Socialscientia Journal of the Social Sciences and Humanities

Assessment of the Basic Sanitation Facilities in the Major Markets of Anambra State, Nigeria.

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Abstract
This study assessed the sanitation facilities in the major markets of Anambra State, Nigeria. The study aimed to assess the sanitation facilities in the markets. Stratified Random Sampling Technique was used to select the major markets while the field study technique was employed to collect the relevant data. The Nearest-neighbour analysis was used to assess the average mean distance of the markets. The findings of the study were that insufficient water, insufficient sanitation facilities, and poor management characterized the major markets of Anambra State. The paper concluded by stating that poor sanitation definitely will affect those with good sanitation: poor hygiene practices in one market will affect other markets. And therefore recommended that the relevant statutory agencies and other stakeholders in the state should ensure adequate provision and management of the sanitation facilities in the major markets by applying the Community-Led Total Sanitation (CLTS) Approach.
Keywords: Disease, Hygiene, Sanitation, Sanitation facilities, Sanitation system.

Introduction

Markets are one of the most focal points for the interaction of the people because almost everybody has to visit the market for one service or the other. They are responsible for most of the spatial interactions that take place in a city. Thus, any epidemic that emanates from the market will inevitably affect the whole population. This was aptly put by Abejegah et al (2013) "environmental sanitation has remained an intractable problem in Nigeria with serious public health consequences". To address the enormous problems of environmental sanitation in Nigeria, the Federal Ministry of Environment (FMOE) through the National Environmental Sanitation Policy identified markets and abattoir sanitations as areas of concern (FMOE, 2005).

This was sequel to the overwhelming sanitation problems in markets and abattoirs that includes, improper refuse disposals, inadequate water supply, and gross inadequacy of sanitary facilities that result in open defecation and urination as well as overcrowding and exposure of food and meat to flies and rodents and contaminants. These problems were attributed to improper planning of markets and abattoirs; the springing up of illegal

markets and abattoirs (including slaughter slabs); lack of provision of adequate facilities such as portable water, inadequate road networks, institutional regulations, enforcement, and monitoring; and above all corrupt and sharp practices by the Supervisors of markets and abattoirs (FMOE, 2005).

In 2010, the UN General Assembly recognized access to safe and clean drinking water and sanitation as a human right and called for international efforts to help countries to provide safe, clean, accessible, and affordable drinking water and sanitation. According to joint WHO and UNICEF data (2014), 36 percent of the World Population lack access to basic sanitation facilities, and 768 million people regularly go without drinking water.

