Impact of Ogbor Hill Waste Dumpsite on Socio-Economic Activities of Urban Dwellers in Aba Metropolis, Abia State, Nigeria

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Abstract: *The focus of this research is on impact of Ogbor hill waste dumpsite on socio-economic activities of urban dwellers in Aba metropolis, Nigeria. Both primary and secondary data were used in the study. The primary data were acquired from the fieldwork survey through the use of structured questionnaire. Data collection were carried out on weekends in order to ensure equal participation of respondents in the study area. The population of the study involved all residential properties located within the radius of between 100m to 1000m around Ogbor hill dumpsite in Aba Metropolis. The total enumerated houses found within this radius in the study area was 353. The types of socio-economic impacts associated with the waste dumpsite location were identified as change in migration trends, change in population characteristics and disruption of settlement. Similarly, the level of impact was also identified on change in economic pattern, change in occupational distribution, decrease in income, devaluation of property and change in structural pattern of properties. The findings of the study also revealed that change in compliance of land use plans have been evident in the study area as perceived by majority of sampled respondents (66.3%). Interestingly, the study further showed that the location of the dumpsite has effect on values of land and the relocation of economically viable structures in the area. The findings revealed that 23.8% of total respondents have not experienced these changes while 76.2% of the total respondents have experienced these changes in the study area. The study recommends effective urban land use planning and absolute compliance with stipulated urban land use plans to reduce further impacts and protect against future challenges in the study area, proactive measures directed on the implementation of proper urban land use planning and strict adherence to urban land use plans for proper land use assessment in Nigerian urban areas that will not allow the location of urban residential apartment close to already located waste dumpsites.*

Keywords: Municipal waste, Urban, Socio-economic status, Urban residents, Abia State

1. Introduction

The generation of waste is unavoidable as far as life is sustained on earth. Man's activities generate waste which usually originates from resource exploitation and use, promoting complex left over here and there. The complex nature of waste generated in metropolitan cities directly affects the environment, property values, socio-cultural and economic characteristics of the environment and man (Wizor, 2017). Nigeria is currently rated as the most populated black country in the World with an increasing population figure of over201 million people.Studies has shown that the values of properties located closer to waste dumpsites are lower to those properties found at several kilometres away from waste dumpsites. Accordingly, Olofinji (2015) affirms that rates of transactions of properties were also slower and not attractive in areas with properties close to waste dumpsites when related to those located at farther distances away. Ordinarily, a property located in a clean and hazard free environment will always attract more customers than a property located in a dirty and uncoordinated environment; which have several implications on its socio-economic value. Thus, a property located in an unattractive environment will lose its socio-economic value and marketability which will be different from the location of properties with attractive potentials (Cetintahra and Cubukcu, 2015).

Similarly, tenants see it as risky and unhealthy to stay in an environment that is characterised by several open waste dumps. Such situations and circumstances may contribute to loss in rental value, thereby leading to loss in rental income over an extended period of time. This affects not only the rental income but also creates negative impact on the economy in terms of reduction in property tax (http://nigeriarealestatehub.com).

The problem of waste management and disposal has contributed to several environmental issues in Nigeria. For instance, it was discovered that several issues and problems arose as a result of poor waste disposal systems and poor waste management and maintenances, which include human, animal and other waste types and constituents.

Okoro and Ibe (2017) noted that socio-economic characteristics of urban dwellers around waste dumpsites in Nigeria are negatively affected due to several factors ranging from reduction in income, change in economic pattern, change in occupational distribution to reduction in rent. Wastes come from homes, schools, hospitals, and businesses (United States Environmental Protection Agency (EPA), 2011). Solid waste generation is experiencing a rapid increase all over the world as a result of continuous economic growth, urbanization and industrialization. It is estimated that in 2006 the total amount of municipal solid waste (MSW) generated globally reached 2.02 billion tones, representing a 7% annual increase since 2003 (Nwosu and Pepple, 2016).

The process of uncontrolled solid waste disposal in cities can cause environmental problems like traffic congestion on the streets and roads, municipal floods when dumped on waterways as well as altering the socio-economic status of urban residents. There are many drawbacks in the existing Urban Waste Management System in developing countries. For example, distribution and allocation of waste bins at

improper location, no separate bins for recyclable waste, pollution of natural water streams due to waste collection centres proximity and open nature (Nair, 2010).

