Knowledge of Residents on what makes their Environment Sustainable: A Case Study of Ikeja, Lagos State

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Environmental sustainability is a global phenomenon that is closely connected with many areas of human existence. The lack of it has impacted the air, the land and the water bodies, and has also moved to becoming a global scourge. However, the continuous treat to environmental sustainability is widely believed to be due to human activities. The peculiarity of these environmental issues defers from place to place. The knowledge of unsustainable environment and ways to deal with it is of great importance. Living under these challenges, in ignorance of the paths to their mitigation may be counterproductive. Ikeja, the capital of Lagos was chosen in this research as a case study. Questionnaires were admitted in three neighbourhoods, classified as wards, within high, medium and low-density areas. At the conclusion of analysis, findings reveal that, 64.5% of respondents are unaware of the laws that regulate sustainability, and 71.2% had never participated in an environmental sustainability related programme. This calls for a need to deduce a system of collective involvement, towards mitigating this global scourge.

1.0   INTRODUCTION

The impact of environmental problems on the society becomes more severe on an annual basis.

This include climate change and pollution. It has led to a decline in the quality of life and existence (Osbaldiston & Scott, 2011).

The concept of Sustainable development means many things to many people (Howley 2010). Studies in African climate and development have revealed that, climatic changes emanate from developmental activities such as extensive agriculture, mass housing production, oil exploitation, commercialisation and industrialisation (Pat-Mbano & Alaka 2012). About 13 million hectares of forest around the world was lost to these activities between year 2000 and 2010. These developments are said to have contributed to large volumes of greenhouse gases, a large part of which is the emission of carbon dioxide (CO_2) at 2.6 per cent globally between 2010 and 2011. That scenario puts the global emission at 32.2 billion metric tons in 2011, a rise of 48.9 per cent above 1990 level (United Nations 2014). The activities that lead to these are a threat to the global community, however, they have become an integral part of the communities, whose life has one way or the other become dependent on them (Pat-Mbano & Alaka 2012).

It is predicted that, half of the world's population will be domiciled in urban centres (Cohen 2004); and that the world urban population may increase by 72 per cent in the year 2050, that is, from 3.6 billion in 2011 to 6.3 billion in 2050 (Berg, 2012). Over 60% of the world's population is also expected to live in cities in 2030. This will make energy use, which is an important part of human development progress, increase faster than the population. Urban areas like Lagos particularly Ikeja, will become vulnerable to the effects of global warming, as cities due to their activities discharge a large amount of heat (Hunt *et al*, 2011).

The United Nations Report (1987) introduced the term 'sustainable development' and defined it as the "development that meets the needs of the present without compromising the ability of future

generations to meet their own needs". This definition makes Sustainability a social construct that implies an action plan with an ethical basis, letting the need for survival dictate environmental or ecological ethics.

It is generally accepted that environmental problems are caused by human activities, through behavioural approaches to the built environment. To regulate these activities calls for social awareness and action, on environmental sustainability (Oyefara, 2013). Lagos State has various environmental problems, which are connected to its being a coastal state. This and its position in the economy of the nation makes the challenges more severe. These problems include flooding, waste management, traffic management, overcrowding and poor sanitation in general. As a result of these, the state faces ecological risk, which includes rise in sea level, among other risks (Merem *et al*, 2018). According to Shastri, (2005), the participation of people is important to sustainable environment, which makes it a necessity that, they be aware of the effects of their activities on the environment. This paper examines the degree of knowledge of residents on sustainability issues and their implications, in Ikeja Local Government area of Lagos. This is achieved through finding out their knowledge about; environmental sustainability, global warming, what is required to reduce global warming, their knowledge of laws guiding sustainability and their level of involvement on programmes of sustainability.

This research is limited to Ikeja Local Government, within Lagos State. Data collection covers only residential neighbourhoods and buildings. It limits its findings, through appropriate use of research methods, to the residents' awareness of factors that affect environmental sustainability of neighbourhoods.

1.1 The Meaning and Perception of Environmental Sustainability

Sustainability has several definitions, which has led to diverse discourses that equally result into problems of operationalisation. The meaning adduced to sustainability through definitions do not appear to state what it actually stand for. Some researchers regard it as an abused term, for the absence of concrete meaning. However, modification with additional words makes it more meaningful. The root of environmental sustainability is embedded in understanding the impact human beings on the habitat (Salas-Zapata & Ortiz-Munoz, 2018). However, different professionals have developed a self-satisfactory definition for sustainability over the years (Morelli, 2011).

