

**‘Nothing can be done to make our markets clean’: A qualitative study of attitudes of the African marketplace users toward waste**

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**Abstract:** The African marketplace is a space with deep cultural significance and is considered to be a fundamental focal point of economic and social life. One significant challenge faced by market stakeholders is solid waste management (SWM). Waste is poorly managed contributing immensely to the pollution of the physical environment and poses risk to public health. With sanitation being one of the priorities of the Sustainable Development Goals, this paper aims to investigate the attitudes of the users of African markets toward waste.

Based on an in-depth qualitative approach; observations and semi-structured interviews were conducted in four markets in Port Harcourt, Nigeria. Findings of this study revealed that the provision of modern infrastructure in traditional marketplaces creates an identity that is valued by its users and results in improvement of their waste management practices. On the contrary, users of the old traditional marketplaces were under the impression that the cleanliness of the market environment is an unattainable goal.

The study provides a much needed understanding of SWM practices in an under researched area in Sub-Saharan African: the urban marketplace.

**Keywords:** African urban marketplace; attitudes; market practices; solid waste disposal; solid waste management; qualitative research.

## Introduction

One of the fundamental focal point of economic and social life in African societies is the marketplace (Wambugu, 1995). It is a space with deep cultural significance and based on their unique composition, the marketplace is viewed as a heritage and part of the heartbeat of African societies (Daily Independent, 2013). Everyone irrespective of their social status has contact with the marketplace (Ladipo et al., 1990). Even with the emergence of departmental stores and supermarkets, traditional marketplaces are common in all African cities (Ogeah and Omofonmwan, 2013; Onyango et al., 2013). This is mainly because in addition to its cultural importance, the marketplace supplies a bulk of the needs of the urban population (Ikioda, 2013). It is thus rare to find an African who does not participate in market life (Ladipo et al., 1990).

Besides trade activities, people meet at the marketplace for various reasons; settling of dispute, meeting friends and kinsmen, catching up on the latest news, religious activities, traditional festivals and political activities (Nelson, 1998; Henrich, 2006). Based on its configuration, it also provides opportunity for organised programmes by most organisations and Government aimed at educating and reaching out to the public (Hill, 1963; Wambugu, 1995).

African markets are classified into five major types based on their location and periodicity; urban daily markets, urban night markets, rural daily markets, rural periodic night markets, and rural periodic day markets (Udo, 1982). This study is concerned with the operations and activities within urban daily markets with the aim of investigating the attitudes of the market users toward waste.

Most urban markets operate daily from sunrise to sunset, cover a large land mass, and are noisy and congested, and usually command a large gathering of people – say between 50,000 to over 100,000 daily depending on the size of the market (Jerome and Ogunkola, 2000). Local authorities are usually responsible for the management of markets and this includes allocation and collection of rent on stalls, and the overall management of marketplace operations and activities (Onyango et al., 2013).

One significant challenge faced by the local authorities in the management of marketplaces is the issue of market sanitation particularly regarding SWM (Udo, 1982; Bammeké and Sridhar, 1989; Ogeah and Omofonmwan, 2013). Waste is littered and dumped indiscriminately (see Picture 1) on the ground and in the open drains contributing immensely to environmental degradation, the pollution of the physical environment, and poses risk to public health (Olaseha et al., 2005).

Waste remains a part of the surroundings of the market users resulting in a strong stench as a result of its decomposition (Taiwo and Ajayi, 2013). In most instances, it obstructs movements in and out of the marketplace and also poses risks to fire outbreaks (Abejegah et al., 2013; Taiwo and Ajayi, 2013). There are instances where market activities are shut down by Governments in various Nigerian cities on the grounds of poor SWM practices (Akoni and Olowoopejo, 2012; Olayinka, 2015). However, despite the high risk to public health and the environmental problems posed by waste in marketplaces, research in waste management in African urban marketplaces is an area that has been neglected (World Bank, 2009a).



