
Evaluation of The Effects of Urban Population Growth On Student's Personal Hygiene and Environmental Pollution of Secondary Schools in Anambra State

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ABSTRACT: *Sequel to the need to tackle the negative effects of urban population growth in schools, this study evaluated the effects of urban population growth on student's personal hygiene and environmental pollution in selected public secondary schools in the three main urban centres of Anambra State, Nigeria. With the following objectives: to identify the effects of urban population growth on student's personal hygiene and environmental pollution in the selected schools, determine the level of significance of these effects on the student's personal hygiene and environmental pollution in the selected schools and recommend ways of reducing these negative effects. The study adopted descriptive survey research design. Four hundred (400) copies of the questionnaire were administered using the stratified random sampling technique and three hundred and eighty-one (381) were returned. Fifty (50) secondary schools were selected purposively from the total number of one hundred and fifty-four (154) public secondary schools within the three zones, while the snowball sampling technique was utilized in sampling the teachers who have stayed above five (5) years in their school of assignment. The effects of urban population growth on student's personal hygiene and environmental pollution was confirmed to include that inadequate toilet facilities, overcrowding in dormitories/classrooms, uncontrolled generation of wastes, environmental pollution through open defecations, high tendency of water contamination through dirty water taps, noise pollution by students in overcrowded classrooms, air pollution and high tendency of airborne diseases as students often urinate openly rather than using designated urinals. The test of hypothesis showed that there is significant effect of population growth on students' personal hygiene and environmental pollution. The study therefore recommends that: policy makers should formulate a policy to control student's enrolment in line with the capacity of each school and ensure full implementation, increase in the provision of teaching aids in schools, students should be rewarded for good personal hygiene and cleanliness to encourage others.*

KEYWORDS: evaluation, effects of urban population growth, student's personal hygiene, environmental pollution.

INTRODUCTION

PRB's projections show that Africa's population will reach 2.5 billion by 2050, while the number of people in the America will rise from only 223 million to 1.2 billion. Asia will gain about 900 million to 5.3 billion, while Europe registers a decline from 740 million to 728 million. Oceania (which includes Australia and New Zealand) would rise from 40 million to 66 million (PRB, 2016). The world has about seven billion people today. Resources can no longer cope with human population, hence the incidence of economic recession. Among the continents of the world, Asia and Africa face population growth of

uncontrollable proportion. If this phenomenon is unchecked, the whole world would definitely plunge into a catastrophe of greater magnitude (Richards, 2013).

One of the critical issues of concern to most national governments world over is the need to stem the rate of urbanization induced by the incidence of globalization, industrialization and an unprecedented population growth rate in the cities with its attendant resource management problems (Jiboye, 2009; Osasona and Jiboye, 2007). This concern has led to several global Summits organized at various levels of government and international agencies including the United Nations. Specifically, among such are, the Millennium Development Goals Summits, the 2002 World Summit in Johannesburg and the 2005 La-Havana UN Sustainable Cities Documentation of experience programme among several others, with interest in population control.

The case in Nigeria is pathetic especially in the urban centres where the population growth has really affected the available facilities with its consequent substandard service delivery. The educational facilities are amongst the most hit but partially neglected but recent scholars and researchers. The major urban centres in the south-eastern Nigeria are all affected by population growth, especially the three major Urban centres of Anambra State (Onitsha, Nnewi and Awka) due to series of economic activities going on in them. This study therefore becomes expedient.

Statement of the Problem

Paul Erhlich in analyzing environmental impact using the Impact Population Affluence Technology (IPAT) model acknowledged and clearly buttressed population growth as a major factor. Ottong, Ering and Akpan (2012); and Akanwa, Anyanwu and Ossai-Onah (2013), among other authors noted that Nigeria as a nation is witnessing population explosion at an alarming rate, and if nothing is done to address the situation, the nation will be heading for chaos. Most amenities in Nigeria are in sorry situation and we as a people have not stopped to think about what brought about these social woes. There is immense pressure on the land and resources can no longer cope no matter how well economic analysts may present it. Our social institutions are over-crowded and our infrastructures are stretched to the farthest limit. For instance, most of our universities facilities that were built to accommodate six thousand students now accommodate over twenty-five thousand students. Our markets are over-crowded with stalls and make-shift stores by traders who desire to make a living. Our roads, hospitals, libraries, housing and schools can no longer cope with such increase in population (Birdstal, 2007 and Richards, 2013).