It is pathetic to note that at any given time, close to half of the urban populations of Africa have a disease associated with poor sanitation, hygiene, and water of human excreta, and faeces are the most dangerous to health. Thus, a UNICEF 2014 – 2017 report on Nigeria stated as follows:"Poor access to improve water and sanitation in Nigeria remains a major contributing factor to high morbidity and mortality rates among children under five". The use of contaminated drinking water and poor sanitary conditions result in increased vulnerability to water-borne diseases, including diarrhea which leads to the deaths of more than 70,000 children under five annually.
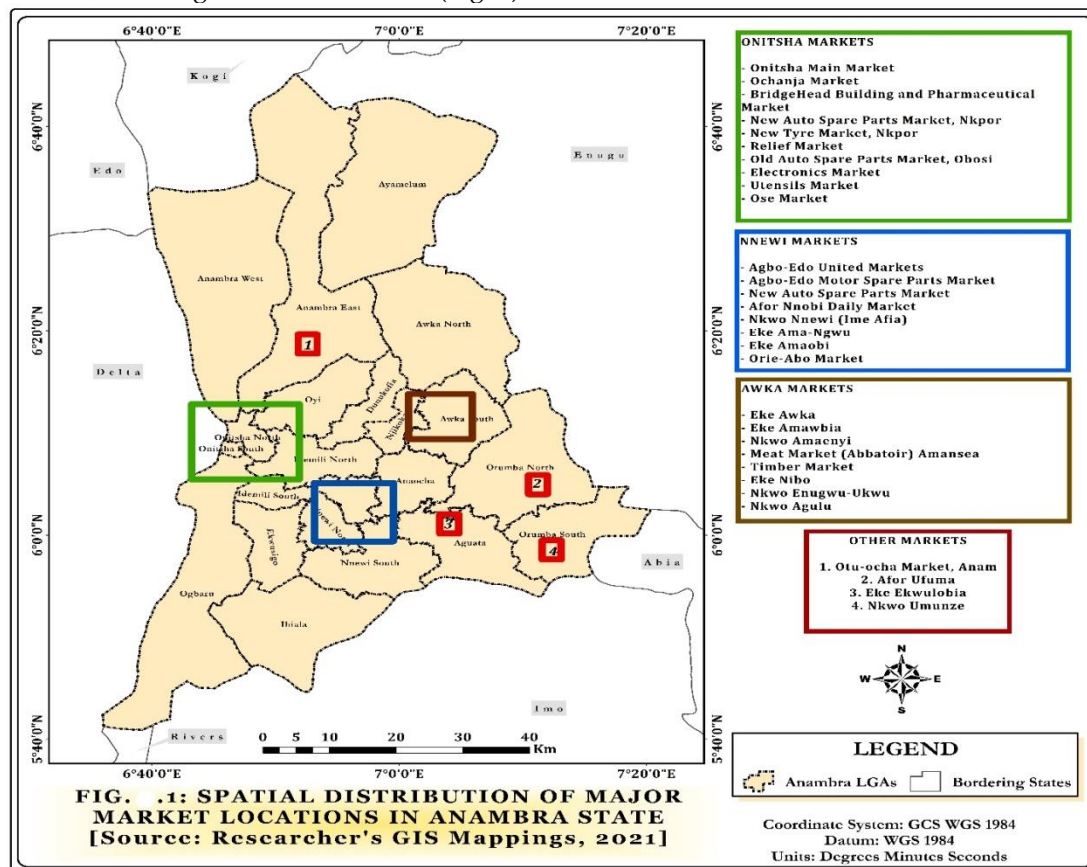
Seventy-three percent of the diarrheal and enteric disease burden is associated with poor access to adequate water sanitation and hygiene (WASH), and is disproportionally borne by poorer children. Frequent episodes of WASH-related ill-health in children, contribute to absenteeism in school and malnutrition. Only 26.5 percent of the population uses improved drinking water sources and sanitation facilities. Also, 23.5 percent of the population defecate in the open" (WHO, 2017). Sanitation plays a very important role in the productivity and wellbeing of the people while the market, being the focal center of spatial interaction of the people, is a major epicenter for the spread of diseases. Poor sanitation practices help many water-borne diseases spread, such as cholera, typhoid fever, and malaria. Despite this, many market communities have little awareness of this, and knowledge of their connection is still very low in Nigeria; many people use the same water source that they dump their waste in for cooking, cleaning, and drinking.

Inadequate access to sanitation and clean water kills 4,000 vulnerable children each day in developing countries. This contributes to the cycle of poverty for families and communities in developing countries. (The Borgen Project, 2014). This is true because, in Nigeria, it is quite common to observe mountains of refuse at market places. The heaps of refuse provide excellent breeding grounds for vectors of communicable diseases including rodents, and insects which increases the potential for the spread of infectious diseases. It is also acknowledged that many of the diseases that affect Nigerians, including malaria, tuberculosis, and diarrhea are due to unhealthy environmental conditions. (Nigerian National Planning Commission, 2004). Another common feature of markets in Nigeria is the gross inadequacy of sanitary facilities such as portable water, toilets, bathrooms, and refuse disposal bay.

Furthermore, the absence of sanitary inspectors in the major markets, and poor supervision of markets by ill-trained, ill-equipped, and corrupt officials have led to over-crowding, blockage of access roads in the markets by refuse and trading on the highway.

Against this background, the intention of this research becomes vivid and that is to assess the sanitation facilities in the major markets of Anambra State, Nigeria.

