

THE ADEQUACY AND EFFECTIVENESS OF PUBLIC CONVENIENCE IN SELECTED MARKETS WITHIN ETSAKO WEST LOCAL GOVERNMENT AREA, EDO STATE, NIGERIA

Asunogie, O.F¹, Eshiemokhai I.T² and Okpugwu, E.T³

¹Department of Urban and Regional Planning

^{2,3}Department of Surveying and Geo-informatics, School of Environmental Studies,
Auchi Polytechnic, Auchi

Corresponding Author:

Asunogie, Osighbemhe Faruk

Email: asunogieof@auchipoly.edu.ng

Published: 23 July 2021

Copyright © Asunogie et al.

ABSTRACT

Markets are normal places where forces of demands and supply operate, and where buyers and sellers interact to trade goods, services or instruments for money exchange, and this leads to the demand for public convenience. Public conveniences are often thought of as toilets that allow people to meet their sanitary needs in public places such as markets. This study is aimed at assessing the adequacy and effectiveness of public convenience in selected markets in Etsako West, LGA. Using systematic and random sampling techniques, 188 questionnaires were administered with Uchi, Igbe, Agbede, Utukwe, South-Ibie and Jattu markets having 47, 30, 31, 39, 23 and 18 questionnaires respectively. findings shows that Igbe, Uchi, Agbede, Utukwe and Jattu markets have public toilets respectively but South Ibie, do not have any public toilet and the common toilet type in all the areas is the pit toilets which are shared by all the sexes, with most of these toilets not accessible to all and for those whom it is, they pay for the service usually not more than ₦50 as the case may be even in their unsanitary state. Also the study showed that the toilets are inadequate and factors influencing patronage includes; charges, closeness, security, cleanliness, privacy and convenience. It is recommended that public toilet facilities be located where it is required and in accordance with the demand, all sanitary facilities should be provided with the reliable and dependable source of water, the public toilets should be made available to users at an appointed time, public sanitary facilities should be built and managed in accordance with sustainable design principles among others.

Key words: Markets, Public Convenience, Toilets Facilities, Adequacy and Effectiveness

INTRODUCTION

Market as defined by Roth (2012) is a normal place where forces of demands and supply operate, and where buyers and sellers interact to trade goods, services or instruments for money exchange. Generally, markets occupy an important position in the lives of Nigerians and activities involved in buying and selling generate large quantities of solid waste that contains a large proportion of putrid vegetable and animal matter (Parks, 2007). Markets attract large gathering of buyers, sellers and especially pre-school children who have accompanied their mothers to markets. There are two types of markets in Nigeria- Traditional and Modern. Both may hold daily or periodically on specific days. Small markets usually serve local communities and may consist of just a few stalls, (Abejegah, et al. 2013). They are usually easy to keep clean at the end of the day's transactions. Medium markets, on the other hand, serve a number of neighboring communities while large markets are usually central, contain many stalls, and promote inter-township trade. Adequate provision of sanitary facilities is required in medium and large markets.

Public conveniences are often thought of as toilets that allow people to meet their sanitary needs in public places such as markets, and transport centers (Kolsky, 2006; Michael & Olamiju, 2015). The coming together of buyers and sellers in markets invariably leads to the demand for public convenience since a large number of persons convenes in the market on a daily basis. Public sanitary facilities are crucial infrastructure necessary for the social well-being and practical operation of a city (Abubakar, 2015). Provision of toilet facilities is considered a privilege rather than a necessity in most public places, which leads to failure in their roles to promote good health and safety of the users. Access to and efficient use of safe sanitation facilities is an essential part of public health. This underscores the need for the provision of decent toilet facilities for all (Issaka & Enoch, 2013). The provision of properly managed functional public convenience facilities located in high density areas

such as markets, motor parks and open spaces will consolidate sanitary efforts of the state Government in significant reduction in health related problems (Asabia, 2011).

