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Articles

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Nigerian Valuers' Perception of the Significance of Broad Knowledge on Assets

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Abstract: The field of property valuation is yet to have a settled domain, more importantly the aspect that concerns multiplicity of assets. This eclectic nature is already facing a challenge from Nigerian engineers in the aspect of machinery valuation and invariably, emerging economic activities tend to produce new specialists that could further shut out traditional property valuers. Thus, there is the imperative for extended education to improve competencies for valuation, especially as regards non-real estate assets as most professional valuers have their background education within the real estate discipline. Online questionnaire survey through *SurveyMonkey*^{R} was served on the entire 117 accredited members (with established electronic mail addresses) of the 'Faculty of Valuation International', a social - professional wing of Nigerian Institution of Estate Surveyors and Valuers (NIESV) with 44 useable responses. Respondents were required to rate the importance of nine identified knowledge-imparting courses on a 5-point Likert-type scaling. Probit analysis of the responses indicates significance being attached to machinery maintenance, environmental economics, introduction to structures and business accounting with asset analysis while introduction to machines and basics of industrial production were also found essential. Thus, it is recommended that benchmark curriculum for valuation education in Nigerian Universities and Polytechnics should be upgraded to accommodate these yearnings in practice. This study is significant in designing curriculum upgrade given the emerging demand for valuation of various assets within increasingly competitive and globalised market settings.

Keywords: Competency, curriculum upgrade, knowledge, multiplicity of assets, valuation

1.0 Introduction

The value of an asset refers to its worth and this predicates on its productivity potential (utility), ownership, limitation in supply and transferability (Olaniran and Adedokun, 2016).

When one intends to acquire used asset from another for a consideration, one needs to ponder on the extent to which comparative analysis would suffice, and whether such always exists. Asset valuation has been described as a product of quantitative expression of functional qualities and modifying the result by the conditions imposed by the market at that place and time, as well as other technical and legal considerations (Ayala, 2008). Perhaps, that of an automobile can properly illuminate this. The worth of a car just out of the factory would seldom require professional valuer's input as it could easily be exchanged at quoted, standard price. Upon being on the road for six months however, several variables must be taken into consideration in ascertaining its exchange value – nature and intensity of use, type of roadways it had plied, possible accident history, frequency and suitability of maintenance – with mileage covered and physical age being relatively minor issues. Thus, two of such cars being available for sale in the same garage and sharing comparable physical age and recorded distance traveled may carry significantly different price tags. Whether someone called in to advise on price payable for one of these cars would be expected to have knowledge about cars and their operations or not becomes the issue at stake here.

Generally, there are different levels of valuation. We have the book valuation to ascertain base price that gives overall guide for typical second new (used) asset on account of historical cost and age. This type of pricing is obtainable on different asset categories such as used aircrafts, cars, furniture and electronics by accessing dedicated websites. Examples include *aircraft bluebooks*, *Canadian Black Book* and *Edmunds.com* for cars, *Sage bluebooks* for electronics and *NADA Guides* for boats. At best, these sources afford rough estimates of value with limited application as value calculation is hinged on average standard of use and handling. The second level is spot valuation having a limited scope and data input. Accounting Professional & Ethical Standards Board Limited (APESB, 2015) describes this as requiring minimal to limited use of valuation approaches and methods. The professional valuer in this case would inspect the asset but because the purpose of valuation is less committal, only easily available data and details may be used. This is however a step ahead of the earlier book valuation (which coincides with what APESB, 2013 referred to as 'calculation Engagement') that makes little or no reference to data and methodologies outside those in the base formula. The peak of valuation exercise has been termed 'comprehensive valuation' or 'valuation engagement' in situations where the reported figure is to be relied upon for important financial or investment decisions (The Canadian Institute of Chartered Business Valuators, 2012, APESB, 2013 and Equity Valuation Associates, 2013). In this respect, complete due diligence is expected from the valuer to consider all relevant value-influencing variables and exploit every available methods and procedures and such forms the focus in this paper.

