RESIDENTS' NARRATIVES OF ENVIRONMENTAL QUALITY IN METROPOLITAN LAGOS, NIGERIA

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Abstract. This study narrates environmental quality of residential areas in Lagos Metropolis, Nigeria with a view to evolving policy response for planning and development of livable environment and others with similar characteristics. This narration is in terms of the environmental characteristics of the residential areas, the level of importance that the residents attached to the environmental characteristics and the level of satisfaction that they derived from them. The study made use of data collected from three hundred and twenty-one (321) residents systematically sampled across the three residential density areas (high-density, medium-density and low-density) of Lagos Metropolis. Data analysis was done using cross-tabulations and analysis of variance. Findings revealed that environmental quality in the metropolis was at the low ebb, especially in high and medium density areas. Residents attached high level of importance to environmental characteristics of the study area but derived low level of satisfaction from the environmental characteristics. Based on the study, it was recommended that there is need to put in place a workable legal framework to boost the condition of environment across the residential density areas of the metropolis. Also, through public enlightenments, and awareness, residents should ensure judicious use of the environmental amenities and be environmentally-friendly in their utilization.

Keywords: Environmental quality, perception, residential areas, Metropolis, Nigeria, residents.

1. Introduction

It has become a common knowledge that countries in developing world, Nigeria inclusive, experience rapid urban growth as a resultant effect of population growth, and areas expansion (World Bank, 2017; UN-Habitat, 2019). Residential areas are therefore, developed to accommodate this ever-growing population and, in the process, they experience various environmental challenges. This is because, with the rate of urban growth, most residential areas have lost their identity from a safe environment to one riddled with various forms of land use activities that continuously leads to major threat to social and economic development and even to human survival (Glaeser, et al., 2004; UNICEF, 2007). A glance into the landscape of many cities in developing nations, including Nigeria, does not prove an exception as they contain residential areas that lack good environmental quality.

Generally, environmental quality refers to varied characteristics that relate to the natural and the built environment and the potential effects which such characteristics may have on human health (Kamp, et. al., 2003; Nwoba, 2015). It is the measure of the condition of an environment and how the characteristics of the environment may have physical, economic, social or mental effect on both the residents and the residential areas. Environmental quality has also been defined as a set of physical, social or economic characteristics of the environment, either generalized or local, which impinge on human beings and convey a sense of well-being and satisfaction to its population (Lansing, Marans, 1969). Environmental quality is therefore a component of quality of life which focuses

on the environmental condition in a particular locality and relative to any human need or purpose (Keles, 2011).

This involves the assessment of the condition of all the biophysical features, organic and inorganic resources in a residential environment (Acheampong, 2010; Shabu, 2012; Babalola, et. al., 2016). In another parlance, environmental quality is the assessment of the varied characteristics, properties, physical and perceived attributes of the environment and their potential effects on human health (Kamp, et. al., 2003; Nwoba, 2015). The condition of environmental quality plays vital roles in the growth and sustainability of a residential area and the capacity of a residential area to be in a state of meeting certain basic standards depends on its environmental characteristics. These environmental characteristics include the amenities such as water supply, sanitation, refuse collection, electricity and availability of facilities for health care, education and recreation, among others that ensure accessibility in the residential area (smooth sidewalks, broad passages and sufficient parking space) and denote efficient management to promote serenity, safety and security.

Based on environmental characteristics, the environmental quality of residential areas can be measured both objectively and subjectively. The basic distinction between the two approaches is that the objective approach focuses more on scientific standards and criteria while the subjective approach reflects people's perception on environmental quality. The subjective approach is adopted in this study to assess the environmental quality of residential areas in Lagos Metropolis and it is therefore based on the narratives of residents on environmental quality in the metropolis. It is adopted because, people's opinion data can be a tool in proffering solution to different problems in the different human endeavors (Afon, 2011). Therefore, residents' narratives of environmental characteristics will reveal that their environmental quality of their residential areas is good or otherwise. It is against this background that this study is an attempt to know the narratives of residents on environmental quality in Lagos Metropolis, Nigeria.