Public toilets, for the interest of a populace, health and safety of traders, market meat consumers, and the general public in the markets are statutorily required to satisfy certain basic sanitary conditions for them to be officially approved for use (Amadi, et al., 2018). The stipulated requirements from Federal Ministry of Environment (FMENV) include the provision of adequate facilities for environmental sanitation and personal hygiene, such as refuse collection and disposal facilities, toilets, bathrooms, hand-washing facilities, proper drainage and water supply (Federal Ministry of Environment, 2005).

The situation of public toilets in most markets are usually offensive, with open spaces, water bodies, public places and drainage systems (gutters) exude smelly, offensive, putrefied odour emanating from indiscriminate urination and open defecation (Asabia, 2011; Michael & Olamiju, 2015). Safe disposal of excreta and hygienic behaviors are essential for the dignity, status and wellbeing of every person, irrespective of whether they are rich or poor, live in rural or urban areas, small towns or cities. The primary direct impact of sanitation and hygiene promotion is on health, and its impacts; the most significant is probably the prevention of diarrhoeal disease (Abogan, 2014).

In spite of their importance, public toilets present a challenge for every society in Nigeria. Anyone who has had the need for a public toilet facility has invariably acquired the knowledge that one nearby is priceless (Drangert & Greed, 2010), and such facilities have been consistently poorly managed and have become the site of local political conflict, notwithstanding efforts at franchising them and involving communities in their management. This is attributable to the politics of patronage at the urban level, the relationship between city government and community level groups, and the failure of regulation by municipal authorities (Ayee & Crook, 2003).

Most markets in Etsako West were formed organically without proper planning. Since the markets were not properly planned, most of them have no proper location for convenience let alone having effective and functional toilets. In areas where the toilets are present including Uchi, Igbe, Utukwe and Jattu, some of the design or management are not female-friendly and are usually not accessible to all users, hence when one is forced to use the toilets, they end up using the available open space around them and this restricts the movement of women and girls, as well as older people and people with disabilities, and limits their ability to participate in public life (Water Aid, Water and Sanitation for the Urban Poor, & Unicef, 2018) which makes Nigeria to be ranked among the highest in countries with open defecation system. Again, a key issue for universal access is low availability of public and community toilets. Where they do exist, these facilities typically do not meet the requirements of women and girls. Men and women have different requirements from facilities due to: biological factors including menstruation and pregnancy; and social and cultural factors such as expectations around maintaining 'dignity' and 'modesty', women still being the main caregivers for children and sick or older relatives and community members and those with disabilities, and women remaining at greater risk of harassment and sexual violence than men. This has negative effects on women's lives (Water Aid, Water and Sanitation for the Urban Poor, & Unicef, 2018). The above issues have therefore necessitated the need for this study which is aimed at assessing the adequacy and effectiveness of public convenience in selected markets within Etsako West LGA through: Identification of markets and toilet facilities in them, Appraisal of the state of the facilities in the markets, Examination of the factors influencing the usage of toilets, Estimation of the population of the markets and facility usage percent to the established adequacy, Analyzing the cost of accessing the facility in the market to establish accessibility, Identifying the environmental and health implication of

the absence of public conveniences in the market and make feasible recommendation based on findings and conclusion.

THE STUDY AREA AND METHODOLOGY

Etsako West is a Local Government Area in Edo State, Nigeria. Its headquarter is Auchi. It is made up of six clans namely; Auchi, Uzairue, South-Ibie, Aviele, Jagbe and Awain clans. A projection of 1991 census figure using growth rate of 2.5% puts the area at 273,252 persons. The area is primarily agrarian and therefore generates a socio-economic activity that leads to trade in exchange for economic prices. From these clans, Uchi, Igbe, Agbede, Utukwe, Iyapki and Jattu markets were selected for the study. Using survey and observatory approach, the research population was an “estimated number of shops in the selected markets” which amounted to 4,672 estimated shops from which a sample percentage of 23%, 10%, 18%, 12%, 10% and 27% were taken from the selected market amounting to 188 sample size. Random sampling technique was adopted for the study. This is because the study area is primarily homogenous in nature.