Picture 1: Indiscriminate Dumping in Creek Road Market, Port Harcourt (Abigo et al. (2015)

Literature suggests that inadequate SWM in marketplaces centres around the attitudes of the market users, lack of adequate infrastructure, lack of awareness, and low community participation of the users of the marketplace facility (Olaseha et al., 2005; World Bank, 2009a; Balogun, 2012; Brown et al., 2015). However, Agwu (2012) posits that even with the presence of waste infrastructure, fly dumping and littering is a common practice amongst most urban dwellers. Barr (2007) has thus argued that it is fundamental to identify and clearly have an understanding of factors that influence the attitudes and behaviour of individuals and stakeholders towards waste in order to have an effective waste management strategy.

The significance of this study lies within Goal 12 of the Sustainable Development Goals (SDGs) as the study addresses issues associated with indiscriminate handling and disposal of waste within marketplaces which in turn poses risk to public health and the environment. Goal 12 of the SDGs sets out a 2030 target of achieving environmentally sound management of waste throughout their life cycle in order to significantly minimise their adverse impact on human health and the environment by reducing their release to air, water and soil (UN, 2015c).

There are certain principles of good waste management practices, and this includes: proper waste disposal, minimising waste generation, facilitating easy collection of waste and other sustainable actions towards waste (Davies et al., 2005; Desa et al., 2011; EPA, 2014). Godfrey et al. (2012: p.2167) has also defined good waste management practice as “waste activities that are compliant with waste and environmental legislation; that promote the waste hierarchy and support waste avoidance, minimisation, reuse and recycling; and that minimise the impact of waste and possible associated pollution on the environment and human health”. Drawing on these principles, it then implies the users of the marketplace as suggested by literature exhibit poor waste management practices which results in behavioural actions such as indiscriminate dumping in drainages, on the ground and at unauthorised dump sites (Olaseha et al., 2005; Balogun, 2012). This intensifies the challenges of effective SWM in marketplaces and raises hygiene and environmental concerns. It is thus important to investigate the attitudes of the market users towards waste and provide an understanding of the context in which these attitudes exist.

## Methods

A case study strategy was adopted for this study as the study seeks to examine a phenomenon taking into consideration its present settings in order to build an in-depth focused understanding of a particular context. Yin (2014) recommends the application of the case study strategy when a researcher seeks to provide in-depth contemporary knowledge of the research subject within its real life context. Other marketplace researchers (particular in the field of SWM) such as Olaseha et al. (2005), World Bank (2009a), Balogun (2012) and Asomani-Boateng (2015) also adopted the case study strategy in gaining insights into SWM practices in marketplaces.

The findings reported in this study are based on an in-depth qualitative approach utilising non-participant observation and semi-structured interviews. A multiple case study approach was adopted for this study. Four cases made of two old traditional markets and remodelled markets respectively that met the study criteria were studied. For the purpose of this study, the cases will be referred to as:

- Creek Road Market – Old Market (South)
- Mile 3 Nkpolu Oroworukwo market – Old Market (North)
- New Layout Market – Remodelled Market (South)
- Mile 1 Rumuwoji Market – Remodelled market (North)

In the selection of cases, the study adopted the set of six criteria proposed by Miles and Huberman (1994). A key criterion was the appearance of the phenomenon of concern of the study in the cases – SWM concerns. The study criteria were also limited to market frequency – markets that operate at least six days in a week, market location – markets located in core areas of Port Harcourt, and market type – mixed markets; markets that trade in a variety of goods.

Port Harcourt the study area (Figure 1) is the third largest city in the southern part of Nigeria and is considered as one of Nigeria's most important industrial and commercial city with an estimated population of 2,340,000 (Ayotamuno et al., 2010; Demographia, 2015). Located in the Niger Delta, Port Harcourt is the operational base for multinational petro businesses and this has led to a rapid influx of migrants seeking work opportunities (UN-HABITAT, 2009). According to Ayotamuno and Gobo (2004), the rapid increase in population coupled with industrial and commercial activities led to increase in volume and variety of solid waste generated. The authority responsible for waste management is at a loss as to how best to sustainably manage waste (Ogwueleka, 2009; Abah and Ohimain, 2010). This situation is further exacerbated by the attitudes of the populace.