Study Area. The study area, Lagos Metropolis is situated between Longitudes $2^0 42^{'}$ E and $4^0 42^{'}$ E and Latitudes $6^0 23^{'}$ N and $6^0 41^{'}$ N in Lagos State, Nigeria. With a population of almost 20 million people, the phenomenal growth of metropolitan Lagos was put at the rate of about 600.000 people per annum, which is ten times faster than that of New York and Los Angeles (Canadian International Development Agency, 2012). There are 20 local governments in Lagos State but with 16 local government area in the metropolis. Lagos Metropolis has the largest population concentration among all the metropolitan areas in Nigeria. This makes the city one of the most urbanized regions in Nigeria with a population density of over 20,000 persons per square km (Ojewale 2014). This alarming population growth of Lagos Metropolis is not without environmental challenges.

2. Materials and Methods

The study was based on field survey through administration of questionnaire on the residents of Lagos Metropolis. Multi-stage sampling technique was employed for the study. Lagos Metropolis was stratified into high-, medium- and low-density residential area. Due to different population density areas, land area and housing characteristics, the LGAs with 20–10.000 persons/km² were regarded as low-density; those with 10.001–20.000 persons/km² were considered medium-density, while those with above 20.000 persons/km² were considered high-density. This classification is well documented (Nwanna 2012; Ojewale 2014). This study therefore adopted this classification.

In Lagos Metropolis, there are eight (8), five (5) and three (3) LGAs in high-, medium- and low-density residential areas. Due to homogeneity of the residential areas, one LGA was selected randomly each from the high (Agege), medium (Kosofe) and low (Ojo) density residential areas. However, to determine the sample size, consideration was given to the the existing political wards in each of the selected LGAs as recognized by Independent National Electoral Commission (INEC) in the conduct of electoral polls. There are 11, 10 and 11 wards each in Agege, Kosofe and Ojo LGAs respectively and two political wards were randomly selected in each of the three LGAs.

In the six selected political wards, residential buildings were systematically sampled while a household was randomly sampled in the selected residential building. The target person for the survey is any person aging over 18 years old in a household. This is because, in Nigeria, 18 years is the minimum age of franchise and responsibility. From the process, 321 residents were sampled comprising 132, 101 and 88 in high-, medium- and low- residential areas, respectively. These residents served as the sample size on which questionnaires were administered.

Issues addressed in the questionnaire included socioeconomic characteristics of the respondents, the conditions of environmental characteristics, level of importance and satisfaction attached to the environmental

characteristics in the study area. The questionnaire also addresses the opinion of residents on the level of importance and satisfaction with environmental characteristics using a 5-point Likert scale. The data were collected in 2022 and analyze using both descriptive and inferential statistics.

3. Results and Discussion

3.1 Profiles of the respondents

Profiles of the respondents is discussed in terms of their socio-economic attributes in Table 1. The identified variables discussed include gender, educational attainment, age, income, type of building occupied and years of living in place of residence. These variables are considered important in explaining household's opinion of their residential area (Afon, 2011; Mobolaji, Adekiya, 2021). From the table, findings revealed that 56.4 % of the respondents were male while 45.5 % were females. This implies that both genders were well represented in the study and the findings from the study can adequately represent residents' opinions without any bias for the gender of the residents.

The age distribution revealed that 65.6 % of the respondents were above 45years and 37.4 % were below 45years of age. Findings also revealed that there was similarity in the age of respondents across the residential areas where the majority of the respondents were above 45 years. This implied that most respondents were old enough to give information about environmental characteristics in their respective residential areas. Findings on educational level of the respondents revealed that 6.5 % and 26.5 % attains primary and secondary level respectively, while 67.9 % attain

tertiary level. However, across the residential areas, majority 67.0 % of the respondents attained tertiary education which is the highest educational level. It is of the opinion that most of the respondents are learned and were able to give out reliable information on their perception of environmental characteristics.