Professionalization of the task of valuation has been associated with the

rise of the real estate as a field of study. Gustafsson and Lundstrom (2008) traced the treatment of real estate as an academic discipline to two publications by Ratcliff (1961 and 1972) which drew attention to the technical nature of real estate assets. With increased urbanization, the valuation of real estate for exchange purposes, tax and mortgage decisions eventually emerged. Perhaps, emphasis on technical aspect of real estate is attributed to its perception as a summation of land and improvements on land while contemporary thinking lean towards market and financial analysis. Both views have their merits but could be rather too extremist in nature. On a macro level, most investment assets are in competition and should therefore be compared vis-à-vis their risk structure. At the same time however, assets that call for professional valuation which are most times not in their new state often possess peculiar features that are not easily analysed in any standardized form. Used electronic item could have been mishandled beyond expected average based on family size and quality of electrical installations the same way say, a piece of living room furniture could have been under- or over-used. Vaz (2015) aptly captured this in his reference to the real estate assets as having very different characteristics from other goods and products traded in the markets in which the value is defined in advance and it's known by all market participants. Vandell (2006) also cautioned about insufficient recognition of the "real" nature (as opposed to "capital" nature) of real estate during its valuation and a lag in educational standards to bring the profession up to date.

Rottke (2007) had cautioned that the need of an economy as defined by its stage of development often determine the kind of real estate activities in place which is a pointer to the required approach to valuation. Thus, ranging from units of real estate to used automobile, item of installed machinery or furniture, the actual size, composition and condition (technical and economic) do exert significant influence on value. Sometimes therefore, it could become inadequate for a valuer to limit his competency to econometrics and market study without having relevant understanding of the nature of the asset involved in valuation. The European Group of Valuers' Associations (TEGOVA, 2011) categorized minimum educational requirements for a real estate valuer into three (understanding, general knowledge and in-depth knowledge): understanding of the principles of economics, business and finance, general knowledge of marketing, buildings and construction as well as in-depth knowledge of valuation methods, standards and the legal framework. Thus, this paper seeks to determine how significant is the valuer's knowledge on a particular non-real estate asset in the course of his valuation exercise. The focus on non-real estate assets is informed by the realization that globally, apart from business valuers, most asset valuers have real estate educational background which knowledge could easily be taken for granted in the course of their valuation practice. Common fixed assets coming under professional valuation include land and buildings (jointly referred to as 'real estate'), machinery, vehicles and furniture. Real estate assets are attached to land and immoveable thereby conferring on them certain distinguishing features when compared

to some others broadly classified as 'personal properties', which are moveable. Apart from land and buildings, coming within the scope of real estate assets are civil infrastructures like highways, bridges and tunnels and perhaps, environmental assets dealing with right to quality air, water and soil. Similarly, within the purview of personal assets would be jewelry and works of art.

2.0 **Justification for broadened knowledge**

The foregoing portends that professional valuation requires competencies that seem beyond the immediate reach of conventional real estate valuer. Hence, in practice, he often resorts to seeking assistance of relevant third party experts for assignments outside core real estate sector. Incidentally however, the level of knowledge often required is not the in-depth type and as observed by Ashaolu (2016), even when such specialist knowledge must be sought, the valuer must be acquainted with the basic aspects of this other field to be able to effectively interprete and blend the report into his. Beyond this, professions are generally forward-looking to survive in an increasingly competitive business environment. In addition is emerging reality of globalization and free flow of resources across national borders. Property valuation as a field therefore, must be let out of the strait real estate box. The core valuation competencies acquired are for property assets – real estate and otherwise – but often constrained within real estate-specific knowledge setting. Presently, the challenge is coming from engineers on machinery but before long, emerging economic activities tend to produce new specialists that could further seek to shut out traditional property valuers. Thus, there is the imperative for extended education with this study targeting those found relevant to the Nigerian valuation market over the foreseeable future.

2.1 **Agriculture and Forestry**

Real estate has both urban and rural aspects but with the latter only prominent in developing nations. Royal Melbourne Institute of Technology **(**RMIT University, 2016) in Australia has a course named 'Valuation of Rural Property' with contents that embrace 'knowledge of a broad range of current rural issues and trends in farming and the implications of these for the property industry'. In Nigeria, efforts are being geared towards diversifying the economy in favour of agriculture, among others. With vast investments (by local and foreign firms) in agricultural production and processing, the demand for valuation of assets in this sector is imminent and any relevant background knowledge of the activities involved would increase practitioners' confidence. Already, a few universities have been exploring courses in this area which could possibly, be made mandatory in the general valuation curriculum. Eves (2007) concluded from an Australian study that the nature of rural valuation practice required valuers should undertake studies in agriculture (farm management), especially if carrying out valuation of rural property assets for financial institutions.