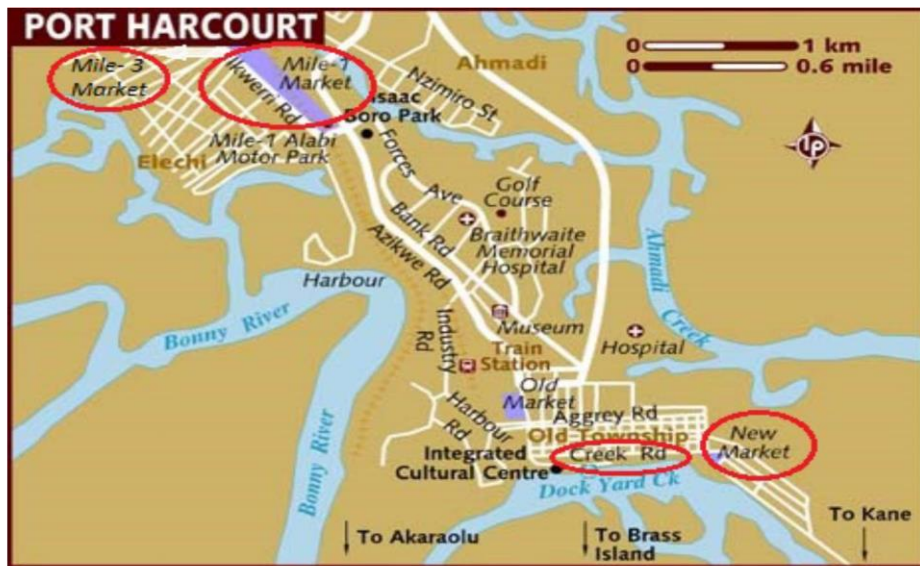


Figure 1: Map of Port Harcourt Indicating Case Studies after Lonely Planet (2014)

The empirical phase of the study began with non-participant observation. This was important in order to further explore the themes emerging from the observations during the interviews. The observations were in two phases. Phase 1 was the intelligence gathering which entailed collating information on the physical settings of the market. This enabled the mapping out of the strategy and activities for Phase 2, which included the duration and sequencing of all activities in the phase. The ad libitum sampling strategy was adapted for the Phase 2 which was the actual observation. This technique was useful as it enabled random recordings of marketplace activities especially rich data on SWM practices of the market users (Altmann, 1974; Bryman, 2012). The use of this technique enabled the study establish market routines particularly regarding waste, the interactions between the market stakeholders, and the attitudes and behaviours associated with the use of the market environment. A total of 42 days was spent undertaking observations for the study.

The face-to-face semi-structured interviews commenced after data from observations was collated. The use of interviews was to probe and further develop an understanding of SWM practices of the market users. A total of 11 days was spent conducting interviews. The market stakeholders were categorised into five groups: (a) buyers and visitors (n=12), (b) traders (n=15), (c) regulators, including market superintendents, chairmen of market management committee and traders' association, and State sanitation authority officers (n=7), (d) waste handlers (n=3), and (e) sensitisation groups, including health organisations, banks, and political parties (n=6). A total of 43 interviews were conducted out of which 39 were useful for analysis.

The interviews were transcribed verbatim and further organised and coded thematically in order to identify themes and concepts emerging from the data sets. The process was enhanced with the use of NVivo – a computer-assisted qualitative data analysis software.

### Findings of the Study

The section relates and discusses the findings of the study. It is in two subsections; the first section provides details and description of the cases, while the second section reveals SWM practices in the cases.