Also, on the average monthly income, 39.4 % and 21.9 % of the respondents in the high-density area earned less than ₦30.000 and ₦60.000 respectively while 38.7 % earned above ₦61,000. In the medium-density area, 47.5 % and 37.7 % of the respondents earned below ₦60.000 and ₦61.000 while fewer 14.8% earned less than ₦30.000. Also, in the low-density area, majorities 66.0 % of the respondents earned above ₦61.000 while 14.7 % and 19.3 % earned below ₦30.000 and ₦60.000 respectively. Further findings revealed that majority 45.8 % earned above ₦61.000 while fewer 24.9 % earned ₦30.000. The findings revealed that variation existed in average monthly income and this has implications on residents' choice and preference of environmental characteristics.

The number of years spent in the study area is considered necessary for this study. This is because people's length of stay helps in determining people's opinion of the conditions of environmental characteristics in their environments. The numbers of year's respondents have been living in their buildings were categorized into three; these are ≤ 15 years, 15– 30 years and ≥ 30 years. Across the residential area, findings revealed that 35.5 %, 33.6 % and 30.9 % have spent ≤ 15 years, 15–30 years and ≥ 30 years respectively. These indicated that most of the respondents have stayed nothing less than 15 years which makes them suitable to give an opinion on the environmental characteristics available in their environments.

Table 1

Profile of Respondents

Attributes	High	Medium	Low	Total
1	2	3	4	5
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
Gender				
Male	88 (66.7)	45 (44.5)	48 (54.5)	181 (56.4)
Female	44 (33.3)	56 (55.5)	40 (45.5)	140 (43.6)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Age				
≤ 45	55 (41.7)	35 (34.7)	30 (34.1)	120 (37.4)
≥ 45	77 (58.3)	66 (65.3)	58 (65.9)	201 (65.6)
Total	**132 (100.0%)**	**101 (100.0%)**	**88 (100.0)**	**321 (100.0)**
Educational Attainment				
Primary	14 (10.6)	7 (6.9)	-	21 (6.5)
Secondary	40 (30.3)	28 (27.7)	17 (19.3)	85 (26.5)

1	2	3	4	5
Tertiary	78 (59.1)	66 (65.4)	71 (80.7)	215 (67.0)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Average Monthly Income				
≤ #30,000	52 (39.4)	15 (14.8)	13 (14.7)	80 (24.9)
≤ #60,000	29 (21.9)	48 (47.5)	17 (19.3)	94 (29.3)
≥ #61,000	51 (38.7)	38 (37.7)	58 (66.0)	147 (45.8)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Number of Years Spent in the Study Area				
≤ 15 years	39 (29.5)	35 (34.6)	40 (45.5)	114 (35.5)
15 – 30 years	41 (31.1)	37 (36.6)	30 (34.1)	108 (33.6)
≥ 30 years	52 (39.4)	29 (28.8)	18 (20.4)	99 (30.9)
Total	**132 (100)**	**101 (100)**	**88 (100)**	**321 (100)**
Household Size				
1-3	21 (15.9)	18 (17.8)	52 (59.1)	91 (28.3)
4-6	22 (16.7)	34 (33.6)	31 (35.2)	87 (27.1)
7-9	89 (67.4)	49 (48.6)	5 (5.7)	143 (44.6)
Total	**132 (100)**	**101 (100)**	**88 (100)**	**321 (100)**
Type of House Occupied				
Detached Bungalow	61 (46.2)	29 (28.7)	12 (13.6)	102 (31.7)
Semi-detached Bungalow	11 (8.3)	22 (21.7)	18 (20.5)	51 (15.8)
Storey Building	31 (23.5)	40 (39.6)	22 (25.0)	93 (28.9)
Others	29 (22.0)	10 (10.0)	36 (40.9)	75 (23.6)
Total	**132 (100)**	**101 (100)**	**88 (100)**	**321 (100)**

