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# Use of Neighborhoods' quality evaluation to determine the performance of Residential development in Southwestern Nigeria.

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### ABSTRACT

There has been an increasing concern in many parts of the world, particularly in developing nations on the poor living conditions and deteriorating state of most urban residential neighbourhoods. The failure of many public and private housing projects has been attributed to the lack of consideration for adequate housing, as relevant parameters and indicators required for determining the quality and performance of residential neighbourhoods were ignored. Access to adequate housing has therefore remained one of the greatest challenges to human and sustainable urban development. Through a survey of two medium-sized private and public residential developments:- Bodija and Moremi, this study evaluates and compares neighbourhoods' quality in order to determine the performance of housing development in Southwestern Nigeria. Using Analysis of Variance test; eighteen variables consisting of the dwelling, environmental and neighbourhood features were identified as significant determinants of residential quality in the study areas. These variables were rated and their total weight values obtained. Residential quality index (RQI) was calculated for each of the variables and different indices - 4.12 and 3.24 were obtained for Bodija and Moremi Estates respectively. These values indicate existing variation in the quality of the two neighbourhoods; with Bodija- a private residential estate having a higher quality rating than Moremi estate. The study showed that different factors determine neighbourhood quality and these affect users' view on the performance of their dwellings. Rather than making a broad generalization in housing provision, the performance and quality of residential development could be measured and improved upon using appropriate indices based on users' ratings of their dwellings.

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### Introduction

Housing is a basic necessity of life, ranked next to food in order of importance for the survival of man. It is defined as "the process of providing a large number of residential buildings on a permanent basis with adequate physical infrastructure and social amenities, (services) in planned, decent, safe, and sanitary neighbourhoods to meet the basic and special needs of the population". Adequate housing should provide protection from the elements, and contribute to the physical, mental and social wellbeing of the occupants (Kuroshi and Bala, 2005; Mallo, and Anigbogu, 2009). However, studies have shown that inequalities exist in the provision of basic facilities across residential neighborhoods and many residents of urban areas in developing countries live in inadequate housing and in neighbourhoods that lack the basic requirements of livable environments (Dung-Gwom, 2007; 2008) Studies by Ebong (1983) and So and Long (2004) have nonetheless established a strong correlation between adequate housing and the quality of life, human comfort and convenience. Therefore, the quality of life of a man in a housing environment is both affected by the quality of the dwelling place and that of the immediate environment which is the entire residential neighbourhood (Bogdanović and Mitković, 2005). The need for adequate housing in an appropriate neighbourhood environment is thus central to the improvement of quality of human life and the overall sustainability of the living environment.

In recent times, there has been an increasing concern in many parts of the world, particularly in developing nations on the poor living conditions and deteriorating state of most urban residential neighbourhoods. Access to adequate housing has therefore remained one of the greatest challenges facing development. The situation in Nigeria is no doubt similar to that of other developing nations, as the housing situation is characterized by some inadequacies, which are qualitative and quantitative in nature. The qualitative inadequacy being so enormous and complex constitutes a major challenge of urban housing (NHP, 1991; Ozdemir, 2002; Oladapo, 2006; Akeju, 2007). Attempts by stakeholders, including both the private and public housing agencies to provide adequate housing and improve the quality of existing residential neighbourhoods have been short-lived, yielding no significant result. This situation is becoming more pathetic by the day considering the high rate of poverty and urban growth in Nigeria.

Past researches have however indicated that the failure of many public and private housing projects was due to the lack of consideration for adequate housing, as relevant parameters and indicators required to determine the quality and performance of residential neighbourhoods were ignored (Onibokun, 1973; Ebong, 1983). Most of the past neighbourhoods improvement and slums eradication programs undertaken by governments in many countries -particularly in Nigeria, were not executed based

on their overall perspective on performance, even though this should form an integral part of any planning process. In such instances, development criteria were mostly based on developers' standard rather than users' preferences and needs (Anantharajan, 1983; Jiboye and Ogunshakin, 1997). Post-construction evaluation studies involving the users in particular, would be of great use to decision makers if the results of such studies are analyzed by relating it to the existing standard peculiar to the area being investigated. Therefore, the task confronting all those concerned with providing adequate housing is to identify the criteria for determining the performance and quality of residential neighbourhood, and use them as inputs for housing improvement and development. This concern forms the basis for this study.