### ***Case Profiles***

#### ***Old Markets***

The old markets are characterised by old and dilapidated structures, congested space, uneven and muddy paths, open and filthy drainages, waste litters and fly dumping at various corners of the market. They are not connected to the national grid supplying electricity nor public mains of water supply or independent water supply (borehole). Traders who can afford it have generator plants while traders who stay until late evenings rely on torchlights or *bush lanterns* (Lanterns with exposed flames fuelled with kerosene - paraffin). *Mai ruwas* (People who move around with water for sale mostly in 20 litres jerry cans transported in hand pushed trucks) and *pure water* (Sachet water which is usually 500 millilitres per sachet) are the reliable source of water supply for the market users. There are no car parks for shoppers or waste receptacles. See Picture 2 for a section of the old markets.



Picture 2: A Section of Old Market (South) and Old Market (North) Respectively

According to Wolpe (1974), old market (South) was established circa 1949. It is located by the waterfront within a residential hub in the core urban area of Port Harcourt known as ‘old township’. Old market (South) is one of Port Harcourt’s main markets with a combination of lock-up and open plan shops estimated at about 3000. The market operates officially from 8:00am – 6:30pm daily except on Sundays and special holidays including Christmas and New Year.

The old market (North) on the other hand, is located within a commercial area in the core of the city and shares boundary with one of Port Harcourt’s major motor park. It is open for operations 8:00am – 6:00pm daily except on Sundays and special holidays including Christmas and New Year. The market is organised haphazardly with an estimated number of 600 lock-up shops and 520 temporary sheds.

#### ***Remodelled Markets***



Picture 3: A Section of Remodelled Market (South) and Remodelled Market (North) respectively

Remodelled market (South) was described by Wolpe (1974) as the main market located in Port Harcourt township with the stalls highly sought after. In 2013, the market structure was remodelled to include modern facilities as a result of fire incidence that razed down the traditional structure of the market (Barasimeye, 2013). The market is in close proximity to the old market (South) and it is situated in a residential cum commercial area in the core of Port Harcourt. It operations from 8:00am – 6:30pm six days a week (Monday – Saturday) except on special holidays and trades mostly in packaged goods. The market has a combination of 1600 lock-up and open space shops built on two floors.

According to Brown et al., (2015), the remodelled market (North) was established in the late 1930's. This market was also remodelled as a result of fire incidence that razed down the traditional structure of the market (Ejibas, 2015). Remodelled market (North) is located within a commercial area of the core urban centre and is in close proximity to old market (North). The market is one of the busiest in Port Harcourt and operates six days a week (Monday – Saturday) from 8:00am – 6:00pm except on Sundays and on special holidays.

#### ***Solid Waste Management Practices in Old Markets***

The waste collection method in old market (South) and old market (North) is evacuation of waste at authorised dumpsites and truck placement respectively by 6:00pm in the evenings. The difference in the waste collection method is because of accessibility. The waste handlers for old market (South) have designated areas for the disposal of waste along the external road. The external road of old market (South) is in a deplorable state and it is barely used by other motorist apart from delivery vans and trucks. Whereas, old market (North) is situated off one of the busiest roads in Port Harcourt and its physical setting is such that there is no room for dumpsites or vehicular accessibility.

Between the hours of 6:00am and 7:00am, traders in old market (South) are seen, most of whom are women accompanied by their children or children unaccompanied, and informal waste handlers, transporting their waste stored in old plastic buckets, baskets, plastic bags, cartons and hand pushed carts to the open dumpsites (both authorised and unauthorised) within the marketplace before sweeping and displaying their goods. Whereas when the old market (North) is open for operations by 8:00am, the traders start off their day by sweeping and tidying up their shed. They store their waste either in old plastic buckets, baskets, plastic bags, cartons or on the ground by the side of their sheds or shops before displaying their goods.

Within the hours of 8:00am – 5:00pm, the market is busy with both trade and non-trade activities. The traders store their waste on the ground by their shed/shop, in open storage such as old plastic buckets, baskets, plastic bags, cartons. Traders who occupy spaces by the open drain are seen disposing their waste in the open drains. The traders and the buyers/visitors are seen littering and disposing waste at unauthorised dumpsites. During peak periods, the quantity of loose waste mostly in the form of *pure water* sachets (Sachet water which is usually 500 millilitres per sachet), husk and stems of vegetables, littered in the market increases.