2.2 **Mining and Geology**

Another focus in Nigeria's diversification of her economy is on exploitation of solid minerals. An introductory course on the science and methodologies involved in mineral exploitation, including the impact on incident natural and built environment

would found significance in the valuation assessment relating to environmental factors, sustainability studies and even towards appreciating assets directly invested in the sector. Nigeria is richly endowed with various mineral resources while only crude oil is presently providing her foreign exchange. Should the efforts of the current administration with billions of naira released annually for solid mineral prospecting in the budget yield expected results (through commercial exploitation of latent reserves of kaolin, bitumen, gold and precious stones, for instance), the pattern of economic activities and investment may soon witness remarkable restructuring with concomitant impacts on the direction of professional services. Valuation services should be expected for land to be acquired for exploitation, viability analysis of exploration proposals on a land, resources and assets of an exploration outfit and impact of exploitation on an incident land.

2.3 **Introduction to Machines**

Assessment of installed items of machinery and equipment becomes a homely exercise when the valuer can readily comprehend their basic components and operational modalities. Ability to read and interprete building design, recognize and appreciate different materials and construction techniques unconsciously eased the valuer's analytical skill in land and building valuation even when more complex structural issues could warrant a resort to specialist assistance. Basic knowledge in the design and operations of common machines, if properly drawn up and delivered in the curriculum, would also facilitate interpretation of technical information in the valuation of industrial assets and specialist equipment.

2.4 **Industrial Production**

The different types of industrial layout, methods of production, modes of machinery installation and the legal setting for industrial activities are some pertinent factors that can significantly influence the value of assets tied to the industrial business. Except someone engaged in the valuation of assets within the sector has an inkling of such towards factoring them into his exercise, his supposed economic analysis may not be sufficiently realistic.

2.5 **Machinery maintenance**

Maintenance is a key factor in professional valuation of used assets - real estate or personal. During inspection of company assets for valuation, resources available for maintenance and the history of maintenance activities are some of the inputs expected to be collected for analysis. Having data on these is not as important as being able to appropriately interprete such into figures. Building management and maintenance is one related course that could have prepared the valuer for similar task with respect to valuation of real estate assets.

2.6 **Structures and Materials**

Real estate focuses land and improvements to land which ordinarily, includes civil developments. Nevertheless, most real estate students borrow courses from the Departments of building with the perception that structural courses in engineering belong to the higher specialist category. This position finds justification in the rarity of market transactions involving the products of this class (such as roads, bridges, towers and tunnels). However, contemporary public accounting standards is geared towards accrual as

against traditional cash basis and this necessitates prior professional valuation of investments in infrastructural assets like roads, bridges and drainage channels. Apart from this, when corporate assets are to be valued, it often happens that the infrastructure is exclusively owned and capable of being exchanged at 'market' value. Also, instances of public-private partnerships, divestments and insurance coverage do arise to place demand for valuation of assets in this category. An introduction to structures would have the impact of making potential valuers to appreciate and gauge the slightly more complex technological inputs into materials and construction of civil and related engineering improvements to land.

2.7 **Rural Sociology**

The inclusion of this area of knowledge was unsettling at first but incidentally, it eventually scored significantly among study respondents as shown later in the results in Section 4.0 hereunder. The justification is that most valuers operate at the urban level and would require a glimpse into social structure and conflict in the rural setting if he is to assess land and resources owned in the agriculture and mining sectors. This is more-so that most potent legal frameworks in such environment are customary in nature.

2.8 **Business Accounting and Asset Analysis**

Valuation is traditionally an accounting concept and in most cases, the value of assets is required as input into some forms of financial reports. Basic accounting dealing with transaction entries and balance sheet development has remained a part of regular valuation education curriculum but the more penetrating business accounting (including deciphering various categories of business assets and profitability analysis) would afford better recognition and appreciation of the relative positions of tangible and intangible assets in the capital structure of a firm and in turn, the implication for valuation purpose.

2.9 **Environmental Economics**

Concern about the environment is not only to guarantee human health but also to preserve nature and ensure sustainability of man's enjoyment of environmental resources beyond the present generation. Environmental assets comprise land resources (including the soil and non-cultivated biological resources), water resources, the air, energy and sunlight and mineral resources among others. The valuer in a nation like Nigeria with hunger for economic growth through large scale resource exploitation must be able to appreciate the economic implications of various policies and actions relating to the use of the environment. This could possibly mean a little foray into appreciating need for chemical analysis and being able to undertake trade-off between economic activities and nature especially in instances like environmental degradation and oil spillage.