Raheem and Balogun (2015) observed that the proliferation of urban waste dumpsites and lack of control and management of wastes generated in Nigeria is becoming an issue of great concern. This is because apart from the destruction of aesthetics of landscape by the waste dumpsites, some of the municipal solid wastes contain both organic and inorganic toxic pollutants (such as heavy metals) that threaten the health of humans and the entire ecosystem. Proper management of solid waste is an important factor which can make for improvement in the health and well-being of urban residents (World Bank, 2003).

In Nigerian, actions and concern toward solid waste management and disposal system has not gone beyond the physical removal of waste from the streets, which can still be found littering the whole surrounding. It has been a common practice to dispose solid wastes using open dumpsites in urban areas or the use of an open burning system. Hauwa (2003) opined that heaps of solid waste continue to emerge in Nigerian cities on daily basis and the site have become fertile ground for breeding flies and other vectors which have in effect became health hazards, obstructing traffic flow causing environmental degradation and negative socio-economic impacts on urban residents. One of the important economic impacts created by solid waste dumpsite is the impact on residential property values. Residential property values are affected by factors like good road network, infrastructure facilities (water, electricity, drainage, etc) accessibility (in terms of traffic flow) and demand, location and distance. Apart from this, residential property values are affected by the generation and management of solid waste (Ogedengbeand Oyedele, 2015). The social impacts created by municipal solid waste dumpsite include the unpleasant odour and the dirty surroundings, breeding of mosquito, worms, insects and flies and the release of smoke and poisonous gases giving rise to safety problems.

Another point is the location problem. Most of the dumpsites are not well planned, and this leads to introduction of illegal dumpsites (Nwosu and Pepple, 2016). Wastes dumpsites are essential for managing wastes in urban residential areas. However, most of the existing solid waste disposal sites in developing countries like Nigeria are open dumping because the technology of proper sanitary landfill practice is yet to beholistically implemented. The environmental conditions from these dumpsites are thus expected to be bad especially in terms of the contamination to the environment and lives leading to some levels of distortion in the socio-economic status of residents around the dumpsites. This study, therefore examined the impact of Ogbor Hill waste dumpsite on the socio-economic characteristics of urban dwellers in Abia State, Nigeria.

2. The Study Area

Ogbor Hill waste dumpsite in Aba Metropolis, Abia State, Nigeria is the study area. Figure 1 is the location map of Aba Metropolis while figure 2 is the map of Ogbor Hill waste dumpsite. It is situated between latitudes 5° 2' N and 5° 10'N and between longitudes 7°20' E and 7° 25'E. Aba Metropolis is the commercial capital of Abia State and lies in the South eastern part of Nigeria. During the time Abia State was created in 1991, Aba was subdivided into two Local Government Areas (LGAs); these areas were Aba South and North. The area occupied by Aba south is located in the main Aba city centre which is the heartbeat of the State, (Wizor, 2017).

Aba is situated in the sub-equatorial region; has a tropical climate with a mean temperature of 32°C, and a relative humidity of 80% to 100%, and a mean yearly rainfall of about 2,000mm.The warmest months are usually between January and May, and each of the month has a period of 10 days or more with a temperature of 32°C or above (Hoiberg, 2010). The area is also characterized by heavy rainfall from April to October ranging from 2000mm to 2500mm. The drier months of November, December, January and February are not also free from occasional rains (Hoiberg, 2010; Amadi, Olasehinde, Okosun, Okoye, Okunola, Alkali, and Dan-Hassan, 2012).