Through a survey of two residential neighbourhoods in Southwest Nigeria, the study attempts to explore ways of providing useful qualitative criteria and indices for evaluating residential development. The study also seeks to identify variables or factors which could enhance the living conditions as well as influence the quality of residential development in Nigeria.

#### **Empirical issues on neighbourhood quality evaluation.**

Residential Neighbourhood, according to Hur & Morrow - Jones (2008) is the most basic environmental unit in which man's social life occurs, and it necessarily affects the quality of life of residents. However, issues on residential neighbourhoods have generated a lot of researches in the past. Investigations have been carried out on their structure, form and composition. Various types of residential areas have been identified and efforts made to explain the adequacy and quality of social facilities and amenities in these areas. Previous works have also used the living condition of residents to predict the quality of residential areas in many cities.

Empirical studies however indicate that diverse reasons determine residents' preference for some residential districts over the others. Citing Galster, Amole and Mills-Tetty (1998) observe that "people perceive salient attributes of their physical environment and evaluate them based on certain standards of comparison; especially the standard defined by what people may reasonably aspire to. The extent to which there is little gap between perceived actual environment and the aspired - to-environment". For an individual seeking residential allocation, Sanni and Akinyemi (2009) believe that his residential area evaluation starts with cognition when people identify the salient features of residential areas. This is followed by preference formation when the perceived level of salient characteristics are weighed and combined into preference rating that describes the overall desirability of each location. Though preference ratings guide residential choice, personal and financial considerations often preclude selection of the preferred location. However, in a study on residential quality in Nigeria, Olayiwola et al. (2006) identified some socio-economic and cultural factors of residents as well as the physical characteristics of dwellings as determinants of housing preferences and neighbourhood quality. In like manner, Ogunjumo and Olatubara (cited in Sanni and Akinyemi, 2009) observe that a household's decision to choose a particular residential district could be influenced by socio-economic, cultural, administrative or purely psychological factors. However, other related studies considered physical characteristics, compared to social and economic characteristics, a strong determinant of residents' satisfaction and quality of life

within neighbourhoods. While the one set of studies identifies the physical appearance as the most important factor for improving neighbourhood quality, others consider social factors more important in judging a neighbourhood (Hur & Morrow - Jones, 2008).

Some correlates of neighbourhood quality have been identified and consistently supported by research. These have been considered in neighbourhood evaluation programs for different communities. For instance, in Madras, a group of scholars in housing has suggested that residential development could be evaluated using three major attributes namely; dwelling features, convenience for living, and physical environment. Also, a survey carried out in Washington had identified certain variables classified as need indicators and potential indicators for evaluating the quality of residential neighbourhoods. Similarly, a survey in Melbourne had evaluated residential development using a number of related features grouped under dwelling, convenience, physical and social environment. In Singapore, public housing programs were evaluated on the basis of residents' satisfaction levels with the quality of various public services available within their neighbourhoods (Anantharajan, 1983). Furthermore, the study of Scottish housing condition survey identified five basic criteria for determining housing quality standard. The study recommends that every housing development must be compliant with tolerable standard; free from serious disrepair; energy efficient; provided with modern facilities and services; and must be healthy, safe and secure (Neilson, 2004).

The outcome of these various studies nonetheless indicates that neighbourhood quality in any residential development could be evaluated using varied criteria comprising of both the dwellings and environmental features among several others. Through these studies, selected attributes have been analyzed independently to obtain the indices of quality for the particular residential development. The data obtained thereby could allow for comparison among similar areas in terms of quality of development.

By considering some of the criteria identified above, this present study intends to evaluate the performance and quality of housing in two selected neighbourhoods in Nigeria. The approach adopted is to determine and compare residential quality indices (RQI) through residents' housing preference ratings in two types of neighbourhoods - one, government-built estate, and the other, privately-developed, owner-occupier estate. A study hypothesis was formulated which states that "different residential neighbourhoods have distinct set of quality determinants and indices peculiar to them". Essentially, qualitative criteria in evaluation, even though basically subjective in nature, would prove useful to decision makers when such is used within a particular cultural environment and within a specific period of time.