CONCEPTUAL FRAMEWORK: THE SHARED TOILET MODEL

Shared toilet model refer both to the facilities and management models that provide sanitation services to groups of households, or, in the case of public toilets, to the public. For the sake of comparison, individual toilets for use by a single household are known as individual household toilets. Shared toilet models tend to be applied to three general categories of infrastructure characterized by use. Toilets shared by a small defined number of households are referred to as shared household toilets. Toilet blocks that serve many households in a residential area, and that may offer shower and laundry facilities, are referred to as community toilets. Public toilets refer to facilities open to all users who are in transit or otherwise away from home (Rachel, Alyse, & Rebecca, 2018).

A REVIEW OF EXISTING LITERATURE

THE NEED FOR PUBLIC CONVENIENCES IN PUBLIC AREAS

Public toilets are not only needed for regular purposes but also important during a particular occasion or event (Michael & Olamiju, 2015). Wherever people go, outside of their own home, toilet facilities are needed for the enjoyment of the area by visitors and also residents who may be some distance from their home. They can make a significant impact upon the comfort of individuals and families who visit public spaces and their perception of the area as a desirable place to visit.

The design and location of public toilets according to Greed, (2005) should be proudly placed out in the open and not hidden but thoughtfully designed. Toilets should be located in central public thoroughfares, squares, in open well lit areas, and people should be proud of them as an important townscape statement in their own right (Greed & Roberts, 1998). Public toilets that are badly designed, badly maintained and poorly located generate a sense of neglect, attracting vandalism, anti-social behaviour and social disorder (Michael & Olamiju, 2015).

On the use of signage for public conveniences, Drangert & Greed (2010) opined that the use of signage is very important as it depicts how to find available public conveniences. Signage facilitates good direction to sanitary facilities and individual facility information signs. On the health of communities and availability of public conveniences, Greed and Daniels (2002); opined that public toilets are vital facilities that might contribute towards the health and well-being of a nation. Greed (2006), notes that public toilets are vital components in creating sustainable, accessible and inclusive cities.

ENVIRONMENTAL AND HEALTH IMPLICATIONS OF PUBLIC CONVENIENCES/ INCONVENIENCES

There is a direct link between urban environment degradation and public health considering water related diseases such as diarrhea, dysentery, cholera, and typhoid that are ravaging man (WHO, 2007). Human waste is responsible for the transmission of infectious diseases such as cholera, typhoid, dysentery, and diarrhea (Pickering & Owen, 1997). Approximately according to Wikipedia (2005), 14,000 people die each day from preventable water-borne diseases because of inadequate sanitation and hygiene practices. This must have prompted Wahab (2004) to opine that most of the endemic diseases of Africa are best addressed through sanitation and hygiene.

Majority of cities in Nigeria and many developing countries, have no central sewage collection and disposal system. Every home in the urban and semi-urban areas utilizes block lined private septic and soak away pits for excreta and sewage disposal (Nwachukwu, 2008). The greatest dangers lie in the evacuation and disposal of the excreta and sewage from the septic and soak-away pits when they fill up. After the evacuation, how the excreta-sewage is disposed of is a matter for great concern. Baarschers (1996), affirmed that raw sewage is often dislodged into surface water without any form of treatment. In many developing countries and in some developed countries, sewage and water-borne industrial wastes are discharged without treatment into the nearest waterway or into lagoons. Obire, Tamundo, & Wemedo (2003) affirmed that domestic sewage and industrial wastewater containing large quantities of chemical substance drained into rivers without treatment causing serious water pollutions. The challenges posed by insanitary non-solid waste management in Nigerian cities are grave (Kamaldeen & Wahab, 2011). This is made worst due to non-existence of sewage system in any of the city and inaccessibility to excreta disposal system (Linn, 1983). Nigerian cities have inadequate systems for the safe disposal and treatment of waste (Kamaldeen & Wahab, 2011). Adeyemo (2003) noted that in Nigeria, like many developing countries, the discharge of untreated wastes into the environment is still a problem, despite the establishment of Federal Environmental Protection Agency (FEPA) since 1998. In furtherance to the above observations, Nadkarni (2004) stated that pollution of rivers, lakes, oceans and groundwater with sewage damages aquatic biodiversity and as a result, only a few forms of life survive; more so, when local people might be dependent on some of the affected species for food and livelihoods.

