficient of 0.802 that has positive and significant correlations with variables such as the method of evacuating waste (PCC = 0.535) and time interval in disposing of waste (PCC = 0. 481) those were significant at 0.01 levels. Column (R) shows that neighbourhood quality with a correlation coefficient of 0.703 that has positive and significant correlations with variable: time interval in

disposing of waste (PCC = 0. 655) that is significant at 0.01 levels. The study revealed a strong and significant correlation between neighbourhood quality and physical characteristics that comprised: building types, buildings ages, buildings orientation, building forms, wall colour, window protection, foundation materials, and wall materials among others features. This is in line and tandem with findings by Olotuah, (2016); Olotuah, (2019) and Babalola et al. (2019) [36, 37].

Table 16. Aggregate of Pearson's Correlation Coefficient (r) for Physical characteristics and Neighbourhood Quality Variables

S/No	Variables	A (i)	B (ii)	C (iii)	D iv)	E (v)	F (vi)	G (vii)	H (vii)	I (ix)	J (x)	K (xi)	L (xii)	M (xiii)	N (xiv)	O (xv)	P (xvi)	Q (xvii)	R (xviii)	S (xix)	T (xx)
i	Building Types (A)	1																			
ii	Buildings Ages (B)	.744**	1																		
iii	Buildings Orientation (C)	.244	.641**	1																	
iv	Building Forms (D)	.684**	.566**	.255	1																
v	Wall Colour (E)	.069	.108	.267	-.086	1															
vi	Window Protection (F)	.319	.612**	.750**	.585**	-.173	1														
vii	Foundation Materials (G)	.808**	.586**	.280	.257	.323	-.005	1													
viii	Wall materials (H)	.931**	.799**	.361	.727**	-.018	.448*	.717**	1												
ix	Roofing Materials (I)	.423*	.618**	.399*	.675**	-.480**	.809**	.020	.597**	1											
x	Flooring Materials (J)	-.050	.375*	.642**	.448*	-.139	.708**	-.254	.204	.653**	1										
xi	Ceiling Materials (K)	.446*	.301	.141	.128	.537**	-.056	.675**	.357	-.112	-.333	1									
xii	Window Materials (L)	.012	.198	.245	.553**	-.425*	.725**	-.463*	.193	.786**	.733**	-.493**	1								
xiii	Entrance Door Materials (M)	-.240	.023	.293	.381*	-.351	.696**	-.653**	-.069	.605**	.721**	-.558**	.906**	1							
xiv	Special Design Features (N)	.999**	.741**	.248	.689**	.075	.320	.804**	.932**	.420*	-.041	.432*	.019	-.231	1						
xv	Safety Features (O)	.419*	.647**	.742**	.183	.363*	.319	.537**	.516**	.157	.439*	.068	-.026	-.116	.431*	1					
xvi	Waste Storage (P)	.656**	.587**	.481**	.137	.538**	.152	.869**	.526**	-.058	-.252	.772**	-.474**	-.549**	.649**	.490**	1				
xvii	Wastes Disposal Methods (Q)	.470**	.592**	.362*	.834**	-.344	.708**	.103	.569**	.812**	.623**	.017	.634**	.451*	.468**	.159	.026	1			
Xviii	Method of Evacuating Waste (R)	.632**	.681**	.631**	.667**	.017	.814**	.313	.652**	.630**	.370*	.131	.465**	.418*	.631**	.357	.430*	.535**	1		
xix	Time Interval in Disposing Waste (S)	.747**	.744**	.248	.523**	-.097	.418*	.526**	.754**	.571**	.068	.338	.193	-.056	.734**	.265	.465**	.481**	.655**	1	
xx	Neighbourhood Quality (T)	.809**	.871**	.545**	.793**	-.134	.681**	.549**	.904**	.792**	.491**	.248	.398*	.169	.808**	.526**	.416*	.802**	.703**	.715**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

3.7. Relationship between Social Characteristics, Physical Characteristics and Neighbourhood Quality in the Study Area

Table 17 shows the Multiple Regression Analysis results of the relationship between social characteristics, physical characteristics and neighbourhood quality in the Study Area. According to Table 17, with F–value of 1.203E8 and P–value of 0.000, it was observed that the relationship between residents' socio-economic characteristics, social and physical characteristics and neighbourhood quality is significant. Moreover, the results showed a correlation coefficient (R) of 0.931 and coefficient of multiple determinations (R^2) of 0.876. It can be observed that about 87.6% of variation in residents' socio-economic characteristics, social and physical characteristics may be attributed to a magnitude change in neighbourhood quality. In order words, 87.6% of the variability in observed neighbourhood quality was explained by residents' socio-economic characteristics social and physical characteristics in the study area. This suggests that the regression model used describes (0.876×100) 87.6% of the variance in neighbourhood quality. The implication of this is that these three factors that comprised the residents' socio-economic characteristics, social and physical characteristics are the major factors influencing neighbourhood quality in the study area.