The term, "Sustainable development" is perceived by many stakeholders as an abstract concept, that cannot be pinned down to an actual interpretation (Williams & Millington 2004), but, a very common definition of Sustainability according to Bartlett (2012), Heinberg (2010), Macion (2010) & Bruntland Commission Report (1987) is as coined by Bruntland report, which defines Sustainable development as the "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs". They believe this to be the generally accepted definition of sustainable development.

Kuhlman & Farrington (2010) also opined that, the Bruntland report definition, which is of the aspiration of the world to achieve a better life, under the limitations of nature has been changed in the course of time. Their submission is that, this change makes it difficult to understand the conflict between providing welfare for all, and the conservation of the environment. This change, according to this opinion relegates the importance of the environment and equally separates the social from the economic which are meant to be the same.

Environmental sustainability is closely tied to different social classes and cultural groups, as it encourages co-existence of the different classes, and equally promotes a greater richness of the social fabric, and also strengthens its cohesion (Oliviera 2013).

Approach to creating a sustainable society requires changes in behaviour, which can only be achieved through proper awareness (Frame & Vale 2006).

Different theoretical views have been formulated by researchers over the years, on sustainability and sustainable practices, one of which is the Triple Bottom Line (TBL) Concept. This concept describes the three factors embedded into sustainability, and equally points to the relationship between these factors. It considers the basic factors of economic, social and environmental aspects. It is also called the pillars of sustainability, as represented by people, planet and profits. The social aspect is synonymous with people, while the environmental aspect is synonymous with the planet, also with economy and profit (Kuhlman & Farrington 2010).

1.2 Dimensions of Sustainability

Sustainable development was initially meant to be a solution to the ecological crisis caused by intense industrial exploitation of resources and the continuous degradation of the environment and seek primarily the preservation of environmental quality, now the concept has spread to the quality of life in its complexity and in terms economically and socially (Muscalu, Neag, Halmaghi 2016).

Morelli classifies sustainability in a number of different ways. It is divided into four categories:

(1) Regulation functions: Regulation of essential ecological processes and life-support systems (bio-geochemical cycling, climate regulation, water purification, etc.).

(2) Production functions: harvesting from natural ecosystems of, for example, food, raw materials and genetic resources

(3) Habitat functions: provision by natural ecosystems of refuge and reproduction, habitat to wild plants and animals and thereby contribution to the (in situ) conservation of biological and genetic diversity and evolutionary processes.

(4) Information functions: provision of many possibilities for recreation and aesthetic enjoyment, cultural and historical information, artistic and spiritual inspiration, education and scientific research. (Morelli 2011)

Sustainability development rests on three major pillars, economic sustainability, social sustainability and environmental sustainability (Basiago, 1999). Sustainable development deals with the concept of quality of life in complexity, economically, socially and environmentally, promoting the idea of balance between economic development, social equity, efficiency and environmental conservation (Muscalu, Neag & Halmaghi, 2016). The commonly agreed models for representing the interrelationship between environmental, social, and economic aspects of sustainability are the Venn diagram; consists of three concentric circles, and the planning hexagon. In all of these models, the different pillars of sustainability are separate but connected to each other independently (Rasouli & Kumarasuriyar, 2016).
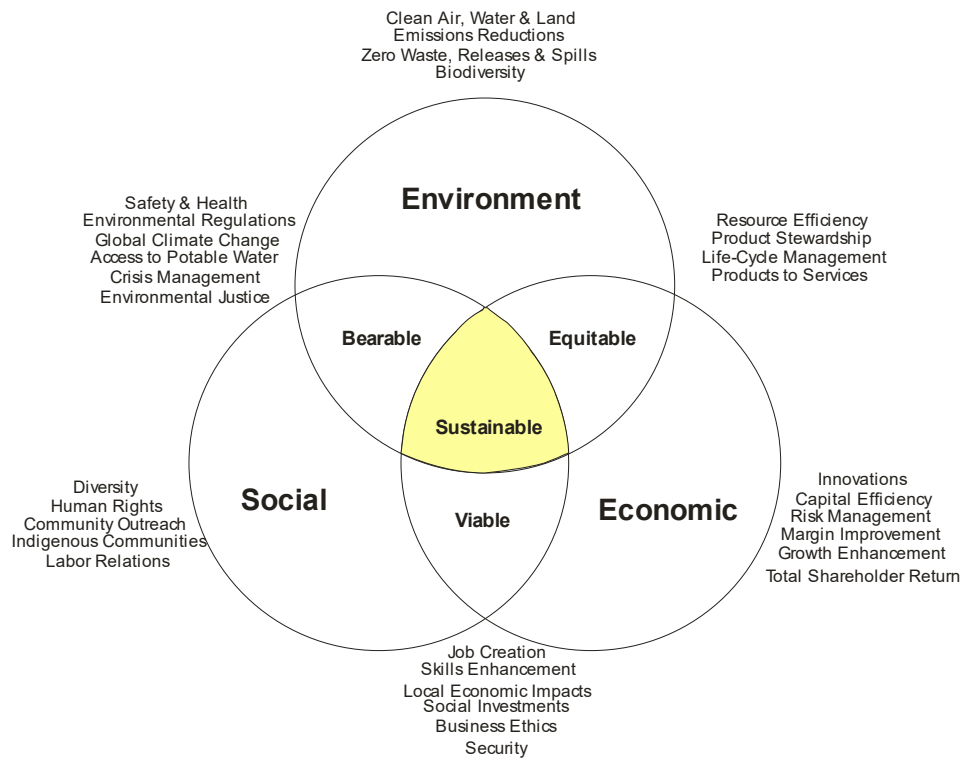
Clean Air, Water & Land
Emissions Reductions
Zero Waste, Releases & Spills
Biodiversity