#### **Methodology of study**

In carrying out this study, two residential estates, one belonging to public and the other, private housing were selected from Southwest, Nigeria. Consequently, Bodija private estate was selected from Ibadan, while Moremi public estate was selected from Ile-Ife. Available data indicate that Bodija estate has 350 residential units, while Moremi has 313 units. Thirty percent (30%) sample of housing units was randomly selected in each area of study. This comprises of 105 and 90 units in the private and public estates respectively. One household was

sampled per building. The research instrument is a questionnaire containing a data matrix of 30x105 and 30x90 questions for Bodija, and Moremi Estates, respectively. This is designed to elicit relevant information on respondents' household demographic characteristics and neighbourhood quality attributes identified through literature and categorized as neighbourhood or environmental amenities, building elements, design, and facilities within dwellings (See, Appendix A and B).

On a five-point Likert scale, respondents were asked to indicate their opinion and ratings of 18 residential quality attributes ranging from very adequate or very good, rated as 5, to very inadequate or very poor, rated as 1 (See Anantharajan, 1983; Potter and Cantarero, 2006; Jiboye 2009a). Through this process, the responses from each of the attributes rated were calculated to obtain the weight values. Consequently, the values obtained were used to evaluate the residential quality index for the selected estates' neighbourhoods. The data obtained were analyzed with the SPSS software using frequency distribution and Analysis of Variance test (ANOVA) to identify significant determinants of residential quality and to validate the test of hypothesis.

#### **Approach to data analysis and evaluation of residential quality index (rqj).**

The total weight values (TWV) and the mean values (X) for each variable or factor were obtained and used to evaluate the housing quality index (RQI) in the study area. The level of quality being tested was determined by adopting the mid-point value of the index, which is three (3) – the acceptable mean of the equation which is considered as “the average or fair” (Coakes and Steed 2001, cited in Oladapo 2006 and Jiboye, 2009a). This implies that any result significantly different from this mean value is assumed to be either positive or negative (Pulling and Haidar 2003, also cited in Oladapo 2006 and Jiboye, 2009a).

Using the formula:

(1)

$TWV = \sum (n \times w)$ , where: “TWV” is the total weight values of rated variables indicating the summation of the product of number of responses and the weights for the ratings of the variables.

“n” is number of respondents; and “w” is the weight assigned to the variables.

Therefore, the mean value “X” is calculated as  $TWV/n$   
Also using the formula:  
(2)

$R.Q.I. = \sum X / (N)$ , where RQI is the Residential Quality Index, “ $\sum X$ ” is the total sum of mean values of the rated variables, and “N” is number of variables rated.

Citing from Table 1 for illustration, the total weight value (TWV) of 336 is obtained for adequate water supply in Bodija Estate. This is calculated as;

$$TWV = (22 \times 5) + (39 \times 4) + (20 \times 3) + (5 \times 2) + (0 \times 1) = 110 + 156 + 60 + 10 + 0 = 336.$$

The mean value (X) is thus calculated as  $336/86 = 3.91$ , while the index (RQI) is obtained by dividing the sum of all the mean obtained from the equation with the number of variables (N) for the sample.

This process is used to determine the values for all the variables. Also, to test the study hypothesis as well as confirm the effects and level of association of selected variables on neighbourhood quality, a multi-variate test using Wilks' Lambda

was carried out. Of the 105 and 90 questionnaires distributed in Bodija and Moremi Estates, only 87 and 68 were returned in each of the Estates, respectively. These represent response rates of 82.86% and 75.6% for the samples. The results and findings are discussed below.

#### **Results and discussion**

Appendix A, illustrates respondents' and households' demographic data for the study. A brief examination of the result in the two neighbourhoods reveals the following: Bodija estate has 56.3% male respondents and 43.7% female respondents; while Moremi estate has 61.8% male respondents and 38.2% female respondents. The modal age range of between 21 to above 51 years old (94.2%), recorded in Bodija estate indicates that the estate comprises of the young, middle-aged and older people who are mostly heads of households. Whereas, in Moremi estate, the young and middle-aged people of age range between 21 to 40 years old (70.6%), constitute most household heads. Of these proportions, 65.1% and 76.5% are married in Bodija and Moremi estates, respectively. With regards to respondents occupation in Bodija estate, the majority (59.8%) are self employed, while in Moremi – government built estate, most of the respondents (53%) are in the civil service employment. It is apparent from the survey that the level of education of respondents in the study area is quite high, as 75% and 82.4% of them in Bodija and Moremi had tertiary education. Also apparent is the relatively high income level of the respondents, considering the minimum wage of less than \$100 (<#10,000) payable monthly to the lowest cadre of civil servants in Nigeria, almost 60% of those in Bodija estate earn above \$1000 (>#150,000) monthly; and 52.9% of those in Moremi estate earn between \$300 (#50,000) and \$1000 (#150,000) monthly. Perhaps, the high level of education and income of respondents in the study areas could significantly influence their neighbourhood preference rating and aid in their assessment of residential quality.