The situation of educational institutions in Anambra State urban centres is one that is besieged with overcrowding and its attendant negative effects. The massive outpour of students of primary and secondary schools in urban centres in the State at dismissal hours causing traffic congestions daily as confirmed from reconnaissance survey is a serious issue. The question is "what can we do to tackle this intrinsic problem?"

From the literature review, the causes and effects of population growth within the educational institutions have been overlooked and earlier researchers were also silent about the case of Anambra State although the state is seriously under this siege of population growth in the educational institutions; hence this study.

Aim and Objectives

The aim of this study is to evaluate the effects of urban population growth on student's personal hygiene and environmental pollution in selected public secondary schools in the three main urban centres of Anambra State. To achieve this aim the following objectives were set and pursued:

1. to identify the effects of urban population growth on student's personal hygiene and environmental pollution in the selected schools,
2. to determine the level of significance of these effects on the student's personal hygiene and environmental pollution in the selected schools and
3. to recommend a way or ways of reducing these negative effects.

LITERATURE REVIEW

Odusina (2010), in his review paper titled "Implications of a Rapidly Growing Nigerian Population", highlighted that Growth in population normally results to growth in population density especially in developing countries of the world. The average population density for the country in 1991 was ninety six (96) persons per square kilometer. In some parts of Nigeria, population density is as high as one thousand (1,000) persons per square kilometre. For instance, the four most densely populated states are Lagos one thousand seven hundred and twelve (1,712) persons, Anambra five hundred and thirty four (534) persons, Imo four hundred and thirty eight persons (438) and Akwa Ibom three hundred and eighty nine (389) persons. These states are all in the southern part of the country. Kano State is the most densely populated in the northern part of the country, with a population density of two hundred and eighty one (281) persons per km (NPC, 1998). As the population density increases, the level of environmental degradation and pollution also increases.

Onyekwere (2012) in his book "Demography and population dynamics for Nigeria", revealed that the rapid growth of population brought increasing unemployment, social and political unrest, increased pressure on agricultural population, high percentage of dependent children, high rate of rural-urban migration, low returns on investment and low per capita income as well as environmental pollution, among others. According to him, the effects of over population are more severely felt by the poor in the society and that is why Malthus advocated for the education of the lower class about the use of moral restraint or voluntary abstinence, which he believed would slow the population growth rate. As a result of the adverse effects of uncontrolled population growth on the economy of any nation, demographers and population experts advocate population control as the only cure for it.

Nwosu (2013) studied the socio-economic and developmental problems of Oshodi-Isolo Local Government area, Lagos in southwestern Nigeria with a high population distribution of one thousand and forty five (1045) people per square kilometer. He adopted questionnaire survey method and physical inventory for generation of data. In his findings, the area under investigation was plagued with incidence of environmental decay and deterioration while supporting a large population irrespective of its small landmass of nine square kilometers (9km²). Nwosu (2013), while agreeing with Ehrlich (1967) and Awe (2009) also noted that population growth creates unfavorable circumstances for economic development and puts pressure on available resources.

Mittal & Mittal (2013) in their review on the impact of population explosion on the environment, stated that rapid increase of human population is putting an incredible strain on our environment. They stated that the growth of human number is considered as a major cause of environmental and socio-economic problems as well as increasing pressure on natural, social and economic resources. While developed countries continue to pollute the environment and deplete its resources, developing countries are under increasing pressure to compete economically and their industrial advancements are damaging as well. The demands that this growth places on our global environment are threatening the future of sustainable life on earth. One of the largest environmental effects of human population growth is the problem of

global warming. Some scientists fear that global warming will lead to rising sea levels and extreme weather conditions in the future. In order to support the growing population, forests are being destroyed at an alarming rate. Humans also continue to put a great demand on the natural resources of our planet. Many non-renewable resources are being depleted due to the unrestrained use of fuel and energy. Many parts of the world also suffer from a shortage of food and water. The growth of population puts larger demands on our already limited resources. The environment on earth is suffering from the growth of global population. The depletion of resources and biodiversity, the production of waste, and the destroying of natural habitat are serious problems that must be addressed in order to ensure that life on earth will be sustainable throughout the next century. With large population come more extensive economic activities that utilize and deplete natural resources including the clearing of forests, reclaiming of wetlands and greenbelts as these have great implication on the social environment and comfort of humans (Mittal & Mittal, 2013).