APPROACHES TO PROVISION AND MANAGEMENT OF PUBLIC TOILETS

Over the years, researches have shown different approaches to public toilet management. Abubakar (2015), in an extensive research summarized these approaches into three classes which included conventional, ecological and low-cost public toilets management approaches. While the conventional approach to public toilets includes systems that collect and store human excreta, so-called “drop and store” systems (also known as pitsan), or collect and transport the excreta further, so-called “flush and discharge” systems, these systems he notes are normally simple, low-cost and require no infrastructure, but they also have many disadvantages; The Ecological sanitation (ecosan) is not a specific technology, but rather a holistic sanitary concept. It is based on three fundamental principles: preventing pollution rather than controlling it after the fact (the opposite of end-of-pipe systems), sanitizing of urine and feces and using resulting safe products for agricultural purposes. Ideally, ecosan systems enable a complete recovery of nutrients in wastewater and their reuse in agriculture and; Low-cost public toilets approach is a cheap alternative to the conventional sanitation approach as it utilizes technologies that are similar to the conventional ones. However, low-cost sanitation is designed in such a way that it can be installed, operated and maintained at considerably lower costs

than the conventional one. It employs pipes of small diameter laid at shallow depths to transport wastewater preferably by gravity offsite. It is especially suitable in highly congested areas. Its lower costs are attained through reduced sewer length. The success of this type of sewer systems is highly dependent on the community and it needs to be chosen upon the consultation with future users. Simplified sewerage can be seen as a conventional sewerage stripped down to its hydraulic basics.

WHY PUBLIC AND COMMUNITY TOILETS MUST MEET REQUIREMENTS OF WOMEN AND GIRLS

A lot of social, cultural, gender and other factors affect the lives of women and girls in modern reality. These realities form the basis why most public toilets systems must meet the standard or requirement of women. These factors are: **Social and cultural roles, responsibilities and restrictions**. Thus it is easier (although not desirable) for men to urinate outside than it is for women. Women and girls are more restricted by what is considered acceptable and appropriate behavior (i.e. gender norms) and by pressures to maintain 'dignity' and 'modesty'. When toilets are not available, evidence shows women and girls often restrict their eating or drinking to delay the need to use a toilet, which increases their risks of various health problems and affects their quality of life. They might also wait for darkness to relieve themselves outside, which can be dangerous (UNICEF, 2018); **Women and girls (and transgender people, people with disabilities, and children) are at greater risk** than are men, of sexual violence, harassment and physical violence when forced to defecate in the open or use unsafe, dark or badly located toilets. In Bihar, India, for example, 'sanitation-related' rapes made up nearly half of the more than 870 cases of rape in the state in 2012. The fear of rape and violence leads to women and girls avoiding using community and public toilets in the dark or where they feel they are unsafe.

Incontinence affects one in four women over the age of 35 years, compared with one in ten adult men. This can be associated with pregnancy, childbirth, menopause, fistula and the structure of the female urinary tract. People with incontinence need a toilet more often (Water Aid, Water and Sanitation for the Urban Poor, & Unicef, 2018). Women cannot urinate as easily as men can because they need to undress at least partially for both urination and defecation, which requires more space, privacy and time – even more so when managing menstruation. These requirements are greater for older women and those with disabilities.