Information on housing and households' history reveals that 70.7% of the dwellings in Bodija estate were built more than 41 years ago, while all the government built housing in Moremi estate dated back to between 21 to 30 years ago. Also, more than 64% of households in Bodija estate had lived for more than 15 years in their neighbourhood, while less than 50% of those in Moremi estate had lived for more than 15 years in their neighbourhood. With regards to the size of households, although quite a few (16.7%) of the households in Bodija estate have more than six persons in a family unit – a situation typical of the Yoruba extended family structure in Nigeria (Jiboye, 2004; 2009b). However, a significant proportion of households in both Bodija (67.8%) and Moremi (82.3%) estates have moderate sizes of households between 3 to 6 persons.

From the analysis above, there is indication that some of the households' features and demographic variables could actually influence respondents' preference and assessment of neighbourhood quality. In verifying this assumption, a test to determine and compare the level of significance of households' demographic features on neighbourhood quality in the two estates was carried out using Analysis of Variance test. The result in Table 1 for Bodija estate shows that with the exception of respondents' marital status - having no existing association (F-value is nil), all other variables in the sample tested highly significant ( $p < 0.05$ , i.e. 5% probability level). Also, the result for Moremi estate shows that with the exception of “marital

status” and “age of building”, having no existing association ( $F$  - value is nil), all other variables sampled are highly significant. In substantiating previous studies by Jiboye (2004 and 2009b), Olayiwola et al. (2006) and that of Sanni and Akinyemi (2009), this finding thus validates earlier assumption that some households’ and respondents’ demographic features could actually influence respondents’ preference and assessment of neighbourhood quality. Therefore, in supporting the views by Anantharajan (1983) and several others, the use of inputs arising from human values in residential evaluation is very significant in judging the performance of any housing development.

#### **Identifying the determinants of residential quality**

To identify relevant dwellings and neighbourhood factors which significantly determine residential quality in the study areas, Twenty-four qualitative variables identified from relevant literature were subjected to Analysis of Variance test. Eighteen of these variables were identified as relevant qualitative determinants. The result in Table 2 shows that for both estates - Bodija and Moremi, all the variables identified for the sample have significant effect on neighbourhood quality ( $p < 0.05$ , i.e. 5% probability level). These variables are therefore identified as possible determinants of neighbourhood quality in the study areas.

Specifically, the main deduction from the above findings is that the quality of residential neighbourhoods of Bodija and Moremi estates is determined and affected by factors which deal mainly with the quality of environment, dwelling and those that are demographic in nature. Among factors that deal with the quality of environment are adequacy of basic infrastructural facilities such as good roads, adequate water supply, efficient electricity, clean drainages and prompt and safe disposal of garbages. Factors that deal with the quality of dwelling include satisfaction with building design and adequacy of storage spaces and room sizes, privacy level, adequate security, ventilation, lighting condition and suitability of dwelling components such as roof, wall, floor, window and others that make a dwelling conducive for living. Factors that are demographic in nature which also play significant role in influencing users’ ratings of their neighbourhood are; respondents’ age, sex, income, and occupation, level of education, age of building, length of stay within neighbourhood and size of households among several others. The relevance of these factors as determinants of housing quality also substantiates previous studies by Anantharajan (1983), Olayiwola et al. (2006) and that of Sanni and Akinyemi (2009).

