URBAN HOUSEHOLDS' ASSESSMENT OF ENVIRONMENTAL SAFETY: A CASE STUDY OF IBADAN, NIGERIA

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Abstract. Safe environment is a prerequisite for healthy living and socio-economic development of any nation. In this study, we analyzed the different forms of environmental problems being faced by households in Nigeria's largest city. Data were collected from 120 households using the stratified sampling method. Our results show that majority of the households were faced with bushy and untidy environment, illegal structure/urban slum and improper disposal of refuse/feaces. Also, using the ranking method, the most pressing problems indicated to be solved are improper disposal of refuse and faeces, bad odors in the neighborhood, poor drainage and bushy/untidy environment. The study recommended serious enforcement of existing environmental laws in order to ensure safe environment for residents in Ibadan, among others.

Keywords: environmental safety, urban households, Ibadan

Introduction

Industrialization and its consequent rapid population growth are the major drivers of environmental problems in both developed and developing countries (Dike, 1985). The magnitude of the problems varies from country to country, depending on various factors. These include the stage of industrial development and the degree of enforcement of environmental regulations. Although urbanization contributes to national economic and social development, high speed of it is always accompanied by increasing requirements of water, energy, and other basic social services. Government's lapses in responding to these demands often lead to increasing poverty, unemployment, inadequate shelter, poor or non-existent sanitation, contaminated or depleted water supplies, air pollution and other forms of environmental degradation.

The negative impact of urbanization can be alarming. Precisely, substandard housing, unsafe water and poor sanitation in densely populated cities are responsible for 10 million deaths worldwide every year.[1] The World Health Organization (2004) therefore noted that the home, not the clinic, is the key to a better health delivery system. However, in Nigeria, the vast majority of the households, especially those in informal settlement live in overcrowded conditions with defective physical dwellings, sometimes located in areas that do not provide adequate safety from disease and some other health hazards.

World Bank[2] submitted that some political and economic factors have been responsible for rapid growth in urban population in Nigeria. The colonial era influenced the growth pattern of urbanization by creating new towns, modernizing physical structures of existing towns and introducing some modern utilities. Thereafter, Nigerian urban population has been growing at an alarming rate. According to Onibokun (1996), a little more than 50 years ago, fewer than 7 percent of Nigerian lived in urban centers (that is settlement with

population of 20,000 or more). The proportion rose to 10 percent in 1952 and 19.2 percent in 1963. It was expected to increase to 45 percent by 2000.

The spatial dynamics of urbanization in Nigeria is reflected by many changes in the country since 1815 (Ekundare, 1973). Although demographic estimation is contentious, available indices suggest that urban growth has continued. The World Bank[2] estimated the average annual growth rate in Nigeria towns for 1970-1975 at 7 percent, of which rural – urban migration accounted for 84 percent. The problems and challenges posed by this rapid urban growth are numerous. Very frightening and perhaps more easily observable are the human and environmental poverty, the declining quality of life and the untapped wealth of human and environmental resources that they represent. Housing and associated facilities (water, toilet etc) are similarly inadequate, such that millions now live in substandard and sub-human environment, plagued by slums, squalor, inadequate social amenities such as schools, health and recreational facilities (Onibokun, 1996).

According to Inyang,[3] the greater the concentration of people in one area, the greater the amount of pollution being generated. That is why the problem of pollution is getting more serious and complex in towns than in villages, and more in densely populated areas than in regions of sparse settlements. The uncontrolled disposal of liquid waste into opens gutters, open spaces, along road etc are part of the environmental problems that pose serious health hazards to the people. Precisely, bodies of stagnant water produce bad odours, breed mosquitoes and sometimes obstruct the movement of people and goods. The unwholesome environment forces the populace to spend appreciable portions of their low income and time on improving their personal health, with diverse consequences for economic wellbeing (Onibokun, 1996).

This study intends to address two basic research questions. First, what is the current environmental situation in one of Nigeria's mega cities? Second, which environmental problem would households want government address

given highly competing demands? In the remaining parts of the paper, one section discusses the methods of data collection and analysis and other section presents the results and discussions.