DESIGN AND MANAGEMENT CONSIDERATION OF PUBLIC TOILETS

When a public toilet is to be provided, effective planning and design needs to be undertaken to ensure that the installation of the toilets achieve desirable benefit to the community but minimizes the opportunities for negative impacts. This is because the location and siting of a Public Toilet can cause concern for members of a local community where it is perceived that the installation of the Toilet block will impact negatively on the neighborhood. Often this perception is based on past experience of public toilets being associated with anti-social behavior and in many cases experiences with toilets which have become run-down and degraded (Abubakar, 2015).

In a broader sense however, guidelines are to be used to ensure that public toilets facilities are designed, installed and managed to meet at least the minimum standard. These includes

Configuration- Public Toilets should be provided as a unisex (genderless) single cubicle, enclosing other facilities such as hand washing and baby change, and exiting direct to a public area. The cubicle should be designed to meet disability access standards; **Location-** The toilet should be located in a highly visible area with the entrance orientated to the nearby activity. The immediate vicinity should

be free of other facilities which might give people an excuse to loiter in the vicinity of the toilet; **Crime Prevention- Design** should incorporate features which minimize the opportunities for vandalism, graffiti and anti-social behaviors which have been associated with public toilets. The primary function of these design principles, when applied to public toilets, is to engender in the members of the public a sense of confidence in the safety of the toilet especially for ladies which are more vulnerable to attacks from males; **Life Cycle Cost Management-** The design of the toilet should seek to optimize the total life cycle cost by incorporating features which reduce operation costs such as utilities, maintenance, and replacement of consumables, cleaning, surveillance, opening and closing. **Sustainability-** The design of the facility should incorporate, as far as is practicable, environmentally sustainable design features. These include consideration of embedded energy and recycling potential of materials, minimization of waste associated with construction, energy and potable water, reducing the impact of cleaning materials used for graffiti removal and maintaining a high level of satisfaction among users with hygiene and appearance

FINDINGS

Bio-Data

Findings from the survey shows that 31% of the respondents are males while 69% are females. This means that more females participated in the exercise than the males; that 13% of respondents fell within the ages of 20 and below, 63% between 21 - 40, 18% between the ages of 41- 60 while 6% are of ages 61 and above. This shows that more than 87% of the respondents are adults therefore their judgments can be relied upon; that 47% of respondents are single, 44% are married, 1% are divorced while 2% are separate and 6% are widowed; that 8% of respondents have no formal education, 14% had primary, 22% had secondary, 34% had higher education, 18% are graduates, and 4% had post graduate degree; that 53% of the total respondents are traders in the various markets while 47% of them are customers/buyers.

Market and Facilities

Findings of the Market's facilities and use shows that: On the frequency of visits to markets, 55% visit the market on a daily basis, 23% visits weekly, 19% visits biweekly and 3% said once monthly. This implies that most people visit the markets on a regular basis; that 76% of the respondents use public toilets while 24% do not use public toilets; On the preference of where to answer the call of nature, it was revealed that 22% preferred open space, 37% preferred available toilet in the market for decency sake while 41% preferred anywhere they like so long it is convenient for them; From the selected markets, Igbe, Uchi, Utukwe, Agbede and Jattu markets all have public toilets respectively except South-Ibie market; that Uchi market had the water system toilet type, Igbe market had pit toilet, Agbede, Jattu and Utukwe markets had both pit and water cistern toilets respectively. This shows that the predominant toilet types in the markets are pit toilets. The study also showed that Uchi market has separate places for males and females while Agbede, Utukwe, South Ibie, and Jattu, do not have separate places for male and female. This implies that the same toilets are used for both sexes which is unhealthy for females: that only Uchi and Utukwe markets had water for cleaning after use while Agbede, South Ibie and Jattu had no access to water usage after use: that for access to the facility, only 24% had access to it whenever they want to use it while 76% do not have access to it. This implies that the toilets are not readily accessible to everyone when needed: That for the amount paid for the usage, shows that 47% of the respondents said they pay ₦50 for the usage of the facility, 29% pay ₦30 while

29% said it is ₦20 per usage of the facility. This according to them is a function of the type of toilet facility in the market in question and the activity being carried out in the facility;