Study Area: Anambra State is a State in South-Eastern Nigeria. His name is an anglicized version of the original Oma-bala; the native name of the Anambra River, which is a tributary of River Nigeria, the capital and seat of government is Awka. Onitsha, Nnewi, and Ekwulobia are the biggest commercial and industrial cities respectively. The Geographical area of Anambra State came into being on August 21, 1991. Boundaries are formed by Delta State to the West, Imo State and Rivers State to the South, Enugu State to the East, and Kogi State to the North (Fig. 1).

FIG. .1: SPATIAL DISTRIBUTION OF MAJOR MARKET LOCATIONS IN ANAMBRA STATE [Source: Researcher's GIS Mappings, 2021]

The indigenous ethnic groups are the Igbos (98% of the population) and a small population of Igalla (2% of the population) who lived mainly in the North-Western part of the State. Anambra is the eighth-most populated State in the Federal Republic of Nigeria and the second-most densely populated state in Nigeria after Lagos State. The stretch of more than 45km between Oba and Amorka contains a cluster of numerous thickly populated villages and small towns giving the area an estimated average density of 1500 – 2000 persons per square kilometer.

The State is situated on a rolling flatland on the Eastern plains of River Niger. It covers an area of 4,416 sqkm with a population of 4,182,032 persons with 2,174,641 males and

2,007,391 females (NPC, 2006).It has typical semi-tropical rainforest vegetation, a humid climate with a mean temperature of about 87^0f, and a rainfall of between 152 – 203 mm (Agbasi, 2001). Anambra State is rich in natural gas, crude oil, bauxite, and ceramic and has almost 100% arable land. Anambra State has the lowest poverty rate in Nigeria (Obiano, 2020).

Conceptual Classification:
Sanitation: Sanitation refers to public health conditions related to clean drinking water and adequate treatment and disposal of human excreta and sewage (Oxford Dictionary). It is also defined as the provision of facilities and human wastes (excreta) and urine.
Sanitation Facilities: Refers to rooms in a public place with toilets and sinks.
Basic Sanitation Service: Refers to the use of improved sanitation facilities that are not shared with other households.
Hygiene: Refers to the ability to participate in "auditions and practices that help to maintain health and prevent the spread of diseases".
Sanitation System: Includes the capture, storage, transport, treatment, and disposal or reuse of human excreta and wastewater (Gates Foundation, 2010).
Container-Based Sanitation (CBS): Refers to a sanitation system where human excreta is collected in sealable, removable containers that are transported to treatment facilities.
Community-Led Total Sanitation (CLTS): This is an approach to achieve behavior change in mainly rural people by a process of "triggering", leading to a spontaneous and long-term abandonment of open defecation practices. CLTS takes an approach to rural sanitation that works without hardware subsidies and that facilitates communities to recognize the problem of open defecation and take collective action to clean up and become "open defecation free".
Environmental Sanitation: Encompasses the control of environmental factors that are connected to disease transmission.
Onsite Sanitation: Is defined as "a sanitation system in which excreta and wastewater are collected and stored or treated on the plot where they are generated" (Tilley, Ulrich, Luthuli, Raymond, and Zurbrugg, 2014).
Sustainable Sanitation: Considers the entire "sanitation value chain", from the experience of the user, excreta, and wastewater, collection methods, transportation of waste, treatment, and reuse or disposal (Ujang, 2003).
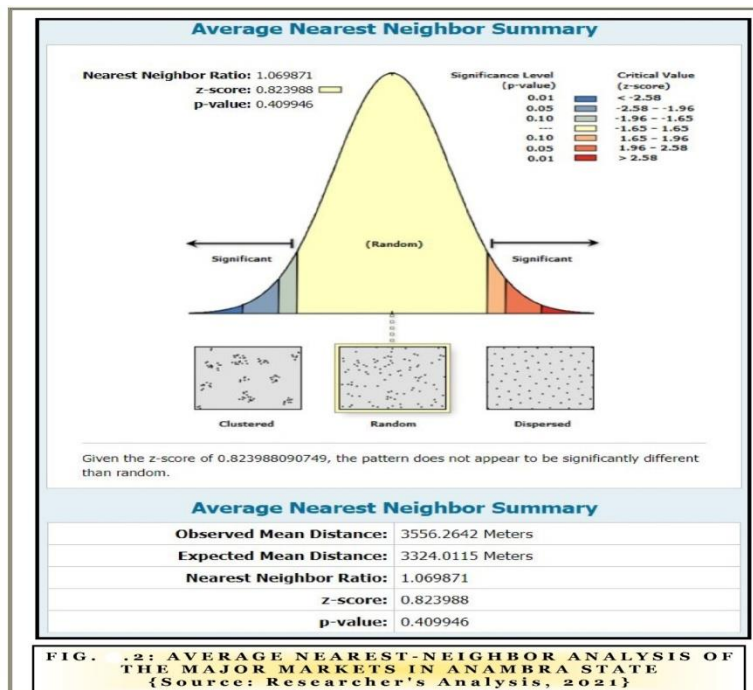
Statement of the Problem: Waste that is not properly managed, especially excreta and other liquid and solid waste from markets, are a serious health hazard and lead to the spread of infectious diseases. Unattended waste lying around attracts flies, rodents, and other vectors that in turn spread disease. This leads to unhygienic conditions and thereby to a rise in the health problems of the people (Godswill, 2016).