2.10 **Tourism**

Of equal importance to the contemporary valuer is the rising importance of tourism with associated hospitability business as veritable means of national sustenance. The sector is a major employer of labour and most viable source of foreign exchange for many countries (Lasisi, 2016). Economic assessment of scenery landscapes such as mountain ranges, natural springs and waterfalls, wildlife and ranches, coasts and beaches are quintessential to financing and

development of the promising industry in the country. Hence, basic knowledge about these natural resources is germane to shoring up a valuer's competency.

3.0 Methodology

3.1 Research Design and Data

Case study design was adopted through questionnaire survey. This delved into the relevance or otherwise of seeking knowledge about assets as basis for attaining complete competence in their professional valuation. It recognised that though existing valuation practitioners might have relied on their on-the job skills, there could be conscious need for improved education as professional development has been described as systematic maintenance, improvement and broadening of knowledge (Institute for Continuing Professional Development, 2016). Hence, through a review of literature and preliminary interaction with colleagues in both academia and practice, nine new courses in the academics were identified as plausible addition to curriculum. These were put forward for assessment by existing valuation practitioners in Nigeria (otherwise known as 'estate surveyors and valuers' – ESV) in terms of their relevance in imparting useful knowledge for potential asset valuers.

Study respondents comprise 44 ESVs who are members of the 'Faculty of Valuation International', a social-professional wing of Nigerian Institution of Estate Surveyors and Valuers (NIESV). These were the respondents with complete and analyzable responses to online electronic mail survey through *SurveyMonkey*^{R}, among a total of 117 reached. The response rate (about 37.6%) was attributable to the level of internet usage coupled with limitation of supporting infrastructure in Nigeria. It is however higher than the 24.8% threshold suggested by Fluidsurveys Team (2014) and also considered reasonable given the acknowledged reliable nature of internet survey in-spite its relatively low response rate (Fan & Yan, 2010; Millar & Dillman, 2011 and National Social Norms Center, 2014). Among other characteristics, 39 respondents (about 89%) were full members of NIESV and 10 (over 25%) of them had attained the 'Fellow' grade while 21 (about 48%) had spent more than 20 years in practice. Also, all the 44 respondents had a background education in estate management and went through a minimum of 4-year Polytechnic education (HND) or the 5-year Universities' Bachelor's degree with 13 of them holding higher degrees (M.Sc. or Ph.D.). These calibre of respondents were therefore considered to be sufficiently knowledgeable and experienced to carry out the requisite assessment on educational needs, more-so that they constitute the core of those with declared passion for valuation within NIESV.

3.2 Model Specification

The model is formulated on a priori postulation that valuer's capability to carry out asset valuation is dependent on his knowledge of the assets though in terms of general or adaptive (as against specialist) education related to the asset concerned. This education is to be obtained through relevant descriptive courses either existing or to be designed and delivered by proximate departments in the institution. In other words, the theory can be explained as a functional relationship between asset valuation and adaptive valuation education. Mathematically, this can be illustrated as;

Non-Real Estate Asset Valuation = f (Valuation Education)
OR
Non-Real Estate Asset Valuation = f (Adaptive valuation Courses)

Non-Real Estate Asset Valuation = f (Agriculture and forestry, Introduction to Mining and Geology, Introduction to Machines, Machinery Maintenance, Industrial Production, Environmental Economics, Introduction to Structures and Materials, Business accounting and Asset Analysis, Rural sociology)

ASV = f(AGF, IMG, INM, MAM, IDP, ENE, ISM, BAA, RUS).....equation 1

The econometrics interpretation of equation 1 above can be expressed as;

$Pr\ (ASV = 1) = \bar{\alpha} + \beta_1 AGF + \beta_2 IMG + \beta_3 INM + \beta 4 MAM + \beta_5 IDP + \beta_6 ENE + \beta_7 ISM + \beta_8 BAA + \beta_9 RUS + \mathcal{E}$..... *equation 2*

Where;

ASV = Non-Real Asset Valuation; AGF = Agriculture and forestry; IMG = Introduction to Mining and Geology; INM = Introduction to Machines; MAM = Machinery Maintenance; IDP = Industrial Production; ENE = Environmental Economics; ISM = Introduction to Structures and Materials; BAA = Business accounting and Asset Analysis; RUS = Rural sociology

$\bar{\alpha}$ *=intercept;* $\beta_1 - \beta_9$ *= coefficients of predictors; Pr = probability; and* $\mathcal{E}$ *= stochastic term. The a priori expectation;* $\beta_1 - \beta_9 > 0$

3.3 **Method of Analysis**

The study makes use of inferential statistics carried out through the use of Probit version of binary regression. The use of binary regression is informed by the nature of dependent variable (Long, 2012). All analyses were conducted at 5% level of significance.