Environment

Safety & Health
Environmental Regulations
Global Climate Change
Access to Potable Water
Crisis Management
Environmental Justice

Resource Efficiency
Product Stewardship
Life-Cycle Management
Products to Services

Bearable   **Equitable**

Sustainable

Diversity
Human Rights
Community Outreach
Indigenous Communities
Labor Relations

Social   **Viable**   **Economic**

Innovations
Capital Efficiency
Risk Management
Margin Improvement
Growth Enhancement
Total Shareholder Return

Job Creation
Skills Enhancement
Local Economic Impacts
Social Investments
Business Ethics
Security

Figure 1: Triple bottom line factors. Source: Pearce et-al, 2012

1.3 Economic sustainability

In response to the environmental destruction and overuse of natural resources, the concept and theory of environmental economy emerged in developed countries in the 1970s to change the lifestyle by combining theories of the economy and ecology (Rasouli & Kumarasuriyar 2016). Economic Sustainability from an economic standpoint is the sustainability required so that current economic activity does not disproportionately burden future generations. Economists then allocate environmental assets as only part of the value of natural and manmade capital, and their preservation becomes a function of an overall financial analysis (Morelli 2011).

Economic aspect plays a crucial role in facilitating sustainable development by identifying options and alternatives for more effective natural resource management. Economic system should provide a sustained basis surplus, (Rasouli & Kumarasuriyar 2016).

An adequate definition which everyone can relate to states that "if sustainability means leaving future generations with at least as many opportunities as we have today, then the way to achieve this is by passing on to future generations a level of capital that is at least as high as ours today" (Rasouli & Kumarasuriyar 2016).

1.4 Social sustainability

The concept of social sustainability had been neglected in comparison to environmental and economic aspects of sustainability (Rasouli & Kumarasuriyar 2016). Social sustainability considers how individuals, communities and societies live with each other, and societal provisions and expectations for individual autonomy and realization of personal potential, participation in governance and rule making, citizenship and service to others, justice, the propagation of knowledge, and resource distributions that affect the ability of that society to flourish over time (Global sustainability 2011). Social system should be able to solve the problems

and tensions that arise from "disharmonious development" (Rasouli & Kumarasuriyar 2016). Social Sustainability is referred to as "a positive condition within communities, and a process within communities that can achieve that condition." (Morelli 2011). This definition supplements the following principles
• Equity of access to key services
• Equity between generations
• A system of relations valuing disparate cultures
• Political participation of citizens, particularly at a local level
• A sense of community ownership
• A system for transmitting awareness of social sustainability
• Mechanisms for a community to fulfil its own needs where possible
• Political advocacy to meet needs that cannot be met by community action
Socially sustainable communities are equitable, diverse, connected and democratic and provide a good quality of life (Global sustainability 2011).

1.5 Environmental sustainability
Environmental concept definitions and meanings are still very varied. Environment means all the conditions of the Earth and natural elements: air, water, soil and subsoil, all layers of the atmosphere, all organic and inorganic materials and living beings, natural systems interact, material and spiritual values. The environment consists of three subsystems: biotic, abiotic and human. The environment is all natural and anthropogenic elements, events and energies that are in constant action and that contribute to maintaining the ecological balance of the planet. Elements of human action is due to anthropogenic effects on topography, vegetation. The environment is represented by a combination of living and non-living factors that are not influenced in a significant way to human beings (Muscalu, Neag, Halmaghi 2016).