When probed about their waste management practices, the traders shared same views indicating time as a significant factor. A trader relates in the extract below:

“Ermmm it’s because (..) although you can go in the evening to dispose waste but because of time you cannot generate waste now and go to dispose it and again government place (introduced) a law, you dispose waste by six o’clock”.

Convenience and collection times are the key issues raised by the market users. While the traders prefer to dispose waste in the mornings, the waste handlers evacuate waste in the evenings. It was observed that the timing of waste evacuation (in the evenings) is inconveniencing as a result of the busy nature of markets. The acts of littering, indiscriminate dumping and poor handling of waste are directly as a result of convenience and collection times. Ogwueleka (2009), Regassa et al. (2011) and Ayuba et al. (2013) in their studies, established these as factors responsible for the inefficient SWM practices in African cities.

At the close of trade activities, a few of the traders in old market (South) are seen tidying up and heading to the dumpsites (both the authorised and unauthorised dumpsites) to dispose their waste. In old market (North), the situation is different because of the waste collection approach. The traders here are seen with their waste stored in old plastic buckets, baskets, plastic bags, and cartons, heading to the truck stationed for the collection of waste. When the truck is not available, the traders dump their waste on the ground. This intensifies SWM concerns as the waste is exposed to different weather conditions thereby posing risk to public health and the environment. This also questions the truck placement approach adopted for markets. This is similar to the findings of Kassim and Ali (2006).

When probed regarding achieving effective SWM practices in the market, a trader gave their reservation:

“To me nothing can be done to make our market clean. We can do our best and the market will be a little bit clean but it can’t be as clean as we want it. Because in this market, it’s not only the sellers that generate waste. For example, there’s one *mallam* (an informal waste handler), when people pay him to collect their waste, he will carry

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the waste from outside and put in the market because he knows the market is a dirty place”.

The extract above reveals that as a result of the physical environment of old markets, they are perceived as dirty environments, and this has an influence on the SWM practices of the market users and its adjoining environs. The extract above also raises questions regarding the monitoring and supervision of SWM practices by the market regulators. The monitoring and supervision of SWM practices was recommended by Agwu (2012) as one of the factors to addressing SWM challenges in Port Harcourt.

### ***Solid Waste Management Practices in Remodelled Markets***

There is an enormous difference in the quality of the environment of the old markets from that of the remodelled markets as the remodelled markets appear cleaner, and are void of indiscriminate dumpsites. The remodelled markets are fitted and serviced with waste disposal facilities too.

At the start of trade activities, the traders are seen sweeping and tidying up and disposing their waste in the waste receptacle before staging their goods. Their waste is stored in similar storage as with traders in the old markets: old plastic buckets, baskets, plastic bags, cartons and in small heaps by the corner of their shops.

Although not a perfect system, the market users are conscious of their SWM practices especially in the handling and disposal of waste. They are overheard cautioning one another regarding handling and disposal habits and the buyers/visitors are frequently heard making enquires as to where to dispose waste. It is uncommon to see market users litter and the practice of fly dumping is non-existent. A buyer/visitor relates in the excerpt below when probed of their attitudes towards waste in the remodelled market:

“We are now conscious of the way we dispose waste. We are now conscious of ourselves like yes this is the place to dispose waste”.

A market regulator (Chairman, market superintendent) further reveals below how the remodelling of markets has influenced the attitudes and behaviours of the market users:

“Like the kind of market we had, it will be difficult even if you had a good environmental attitude. The market is always messy, the ground is mud you know, water everywhere, when rain falls, it falls in your shed, you have to use bucket. So even if you have a good environmental attitude you will still find yourself that the whole place is somehow. So the remodelling of the market is a major factor”.

The extract above reveals that the users of the remodelled markets have attached ideas in a particular perception to the use of the space because the remodelling of market structures creates an identity that is valued by the users. This results in the stereotyping of the old markets as the ‘other’. The shift in attitudes towards waste in the remodelled markets is because the users do not want their market environment to become like the old markets.