4.0 Results and Discussion

Table 1 presents the rating by the 44 respondent ESVs of nine courses suggested to be introduced into the existing curriculum for asset valuation in Nigerian Universities and Polytechnics. A cursory examination reveals that all the suggested courses receive significantly positive disposition among respondents with introduction to machines and machinery maintenance topping thev list with weighted mean scores of 4.3636 and 4.0227 respectively from a maximum of 5.0 while Rural Sociology rated lowest also had a significant weighted mean score of 3.50.

Table 1: Respondent ESVs' scoring of suggested courses to be added to valuation curriculum

Asset Category/ Course(s) suggested	Code	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Weighted Mean (Max.5.0)	
Rural Assets:								
Agriculture and Forestry	AGF	3	2	1	26	12	3.9545	
Rural sociology	RUS	1	6	11	22	4	3.5	
Machinery & Equipment:								
Introduction to Machines	INM	2	0	1	18	23	4.3636	
Machinery Maintenance	MAM	1	4	4	19	16	4.0227	
Industrial Production	IDP	2	4	10	19	9	3.6591	
Environmental Assets:								
Environmental Economics	ENE	0	2	4	28	10	4.0455	
Intro to mining &geology	IMG	3	2	9	20	10	3.7273	
Civil infrastructure:								
Intro to Structures & Materials	ISM	1	5	11	19	8	3.6364	
Business:								
Business accounting & Asset Analysis	BAA	0	2	12	21	9	3.8409	

Table 2 depicts the outcome of Probit Binary regression analysis. This method of analysis is best interpreted in terms of probability (Garson, 2011). The Table shows that probability of acquiring competencies for asset valuation increases with knowledge from courses on introduction to machine (INM), machinery maintenance (MAM), industrial production (IDP), environmental economics (ENE), introduction to structures and materials (ISM), business accounting and assets analysis (BAA) and rural sociology (RUS). This occurs as response categories of predictors increase from lower category to higher category. With this result, the signs of all independent variables except AGF and IMG conform to the a priori expectation of the study.
From Table 2, equation 2 becomes:

$$\Pr(ASV = 1) = 3.238 - 0.254AGF - 0.080IMG + 0.274INM + 0.382MAM + 0.312IDP + 0.620ENE + 0.143ISM + 0.123BAA + 0.658RUS + \varepsilon \quad \text{.....equation 3}$$

Equation 3 depicts that only AGF and IMG which belongs to the less common sectors of agriculture and environmental asset have no direct (positive) contribution. From the figures in Table 2, we realise that MAM, ENE. ISM and BAA are significant courses that improve techniques and knowledge required for asset valuation. This result is in line with the theory that education contributes significantly to knowledge required for any profession.

Table 2: Inferential Statistics (Variables in the Equation)

Variable		B	S.E.	Wald	Df	Sig.	Exp(B)	Prob.	95% C. I. for EXP(B)	
									Lower	Upper
Step 1[a]	AGF	-.254	.337	.569	1	.451	.776	22.4	.401	1.501
	IMG	-.080	.316	.063	1	.001	.923	7.7	.497	1.716
	INM	.274	.458	.359	1	.549	1.316	31.6	.536	3.228
	MAM	.382	.372	1.056	1	.004	1.465	46.5	.707	3.035
	IDP	.312	.350	.793	1	.373	1.366	36.6	.688	2.712
	ENE	.620	.607	1.044	1	.000	.538	46.2	.164	1.767
	ISM	.143	.393	.132	1	.016	1.154	15.4	.534	2.491
	BAA	.123	.504	.059	1	.007	1.131	13.1	.421	3.034
	RUS	.658	.502	1.723	1	.189	1.932	93.2	.723	5.163
	Constant	3.238	5.032	.414	1	.520	.039			

a. Variable(s) entered on step 1: AGF, IMG, INM, MAM, IDP, ENE, ISM, BAA, RUS.