Materials and methods

The study area

In geographical size, Ibadan is the largest city in Nigeria. Ibadan central metropolis consists of five local government areas (Ibadan North, Ibadan Northeast, Ibadan Northwest, Ibadan Southeast and Ibadan Southwest local governments). The population of the Ibadan central Ibadan is 1 338 659 according to census results for 2006, covering an area of 128 km².

Methods of data collection

Data for the study were obtained from primary sources. The data were obtained with the aid of well-structured questionnaires administered to heads of households in the study area. The stratified sampling technique was initially employed to group the study area into the traditional area, the transitional areas and the elite areas. Simple random sampling was then used to pick equal number of respondents from each of the stratum. The rationale behind the stratification was to ensure equal representation of different classes of people in the selection of the respondents, since the three strata (the traditional, transitional and elite areas) are heterogeneous in terms of settlement pattern and level of planning which is likely to reflect in the socio-economic characteristics of respondents.

Traditional areas in Ibadan metropolis are places like: Beere, Oja Oba, Agugu, Foko, Oje, Idi Arere etc. The transitional area covers place such as: Sango, Agbowo, Akobo, Ijokodo, Ashi, Iwo Road etc. while the elite area are well planned areas such as: Old Bodija, Agodi G.R.A, Jericho GRA, Onireke, Oluyole extension and so on. For the purpose of this study, 40 households

were randomly selected from each of the strata, giving us a total of 120 respondents.

Analytical technique

The descriptive analytical tools such as frequency, means, percentages and tabular representation were employed to summarize the socio-economic characteristics and environmental attitudes and concerns of the respondents. Ranking was also employed to obtain the order in which respondents wanted common environmental problems to be attended to as well as how they ranked common societal problems in their order of importance.

Results and discussions

Socio-economic characteristics of the respondents

Table 1. Distribution of respondents' socio-economic characteristics

Socio-economic/demographic groups	Frequency	Percentage
Gender		
Male	97	80.8
Female	23	19.2
Marital status		
Married	81	67.5
Single	18	15.0
Divorced/widowed/separated	21	17.5
Household size group		
≤ 4	54	45.0
5-8	56	46.7
9-12	8	6.7
> 12	2	1.7
Age groups		
≤ 30	13	10.8
31-40	38	31.7
41-50	22	18.3
51 – 60	34	28.3
> 60	13	10.8
Occupational groups		
Government Employee	34	28.3
Private salaries job	19	15.8

Private owned business	31	25.8
Merchant	19	15.8
Labour	1	0.8
Farmers	6	5.0
Unemployed	6	5.0
Others	4	3.3
Years of education		
0	10	8.3
1-5	9	7.5
6-10	15	12.5
11-15	36	30.0
16-20	50	41.7

As shown in Table 1, majority of the respondents are males. Precisely, 80.8 percent of them are males, while the rest 19.2 percent are females. This is in line with cultural norms of the study area, which makes the males bread-winners and head of households. Rahji (2002) found that 71.2 percent of 546 household heads interviewed in some area of Ibadan were males. The average age of respondents is 45.84 years. Majority of respondents (31.7%) were in the age bracket of 31-40 years, this is followed by the age bracket of 51-60 years, which constitute 28.3 percent. The variability index of 27 percent reveals that there is no much variation in the distribution of respondents' ages.

Majority of the heads of households are married. Precisely, 67.5 percent are married, 15 percent are not married while 17.5 percent of the respondents are divorced, widowed or separated. Also, majority of the respondents, 46.7 percent have between 5 and 8 members in their households.

Occupational group with highest percentage is government employment (28.3 percent). This, together with the private salaried job (15.8 percent) constitutes 44.1 percent of the entire respondents' occupation. This is typical of any urban center, where people always rely on formal sector. The occupation with second highest frequency is private owned business which is 25 percent, while private salaried job and merchandize are both 15.8 percent unemployed constitute 5.0 percent each, while labour and others not included constitute 0.8 and 3.3 percent respectively.

The distribution of respondents by their educational status, as determined by the number of years spent in school shows that the average year of education is 13.45, which shows a reasonable literacy level. About 8.3 percent of the respondents had no formal education, 20 percent spent between 1 and 10 years in school, while 41.7 percent spent between 16 and 20 years. The disparity in the distribution of respondents by educational status is not so high, considering the coefficient of variation of 32.57 percent.