3.2 Condition of the Environmental Characteristics in the Study Area

Presented in Table 2 is the findings on the condition of environmental characteristics across the residential area of Lagos Metropolis. Across the residential density area, borehole and public tap water is the main sources. As a result, in high-density area, majority 58.3 % of the borehole were in fair condition, 25.8 % and 15.9 % were also in good and bad condition. In the medium-density area, 72.3 % of the boreholes were in good condition while 17.8 % and 9.9 % were fair and bad respectively. Also in the low-density area, majority 77.3 % of the boreholes available were in good condition while 9.1 % and 13.6 % were fair and bad respectively. Across the residential zones, majority 54.5 % of the boreholes available were in good condition while 13.4 % were in bad condition.

Findings on the public tap water supply in the high residential area revealed that majority 50.7 % of the tap were fair in condition while 16.7 % and 32.6 % were in good and bad condition. In the medium-density area, 66.4 % of the tap were in bad condition while 24.7 % and 8.9 % were good and fair condition respectively. Also, in the low area, majority 64.8 % of the available public tap were in bad condition while 17.0 % and 18.2 % were good and bad respectively. In summary, majority 52.1 % of the tap were in bad condition while only few 19.3 % were in good condition. The findings indicated that across the residential areas, tap water supply is poor and could be as a result of the fact that there is poor disposition towards providing public infrastructure by Government as they are not profit oriented.

Findings were also made on the condition of electricity supply in the study area. In high-density area, majority 59.8 % of the respondents revealed that electricity supply was in bad condition while 8.4 % and 31.8 % believe it was in good and fair condition. In the medium area, 77.3 % of the electricity supply were in fair condition while 12.8 % and 9.9 % were in good and bad condition, respectively. In low-density area, majority 73.8 % of the supply were in good condition while 19.3 % and 6.9 % were either fair and bad respectively. In summary, majority 42.6 % of the respondents revealed that the condition of electricity supply across the residential area is fair while 29.7 % of the respondents believed it was in bad condition.

The findings could be attributed to inadequate power supply situation in the country.

On the condition of solid waste collection, 46.5 % and 47.6 % of the respondents in the medium and low-density area agreed the condition of solid waste collection to be good while 46.3 %, revealed that waste collection in the high-density area is bad. Also,

findings on the condition of sewage disposal channel across the residential area revealed that majority 55.2 % of the respondents believed it was in fair condition while few of the respondents 14.9 % revealed it was bad. The findings is attributed to inadequate sewage disposal channels in the Metropolis.

Table 2

Condition of Environmental Characteristics

Attributes	High	Medium	Low	Total
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)
Condition of Water Supply through Private Means				
Good	34 (25.8)	73 (72.3)	68 (77.3)	175 (54.5)
Fair	77 (58.3)	18 (17.8)	08 (9.1)	103 (32.1)
Bad	21 (15.9)	10 (9.9)	12 (13.6)	43 (13.4)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Condition of Water Supply through Public Use				
Good	22 (16.7)	25 (24.7)	15 (17.0)	62 (19.3)
Fair	67 (50.7)	09 (8.9)	16 (18.2)	92 (28.6)
Bad	43 (32.6)	67 (66.4)	57 (64.8)	167 (52.1)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Condition of Electricity Supply				
Good	11 (8.4)	13 (12.8)	65 (73.8)	89 (27.7)
Fair	42 (31.8)	78 (77.3)	17 (19.3)	137 (42.6)
Bad	79 (59.8)	10 (9.9)	06 (6.9)	95 (29.7)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Condition of Solid Waste Collection				
Good	50 (37.8)	62 (61.3)	41 (46.5)	153 (47.6)
Fair	21 (15.9)	18 (17.8)	26 (29.5)	65 (20.5)
Bad	61 (46.3)	21 (20.9)	21 (24.0)	103 (31.9)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Condition of Sewage Disposal Channel				
Good	41 (31.1)	31 (30.6)	24 (27.2)	96 (29.9)
Fair	81 (61.3)	49 (48.5)	47 (53.4)	177 (55.2)
Bad	10 (7.6)	21 (20.9)	17 (19.4)	48 (14.9)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Condition of Recreational Space				
Good	67 (50.7)	41 (40.6)	43 (48.8)	151 (47.0)
Fair	37 (28.0)	31 (30.7)	29 (32.9)	97 (30.2)
Bad	28 (21.3)	29 (28.7)	16 (18.3)	73 (22.8)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**
Condition of Drainage				
Good	48 (36.3)	58 (57.4)	44 (50.1)	150 (46.7)
Fair	47 (35.6)	23 (22.7)	20 (22.7)	90 (28.1)
Bad	37 (28.1)	20 (19.9)	24 (27.2)	81 (25.2)
Total	**132 (100.0)**	**101 (100.0)**	**88 (100.0)**	**321 (100.0)**