According to the National Population Commission (NPC) (2006), Aba metropolis was put at 430,296 (Aba South was 423,852 and North was 6,446 people) (Abia State Government, 2017). The study area is endowed with natural resources particularlycrude oil with connections of pipelines of about 30 km, which supplies power with gas from the Imo River natural gas repository (Izugbira and Umoh, 2004). Studies has shown that the indigenous Aba are well known for their textile making skills and palm oil fruits as well as their vast plastic, cement, and cosmetics production which gave the Ariara International market its glamour and identity in West Africa before Onitsha main market. The people also engage in glass making, brewery production and distillery within the city. Lastly, it is famous for its handicrafts ((Izugbira and Umoh, 2004; Hoiberg, 2010).
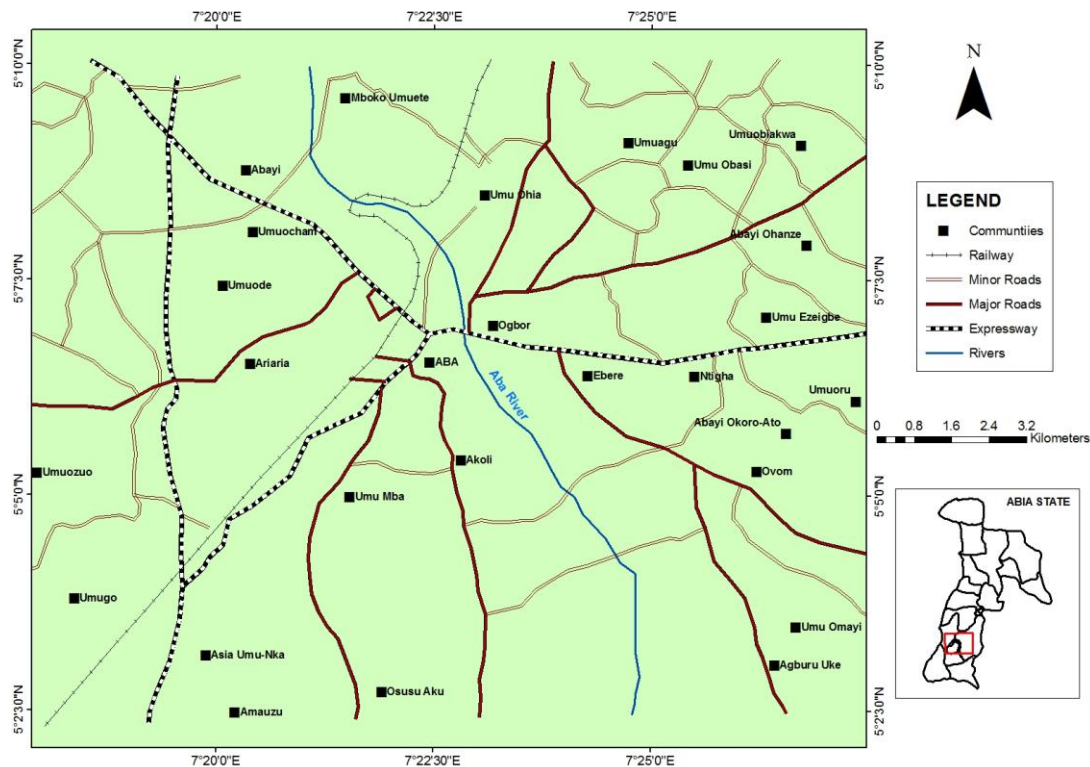
Figure 1. Location Map of the Study Area
Source: GIS Lab. Department of Geography & Environmental Management, Uniport

Figure 2. Ogbor Hill Waste Dumpsite, Aba
Source: GIS Lab. Department of Geography &Environmental Management, Uniport

3. Material and Methods

This study made use of both primary and secondary data. The primary data were acquired from the fieldwork survey through the use of structured questionnaire. Data collection were carried out on weekends in order to ensure equal participation of respondents for the study in the study area.

The population of the study involved all residential properties located within the radius of between 100m to 1000m around Ogbor hill dumpsite in Aba Metropolis. The total enumerated houses found within the radius of 100m to 1000m in the study area was 353, and this number was used for sampling of houses for questionnaire distribution and oral interview. Thus, houses within 100m, 200m, 300m,

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400m, 500m, 600m, 700m, 800m, 900m, and 1000m radiuses around the dumpsite recorded a total of 30, 36, 30, 35, 40, 30, 31, 39, 37, and 45 houses respectively, and this totalled 353 houses. The sample size for the study therefore was 353, since this number can be managed effectively for questionnaire distribution in the study area.

The study used purposive sampling technique to select household representatives from each enumerated house for questionnaire survey and oral interview. Thus, a total of 353 copies of questionnaire were distributed and retrieved for the study. The questionnaire was divided into two main sections. Section A dealt with respondents' personal information while section B dealt with the socio-economic implications of the waste dumpsite and nature of problems encountered.Descriptive and inferential statistics was used to analyse the information obtained from the questionnaire

distribution. The statistical package for social scientist (SPSS) version 21 was used for data coding and all statistical analyses.

4. Results and Discussions

Table 1 below revealed the socio-economic impacts of Ogbor Hill waste dumpsites to the surrounding urban residents in the study area. The distribution showed that 10.2% of the respondents have noticed nothing, 38.2% of the respondents have experienced some changes in migration trends, 41.4% of the respondents have observed a change in the characteristics of the population in the study area, while the remaining 10.2% of the respondents have observed the disruption of settlement patterns as a result of the location of the waste dumpsite.