#### **Evaluating residential quality index (rqi) and neighborhood quality**

Appendix B. contains the data on users’ ratings of neighbourhood quality in Bodija and Moremi estates. The values obtained provided the basis for evaluating and comparing the quality indices between the two neighbourhoods. By applying the approach for evaluating quality index (RQI) discussed in 2.1 above, the result of the 18 quality attributes rated and presented in Table 3 reveals different values (indices) for neighbourhood quality in Bodija and Moremi estates. Consequently for Bodija estate, the calculated residential quality index is 4.12, while for Moremi estate, the index is 3.24. These values indicate that neighbourhood quality of Bodija estate is higher than that of Moremi estate. By explaining these further in relation to the mid-point value of the level of quality being tested or the acceptable mean of three (3), which indicates “the average or

fair” (See, Coakes and Steed 2001, cited in Oladapo 2006; Jiboye, 2009a), neighbourhood quality in Bodija is considered as “good or above average” while that of Moremi estate is “fair or just average”. The deduction from this finding is that the quality of government provided estates is lower than that of private developed ones in Southwest Nigeria.

In justifying the findings of this study and also validate the study hypothesis, a validity test using the Wilks' Lambda Multivariate Tests was carried out. The result is presented in Table 4. Given the  $F$  - values of 33.892 and 84.271 and degree of freedom (df) values of 66.000 and 22.000 for both Bodija and Moremi estates, respectively, the test yielded  $P$  - values of 0.000 in each case, which is statically significant at 0.05 level. This result thus validates the study hypothesis that “different residential neighbourhoods have distinct set of quality determinants and indices peculiar to them”.

#### **Implications of findings for residential development in Nigeria.**

The implications of the findings of this study are of significance to housing policy and residential development in Nigeria. As earlier pointed out, one significant feature regarding the outcome of this study among several others, nonetheless; is that neighbourhood quality in any residential development could be evaluated using varied criteria. Through this process, selected attributes could be analyzed independently to obtain the indices of quality for the particular residential development. Also, the understanding of various factors that could possibly affect residential quality or influence households in their choice of neighborhoods is of immense value to both neighbourhood improvement and housing development.

By considering the outcome of this study which essentially provides relevant qualitative data and indices, it is possible to judge the performance of any residential development at any given time and location. It is equally possible to assess and determine likely differences in the quality and performance of either private or government housing programs if the index of such is computed and compared with other related housing schemes. For instance, one finding that is of significance to this study is that neighbourhood quality of the government-built residential estate is lower than that of the private-developed residential estate. This finding thus confirms the poor performance in terms of existing deplorable conditions and deteriorating state of most public housing developments as well as other urban residential neighbourhoods in Nigeria. The need thus arises for government to pay more attention towards ensuring adequate and qualitative housing for the people. Housing improvement is therefore required in the provision of basic infrastructural facilities, while housing policies and programs should focus more on achieving relevant qualitative ideals and standard rather than on mere propaganda. The outcome of such interventions and efforts towards ensuring adequate housing would be beneficial to the people and society at large.

#### **Conclusions**

This study reports the results of a survey carried out in two residential neighbourhoods – Bodija – a private estate, and Moremi – a government built estate, in Southwestern part of Nigeria. The aim of the study was to assess the performance and quality of residential neighbourhoods in Nigeria. Through the residents’ housing preference ratings of their neighbourhoods, residential quality indices (RQI) were determined and compared

among the two different estates. The study reveals that Bodija and Moremi estates have different qualitative indices, with that of Bodija indicating “good quality or above average” and higher than that of Moremi estate – indicating “fair or just average”. The study also reveals that some factors which deal mainly with the quality of environment, dwelling and demographic attributes of households are significant determinants of neighbourhood quality and users’ ratings in the study areas. In specific terms, the study shows that with the exception of marital status for Bodija estate; also, marital status and age of building for Moremi estate; all other factors are primary determinants of neighbourhood quality. These findings thus indicate that different residential neighbourhoods have distinct set of quality determinants and indices which are peculiar to them.

Based on the findings highlighted above, the study points to the fact that obtaining a good knowledge of relevant factors that could possibly affect residential and neighbourhood quality can serve as a useful guide to housing developers and agencies in their decisions on housing and neighbourhood improvement. Therefore, rather than making a broad generalization in housing provision for the people, the performance and quality of residential development could be measured and improved upon using appropriate indices based on users’ ratings of their dwellings. Planners must therefore take cognizance of the diverse views of the people in any attempt to formulate operational housing policies. Otherwise, the tendency would be to impose unacceptable residential standards which may result in proliferating substandard dwellings and dilapidated blocks of residential slums.