Aim and Objectives: This research aims to assess the sanitation facilities in the major markets of Anambra State, Nigeria. To achieve this aim, the following are the specific objectives:(a) To identify the sanitation facilities in the major markets of Anambra State. (b) To assess the functionality of the sanitation facilities. (c) To assess the hygienic practices of the users of these sanitation facilities. (d) To proffer a solution to the problems of sanitation in the major markets of Anambra State.

Methodology
The researchers adopted a survey method of research for the study. Three (3) methods: field study, interview, and questionnaire were effectively employed. The inventory survey was employed to identify the existing sanitation facilities in the major markets while oral discussion through face-to-face interviews with the traders in the study area was also employed.

A. mapping of the study area was conducted to identify the exact location of the major markets while the Nearest-neighbour Analysis was done on the market locations to ascertain the average mean distance between the markets because disease transmission between markets is directly related to distance/spatial interactions between the markets (Fig.2).

FIG. .2: AVERAGE NEAREST-NEIGHBOR ANALYSIS OF THE MAJOR MARKETS IN ANAMBRA STATE {Source: Researcher's Analysis, 2021}

Using the Nearest-neighbor Analysis, it was discovered that the mean nearest neighbor distance for the markets in the study area is 3556.26 meters(fig2). This depicts an efficient locational configuration since people only have to travel that distance to get to the nearest market. However, the efficiency of the locational configuration is a dangerous signal for rapid disease transmission from one infected market to another non-infected market.

Results and Discussion
Table 1 below reveals that: Onitsha main market (zone 1), Nnewi Motor Spare Parts Market, AforNnobi Market, NkwoAmaenyi Market, and Awka, have no borehole while

field investigations revealed that Afor Ufuma Market has two non-functional-boreholes-for the past 10years, the same also applied to the Eke-Amawbia market.

Table 1:CHECKLIST OF SANITATION FACILITIES IN THE MAJOR MARKETS OF ANAMBRA STATE.

S/N	Name of Market (No1)	Borehole (water)	No of Toilet	Separated (male/ female)	Appropriate location of the toilet	Refuse bin	Refuse dumdum	Urinals	Hand Washing Basin	Washing Soap	Waste Processing Facilities
1	Osha Main Mkt (Zone 1)	None	-	-	-	1	1	-	-	-	-
2	Osha Main Mkt (Zone 2)	1	4	No	Ideal	-	1	None	-	None	-
3	Osha Main Mkt (Zone 3)	1	4	No	Ideal	-	1	None	1	None	-
4	Nnewi (Agbaedo)	1	5	No	Ideal	None	1	None	None	None	None
5	NnewiMotorspare Parts	None	6	No	Ideal	None	1	None	1	1	None
6	Nnewi Motorcycle Spare Parts	1	4	No	Ideal	None	1	None	None	None	None
7	Awka Main Mkt	2	10	No	Ideal	-	1	2	1	1	None
8	AbattoinAwka	1	3	No	Ideal	None	1	None	1	None	None
9	Eke Ekwulobia	1	12	No	Ideal	None	1	2	None	None	None
10	AforUfuma	None	6	No	Poor	None	1	1	None	None	None
11	AforNnobi	None	2	Yes	Ideal	None	1	2	None	None	None
12	NkwoAmaenyi	None	None	No	-	None	At the road	-	-	-	-
13	Eke Amawbia	None	6	Yes	Ideal	None	None	None	None	None	None
14	Eke Nibo	2	2	None	Ideal	1	1	None	None	None	None
15	Nkwo Enugu-ukwu	1	3	No	Ideal	None	None	None	None	None	None

Source: Researchers' field report, 2021.