3.3. Level of Importance attached to Environmental Characteristics

Presented in table 3 is the findings on residents' level of importance attached to environmental characteristics across the residential area. The assessed environmental characteristics includes, water supply, sewage disposal channel, electricity supply, solid waste collection, drainage channel, and recreational space. However, the environmental quality characteristics (EQC) for high, medium and low density are 1.21, 1.23 and 1.25 respectively.

Findings on the level of importance attached to environmental characteristics revealed that, in high and medium-density area, electricity supply (1st), general hospital (2nd) and private schools (3rd) were attached high but in the low-density area, borehole (1st), General hospital (2nd) and serenity (3rd) were also rated high. These findings indicated that variation existed in the level of importance attached to environmental characteristics.

Further findings on the level of importance to environmental characteristics revealed low level of importance attached to speed control (21st), traffic control (22nd) and security (23rd) in high-density area. Residents in the medium area also attached low importance to speed control (21st), traffic control and public tap water supply (23rd) while speed control, pedestrian safety (22nd) and recreational facilities (23rd) were rated low in the low-density area.

Table 3

Level of Importance attached to Environmental Characteristics

Characteristics	High		Medium		Low	
	Mean	Rank	Mean	Rank	Mean	Rank
Open Space	1.46	5th	1.16	7th	1.60	17th
Pedestrian Safety	1.12	13th	1.11	10th	1.55	22nd
Public Schools	1.13	10th	1.11	11th	1.45	8th
Recreational facilities	1.10	14th	1.08	18th	1.45	23th
Parking	1.08	15th	1.08	17th	1.45	13th
Pedestrian	1.40	7th	1.58	5th	1.40	15th
Private Schools	1.52	3rd	1.68	3rd	1.35	7th
Serenity	1.17	9th	1.08	16th	1.35	3rd
Cleaning Facilities	1.06	20th	1.11	9th	1.30	9th
Electricity Supply	1.60	1st	1.73	1st	1.30	16th
Traffic Control	1.00	23rd	1.05	22nd	1.25	19th
Paved Road	1.12	12th	1.11	13th	1.21	12th
Security	1.02	22nd	1.05	20th	1.20	5th
Sewage Disposal	1.08	17th	1.11	12th	1.20	14th
Private Hospital	1.49	4th	1.61	4th	1.15	6th
Primary Health Centre	1.08	18th	1.14	8th	1.15	10th
Water Supply Private	1.33	8th	1.11	15th	1.10	1st
Solid Waste	1.06	19th	1.08	19th	1.10	18th
Drainage System	1.12	11th	1.11	14th	1.10	11th
Bus Stops	1.43	6th	1.53	6th	1.05	20th
Speed Control	1.04	21st	1.05	21st	1.05	21st
General Hospital	1.56	2nd	1.70	2nd	1.05	2nd
Water Supply Public	1.08	16th	1.05	23rd	1.00	4th
EQC	**1.212**		**1.233**		**1.252**	