Environmental problems and concerns

Table 2 shows the analysis of the importance of environmental safety to the respondents. It is evident from the table that environmental safety is very important to majority of the respondents that is 70 percent, to 25 percent of them; it is fairly important and not important to 1.7 percent. Just 3.3 percent could not decide. Individual respondent was asked to rate the levels of environmental safety in his or her immediate environment based on respondents perception of the level of environmental safety. Only 5 percent of the respondents rated the level of environmental safety in their immediate environment as being good, 55.8 percent rated their as being fair, whilst 28.3 and 10.8 percent rated the level of environmental safety in their immediate environment as being poor and very poor respectively.

Table 2. Importance of environmental safety and respondents rating of environmental safety

Degree of importance of environmental safety	Frequency	Percentage
Very important	84	70.0
Fairly Important	30	25.0
Not important	2	1.7
Don't know	4	3.3
Rating of environmental safety		
Good	6	5.0
Fair	67	55.8
Poor	34	28.3
Very poor	13	10.8

Actually, rating the level of environmental safety by individual respondents depends on the judgment of individual respondent. Most people living in the relatively well planned areas (elite areas) rated their level of environmental safety as being fair, while few others said their environment was good in terms of safety. Though most of the people in the transitional and traditional areas rated their environment as being poor and very poor respectively, but there was no clear cut distinction (division) between those two classes of people in terms of rating of their environmental safety. As some people in the transitional areas believed their environment was very poor, some in the same traditional areas viewed their environment as being poor.

Environmental problems being experienced by respondents

Seventeen most common environmental problems, peculiar to urban environments were selected and the respondents indicated the ones being experienced by their households. Table 3 shows the percentage of respondents that indicated each of the problems as part of environmental problems being experienced in their immediate environment. The problems are arranged in descending order, meaning that the most experienced problem in the study area is bushy/untidy environment, followed by illegal structures/urban slums and improper disposal of waste respectively. Industrial waste and water pollution are the two least indicated problems, as no one indicated water pollution

Table 4 presents the relative raking of selected common environmental problems in the order the respondents wanted them to be solved. It shows that the problem of indiscriminate disposal of refuse and faeces occupies the first position with an average of 3.55, on the ranking scale of 1-17, with 1 being the most pressing problem and 17 being the least pressing one. This implies that improper disposal of waste and faeces is the most serious problem or the most rampart one being experienced by majority of the households in Ibadan metropolis. Following this on the ranking scale are bad odour in the environ-

ment, poor water drainage, bushy/untidy environment and traffic congestion with 5.32, 6.63, 6.64 and 7.05 points, respectively. The three last problems on the ranking scale are erosion (12.5), water pollution (12.8) and industrial waste (14.25). Evidently, Ibadan metropolis is not a heavily industrialized urban center, thus water pollution and industrial waste could not be a serious problems.

Table 3. Environmental problems being experienced by households

Problem	Percentage experiencing it
Bushy/Untidy Environment	78.3
Illegal structure/urban slums	75.0
Improper disposal of refuse and faeces	72.5
Smoke from burnt refuse	65.8
Dusty air	62.5
Household Rodent Pest	61.7
Household insect pest	60.0
Noise	59.2
Poor water drainage	59.2
Traffic congestion	46.7
Smoke from kitchens	42.5
Flooding	33.6
Industrial smoke	19.2
Erosion	19.2
Bad Odour in the Environment	16.7
Industrial waste	11.7
Water pollution	0

The effect of heterogeneous nature of the three different strata covered by the study, on the ranking of environmental problems was also observed. Three different ranking analyses were carried out, each for the traditional, transitional and elite strata. Table 4 also revealed that the problems of improper disposal of refuse and faces, and bad odour in the environment still occupied the first and second position respectively across the three different areas. The improper disposal of refuse and faeces has the value of 3.3, 3.43 and 3.93

in the traditional, transitional, and elite areas, respectively. Thus, the traditional area shows the strongest preference for this problem to be solved first, followed by the transitional and the elite area. For the problem of bad odour in the environment, however, transitional area has the least ranking value of 5.07, thus, showing the strongest preference for this problem as the second problem that should be solved among the seventeen problems selected.