In social construction and in the use of space, the phenomenon of the ‘other’ is the creation of an in-group and out-group identity by users, where the out-group is susceptible to discrimination and stereotyping (Staszak, 2009). Thus, the attitudes of the users of the remodelled market is characterised by the ‘threat of the other’ and this identity has re-enacted self-knowledge of the environment.

Also, the shift in attitudes towards waste is also attributed by the market stakeholders to the presence of waste facilities and vehicular accessibility to waste. A waste handler relates in the extract below:

“Vehicles can easily drive into the market, so the remodelling of markets makes it easier for waste to be now reached. So remodelling has really had significant impact”

The extract above supports the studies of Nkwocha et al. (2011) and Regassa et al. (2011), that vehicular accessibility and the provision of waste disposal infrastructure are factors that would enhance waste management practices.

### Conclusions

This paper has provided insights as to how the physical environment of the marketplace influences the SWM practices of its users. Observations on marketplaces reveal the old markets are congested and characterised by old and dilapidated structures, with the existing facilities in deplorable conditions. This has an impact on the SWM practices of the market users as they barely pay attention to waste and are oblivious of the amount of waste littered and dumped within the market environment. On the contrary, the remodelling of markets creates a different perception and expectation regarding SWM practices. The users tend to have a better approach to the handling and disposal of waste and they are also conscious of the practices of other market users. The users of the new markets are thus hopeful and aspire to preserve the identity and values resulting from the remodelling of markets. Whereas, the beliefs of the users of the old markets regarding their SWM practices are maintained as in the statement of a trader ‘nothing can be done to make our markets clean’.

The key issues here are the physical environment, and convenience and collection times. In order to address these concerns, this study recommends that the structures and facilities in the old markets be upgraded. This will entail especially upgrading the physical building, providing closed drains as opposed to open drains and providing waste disposal receptacles. It is also important to determine what time is best to collect waste from markets and what collection method is most appropriate for the old markets.

Furtherance to this study is the identification of the underlying factors that underpin the attitudes of the market users toward waste.

### References

- Abah, S. O. & Ohimain, E. I. 2010. Assessment of Dumpsite Rehabilitation Potential Using Integrated Risk Based Approach: A Case Study of Eneka, Nigeria. *World Applied Sciences Journal*, 8(4) 436-442.
- Abejegah, C., Abah, S. O., Awunor, N. S., Duru, C. B., Eluromma, E., Aigbiremolen, A. O. & 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*, 2(2) 25 - 31.
- Abigo, A., Gidado, K. & Gilchrist, P. Facilities Management for African Urban Marketplaces: Attitudes toward Waste Management. In: LARYEA, S. & LEIRINGER, R., eds. West Africa Built Environment Research (WABER) Conference, 10th - 12th August 2015 Accra, Ghana. WABER.
- Agwu, M. 2012. Issues and Challenges of Solid Waste Management Practices in Port-Harcourt City, Nigeria- a behavioural perspective. *American Journal of Social and Management Sciences*, 3(2) 83-92.