Sustainanbility at the initial stage was purely environmental, then the three pillars was introduced, but it is necessary to provide a clear and specific definition of environmental sustainability that is independent from the economic and social aspects of sustainability (Rasouli & Kumarasuriyar 2016).

The environmental concept functions as 'the capacity of natural processes and components to provide goods and services that satisfy human needs. The 'goods' (e.g. resources) are usually provided by the ecosystem components (plants, animals, minerals, etc.) and the 'services' (e.g. waste recycling) by the ecosystem processes (biogeochemical cycling) (Ekins 2011).

2.0   METHODOLOGY
This study adopts a survey research approach. Ikeja was adopted as a specific case study.
Though, there are 4 local governments in Lagos with all the classified wards in them; low density/high income, medium income/meddle income and high density/low income wards. These are Ikeja, Oshodi/Isolo, Apapa and Amuwo odofin. Ikeja was purposively selected, due to its being the capital of Lagos, with all the 3 classes of wards.

Table 1: Wards within Ikeja Local Government

	SN	High Density Ward	Medium Density Ward	Low Density Ward
	1		Anifowose/Ikeja	
	2		Agidingbi/Omole/Ojodu	
	3		Alausa/Oregun/Olususon	
	4		Onilekere/Onipetesi	
Ikeja	5	Ipodo/Seriki Aro		
	6		Adeniyi Jones/Ogba	
	7		Okeira/Aguda Titun	
	8			Onigbongbo
	9			GRA
	10		Wasinmi/Opebi/Allen	

Source: Physical Planning & Urban Development, 2009

Lagos State, where Ikeja is situated, was created on the 27th of May, 1967, through States Creation and Transitional Provision Decree No 14 of 1967. Before this time, Lagos municipality was administered as a Federal Territory by the Federal Government. The State took off fully as an administrative entity on the 11th of April, 1968. It is the 6th largest city in the world, with the smallest landmass in Africa (Abe, 2010).
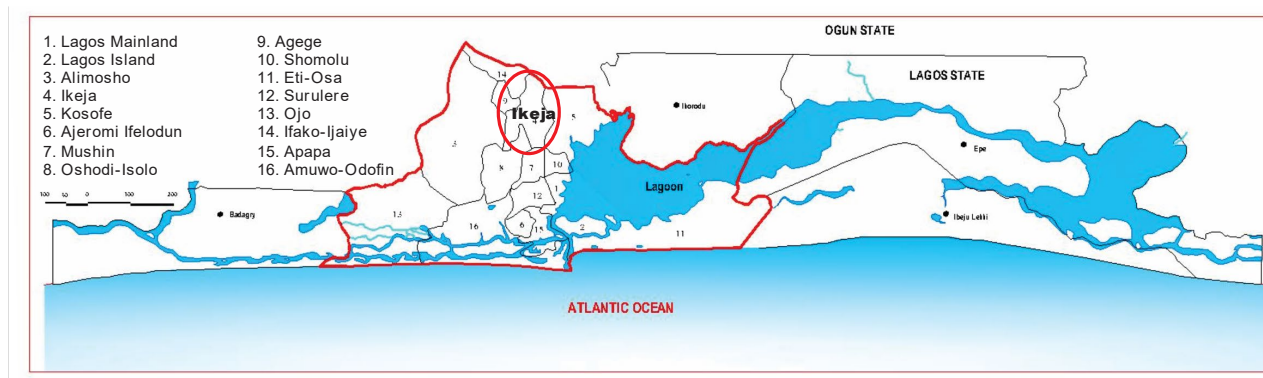

Fig. 2. Map of Lagos State, showing the location of Ikeja. Source: Lagos State Ministry of Urban Planning and Physical Development

Ikeja, the study location, is the capital of Lagos State of Nigeria. This city was pronounced the capital in 1976. This area has economic, social and material potentials; it also has its environmental and physical challenges. Ikeja covers 5,630 hectares of land area, which accounts for 1.57% of the state's total area. It however accommodates 3.45% of the population, which is a total of 533, 237. It is projected to become 1,062,833 in 2020. Lagos state house survey (2010), takes the population of Ikeja to be 735, 828.

The study focuses on Ikeja Local Government, through the adoption of statistically based, Single Case Study, being the Administrative Capital of the State, with all the three classes of settlement. It is subject to quantitative evidences. The only low density in the Local Government (Ipodo/Seriki Aro) is selected, while medium (Wasimi/Opebi/Allen) and high density (GRA) wards, which are contiguous with the low density ward are selected, for ease of data gathering (table 2).