3.4 Level of Satisfaction of the residents to Environmental Characteristics

Findings on the level of satisfactions of residents on environmental characteristics are presented in Table 4. The environmental quality characteristics (EQC) for high, medium and low density are 2.57, 2.75 and 2.30 respectively. In the high-density area revealed that, residents were satisfied with the provision of general hospital,

private schools and borehole while residents in medium and low residential areas were also satisfied with pedestrian safety, borehole and private school. These finding is not unexpected as serene environment is very important element in daily living and it is a major factor that determines the level of development of a community. The findings also indicated that, across the residential area, residents were satisfied with the provision of borehole, private schools and hospital. The findings could be attributed that resident believe in the services of private organization more than public.

Table 4

Level of Satisfaction of the Residents with the Environmental Characteristics

Indicator	High		Medium		Low	
	Mean	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**
Open Space	1.39	23rd	3.24	11th	1.84	17th
Pedestrian Safety	2.30	15th	3.97	1st	3.22	1st
Public Schools	3.18	7th	3.76	5th	3.00	5th
Recreational Facilities	3.22	6th	1.68	17th	2.33	11th
Parking Facilities	1.78	21st	1.45	22nd	1.78	20th
Pedestrian Cross	1.85	19th	1.39	23th	2.18	13th
Private Schools	3.65	2nd	3.89	2nd	3.21	2nd
Serenity Environment	1.50	22nd	1.62	19th	1.58	21st
Cleaning Facilities	2.48	13th	3.61	7th	2.63	7th
Electricity Supply	2.79	9th	3.24	10th	1.94	16th
Traffic Control	1.95	17th	1.55	20th	1.41	22nd
Paved Road	1.82	20th	2.49	14th	2.53	8th
Security Level	2.78	10nd	2.24	15th	2.47	9th
Sewage Disposal	3.04	8th	2.92	13th	1.82	19th
Private Hospital	3.40	5th	3.46	9th	2.06	15th
Primary Health Centre	3.41	4th	2.97	12th	1.83	18th
Water Supply Private	3.60	3rd	3.87	3rd	3.21	3rd
Solid Waste Collection	2.71	11th	3.61	6th	2.78	6th
Drainage System	2.49	12th	1.82	16th	2.41	10th
Bus Stop	1.89	18th	1.68	18th	2.19	12th
Speed Control	1.96	16th	1.53	21st	1.37	23rd
General Hospital	3.67	1st	3.84	4th	3.11	4th
Water Supply Public	2.35	14th	3.54	8th	2.11	14th
EQC	**2.574**		**2.755**		**2.304**	

Further findings also revealed that residents were not satisfied with parking facilities, serenity environment and open space in high-density area. Residents in medium and low-density area were not satisfied with speed control, parking facilities, pedestrian cross and traffic control respectively. These findings have implication for environmental quality in the study area.

4. Conclusion

This study has narrated environmental quality of residential areas in Lagos Metropolis in terms of the environmental characteristics of the residential areas, the level of importance that the residents attached to the environmental characteristics and the level of satisfaction that they derived from them in the study area. Based on the findings of the study, it can be concluded that environmental quality in Lagos Metropolis is at the low ebb especially in high and medium density areas. The only exception is the low-density area where there was a better condition of the environmental characteristics. The residents attached high level of importance to environmental characteristics of the study area but derived low level

of satisfaction from the environmental characteristics. Based on the conclusion of the study, it is recommended that in a bid to ensure good quality of life, there is a need to put in place a workable legal framework to boost the condition of environmental amenities and ensure proper monitoring and its management through enabling laws and order. Also, through public enlightenments and awareness, residents should ensure judicious use of the environmental amenities and be environmentally-friendly in their utilization.

Acknowledgement

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