Table 1: Types of Socio-Economic Impacts

Distance		Types				Total
		None	Change in Migration trends	Change in Population characteristic	Disruption of settlements	
	100m	2	12	15	1	30
		6.70%	40.00%	50.00%	3.30%	
	200m	3	12	16	5	36
		8.30%	33.30%	44.40%	13.90%	
	300m	1	13	12	4	30
		3.30%	43.30%	40.00%	13.30%	
	400m	3	11	16	5	35
		8.60%	31.40%	45.70%	14.30%	
	500m	3	15	20	2	40
		7.50%	37.50%	50.00%	5.00%	
	600m	3	10	12	5	30
		10.00%	33.30%	40.00%	16.70%	
	700m	3	13	13	2	31
		9.70%	41.90%	41.90%	6.50%	
	800m	1	15	18	5	39
		2.60%	38.50%	46.20%	12.80%	
	900m	8	15	11	3	37
		21.60%	40.50%	29.70%	8.10%	
	1000m	9	19	13	4	45
		20.00%	42.20%	28.90%	8.90%	
Total		**36**	**135**	**146**	**36**	**353**
		10.20%	**38.20%**	**41.40%**	**10.20%**	**100%**

Source: Field Survey, 2018

Table 2 below shows the level of impact of waste dumpsite on the resident's socio-economic status. The distribution showed that 5.7% of the respondents have perceived change in economic pattern, 33.7% of the respondents have perceived a change in the occupational distribution, 45.6% of the respondents perceived a decrease in income, 12.2% of the respondents have observed a devaluation of property, while the remaining 2.8% of the respondents perceived other problems like reduction in rents and change in the structural pattern in their residents.

Table 2: Level of Impact of Waste Dumpsite

Distance		Challenges encountered					Total
		Change in economic pattern	Change in occupational distribution	Decrease in income	Devaluation of property	Others	
	100m	1	8	16	5	0	30
		3.30%	26.70%	53.30%	16.70%	0.00%	
	200m	0	12	17	5	2	36
		0.00%	33.30%	47.20%	13.90%	5.60%	
	300m	1	7	15	5	2	30
		3.30%	23.30%	50.00%	16.70%	6.70%	
	400m	1	13	16	5	0	35
		2.90%	37.10%	45.70%	14.30%	0.00%	
	500m	1	10	20	7	2	40

		2.50%	25.00%	50.00%	17.50%	5.00%	
	600m	1	12	12	3	2	30
		3.30%	40.00%	40.00%	10.00%	6.70%	
	700m	2	10	16	3	0	31
		6.50%	32.30%	51.60%	9.70%	0.00%	
	800m	1	11	19	6	2	39
		2.60%	28.20%	48.70%	15.40%	5.10%	
	900m	6	17	13	1	0	37
		16.20%	45.90%	35.10%	2.70%	0.00%	
	1000m	6	19	17	3	0	45
		13.30%	42.20%	37.80%	6.70%	0.00%	
Total		**20**	**119**	**161**	**43**	**10**	**353**
		5.70%	**33.70%**	**45.60%**	**12.20%**	**2.80%**	

Source: Field Survey, 2018

Table 3 below presents information on the level of compliance of land use plans in the study area. The distribution showed that 33.7% of the respondents did not observe any change in compliance of land use in their area, while the remaining 66.3% of the respondents have observed such activities in the area as a result of the waste dumpsite.

Table 3: Change in Land Use Compliance have been Predominant?

Distance		Responses				Total
		SD	D	A	SA	
	100m	0	8	12	10	30
		0.00%	26.70%	40.00%	33.30%	
	200m	2	6	13	15	36
		5.60%	16.70%	36.10%	41.70%	
	300m	2	11	7	10	30
		6.70%	36.70%	23.30%	33.30%	
	400m	1	13	10	11	35
		2.90%	37.10%	28.60%	31.40%	
	500m	1	10	16	13	40
		2.50%	25.00%	40.00%	32.50%	
	600m	2	7	10	11	30
		6.70%	23.30%	33.30%	36.70%	
	700m	1	7	11	12	31
		3.20%	22.60%	35.50%	38.70%	
	800m	2	13	12	12	39
		5.10%	33.30%	30.80%	30.80%	
	900m	2	13	11	11	37
		5.40%	35.10%	29.70%	29.70%	
	1000m	3	15	12	15	45
		6.70%	33.30%	26.70%	33.30%	
		16	103	114	120	353
		(4.5%)	(29.2%)	(32.3%)	(34.0%)	(100%)

Source: Field Survey, 2018

Table 4 below shows the perception among residents in the study area as regards the value of urban land in the study area. The results showed that only 16.7% of the respondents believed that land valuation have increased in their area, while the remaining 83.3% of the respondents believed that the value of urban land within the waste dumpsite decreased. Thus, the waste dumpsite has impact on the value of land in the study area, especially when the study considered the level of responses across the various sampled distances from the dumpsite.