2.1 Sampling Unit
The total number of buildings in Ikeja is 25,313, and the number of polling units is 350 (Independent National Electoral Commission, 2000). This gives an approximate 72.3 buildings per unit. When applied to these 3 contiguous wards, by working out the number of buildings in each ward through the application of the ratio of polling units per ward, considering that, the number of polling units

was determined, by the number of residential buildings in each of the ward, the figures are as reflected in table 2.

This gives a population of 7,953 buildings, as the basis for sampling.

Table 2: Selected contiguous wards

S/N	Ward	Number Of Buildings Calculated By Proportion	Number Of Polling Units
1	Ipodo/Seriki Aro	3,976	55
2	GRA	1,808	25
3	Wasimi/Opebi/Allen	2,169	30
	TOTAL	**7,953**	**110**

Source: Independent National Electoral Commission (2000)

The sample size of this research is based on the total number of buildings in selected wards, which is 7,953. Sample size was determined on the basis of this estimate.

2.2 Sample Size

The sample size was determined in reference to these tables 3, at a confidence level of 95% and a margin error of 5%.

Table 3. Sample size requirements (Glenn D. Israel 2015)

Size of Population	Sample Size (n) for Precision (e) of:			
	+/- 3%	+/- 5%	+/- 7%	+/- 10
500	a	222	145	83
600	a	240	152	86
700	a	255	158	88
800	a	267	163	89
900	a	277	166	90
1000	a	286	169	91
2000	714	333	185	95
3000	811	353	191	97
4000	870	364	194	98
6000	909	370	196	98
7000	938	375	197	99
8000	959	378	198	99
9000	976	**381**	199	99
10000	989	383	200	100
15000	1000	385	200	100
20000	1034	390	201	100

Source: https://edis.ifas.ufl.edu/pdffiles/PD/PD00600.pdf

A total number of 750 questionnaires were administered in the 3 contiguous zones, with the assumption that, the number of remitted questionnaires will not be less than the recommended sample size of 381.

Three different economic zones where selected, due to their being contiguous, for ease of questionnaire administration (figure 2). These are GRA, Opebi/Allen and Ipodo/Seriki wards.
A number of streets were randomly selected from each zone. The selected streets fall within less than 1 kilometre radius. It falls within 0.83 kilometre for GRA, 0.6 kilometre for Allen/Opebi ward and 0.6 kilometre for Ipodo/Seriki Aro (figure 3, figure 4 & figure 5).
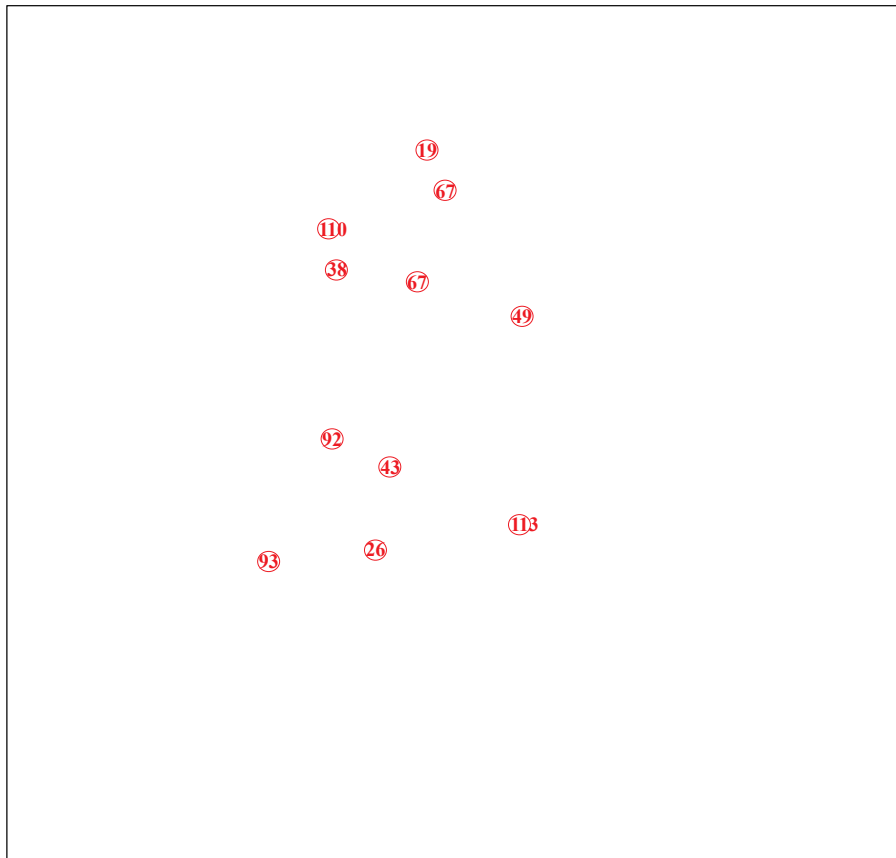
Figure 3. Street Map of Ikeja, showing streets where Questionnaires were administered, within the High Density Ward. Source: Lagos State Ministry of Physical Planning and Urban development (2013)