Odusina (2010), in his review paper also stated that another effect of a rapidly increasing population is the low level of income per head. There will be fewer income or resources per head. The result of this is a lower standard of living or general fall in the standard of living. The consumption of goods and services per head will be low. This can lead to consumption of substandard goods and inferior commodities. Moreover, this can as well generate a situation whereby many people live in ghetto or slump areas. Such areas are conducive for contagious diseases and epidemics. This is the case in many places in Nigeria especially in Lagos, and many parts of the Northern Nigeria.

Adewole (2012) also noted that rapid population growth affects the health and welfare of the masses and the quality of environment in which people live. In the findings of Nwosu (2013), he affirmed that as long as the population increases and the community retain certain pull factors which are stronger than the push factor, the community will grow and expand its geographical coverage. The housing conditions, drainage and sewage system is in a deplorable state and therefore calls for an engineered effort to remedy the existing situation. In an effort to meet the housing needs and demands of the increasing population, inhabitants end up settling in overcrowded areas. Such regions are usually too small to support them. Hence, this affects their state of health and livelihood.

Study Area

The study area is Anambra State in Nigeria as shown in figure 1 below.



Fig. 1: Nigeria Showing Anambra State (Source: Excel GIS Lab., 2019).

The present Anambra state in the southeastern Nigeria forms boundaries with Delta State to the west, Imo State and Rivers State to the south, Enugu State to the east and Kogi State to the north. Anambra State is located within latitude $6^{\circ} 48' N$ and Longitude $6^{\circ} 37' E$ on the North and Latitude $5^{\circ} 40' N$ and longitude $7^{\circ} 27' E$ on the south. It has a total land area of 4,416sqkm (Geological Survey Awka, 2000).

The three main urban centres in Anambra State were also selected on purpose for this study. The map of Anambra State showing the three main urban centres Onitsha, Awka and Nnewi is shown in figure 2.