Sanitation, Hygiene and Adequacy

The study revealed that the toilets in the area are not hygienic in nature. Thus 68% of the respondents said the toilets are poor in general and are not healthy for usage. This means that a lot needs to be done to improve the nature of the toilets. This explained why 75% of the total respondents hold to the fact that the toilets are not satisfactory in nature due to their poor state, but considering the fact that they do not have an alternative, they stick to the usage of these toilets; In terms of adequacy, the study shows that the existing toilets ratios' the markets' population in all the markets is more than 1:38 and are therefore not adequate for the population of the market users. Hence the over utilization of these facilities in the locations where they exist which shortens the lifespan of the facilities.

Influencing Factors

It also revealed on the preference of the type of toilet used by respondents that charges for the toilet and the proximity to users are major influencing factors on the patronage of the toilets as 82% of respondents admitted that charges and proximity are influence; That security is a very essential factor in the patronage of the public toilets and hence it is a major influencing factor on the patronage of the toilets. Thus it showed that 69% of respondents refused using the toilets due to security reasons while 21% disregarded security as a factor and 10% attributed their reasons to other factors; that 87% of respondents refused to use the public toilets due to the physical environment around these facilities.

Summary of findings

From the study, it was revealed that the respondents were predominantly females; that these respondents were adults and they are educated with majority of them falling between single and married in terms of marital status; that 53% of the interviewed respondents are traders; that majority of the respondents visit the market on a daily basis and this people use public toilets when there is need to answer the call of nature but most of the respondents are unwilling to use the public toilets as a result of the fear of infections and diseases from them; that only Uchi market toilets have separate facility for each sex , others are shared by both sex without due consideration for the female folks; that the toilets are not accessible to all and for those whom it is accessible, they pay for the service usually not more than ₦50; that most of the toilets are in physically poor condition and are not healthy for usage; that in terms of adequacy, the existing toilets are not adequate for the population of the market users. Hence the over utilization of these facilities in the locations where they exist which shortens the span of life of the facilities; that on the influencing factors on patronage of toilet, factors ranging from charges, closeness, security, cleanliness, privacy and convenience are the influencing factors on the patronage of the toilets; and that on sanitation, problems associated with toilet use in the markets includes poor water supply, inadequate cubicles, poor facilities, lack of effective supervision, poor hygienic condition, problems of accessibility and lack of hygiene items.

Conclusion

Sanitation as a method of containment and sanitization of human excreta serves an important role of preventing the spread of diseases and protecting both human and environmental health. Public conveniences are necessary to answer the call of nature especially in public places such as markets, parks, churches, mosques, etc. **The study examined the adequacy and effectiveness of public conveniences in selected markets in Etsako West.** Based on the findings from this study it is therefore convenient to conclude that

The findings from the study reveals that the markets do not really have better public toilets for usage which allows the market users practice open defecation system which is not sustainable. The available public toilets have low level of hygiene and the facilities are poor; the provision of sanitary materials that enhance hygienic condition of the facilities like soap, air-fresheners/ odour neutralizers, clean towels, toilet papers, etc. are never available as revealed by the study except for water that is rarely available from the price payable for the use of such facilities; that there is generally a poor attitude towards maintenance in the Public Conveniences, particularly regular cleaning and use of disinfectants. The practice of using bathroom floor as the urinal in most of the Public Conveniences is highly inappropriate and unhygienic.

Recommendations

Based on the findings and conclusion for this study, the following recommendations will go a long way in enhancing public spaces including markets as this will brighten the vision of safe and environmentally friendly space with all human spaces.