Figure 4. Street Map of Ikeja, showing streets where Questionnaires were administered, within the Medium Density Ward. Source: Lagos State Ministry of Physical Planning and Urban development (2013)

Figure 5. Street Map of Ikeja, showing streets where Questionnaires were administered, within the High Density Ward. Source: Lagos State Ministry of Physical Planning and Urban development (2013)

Residential buildings were identified within the selected streets, and questionnaires administered to heads of households or their representatives. This is done in randomly selected residential buildings, based on the ratio of the number of buildings in them (Table 4, Table 5 & Table 6)

Table 4: Ipodo/Seriki (High density ward): Selected streets.

SN	Street	Number Of Buildings	Number of Questionaires Administered
1	Ajiboye Street	33	10
2	Ajao Avenue	127	39
3	Seriki Aro Avenue	70	22
4	Afariogun Street	50	16
5	Ayeni Street	52	16
6	Tonade Street	43	13
7	Ipodo Street	40	12
8	Olowu Street	93	29
9	Unity Road	100	31
10	Orishe Street	63	20
11	Balogun Street	133	42
	TOTAL	804	250

Source: Lagos State Ministry of Environment (2013)

Table 5: Allen/Opebi (Medium density ward): Selected streets

SN	Street	Number Of Buildings	Number of Questionaires Administered
1	Adeleke Street	47	15
2	Oluwaleyimu Street	37	12
3	Owodunni Street	26	8
4	Amore Street	38	12
5	Majekodunmi Street	38	12
6	Emina Crescent	83	28
7	Omotayo Ojo Street	27	9
8	Oladipupo Kuku Street	32	10
9	Folawewo Street	53	17
10	Ogundana Street	91	30
11	Hilton Drive	11	3
12	Bamishile Street	49	16
13	Tiwalade Close	41	13
14	Adebayo Banjo Street	44	14
15	Moshood Abiola Crescent	41	13
16	Felicia Koleosho Street	20	6
17	Sule Abuka Crescent	41	13
18	Agbaoku Street	28	9
19	Folorunsho Kuku Street	30	10
	TOTAL	777	250

Source: Lagos State Ministry of Environment (2013)

Table 6: GRA (Low density ward): Selected streets

SN	Street	Number Of Buildings	Number of Questionaires Administered
1	Sobo Aribiodu Street	110	39
2	Adeyemo Alakija Street	67	23
3	Ladoke Akintola Street	43	15
4	Oba Adeniji Adele Street	19	7
5	Remi Fani Kayode Street	67	23
6	Sowemimo Street	49	17
7	Joel Ogunnaike Street	93	32
8	Oba Akinjobi Road	113	40
9	Ayoola Coker	92	32
10	Micheal Ogun Street	38	13
11	Harold Sodipo Street	26	9
	TOTAL	717	250

Source: Lagos State Ministry of Environment (2013)

Questionnaires were administered in randomly selected Residential Buildings within these Wards. Stratified sampling procedure was employed, to ensure an adequate representative of the study population along the types of neighbourhoods.

The sample size of this research is based on the total number of buildings in selected wards, which are 7,953. Questionnaires were administered on the basis of this estimate.

The sample size was determined in reference to sample size requirements (Israel 2015), at a confidence level of 95% and a margin error of 5%. A total number of 750 questionnaires were administered in 2 randomly selected wards from high and medium density wards, while the only available low density ward was selected.

The questionnaires were administered to occupants of residential buildings within the high density, medium density and low density areas. All the questionnaires were appraised for completeness and accuracy. They were checked to ensure that related answers match all questions asked, and all relevant fields filled accordingly.

3.0 FINDINGS AND DISCUSSION

The questionnaires were admitted to occupants of residential buildings within the low income, middle income and high income areas. All the questionnaires were appraised for completeness and accuracy. They were checked to ensure that related answers match all questions asked, and all relevant fields filled accordingly. This process identifies inappropriately filled questionnaires, and this subsequently led to their removal, before the commencement of analysis. The process was intended to reduce errors during the stage of analysis.

At the subjection of this to a reliability test, Cronbach's Alpha was 0.730, while Cronbach's Alpha Based on Standardized Items was 0.749.