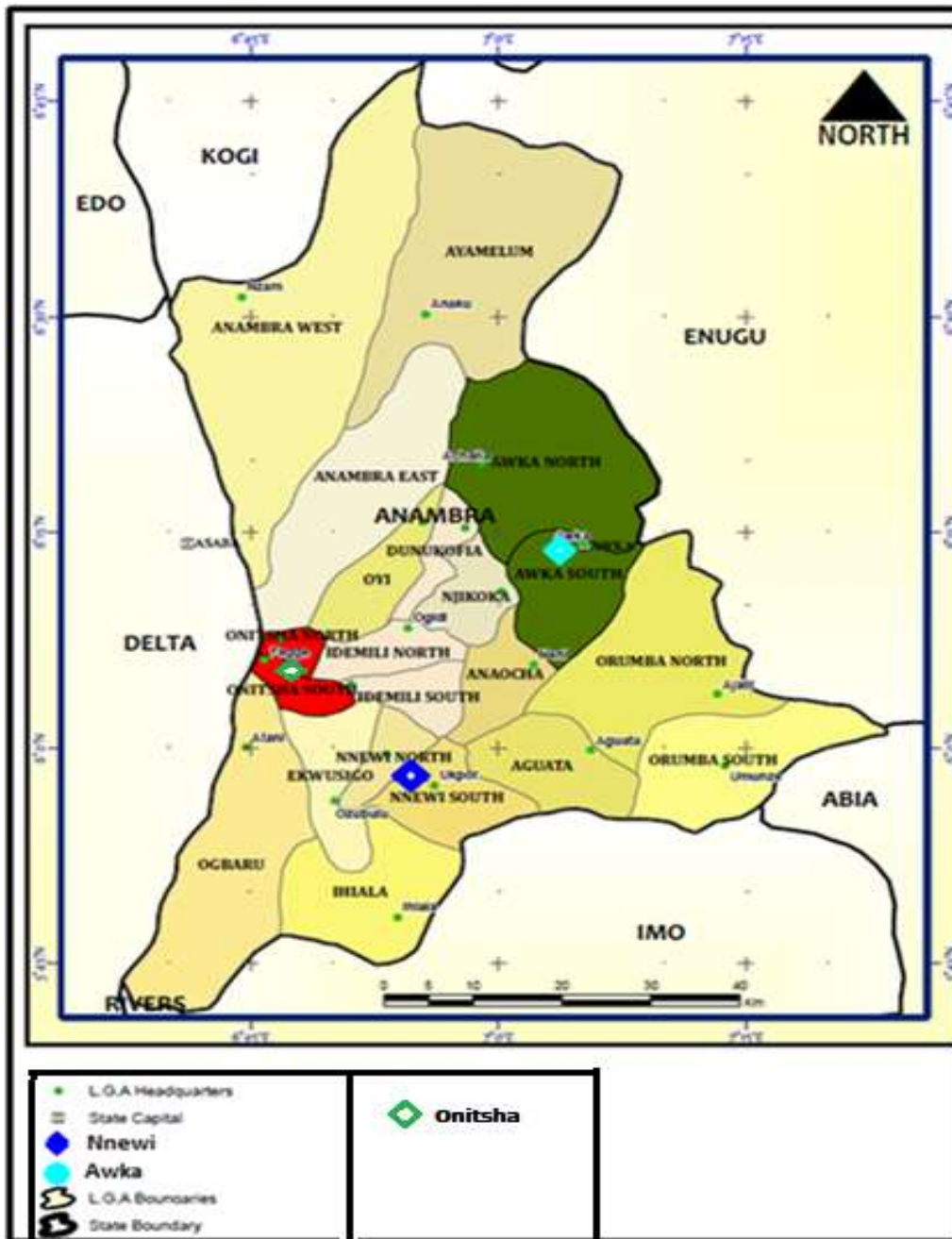


Fig. 2: Anambra State showing the three main Urban Centres Viz: Onitsha, Awka and Nnewi (Source: Excel GIS Lab., 2019)

METHODOLOGY

The study adopted descriptive survey research design having two well-structured copies of questionnaire been administered to two sets of population target and a list of interview questions which were utilized to generate data for the analyses.

Considering the objectives and data need of this study, the population of the teaching staff in the selected area, that of the students' enrolled and the number of schools becomes the target population. From the

data collected from the Director of Research and Statistics at the Ministry of Education and Anambra Post-Primary School Board secretariat, Awka, the total number of public secondary schools in Anambra State are two hundred and fifty seven (257) with one hundred and fifty four (154) within Awka, Nnewi and Onitsha. The total number of teaching staff in the schools within Awka, Nnewi and Onitsha in Anambra State is three thousand two hundred and seventeen (3217) and they made up the target population.

the study was sourced from both primary and secondary sources.

Considering the study area, the three major urban centres selected are incorporated into two Local Government Areas each, that is, Nnewi North and South for Nnewi, Awka North and South for Awka and Onitsha North and South for Onitsha Local Government Areas. The population for the selected urban centres is shown in Table 1:

Area	No. of LGAs	No. of Schools	No. of Tutorial Staff		
			Male	Female	Total
Awka Zone	5	62	128	1,121	1,249
Onitsha Zone	3	42	94	1,109	1,203
Nnewi Zone	4	50	105	660	765
GRAND TOTAL	12	154	327	2890	3,217

Source: Data Modified from ASUDEB and Ministry of Education, Awka

Having a total number of three thousand two hundred and seventeen (3,217) Teachers from one hundred and fifty four (154) Secondary Schools in Awka, Onitsha and NNewi zones of the Anambra State Secondary Schools collated from the data sourced at the Anambra State Post-Primary Schools Board, Awka Office, the sample population was determined as follows”

$$SS = \frac{N}{1+N(e)^2}$$

Where N is the target population and e is 5% level of significance

Thus the sample population for the teachers is determined by the formula as:

$$\begin{aligned} SS &= 3,217/1 + 3,217 (0.05)^2 \\ &= 3,217/9.0425 \end{aligned}$$

= 355.764 approximately a total of 400 respondents were selected from the teachers and copies of the questionnaire was administered to them individually.

Four hundred (400) copies of the questionnaire were administered and three hundred and eighty one (381) were returned.

For the number of schools sampled, fifty (50) secondary schools were selected purposively from the total number of one hundred and fifty four (154) public secondary schools within the three zones. The location of the schools within urban centres in the three zones was the major criteria for the selection of the schools sampled.

The sampling technique adopted in selecting the teachers sampled is stratified random sampling. While purposive and snowball sampling techniques were utilized in sampling the teachers who have stayed above five (5) years in their school of assignment and a total number of sixty six (66) teachers were sampled from the fifty (50) secondary schools purposively selected in the study area with at least one (1) teacher of this status coming from each of the fifty (50) secondary schools. Purposive sampling was also employed in determining the school heads/administrative staff who were interviewed from the fifty (50) secondary schools with at least one coming from each of the secondary schools.

PRESENTATION RESULTS AND DISCUSSION OF FINDINGS

To analyze the effects of urban population growth on students' personal hygiene and environmental pollution, Ten (10) relevant issues were carefully structured to reflect the effects of population growth on students' hygiene and environmental pollution. These were presented to the respondents through use of questionnaire and the outcome is presented in Table 2.