Table 4. Relative ranking of common seventeen environmental in order the respondent wants them to be solved

Environmental problems	Average Rank (All Areas)	Environmental problems	Average Rank (Traditional area)	Environmental problems	Average Rank Transitional area)	Environmental problems	Average Rank (Elite area)
Improper disposal of refuse and faeces	3.55	Improper disposal of refuse and faeces	3.3	Improper disposal of refuse and faeces	3.43	Improper disposal of refuse and faeces	3.93
Bad odour ing the neighbourhood	5.32	Bad odour in the neighbourhood	5.13	Bad odour in the neighbourhood	5.07	Bad odour in the neighbourhood	5.78
Poor water Drainage	6.63	Bushy or Untidy Environment	6.48	Bushy or Untidy Environment	6.23	Traffic congestion	6.28
Busy/untidy environment	6.64	Smoke from burnt refuse	6.8	Poor water drainage	6.53	Poor water drainage	6.37
Traffic congestion	7.05	Poor water drainage	7	Traffic congestion	7.05	Bushy or Untidy Environment	7.23
Dusty air	7.55	Dusty air	7.8	Dusty air	7.48	Noise	7.3
Noise	7.78	Traffic congestion	7.82	Smoke from burnt refuse	7.55	Dusty air	7.38
Smoke from burnt refuse	7.90	Noise	7.95	Noise	8.07	Illegal structures/urban slum	9.03
Illegal structure/urban slum	8.83	Illegal structures/urban slum	9.2	Illegal structures/urban slum	8.25	Smoke from burnt refuse	9.35
Smoke from kitchens	9.00	Smoke from kitchen	10.18	Household rodent pest	9.55	Flooding	9.9
Flooding	10.80	Household rodent pest	10.82	Smoke from kitchen	10.03	Smoke from kitchen	10.05
Household insect pest	11.45	Flooding	11.18	Household insect pest	10.82	Industrial smoke	10.62
Industrial smoke	11.50	Industrial smoke	11.25	Flooding	11.33	Household rodent pest	11.48
Household rodent pest	11.67	Household insect pest	11.63	Industrial waste	12.38	Industrial waste	11.5
Erosion	11.50	Industrial waste	11.67	Industrial smoke	12.63	Household insect pest	11.9
Water pollution	11.80	Erosion	11.97	Erosion	12.83	Water pollution	12.15
Industrial waste	14.85	Water pollution	12.95	Water pollution	13.3	Erosion	12.7

Separate ranking analysis for other problems apart from the two first ones did not follow the overall ranking of the study area as an entity. As shown in Table 4 for the traditional area the third, fourth and fifth problems are bushy/untidy environment (6.48) smoke from burnt refuse (6.8) and poor water drainage (7). In the transitional area the third, fourth and fifth problem are bushy/untidy environment (6.23), poor water drainage (6.53) and traffic congestion (7.05). However, for the elite areas, traffic congestion (6.28), poor water drainage (6.39) and the bushy/untidy environment (7.23) are third, fourth and fifth problems, respectively.

Conclusions

Environmental safety is a prerequisite for healthy living and socio-economic development of any nation. Without it, economic development will be compromised and households resources will not be optimally utilized. Given the findings from this study, some issues should be addressed by policy makers. First, there is need to initiate community based self-help efforts in provision of certain amenities such as toilets, drainages, dumpsites and refuse evacuation facilities. This is highly needed in those areas that are not well planned (traditional areas) where people live under deplorable environmental condition. Second, relevant government agencies should enforce provision of certain environmental friendly amenities by individuals building houses in all the existing and newly developed areas. These include toilets, septic tanks, and drainages and so on. Similarly, efforts should be made to ensure effective sanitary inspections and monitoring of environmental practices of people. This can be effectively achieved through enforcement of existing environmental laws by appropriate government agencies.

Finally, policy intervention to reduce the ever rising rural-urban migration should be adopted to eradicate increasing urban environmental problems

most of which are man made and could easily be eradicated through effective planning and monitoring.

NOTES

1. *World urbanization prospects*. United Nations, New York, 1995.

2. *Housing: enabling markets to work.* World Bank, New York, 1993.

3. Inyang, P.E.R. Urbanization process and problems in Nigeria. Final Report; NISER, 1997.

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