Desciptive statistics was employed, frequecy analysis was deployed to determine the percentage and frequence in line with the respondents' answers to the questionnaire.

Table 7: Knowledge of residents to sustainability in Ikeja, Lagos

		High Density Area	Medium Density Area	Low Density Area	Total
Knowledge of Environmental Sustainability	Yes	61.9%(99)	52.0%(92)	63.9%(133)	59.4%(324)
	No	38.19% (61)	48.0%(85)	36.1%(75)	40.6%(221)
Knowledge of Global Warming	Yes	72.5%(116)	63.8%(113)	63.8%(113)	70.8%
	No	27.5%(44)	36.2%(64)	36.2%(64)	29.2%
Knowledge of requirements to Global Warming reduction	Yes	56.2%(90)	51.4%(91)	57.7%(120)	55.2%
	No	43.8%(70)	48.6%(86)	42.3%(88)	44.8%
Awareness of laws guiding neighbourhood sustainable practice	Yes	38.1%(61)	31.6%(56)	36.1%(75)	35.2%
	No	61.9%(99)	68.4%(121)	63.9%(133)	64.5%
Involvement in sustainable programme	Yes	28.1%(45)	28.8%(51)	24.0%(50)	26.8%
	No	71.9%(115)	71.2%(126)	76.0%(158)	71.2%

Findings from analysed data (table 1), shows that 61.9% of respondents within the high density area are aware of environmental sustainability, and what it stands for, 52.0% within the middle density, while 63.9% are within the low density area.. This is against 38.19% of respondents that are ignorant of this term, within the high density area, 48.0% in the middle density area and 36.1% in the low

density area. At the combination of all the density areas, a total of 59% are knowledgeable about environmental sustainability, while 40.6% of respondents are ignorant of it.   This has a similarity with those that are knowledgeable about global warming as against those without the knowledge of it, these accounts for 72.5% and 27.5 % respectively. However, 61.9% of respondents within the high density area are not aware of laws guiding sustainability, while 68.4% and 63.9% are unaware of such laws within the medium density and high density areas. At the combination of the 3 zones, 64.8% of the total numbers of respondents are unaware of the laws. Above 70% of respondents within each zone have never been involved in programmes targeted at sustainability; 71.9% within the high density area, 71.2% and 76.0% within medium density and low density respectively.

From the findings, which reveal that, majority of respondents are knowledgeable about Environmental sustainability, Global warming and what is required to reduce global warming. This level of awareness could be assumed to have put the residents within these areas in a position where they assimilate specific facts and actions that are required to reduce global warming. However, majority of respondents are unaware of the laws guiding neighbourhood sustainability, with this situation, the residents within the zones are not conversant with the implications of flouting the laws on environmental sustainability. This may result into a non-existent of deterrent measures, which may be required to put sustainability in check for the area.

Table 8. Education Level of Respondents

Educational Level	Percentage
No formal education	2.8
Primary	16.0
Secondary	10.6
Technical school	10.5
NCE/OND	29.0
First Degree/HND	27.5
Post-graduate	3.7

Looking at the level of education of the respondents, at 81.0% at secondary school and above (Table 2), one may assume a good understanding of such laws due to this level. The dichotomy between the educational level and the awareness of relevant environmental laws may be due to inadequacy of awareness creation on the part of administrators and other stakeholders.

The non-involvement of respondents (more than 70%) on sustainability programmes, according to the findings, connotes that residents within the study area have not been exposed enough, to issues and discussions on environmental sustainability.

4.0 CONCLUSION

This study has shown the state of awareness by residents of the study area on environmental sustainability, global warming, and laws guiding neighbourhood sustainability practice and what is required to reduce global warming. It also reveals their low involvement in programmes on sustainability. These however suggest the need for the appropriate agencies of government to put structures in place in order to create awareness on the laws guiding sustainability and also organise public oriented programmes that are linked with environmental sustainability.

REFERENCES

Abe T. (2010). *How to be a good Lagosian*, Lagos, Nigeria: Taijo Wonukabe Ltd

Basiago A. D. (1999) Economic, Social, and Environmental Sustainability in Development Theory and Urban Planning Practice. *The Environmentalist* 19, 145 -161 Kluwer Academic Publishers, Boston.