- ❖ Public toilet facilities should be located where it is required and in accordance with the demand. This is to ensure that high quality public sanitary is provided where a critical mass of people requires access to such facilities. By standards, the facilities should be located within the distance of 100mts. A range of facilities exist including dignified mobile toilet system which can be adopted in informal and temporary locations.
- ❖ All market's sanitary facilities should be provided with the adequate and dependable source of water (i.e. water board and borehole) to constantly serve the market population as this will improve the sanitary conditions of these toilets.
- ❖ Market toilets, just like all public toilets should be built with cubicles size ranging between 2.0-2.5 sqm. This is a recommended standard for size of cubicles as it gives and provides good circulation, movement, alignment and easement
- ❖ Public sanitary facilities should be built and managed in accordance with sustainable design principles. Sustainable design sanitation facilities aim to lessen their impact on the environment through energy and resource efficiency. Besides, they will improve the sanitary conditions of the environment.
- ❖ There is need for objective consideration of the concept of sustainability in the design stage of any public toilets especially markets as these consideration will greatly influence patronage factors when adhered to. These considerations includes minimizing of water use and non-renewable resource consumption, Promotion of health and hygiene, through easy-to-clean surfaces, Absence of areas where dirt or rubbish might accumulate, Limited areas for insect or rodents to inhabitant, Resistance to graffiti, Meeting the demand of intended users, Enhancing of durability of materials and equipment, Safe disposal of waste products with focus on possible re-use options among other considerations.

References

- [1] Abejegah, C., Abah, S., Awunor, N., C.B, D., Eluomma, E., Aigbiremolen, A., & Okoh, E. (2013). Market Sanitation: A case study of Oregbeni market Benin - City Edo state, Nigeria. *International Journal of Basic, Applied and Innovative Research IJBAIR*, 2(2), 25 - 31. Retrieved from www.arpjournals.com; www.antrescentpub.com.

- [2] Abogan, S. (2014). Appraisal of Existing Sanitation Technology in Nigeria; A Critical Review. *Global Journal of Human Social Science*, XIV(1), 32- 46.
- [2] Abubakar, A. M. (2015). *Appraisal of Sanitary facilities in Public areas of Garki District, Abuja*. MSc Thesis, Ahmadu Bello University, Department of Urban and Regional Planning, Faculty of Environmental Design, Zaria.
- [3] Adeyemo, O. (2003). Consequences of Pollution and Degradation of Nigerian Aquatic Environment on Fisheries Resources. *The Environmentalist*, 23, 297-306.
- [4] Amadi, C., Ukala, K., Amadi, A., Ede, A., Iro, O., U, Z., & Obasi, K. (2018). Study on the Availability and Utilization of Sanitary Facilities in Selected Markets in Aba, Southeast, Nigeria. *International Journal of Medical Science and Health Research*, 2(2), 1-7. Retrieved from www.ijmshr.com.
- [5] Asabia, A. (2011). *Making a Clean Change; Women run Facilities Promote Health and Sanitation*. Retrieved March 5, 2019, from www.metamorphosis-nigeria.org
- [6] Aye, J., & Crook, R. (2003). *Toilet wars”: urban sanitation services and the politics of public-private partnerships in Ghana*. IDS Working Paper 213, Institute of Development Studies., Brighton, England.
- [7] Baarschers, W. (1996). *Eco-facts and Ecofiction: Understanding the Environment Debate*. London: Rutledge.
- [8] Drangert, O. J., & Greed, C. (2010). Sustainable Sanitation for the 21st Century: Public “away from home” Toilets. Retrieved from www.sustainablesanitation.info/upload/5.2_Public-toilets_2010-09-07.pdf
- [9] Drangert, O. J., & Greed, C. (2010). Sustainable Sanitation for the 21st Century: Public “away from home” Toilets. Retrieved from www.sustainablesanitation.info/upload/5.2_Public-toilets_2010-09-07.pdf
- [10] Federal Ministry of Environment, (2005). *National Environmental Sanitation Policy*. Abuja, Nigeria.
- [11] Greed, C. (2005). Taking Stock: an Overview of Toilet Provision and Standards. *World Toilet Conference*, (p. 14). Belfast.
- [12] Greed, C. (2006, May). The Role of the Public Toilet: Pathogen Transmitter or Health Facilitator? *Building Services Engineering and Research and Technology*, 27, 2127-139.
- [13] Greed, C., & Daniels, I. (2002). *User and Provider Perspectives on Public Toilet Provision*. Bristol: University of the West of England.