The most pertinent challenge of this study therefore seems to hinge on how to create a consensus image of residential quality which maximizes opportunity for community satisfaction in housing. The need thus arises to enlist the participation of both residents and housing professionals in the formulation of residential policies; having the target users as its focus.

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**Table 1: Analysis of Variance (ANOVA) Tests on the effects of Households' Demographic variables on neighbourhood preference ratings.**

Variables (model)  HOUSEHOLD VARIABLES	BODIJA ESTATE					MOREMI ESTATE				
	Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	df	Mean Square	F	Sig.
Sex of respondents	21.402	86	5.623	44.393	.000	15.672	66	3.123	14.925	.000
Age of respondents	141.721	85	52.969	118.902	.000	70.507	66	28.420	42.217	.000
marital status	19.535	85	9.767	0.0	nr	12.179	66	12.179	0.0	nr
occupation	32.012	81	8.541	43.043	.000	30.985	66	20.560	125.214	.000
educational status	17.934	75	3.235	19.042	.000	9.851	66	.815	4.776	.032
average monthly income	149.951	81	59.281	156.938	.000	119.940	66	50.283	45.200	.000
Age of building	137.680	74	33.500	32.177	.000	0.0	66	0.0	0.0	nr
length of stay in neighborhood	152.930	85	61.037	159.221	.000	141.791	66	66.241	55.114	.000
house-hold size	74.988	83	28.235	119.463	.000	26.866	66	13.486	63.513	.000

Source: Computer's Data Output, 2010. All "F" values significant at 0.05 level. "nr" – F value is nil, therefore has no significant relationship.  
Source: Computer's Data Output, 2010. All "F" values significant at 0.05 level.

**Table 2: Analysis of Variance (ANOVA) Tests showing the determinants of neighbourhood quality.**

Variables (model)  QUALITY VARIABLES	BODIJA ESTATE					MOREMI ESTATE				
	Sum of Squares	df	Mean square	F	Sig.	Sum of Squares	df	Mean square	F	Sig.
adequacy of water supply	61.256	85	122.235	106.297	.000	35.164	66	6.108	12.455	.001
availability of electricity supply	4.713	86	0.730	17.379	.000	12.687	66	1.527	7.76	.007
adequacy of garbage collection	70.158	75	26.483	108.371	.000	47.791	66	27.365	84.742	.000
condition of drainage system	63.609	86	25.276	157.727	.000	38.985	66	20.683	71.324	.000
condition of road network	84.069	86	30.620	108.985	.000	24.657	66	10.891	49.638	.000
satisfaction with building design	28.230	86	12.011	233.124	.000	20.418	66	10.070	61.279	.000
adequacy of storage facilities	34.483	86	11.057	72.295	.000	32.478	66	13.944	47.149	.000
adequacy of room size	29.678	86	8.701	57.114	.000	38.985	66	20.683	71.324	.000
access to neighbourhood facilities	73.402	86	26.855	110.835	.000	59.463	66	24.484	46.999	.000
building floor condition	47.333	86	17.660	119.563	.000	16.657	66	4.687	24.060	.000
window condition	37.176	84	12.070	73.067	.000	20.418	66	10.070	61.279	.000
level of privacy in dwellings	37.453	85	11.977	70.860	.000	30.746	66	5.803	13.888	.000
ceiling condition	40.188	84	14.590	105.024	.000	16.657	66	4.687	24.060	.000
walls' condition	33.488	85	10.052	59.837	.000	21.910	66	3.453	10.976	.000
roof's condition	46.920	86	16.373	93.727	.000	29.672	66	8.589	25.075	.000
adequacy of natural ventilation	41.264	86	14.066	86.832	.000	42.687	66	12.183	24.561	.000
adequacy of natural lighting	40.558	85	14.331	96.572	.000	42.687	66	12.183	24.561	.000
level of security within neighbourhood	44.667	83	17.643	147.564	.000	21.672	66	8.466	40.031	.000