The boreholes at Eke-Ekwulobia and Nkwo Enugu-ukwu are functional and operational. These boreholes are in good condition but poor management resulted in the boreholes not being in use regularly. The most efficient functional boreholes in the markets in Anambra state, are those located at Abattoir Awka, Eke Nibo, and Eke Awka. Availability of water is the most important facility in sanitation, unfortunately, this service is generally over-look and neglected in the markets. The majority of the traders buy water from tankers and water hawkers for their immediate use at the market. The implication of

this is that good hygiene practices obviously will be neglected in the markets. The attendant consequence is that people's health is compromised.

Toilet Facilities: Majority of the markets in Anambra State have a sizeable number of toilets, except Nkwo Amaenyi market and Onitsha main market (zone 1). But Onitsha Main Market and Nkwo Nnewi Main Markets have numerous toilets in the commercial plazas adjacent to the markets. These plazas have clean and well-maintained toilets, owned and operated by private individuals. A token of a hundred naira (N100) is paid for each visit. The only unfortunate aspect of it is that the government sanitation agencies do not visit these places. So the practices of good hygiene by the users and operators are very poor. Except for Eke market Amawbia and Afor market Nnobi, all other markets in the state with toilets do not separate the male section from the female section in the usage of the toilet facilities.

Hand-washing after visiting the toilets is not effectively practiced in the markets except in Nnewi motor spare parts toilet and abattoir Awka. The handwashing basin at Eke Awka is not functional. The researchers observed people who visited the toilets and found out that they are not aware of the dangers of not washing their hands after visiting the toilets. This is made worse by the lack of sufficient water and environmental hygiene among the people. The danger is that these people eventually go back to the markets to handle foodstuff.

The absence of urinals in most of the markets indicated that the stakeholders of the markets and the traders do not realize the need to provide such facilities or most probably, deliberately done to conserve water. The general absence of organized waste disposal bins in all the markets calls for great concern. Worse still, there is only one central collection site (except Onitsha's main market which has two sites; one at the bright street and one at the used-clothes section) in most of the markets, while others have done. The waste bins, the refuse dumps, and the central waste-collection sites are important facilities in the markets but unfortunately, these facilities are being overlooked at the markets.

The Anambra State Waste Management Agency (ASWAMA) only operates in Awka capital city while other cities in the state were contracted to private agencies. The ASWAMA should be commended for their regularity in clearing refuse in Awka City, particularly around the markets. Other waste collection agencies, especially at Nnewi markets and Onitsha markets need to be regularly supervised or the government should venture into these cities in partnership with the respective local government councils. Unfortunately, there is a general absence of the various local councils' involvement in refuse disposals in the major markets. The public must pay for the service of refuse/waste collection.

There is no central waste processing facility in and around all the major markets in the state. This results in refuse vans when transporting wastes, littering the streets as they transport these wastes. With exception of Awka Capital City where the ASWAMA has modern trucks for transporting the waste, other cities in the state use open trucks operated by private individuals. The central waste processing facility is very important to maintain a good and healthy sanitation environment. It will also help to recycle and convert "useful" waste and generate income and employment for the people.

Findings

The findings are (a) There is a general lack of sufficient water for public use in all the markets in Anambra State except Abattoir Awka. (b) There is poor management of the existing functional boreholes in the major markets in the state. For example, the borehole at Nkwo Enugu-ukwu Market is functional but the water attendant always fails to pump water in the market while at Eke Awka market, the water tank has a small water storage capacity, its faulty as well. The NICE Micro-Finance Bank that took the responsibility of pumping the water, pumps it at their convenience. The boreholes at Abattoir Awka and Eke-Nibo are well managed. These findings agree with Adekunle 2015 and Angmor 2012. (c)There is a low level of hygiene practices among the users of the toilet facilities in the markets.