Table 4: Land Values have decreased in the Area?

Distance		Responses			Total
		D	A	SA	
	100m	3	18	9	30
		10.00%	60.00%	30.00%	
	200m	4	22	10	36
		11.10%	61.10%	27.80%	
	300m	6	18	6	30
		20.00%	60.00%	20.00%	
	400m	4	22	9	35
		11.40%	62.90%	25.70%	
	500m	7	22	11	40
		17.50%	55.00%	27.50%	
600m		6	18	6	30

		20.00%	60.00%	20.00%	
700m	4	16	11	31
	12.90%	51.60%	35.50%	
800m	7	24	8	39
	17.90%	61.50%	20.50%	
900m	9	14	14	37
	24.30%	37.80%	37.80%	
1000m	9	18	18	45
	20.00%	40.00%	40.00%	
Total	**59**	**192**	**102**	**353**
	16.70%	**54.40%**	**28.90%**	**100.00%**

Source: Field Survey, 2018

Table 5 below shows the information received from respondents concerning the relocation of urban economically viable structures in the study area. The distribution revealed that 23.8% of the respondents have not observed any relocation of structures of economic value in their area. The remaining 76.2% of the respondents have observed the relocation of structures of economic value in their residence. Thus, the location of waste dumpsite has significant impact on the residents, since majority of sampled respondents have perceived the relocation of economically viable structures which could have been beneficial to the residents.

Table 5: Relocation of Structures have been Evident in your Area?

Distance		Responses				Total
		SD	D	A	SA	
	100m	1	7	12	10	30
		3.30%	23.30%	40.00%	33.30%	
	200m	0	7	19	10	36
		0.00%	19.40%	52.80%	27.80%	
	300m	1	10	11	8	30
		3.30%	33.30%	36.70%	26.70%	
	400m	1	5	22	7	35
		2.90%	14.30%	62.90%	20.00%	
	500m	1	10	17	12	40
		2.50%	25.00%	42.50%	30.00%	
	600m	0	6	19	5	30
		0.00%	20.00%	63.30%	16.70%	
	700m	0	6	15	10	31
		0.00%	19.40%	48.40%	32.30%	
	800m	1	10	20	8	39
		2.60%	25.60%	51.30%	20.50%	
	900m	0	8	17	12	37
		0.00%	21.60%	45.90%	32.40%	
	1000m	0	10	19	16	45
		0.00%	22.20%	42.20%	35.60%	
Total		**5**	**79**	**171**	**98**	**353**
		1.40%	**22.40%**	**48.40%**	**27.80%**	**100.00%**

Source: Field Survey, 2018

Table 6 below shows the result for the correlation matrix computed for the relationship between respondents' place of residence and their occupational status. The direction and strength of the relationship between occupation and location showed that the value of r was-0.145 and this indicated a negative and low relationship. However, the relationship was significant because the significant value of 0.006 was lower than 0.05 (95%) probability value. Thus, a significant relationship exists between sampled respondents' occupation and place of residence.

Table 6: Correlation Matrix for Respondents' Location and Occupation Status

			Location	Occupation status
	Location	Correlation Coefficient (r)	1	-0.145*
		Sig.	.	0.006
		N	353	353
	Occupation status	Correlation Coefficient (r)	-0.145[*]	1
		Sig. (2-tailed)	0.006	.
		N	353	353

Source: Author's Computation, 2018*** Correlation is significant at 0.05**

The correlation matrix shows that the place of residence of sampled respondents around the Ogbor Hill Waste Dumpsite was influenced by their occupation. Thus, a change in occupation might affect their choice of location and place of residence around the Ogbor Hill Waste Dumpsite. It can be concluded that location of waste dumpsite with respect to distance did not influence respondents' choice of place of residence.

The findings of the study revealed that 353 buildings were located within 100m to 1000m radius away from the Ogbor hill waste dumpsite. The types of socio-economic impacts associated with the waste dumpsite location were identified as change in migration trends, change in population characteristics and disruption of settlement. Similarly, the level of impact was also identified on change in economic pattern, change in occupational distribution, decrease in income, devaluation of property and change in structural pattern of properties. This is consistent with the findings UNEP (2014) which affirm that property rents around waste dumpsites usually experience fluctuations in values as a result of change in population characteristics and change in migration trends. Udo and Egbenta (2007); Salaudeen (2016) also discovered change in economic pattern, decrease in income, change in occupational distribution and devaluation of property rent values around waste dumpsites.