- [14] Greed, C., & Roberts, M. (1998). *Introducing Urban Design*. Harlow: Longmans.
- [15] Issaka, K. O., & Enoch, A. K. (2013). Where do I answer nature's call? An assessment of accessibility and utilisation of toilet facilities in Wa, Ghana. *Ghana Journal of Geography*, 5, 17 – 31.
- [16] Kamaldeen, O. S., & Wahab, B. (2011). The Impact of Excreta Disposal into Lagos Lagoon on the Lagoon Ecosystem at Iddo Discharge Point in Apapa Local Government Area of Lagos State Nigeria. *Journal of Sustainable Development and Environmental Protection*, 1(1).
- [17] Kolsky, P. (2006). Opening Remarks for the Public and Community Toilets: Lessons and Ideas from Experience in Nairobi, Delhi, Mumbai, and Liuzhou. *Video Conference held October 3-4, 2006*. the World Bank.
- [18] Linn, J. (1983). *Cities in the Developing World*. Washigton, D.C.: World Bank.
- [19] Michael, A. O., & Olamiju, I. O. (2015). Public conveniences and sanitation challenges in developing nations: A focus on Agege, Lagos, Nigeria. *International Journal of Research In Social Sciences*, 5(7), 7-20. Retrieved from www.ijsk.org/ijrss
- [20] Nadkarni, M. (2004). *The Meaning of Sanitation: An Ecosystem Approach*. Paris. Retrieved from http://www.cerna.ensmp.fr/cerna_globalisation/Documents/Manoj.pdf
- [21] Nwachukwu, M. A. (2008). Environmental Sanitation Enforcement and Compliance Best Management Strategies for Nigeria. *International Network for Environmental Compliance and Enforcement's (INECE) Eighth International Conference, Linking Concepts to Actions: Successful Strategies for Environmental Compliance and Enforcement, held 5-11 April 2008*. Cape Town, South Africa.
- [22] Obire, O., Tamundo, D., & Wemedo, S. (2003). Physico-Chemical Quality of Elechi Creek in Port Harcourt, Nigeria. *Journal of Applied Sciences and Environmental Management*, 7(1), 43-49.
- [23] Parks, K. (2007). *Textbook Of Preventive and Social Medicine* (19th Ed ed.). M/s Banarsidas Bhanot Publishers.
- [24] Pickering, T., & Owen, A. (1997). *An Introduction to Global Environmental Issues* (2nd edition ed.). London: Routledge.
- [25] Rachel, C., Alyse, S., & Rebecca, G. (2018). *Shared and Public Toilets*. Washington, DC: 2018 International Bank for Reconstruction and Development / The World Bank.
- [26] Roth, S. (2012). Leaving Common Places on the place cornerstones of a policy phonic market. *Journal of Critical organization inquiry*, 10(3), 43-54.

- [27] UNICEF. (2008). *Water and Sanitation Monitoring Platform Water and Sanitation Summary Sheet*. UNICEF. Retrieved from http://www.unicef.org/nigeria/NG_resources_washsummary.pdf
- [28] Wahab, B. (2004). Africa Traditional Religions, Environmental Health and Sanitation in Rural Communities. *The Enviroscope. A Multidisciplinary Journal*, 1(1), 1-9.
- [29] Water Aid, Water and Sanitation for the Urban Poor & Unicef. (2018). *Female-friendly public and community toilets: a guide for planners and decision makers*. Water Aid, Water and Sanitation for the Urban Poor, (WSUP); Unicef.
- [30] WHO. (2007). *Guidelines for drinking-water quality: second addendum*. (Vol. 1). Geneva: WHO.
- [31] Wikipedia. (2005). *Sanitation and Water Supply*. Retrieved from Wikipedia: <http://www.en.wikipedia.org/wiki/sanitation>