Berg N. (2012). The Uneven Future of Ubanisation. *Citylab Publications*. Retrieved April 14, 2020 from https://www.citylab.com/equity/2012/04/uneven-future-urbanization/1707/

Cohen B (2004). Urban Growth in Developing Countries: A Review of Current Trends and a Caution Regarding Existing Forecasts. *World Development*, 32(1) pp 23–51. Elsevier Ltd. Retrieved February 12, 2015 from http://www.Alnap.org/pool/files/cohen.pdf

Exploring Sustainable Development: A Multiple-Perspective Approach (2012). Education for Sustainable Development in Action Learning & Training Tools N°3. *United Nations Educational, Scientific and Cultural Organization*. ww.unesco.org/education/desd

Frame B. & Vale R. (2006). Guide to the Kyoto Protocol. *Local Environment*, 11(3), pp 287-293.

Howley P (2010): Sustainability versus Liveability; an Exploration of Central City Housing Satisfaction. *International Journal of Housing Policy,* 10 (2), pp173-189. Retrieved January13,2015from http://www.tandfonline.com/doi/pdf/10.1080/14616718.2010.480857

Hunt J. C. R., Eames I., Da Silva C. B., Westerweel J. (2011). Interfaces and Inhomogeneous Turbulence. *Philosophical Transactions of the Royal Society*, 369(1937), pp 811-832. Retrieved March 15, 2016, from http://rsta.royalsocietypublishing.org

Independent National Electoral Commission (2000). *Guide to polling/Registration Centres*

Kim S, & Kwon H. (2018). Urban Sustainability through Public Architecture. *Sustainability*. DOI: 10.3390/su10041249

Kuhlman T. & Farrington J. (2010). What is Sustainability?. *Sustainability*. 2, pp 3436-3448. Retrieved in September 10, 2015, from, www.mdpi.com/journals/sustainability

Lagos State Household Survey (2010). Retrieved June 10, 2013, from http://resourcedat.com/document/download-lagos-state-household-survey-2010/

Lagos Wards and LCDAs (n.d.). Retrieved October 12, 2015, from wikipedia.org/Lagos State

Lagos Government Reserved Area (GRA) (n.d.). Retrieved October 12, 2015, from www.punchng.com

Lagos Streets and Quarters (n.d.). Retrieved October 12, 2015, from www.nigeriavillagesquare.com

Lagos State Ministry of Physical Planning and Urban development (2010). *Current Maps*

Morelli J. (2011). Environmental Sustainability: A Definition for Environmental Professionals. *Journal of Environmental Sustainability, Vol 1, Issue 1*. DOI: 10.14448/jes.01.0002

Oliviera F. P. (2012). Social Sustainability in Planning Law, *US-China Law Review*, 9(1), 45-51. Retrieved May 12, 2014, from http://search.ebscohost.com

Osbaldiston R & Schott J. P. (2011). Environmental Sustainability and Behavioural Science: Meta-Analysis of Proenvironmental Behaviour Experiments. *Environment and Behaviour*. DOI: 10.1177/0013916511402673

Oyefara J. L. (2013). Good Governance and Environmental Sustainability in Lagos State, Nigeria: Can the State achieve goal seven of Millennium Development Goals (MDGS)?. *European Scientific Journal,* 9(9), pp41-55. Retrieved June 2, 2015 from http://eujournal.org/index.php/esj/article/download/787/823

Pat-Mbano E. C. & Alaka I. N. (2012). Climate Change Reduction: A Mirage in Nigeria. *Management Science and Engineering*, 6(1), pp11-17.

Salas-Zapata W. A & Ortiz-Munoz M (2018). Analysis of Meanings of the Concept of Sustainability. *Sustainable Development*, 2019;27:153-161. https://doi.org/10.1002/sd.1885

Shastri R. (2005). Environmental Awareness and Sustainable Development, Awareness of Deforesting Effect of firewood use in Rural firewood users. Retrieved May 12, 2014, from https://www.researchgate.net

Schaffer D. (2016). Values of Foundation for Environmental Education (FEE). Retrieved March 12, 2016, from www.fee.global/our-values

Scolobig A. & Lilliestam J. (2016). Comparing Approaches for the Integration of Stakeholder Perspectives in Environmental Decision Making. Resources 5, 37. DOI:10.3390/resources5040037

Sutton P. (2004). A Perspective on environmental sustainability? *Victorian Commissioner for Environmental Sustainability*. http://www.green-innovations.asn.au/ Philip.Sutton@green-innovations.asn.au Version 2.b 12

United Nations (1987). Report of the World Commission on Environment and Development: Our Common Future. Retrieved June 15, 2014, from http://www.un-documents.net/our-common-future.pdf

United Nations (2014). The Millennium Development Goals Report 2014. Retrieved January 15, 2016 from http://www.un.org/millenniumgoals.pdf

Glenn D. I. (2015): Determining Sample Size. Retrieved October 12, 2015, from https://edis.ifas.ufl.edu/pdffiles/PD/PD00600.pdf