To determine the weight of each of the components/factors of neighbourhood quality, reference was made to their regression coefficients. Using the standard Beta coefficients, the constant "a" would disappear. That is, the regression coefficients for factors 1-3, as obtained from Table 17, are 0.538, 0.449, and 0.282, respectively, which shows that factor 1 (residents' socio-economic characteristics) is of greater effect, closely followed by factor 2 (physical characteristics) and factor 3 (social characteristics) than other factors. Furthermore, the result of the regression

coefficient also implies that for a one-unit change in residents' socio-economic characteristics, neighbourhood quality will change with a unit of 0.538, and then, concerning a one-unit change in physical characteristics and social characteristics, neighbourhood quality will change with a unit of 0.449 and 0.282, respectively, in the study area. These variables were strong and significant predictors of neighbourhood quality in the study area. This study is valid and the equations would be suitable as a predictive model.

Table 17. Regression analysis showing the relationship between Residents' Socio-economic Characteristics Physical Characteristics, Social Characteristics and Neighbourhood Quality in the Study Area

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.931 [a]	0.876	0.868	0.00003

ANOVA [b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.310	3	0.103	1.203E8	0.000[a]
	Residual	0.000	1	0.000		
	Total	0.310	4			

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.055	0.000		-204.530	.003
	Residents' Socio-economic Characteristics	0.336	0.000	0.538	6.253E3	.000
	Physical Characteristics	0.337	0.000	0.449	4.824E3	.000
	Social Characteristics	0.342	0.000	0.282	4.331E3	.000

a. Dependent Variable: Neighbourhood Quality

P-values significant at 0.05 levels.

4. Conclusion

The role of residents' socio-economic characteristics, social and physical characteristics in the development of the residential area to neighbourhood quality cannot be overemphasized. The design and development of public housing need to be based on the standard design principles and physical characteristics with consideration of neighbourhoods' location and connectivity, and liveability, safety, privacy and facilities among others. The identified highly important and less important factors essential to neighbourhood quality in a positive way will provide useful information for various developers and policymakers in their decision-making. In general, these factors can be categorized into social interaction, economic facilities, physical facilities, safety, privacy, and design quality. Others were personal, recreational, and environmental quality, among others. These were the groups of determinants influencing neighbourhood quality in the study areas as established in this study.

It can be noted that colour schemes, the building's orientation, building form, wall materials, window materials, and safety features, among others, are the largest factors shaping neighbourhood space. These physical characteristics for individual residents and neighbourhood should be a major consideration in design approval in the study area. There is a need to have all these factors considered and submitted to the development officer for approval. These shall include samples of all colour schemes, finishes and consideration of colour(s) quality to be compatible with the quality, style, materials and colours of the whole neighbourhoods.

The study recommended that considerable improvement is required in the areas of the water system, the general state of secondary schools, the general state of primary schools, and the general state of recreational facilities. These facilities had PCI values that were far below the average. These may have far-reaching effects on the quality of the neighborhood. In providing social infrastructure and basic amenities in the future housing programme, urgent attention is required. This finding shows that many of the respondents want improvements in these areas, some of which were not originally provided. Nevertheless, it may also be that some of these physical features were provided, but due to the rising change in status of residents and family needs, the amenities are not adequate. This might have negative and far-reaching implications on neighbourhood quality in the study area.

The architectural design and management of the neighbourhood in the study area need to take into consideration some basic design principles and the requirements of the physical and social characteristics such as quality of focal

point and recreation facilities; heritage and cultural features; the strength of social control forces; community activities; the level of social-interactive and neighbourhood associations, among others. Besides, the delivery of support amenities and facilities ought to be given adequate attention in the study area. This has implications and is important in determining the quality of the neighborhood and the well-being of the residents in the study area. The study showed that different factors determine neighbourhood quality and these affect residents' assessment of their neighbourhoods. Rather than making a comprehensive generalization in housing provision, the neighbourhood quality of public housing development could be measured and improved upon using appropriate indices based on residents' ratings of their neighbourhoods. Neighbourhood quality in all the five study areas was adequate and this was attributed to socio-economic characteristics of the residents and physical and social attributes of the neighbourhood.

5. Declarations

5.1. Data Availability Statement

The data presented in this study are available in article.

5.2. Funding

The author received no financial support for the research, authorship, and/or publication of this article.

5.3. Institutional Review Board Statement

Not applicable.

5.4. Informed Consent Statement

Not applicable.

5.5. Declaration of Competing Interest

The author declares that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the author.

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