**Table 3: Qualitative Indices for rated variables**

S/No.	Quality Indicators	Bodija Estate		Moremi Estate	
		Total Weight Value(TWV)	Mean values (X)=TWV/n	Total Weight Value(TWV)	Mean values (X)=TWV/n
1	adequacy of water supply	336	3.91	252	3.71
2	availability of electricity supply	256	2.94	186	2.74
3	adequacy of garbage collection	237	2.72	232	3.41
4	condition of drainage system	359	4.13	204	3.00
5	condition of road network	339	3.90	172	2.53
6	satisfaction with building design	374	4.30	224	3.29
7	adequacy of storage facility	381	4.37	216	3.18
8	adequacy of room size	389	4.47	204	3.00
9	access to neighbourhood facilities	328	3.77	196	2.88
10	building floor condition	377	4.33	240	3.53
11	window condition	380	4.47	224	3.29
12	level of privacy in dwellings	389	4.52	236	3.47
13	ceiling condition	373	4.39	240	3.53
14	walls' condition	386	4.49	244	3.59
15	roof's condition	383	4.40	228	3.35
16	adequacy of natural ventilation	385	4.43	220	3.24
17	adequacy of natural lighting	378	4.40	220	3.24
18	level of security within neighbourhood	370	4.25	228	3.35
Overall Mean ( $\sum X$ )			74.19		58.33
Neighborhood quality Indices (NQI) = $\sum X/N =$			4.12	$\sum X/N =$	3.24

Source: Computation of Author's Field survey, 2010.

"N" is the total number of variables selected for each neighborhood. "n" is the total number of respondents sampled

**Table 4. Wilks' Lambda's test of hypothesis**

Effect on overall neighborhood quality	Value	F	Hypothesis df	Error df	Sig.
A). Bodija Estate	.001	33.892	66.000	80.000	.000 <sup>a</sup>
B). Moremi Estate	.023	84.271	22.000	44.000	.000 <sup>a</sup>

Source: Computer's Data Output, (a) F values significant at 0.05level.



**Appendix A: Distribution of Respondents and households' demographic data.**

S/No.	Variables	Bodija Estate		Moremi Estate	
		Frequency(n)	Percent	Frequency (n)	Percent
1	sex of respondents				
	male	49	56.3	42	61.8
	female	38	43.7	26	38.2
	Total	87	100.0	68	100.0
2	age of respondents				
	below 20yrs	5	5.8	-	-
	21-30yrs	30	34.9	20	29.4
	31-40yrs	17	19.8	28	41.2
	41-50yrs	14	16.3	8	11.8
	above 51yrs	20	23.3	12	17.6
	Total	86	100.0	68	100.0
3	marital status			16	23.5
	single	30	34.9	52	76.5
	married	56	65.1	68	100.0
	Total	86	100.0		
4	Occupation				
	student	12	14.6	-	-
	self employed	49	59.8	16	23.5
	civil servant	21	25.6	36	53.0
	others	-	-	16	23.5
	Total	82	100.0	68	100.0
5	educational status				
	post primary	5	6.6	-	-
	tertiary	57	75.0	56	82.4
	vocational	14	18.4	12	17.6
	Total	76	100.0	68	100.0
6	average monthly income				
	below 50,000	6	7.3	8	11.8
	50,000-99,000	9	11.0	20	29.4
	100,000-149,000	11	13.4	16	23.5
	150,000-199,000	7	8.5	8	11.8
	above 200,000	49	59.8	16	23.5
	Total	82	100.0	68	100.0
7	age of building				
	below 5yrs	1	1.3	-	-
	5-10yrs	5	6.7	-	-
	11-20yrs	6	8.0	-	-
	21-30yrs	4	5.3	68	100.0
	31-40yrs	6	8.0	-	-
	above 41yrs	53	70.7	-	-
	Total	75	100.0	68	100.0
8	length of stay in neighborhood				
	below 5yrs	11	12.8	10	14.7
	6-10yrs	8	9.3	20	29.4
	10-15yrs	12	14.0	5	7.4
	16-20yrs	30	34.9	15	22.1
	above 20yrs	25	29.1	18	26.5
	Total	86	100.0	68	100.0
9	house-hold size			12	17.6
	1-2	13	15.5	40	58.8
	3-4	29	34.5	16	23.5
	5-6	28	33.3	-	-
	above 6	14	16.7	68	100.0
	Total	84	100.0		