Table 2: Effects of Population Growth on Students' Hygiene and Environmental Pollution

S/N	Population growth has affected Students' Hygiene in the following ways:	SA	A	N	D	SD	Mean	Remark
1	Toilet facilities are inadequate	17	261	0	75	28	3.43	Agree
2	Overcrowding in the dormitories and classrooms	64	127	82	68	40	3.28	Agree
3	Uncontrolled generation of wastes	97	176	42	63	3	3.79	Agree
4	Students do not have water for proper sanitation	89	139	5	102	46	3.32	Agree
5	Environmental pollution through open defecations	101	151	16	97	16	3.59	Agree
6	High tendency of water contamination through dirty water taps	92	181	13	80	15	3.67	Agree
7	Noise pollution by students in overcrowded classrooms	91	163	40	38	49	3.55	Agree
8	Air pollution and high tendency of airborne diseases as students reluctantly urinate openly rather than using designated urinals	86	172	31	73	19	3.61	Agree
9	Large class sizes encourage contamination of contagious diseases	112	189	45	35	0	3.99	Agree
10	Boarding students stand high risk of food contamination and poisoning	6	108	188	15	64	2.94	Disagree

Source: Researcher's Field Survey, 2022

Effects of population growth on students' hygiene and environmental pollution according to the respondents are:

- a. Toilet facilities are inadequate;
- b. Overcrowding in dormitories/classrooms;
- c. Uncontrolled generation of wastes;
- d. Students do not have adequate water for proper sanitation;
- e. Environmental pollution through open defecations;

- f. High tendency of water contamination through dirty water taps;
- g. Noise pollution by students in overcrowded classrooms;
- h. Air pollution and high tendency of airborne diseases as students reluctantly urinate openly rather than using designated urinals, and
- i. Large class sizes encourage contamination of contagious diseases.

Test of Hypothesis:

There is no significant effect of population growth on students' personal hygiene and environmental pollution.

Statistical Tool Used: One Sample T-Test.

Reason for choice of Tool: One level of observation was compared with a known standard.

Degrees of Freedom: 8.

Decision Rule: Accept the null hypotheses if the p-value is greater than or equal to 0.05, otherwise reject it.

Test Proper: The result (output) of test is presented in Table 4.13a

Table 3a: One-Sample Statistics for Hypothesis Two

	N	Mean	Std. Deviation	Std. Error Mean
Effects of population growth on students' personal hygiene and environmental pollution	9	3.5811	.22425	.07475

Source: Researcher's Statistical Computation, 2022

The mean of the effects of population growth on students' personal hygiene and environmental pollution as contained in Table 4.13a is 3.5811, while the standard mean cutoff is 3.0.

Table 3b: One-Sample Test for Hypothesis Two

	Test Value = 3.0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Effects of population growth on student's personal hygiene and environmental pollution	7.774	8	.000	.58111	.4087	.7535

Source: Researcher's Statistical Computation, 2022

Decision and Conclusion: According to the result of the test in Table 4.13b, the effects of population growth on students' personal hygiene and environmental pollution are significant, implying that there are significant effects. This means that the null hypothesis is to be rejected and the alternative accepted because the p-value is 0.000 which is less than 0.05.

CONCLUSION AND RECOMMENDATION

The effects of urban population growth on student's personal hygiene and environmental pollution was confirmed to include that inadequate toilet facilities, overcrowding in dormitories/classrooms, uncontrolled generation of wastes, inadequate water supply for proper sanitation, environmental pollution through open defecations, high tendency of water contamination through dirty water taps, noise pollution by students in overcrowded classrooms, air pollution and high tendency of airborne diseases as students often urinate openly rather than using designated urinals. This was in line with the opinion of Leodinito & Ped (2011), who asserted that population growth when not controlled leads to social disorder such as littering and poor standard of living such as poor hygiene, congested classrooms among others. Also, the test of hypothesis showed that there is significant effect of population growth on students' personal hygiene and environmental pollution. The study therefore recommends that:

1. The policy makers should formulate a policy to control student's enrolment in line with the capacity of each school and ensure full implementation.
2. There should be increase in the provision of teaching aids in schools.
3. Students should be rewarded for good personal hygiene and cleanliness to encourage others.
4. Appreciation to be shown to students who are worthy not only in academic performance but also in character, cleanliness and obedience.

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