- Akoni, O. & Olowoopejo, M. 2012. Lagos Reopens Mile 12 Market. *Vanguard*.
- Altmann, J. 1974. Observational Study of Behavior: Sampling Methods. *Behaviour*, 49(3) 227.
- Asomani-Boateng, R. 2015. Local Networks: Commodity Queens and the Management of Organic Solid Waste in Indigenous Open-Air Markets in Accra, Ghana. *Journal of Planning Education and Research*, 1 - 13.
- Ayotamuno, A., Gobo, A. E. & Owei, O. B. 2010. The Impact of Land Use Conversion on a Residential District in Port Harcourt, Nigeria. *Environment and Urbanization*, 22(1) 259-265.
- Ayotamuno, J. M. & Gobo, A. E. 2004. Municipal Solid Waste Management in Port Harcourt, Nigeria: Obstacles and Prospects. *Management of Environmental Quality: An International Journal*, 15(4) 389-398.
- Ayuba, K. A., Manaf, L. A., Sabrina, A. H. & Sulaiman Wan Nur, A. 2013. Current Status of Municipal Solid Waste Management Practise in FCT Abuja. *Research Journal of Environmental and Earth Sciences*, 5295-304.
- Balogun, A. F. 2012. Management of Traditional Markets in Ibadan, Nigeria: A Focus on Ojo'Ba and Oje Markets. Available: [http://www.regionalstudies.org/uploads/BALOGUN\\_Femi\\_Adekunle.pdf](http://www.regionalstudies.org/uploads/BALOGUN_Femi_Adekunle.pdf) [Accessed 11 October].
- Bammeke, A. O. & Sridhar, M. K. C. 1989. Market Wastes in Ibadan, Nigeria. *Waste Management & Research*, 7(2) 115-120.
- Barasimeye, C. 2013. *New Layout Market Reopens Soon* [Online]. Nigeria: The Tide. Available: <http://www.thetidenewsonline.com/2013/05/01/new-layout-marketreopens-soon/> [Accessed 11 October 2013].
- Barr, S. 2007. Factors Influencing Environmental Attitudes and Behaviors: A U.K. Case Study of Household Waste Management. *Environment and Behavior*, 39(4) 435-473.
- Brown, I., Chikagbum, W. & Jerimiah, U. I. 2015. The Social And Economic Impacts Of The Mile 1 Rumuwoji Market In Port Harcourt On Its Immediate Environs. *International Journal of Scientific & Technology Research*, 4(6) 148-160.
- Bryman, A. 2012. *Social Research Methods*, Oxford, Oxford University Press.
- Daily Independent. 2013. *Marketing the Market*. [Online]. Daily Independent, Nigeria: Daily Independent. Available: <http://dailyindependentnig.com/2013/02/marketing-the-market-2/> [Accessed 8 August 2013].
- Davies, A., Taylor, D., Fahy, F., Meade, H. & O'callaghan-Platt, A. 2005. *Environmental Attitudes and Behaviour: Values, Actions and Waste Management* [Online]. Ireland: EPA. Available: <http://www.epa.ie/pubs/reports/research/waste/attitudestowaste-epa.html#.VDo23smDaoI> [Accessed 6 September 2014].
- Demographia. 2015. *Demographia World Urban Areas: 11th Annual Edition* [Online]. Belleville, Illinois USA: Demographia. Available: [www.demographia.com/db-worldua.pdf](http://www.demographia.com/db-worldua.pdf) [Accessed 12 January 2015].
- Desa, A., Kadir, N. B. y. A. & Yusoooff, F. 2011. A Study on the Knowledge, Attitudes, Awareness Status and Behaviour Concerning Solid Waste Management. *Procedia - Social and Behavioral Sciences*, 18643-648.
- Ejibas, D. 2015. Fire: Port Harcourt Traders get N350M Compensation. Nigeria: News Agency of Nigeria.
- EPA. 2014. Attitudes of Europeans towards Waste Management and Resource Efficiency. European Union.
- Godfrey, L., Scott, D., Difford, M. & Trois, C. 2012. Part II - The Effect of Data on Waste Behaviour: The South African Waste Information System. *Waste Management*, 32(11) 2163-2176.