Source; Authors' Field Survey, 2010



**Appendix B: Users' ratings of Neighborhood quality indicators for the selected Estates.**

S/No.	Quality Indicators	Bodija Estate		Moremi Estate	
		Frequency(n)	Percent	Frequency (n)	Percent
1	adequacy of water supply				
	very adequate	22	25.6	4	5.9
	adequate	39	45.3	48	70.6
	fair	20	23.3	8	11.8
	inadequate	5	5.8	8	11.8
	Total	86	100.0	68	100.0
2	availability of electricity supply				
	rarely available	82	94.3	50	73.5
	not available	5	5.7	18	26.5
	Total	87	100.0	68	100.0
3	adequacy of garbage collection				
	very adequate	13	14.9	20	29.4
	adequate	8	9.2	18	26.5
	fair	20	23.0	-	-
	inadequate	34	39.1	30	44.1
	extremely inadequate	12	13.8	-	-
	Total	87	100.0	68	100.0
4	condition of drainage system				
	v. good	34	39.1	-	-
	good	33	37.9	20	29.4
	fairly good	18	20.7	28	41.2
	bad	1	1.1	20	29.4
	v. bad	1	1.1	-	-
	Total	87	100.0	68	100.0
5	condition of road network	25	28.7	-	-
	v. good	37	42.5	4	5.9
	good	20	23.0	28	41.2
	fairly good	1	1.1	36	52.9
	bad	4	4.6	-	-
	v. bad	87	100.0	68	100.0
	Total	87	100.0	68	100.0
6	satisfaction with building design	31	35.6	-	-
	v. satisfactory	51	58.6	24	35.3
	satisfactory	5	5.7	40	58.8
	fair	-	-	4	5.9
	unsatisfactory	-	-	68	100.0
	Total	87	100.0	68	100.0
7	adequacy of storage facilities				
	v. adequate	39	44.8	-	-
	adequate	43	49.4	24	35.3
	fair	4	4.6	32	47.1
	inadequate	1	1.1	12	17.6
	Total	87	100.0	68	100.0
8	adequacy of room size				
	v. adequate	45	51.7	4	5.9
	adequate	38	43.7	8	11.8
	Fairly adequate	4	4.6	40	58.8
	inadequate	-	-	16	23.5
	Total	87	100.0	68	100.0
9	Access to neighbourhood facilities				
	very accessible	20	23.0	4	5.9
	accessible	36	41.4	8	11.8
	fair	22	25.3	40	58.8
	inaccessible	9	10.3	8	11.8
	extremely inaccessible	-	-	8	11.8
	Total	87	100.0	68	100.0
10	building floor condition				
	v. good	42	48.3	-	-
	good	33	37.9	36	52.9
	fair	11	12.6	32	47.1
	bad	1	1.1	-	-
	Total	87	100.0	68	100.0

11	window condition				
	v. good	48	56.5	-	-
	good	29	34.1	24	35.3
	fair	8	9.4	40	58.8
	bad	-	-	4	5.9
	Total	85	100.0	68	100.0
12	level of privacy in dwellings				
	v. good	53	61.6	-	-
	good	25	29.1	40	58.8
	fairly good	8	9.3	20	29.4
	bad	-	-	8	11.8
	Total	86	100.0	68	100.0
13	ceiling's condition				
	v. good	43	50.6	-	-
	good	32	37.6	36	52.9
	fairly good	10	11.8	32	47.1
	Total	85	100.0	68	100.0
14	walls' condition				
	v. good	48	55.8	-	-
	good	32	37.2	44	64.7
	fairly good	6	7.0	20	29.4
	bad	-	-	4	5.9
	Total	86	100.0	68	100.0
15	roof's condition				
	v. good	47	54.0	-	-
	good	29	33.3	32	47.1
	fairly good	10	11.5	28	41.2
	bad	1	1.1	8	11.8
	Total	87	100.0	68	100.0
16	adequacy of natural ventilation				
	v. adequate				
	adequate	47	54.0	-	-
	fair	30	34.5	32	47.1
	inadequate	10	11.5	20	29.4
	Total	-	-	16	23.5
		87	100.0	68	100.0
17	Adequacy of natural lighting				
	v. good	44	51.2	-	-
	good	32	37.2	32	47.1
	fairly good	10	11.6	20	29.4
	bad	-	-	16	23.5
	Total	86	100.0	68	100.0
18	level of security within neighbourhood				
	v. high				
	high	40	47.6	-	-
	fair	33	39.3	28	41.2
	low	10	11.9	36	52.9
	bad	4	1.2	4	5.9
	Total	87	100.0	68	100.0

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Source: Authors' Field Survey, 2010.