Conclusion and Recommendations

Bad sanitation will affect those with good sanitation. The markets are sources of the spread of diseases and epidemics. There is an urgent need for the various arms of the government, particularly, the local government councils to invest in sanitation facilities in the markets. If well-managed, people should pay for availing themselves of the service of the sanitation facilities in the markets.

Recommendations:(a)The Ministry of Environment and by extension, all agencies responsible for sanitation in the markets should create awareness about safe hygienic practices by the traders when visiting the toilet facilities, and also, the CLTS Approach should be introduced in the markets. (b) The local government councils and the state government should as a matter of urgent importance, assign sanitary supervisors to visit all toilet facilities regularly in the markets, particularly, those in the commercial plazas adjacent to the major markets. (c) In addition, consistent and periodic health education on segregation of waste at source, storage, and sanitary disposal of solid would help to sustain and improve hygienic practices. (d) The state government, in collaboration with the local councils, should provide and manage water in all the major markets in the state.

References

Abejegah, C.; Abali, S.O. Awunor, N.S.; Duru, C.B., Efuromma, E. Aigbiremolen, A.O. and Okoh, E.C. (2013). Market sanitation: A case study of Oregbeni market, Benin City, Edo State, Nigeria. *International Journal of Basic Applied and Innovative Research. IJBAIR 2013, 2(2),* PP.25-31. www. Arpjournals.com.www.antrescentpub.com. ASN-PH-020919 ISSN: 2315-5388.

Adekunle, F. (2015). Management of Traditional Markets in Ibadan, Nigeria. A focus on Oja'ba and Oje Markets Balogun. Retrieved from http://ww.regionalstudies.org/uploads/Balogun_Femi Adekunle.pdf.

Agbasi, E. (2001). Erosion and sedimentation from an aerial photograph, *Nigerian Journal of Tropical Geography,* (2), Pp.100-106.

Angmor, E.N. (2012). The role of transportation service in the development of traditional markets. A case study of Asesewa and Agormanya Traditional Markets in Eastern Region, Ghana. *An M.Sc. Thesis submitted to the School of Graduate Studies*. Kwame Nkrumah University of Science and Technology, Ghana.

Federal Ministry of Environment (F.M.O.E, 2005). *Policy guidelines on markets and abattoir sanitation.* Abuja, Nigeria.

Gates Foundation (2010). *Water Sanitation Hygiene Factsheet 2010 pdf.* Gates Foundation.

National Planning Commission (2004). *National economic and development strategy*. Nigerian National Planning Commission, Abuja.

National Population Commission (2006). Abuja: Federal Government Press, Moore Road Apapa, Lagos.

The Borgen Project (2014). *Borgen Project.org/sanitation-developing countries* 08/09/2014 in Nigeria.

WHO (2017). *UNICEF, Nigeria – evaluation report on WASH programme* 2014-2017. T

WHO/UNICEF (2014). h*ttps://borgenproject/the-history-of-unitedstates*.

WHO and UNICEF(2017). "*Progress on drinking water, sanitation and hygiene 2017 update and SDG Baselines*".

Ujang, Z.(2003). *Environmental biotechnology advancement in water and wastewater application*: edited by Z. Ujang, IWA Proceedings, Malaysia(2003).

Godswill, Ebere. (2016). *Collection and disposal of market waste in Awka, Anambra State*. https://www.researchgate.net/publication/30220316. April, 2016.

Oxford Advanced Learners Dictionary New 6th Edition.

Tilley, E; Ulrich, C; Luthuli, C; Reymond, Ph; and Zurbrugg, C.(2014). *Compendium of sanitation systems and technology (2nd revised edition)*(http://www.eawag.ch/en/department/sanddes/publications/compendum) Swiss Federal Institute of Aquatic Science and Technology(Eawag). Duebendorf, Switzerland. ISBN 978-3-906484-57-0.

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