- Henrich, J. 2006. Africa: Fun Projects for World History. Culver City: Social Studies School Service
- Hill, P. 1963. Markets in Africa. *Journal of modern African studies* 1(4) 441-453.
- Ikioda, F. O. 2013. Urban Markets in Lagos, Nigeria. *Geography Compass*, 7(7) 517-526.
- Jerome, A. & Ogunkola, O. 2000. Characteristics and Behaviour of African Commodity/Product Markets and Market Institutions and Their Consequences for Economic Growth. *Explaining African Economic Growth Performance Conference Series*. Center for International Development, Harvard.
- Kassim, S. M. & Ali, M. 2006. Solid Waste Collection by the Private Sector: Households' Perspective - Findings from a Study in Dar es Salaam city, Tanzania. *Habitat International*, 30(4) 769-780.
- Ladipo, O. A., Mcnamara, R., Delano, G. E., Weiss, E. & Otolurin, E. O. 1990. Family Planning in Traditional Markets in Nigeria. *Studies in Family Planning*, 21(6) 311-321.
- Lonely Planet. 2014. *Map of Port Harcourt* [Online]. USA: Lonely Planet. Available: <http://www.lonelyplanet.com/maps/africa/nigeria/port-harcourt/> [Accessed 20 August 2014].
- Miles, M. B. & Huberman, A. M. 1994. *Qualitative Data Analysis: An Expanded Sourcebook*, Thousand Oaks, Calif, London, SAGE.
- Nelson, M. 1998. *Africa: It's Not a Country* [Online]. Available: <http://teacherlink.ed.usu.edu/tlresources/units/byrnes-africa/aindex.htm> [Accessed 16 November 2012].
- Nkwocha, E. E., Pat-Mbano, E. C. & Dike, M. U. 2011. Evaluating the Efficiency of Solid Waste Collection Services in Owerri Municipality, Nigeria. *International Journal of Science and Nature*, 2(1) 89-95.
- Ogeah, F. N. & Omofonmwan, S. I. 2013. Urban Markets as a Source of Employment Generation in Benin City. *African Journal of Social Sciences*, 3(4) 62-78.
- Ogwueleka, T. C. 2009. Municipal Solid Waste Characteristics and Management in Nigeria. *Iranian Journal of Environmental Health Science & Engineering*, 6(3) 173-180.
- Olaseha, I. O., Sridhar, M. K. C. & Oyewo, O. A. 2005. Developing Sustainable Market Waste Management through the Joint Efforts of Technocrats and Traders: A Case Study from Ibadan, Nigeria. *International Journal of Health Promotion & Education*, 43(2) 1-9.
- Olayinka, F. 2015. Curbing Poor Sanitation Practices in Ogun. *Thisday Live*.
- Onyango, G. M., Wagah, G. G., Omondi, L. A. & Odera, B. O. 2013. *Marketplaces: Experiences from Kisumu.*, Kenya, Maseno University Press.
- Regassa, N., Sundaraa, R. D. & Seboka, B. B. 2011. Challenges and Opportunities in Municipal Solid Waste Management: the Case of Addis Ababa City, Central Ethiopia. *Journal of Human Ecology*, 33(3) 179-190.
- Staszak, J. 2009. *International Encyclopedia of Human Geography*, London, Elsevier.
- Taiwo, P. A. & Ajayi, J. O. 2013. Environmental Pollution in Urban Market: The Case of Bodija Market Ibadan, Nigeria. *Developing Country Studies*, 3(13) 53-66.
- Udo, R. K. 1982. *The Human Geography of Tropical Africa*, London; Ibadan, Heinemann Educational (Nigeria).
- UN. 2015c. *Sustainable Development Goals* [Online]. United Nations. Available: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> [Accessed 6 October 2015]
- UN-HABITAT. 2009. *Evictions and Demolitions in Port Harcourt: Report of Fact-Finding Mission to Port Harcourt City, Federal Republic of Nigeria* [Online]. Available:

- [http://www.unhabitat.org/downloads/docs/10010\\_1\\_593998.pdf](http://www.unhabitat.org/downloads/docs/10010_1_593998.pdf) [Accessed 20 December 2012].
- Wambugu, S. K. 1995. A Spatio-Temporal Analysis of Periodic Markets in Nyeri District, Kenya. *Eastern and Southern Africa Geographical Journal*, 6(1) 60-73.
- Wolpe, H. 1974. *Urban Politics in Nigeria: A Study of Port Harcourt*, London, University of California Press.
- World Bank. 2009a. *Global Study of Livestock Markets, Slaughterhouses and Related Waste Management Systems* [Online]. World Bank. Available: <http://siteresources.worldbank.org/INTUSWM/Resources/4636175264154387/CointreauSWMStudyFinalReportFeb2009.pdf> [Accessed 22 November 2012].
- Yin, R. K. 2014. *Case Study Research: Design and Methods*, London, SAGE.