The findings of the study also revealed that change in compliance of land use plans have been evident in the study area as perceived by majority of sampled respondents (66.3%). Interestingly, it was also observed that the location of the dumpsite has effect on values of land, and the relocation of economically viable structures in the area. The findings revealed that 23.8% of total respondents have not experienced these changeswhile 76.2% of the total respondents have experienced these changes in the study area. This Findings were in consonance with Irtwange and Sha' Ato (2009), studies in Makurdi, Nigeria; and Adeniran, Adekunle, and Olofa (2014), on the effect of waste dumpsites on property values in Ado-Ekiti, Ekiti State. Their findings showed the implication of waste dumpsites location on the relocation of proposed projects and activities which could have benefited the residents in the study area.

Consequently, based on the earlier findings, the study also discovered that there exists a statistically significant relationship between type of occupation of respondents and their place of residence. This was carried out to understand the reason for place of residence among sampled respondents. The implication of this finding is that waste dumpsites location and effects have no influence on the place of residents of majority of sampled respondents in the study area. Thus, the study showed that respondents especially those living close to waste dumpsites of between 100m, and 400m, who should receive much of the impact have other reasons for staying close to the waste dumpsites.

5. Conclusion

The study has shown the impact of the Ogborhill waste dumpsite on the socio-economic activities of urban dwellers in Aba Metropolis, Abia State, Nigeria. The findings of the study revealed several socio-economic implications of the

location of waste dumpsite on the urban residents. Thus, effective urban land use planning and absolute compliance with stipulated urban land use plans is needed to reduce further impacts and protect against future challenges and impacts in the study area. Proactive measures should be directed on the implementation of proper urban land use planning, as this will reduce the problem of poor siting of urban residential properties around waste dumpsites which have socio-economic and environmental implications. Finally, urbanland use compliance should be strictly adhered for proper land use assessment in Nigerian urban areas that will not allow the location of urban residential apartment close to already located waste dumpsites.

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Author Profile

Dr. Wizor, Collins Hanachoris the Assistant Director, Quality Assurance and Quality Control/SERVICOM Focal and Feedback Officer in the University of Port Harcourt. He is a Senior Lecturer in the Department of Geography and Environmental Management, an Environmental Consultant and has successfully accomplished different assignments in the University and industry ranging from University-wide duties to Departmental and Faculty Special Projects. Dr.Wizor graduated from the University of Port Harcourt, Nigeria with B.Sc (Hons) Upper Division in Geography & Environmental Management in 1998, M.Sc Geography & Environmental Management (Urban Development Planning) in 2003 and Ph.D Geography and Environmental Management (Urban Development Planning) in 2012. He started his working career in the University in 2002. Dr.Wizor has been lecturing both graduate and undergraduate students in the University since 2006 till date and consulting for several industries, ministries, departments and agencies (MDA's) on environmental related issues and urban developments. He has acquired relevant industry knowledge over the years especially in the area of data analysis, project management, disaster risk reduction (DRR) skills, remediation and restoration of impacted soil, social media amongst others. Dr.Wizor is very good in research, quality assurance skills, Microsoft office and customer service. He is a Team player, loves teaching and public speaking; leadership and management. Dr.Wizor's interests are in the area of urbanization in developing countries, Greater Port Harcourt city development, housing studies, contemporary urban plans implementation in sub-Saharan Africa, urban agriculture in the global south and disaster risk reduction in the global south. He was awarded the Most Outstanding Lecturer by Nigerian University Geography & Environmental Management Students Association (NUGEMSA) in 2007, Award of Excellence as the Most Social Lecturer in 2014 by Nigerian University Geography & Environmental Management Students Association (NUGEMSA) and Award of Excellence as Outstanding Lecturer in the Faculty of Social Sciences by Social Sciences Students Association (SOSSA) in 2014 among others. Dr. Wizor has been awarded certificates for participating in several workshops and conferences in Nigeria and diaspora. He is a Fellow of the Institute of Corporate Administration of Nigeria (FCAI) and a Member of other reputable professional bodies including; Association of Nigerian Geographer (ANG), Nigerian Environmental Society (NES) and Institute of Certified Geographers of Nigeria (ICGN). He has published widely both in reputable local and International Journals.