The result in Table 3 shows that the model formulated for the study is best fit and from Table 4, 10.6% (Cox and Snell) and 14.2% (Nagelkerke) variation in competence is statistically caused by level of knowledge acquired in MAM, ENE, ISM and BAA.

Table 3: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	8.701	8	.368

Table 4: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	55.258[a]	.106	.142

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

The apparently low values of R square are to be expected in this type of model that attempts to predict human behavior but more important are the significant coefficients in Table 2 that respectively represents the mean change in the response for one unit of change in the predictor while holding other predictors in the model constant (Frost, 2013).

5.0 Conclusion

This study indicates that valuers are conscious of the relevance of appropriate knowledge of the assets at hand in any given exercise, as inputs to methodological analysis. Common methods of valuation comprise comparison, income and cost. Many of the variables to guide proper comparative analysis are often asset-specific features. Income approach to asset valuation requires in-depth understanding of the forces (often related to the nature of asset) that influence income stream together with its attendant risk elements. Also, due to composition of assets, cost method is perhaps, the method most commonly used in this field of valuation and the key variables at play – current cost and depreciation measurement – rely substantially on appropriate knowledge of the nature and use of the assets. While prevailing education of valuers leans much towards real estate assets, the fact that several other assets which differ in nature and use and are often within the ambit of his professional services necessitates the extension of his pursuit of general knowledge (or adaptive) knowledge. Thus, the experience of Nigerian estate surveyors and valuers under assignments involving non-real estate assets have necessitated their call for inclusion in the regular valuation curriculum, of courses on machinery maintenance, environmental economics, introduction to structures and business accounting with asset analysis while introduction to machines and basics of industrial production were also found essential. This study is significant to guide key stakeholders in valuation education - Nigerian Institution of Estate Surveyors and Valuers, the Nigerian Universities Commission and the National Board for Technical Education – on appropriate frameworks for curriculum upgrades given the emerging demand for valuation of various assets within increasingly competitive and globalised market settings.

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Perception of Professionals in Built Environment Regarding Awareness of Sustainable Development in Nigeria

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***Abstract*:** The built-environment is a major consumer of non-renewable resources, producer of substantial waste, and a formidable polluter of air and water. The limited supply of natural resources is causing increased prices, depletion of the reserves, and destruction of natural environment. Building sector in Nigeria consumes 60% of the total energy utilization in the country and the resources are not efficiently utilized. The goal of the study was to examine the perception of building owners and built environment professionals (architects, engineers and facility managers) regarding awareness of sustainable development issues, policies and constraints to sustainable development. The sample consisted of 80 respondents randomly selected building owners, architects, engineers and facility managers in Abuja, Nigeria. Descriptive statistics was used to analyze the data. Findings revealed that majority of those surveyed are aware of and highly involved in sustainable development efforts. The study also revealed that governmental implementation of environmental laws and government policies are not successful. Inferences were made to improve awareness education through creation of guideline for improving awareness, advocacy and enlightenment programmes, and by empowering regulatory agencies to enforce and strengthen existing regulations.

***Keywords*:** Awareness, constraints, green building, intelligent building, sustainable development.

1. Introduction

Serious concerns have been expressed about environmental degradation since the occurrence of energy crisis in the early 1970s (Kalogirou, 2004). The built-environment, comprising of buildings, civil and heavy engineering works, has also been identified as a major consumer of non-renewable resources, producer of substantial waste,

and a contributor to land and air dereliction (Wallbaum and Buerkin, 2003). According to Woolley (2000), the construction industry is the largest destroyer of the natural environment, and buildings are the major contributor to greenhouse gas (GHG) emissions such as carbon dioxide (CO_2), suphur-dioxide (SO_2), nitrogen oxides (NO_2) particulates and carbon monoxide (CO) (Horvath, 2004; Hudson, 2005; Aganga 2010). Sev (2001) stated that all building operations involve the use, redistribution and concentration of some elements of the earth's resources such as water, energy and materials. It is estimated that at least three billion tonnes of materials are used in buildings every year, which is equal to about 40% of total global material flows.

The primary goal of sustainability is to reduce humanity's environmental or ecological footprint on the planet by reducing the negative impact of buildings on the environment and enhancing efficiency through the use of strategies, techniques, materials, and practices that are clean, resource efficient, and less pollution producing from the point of extraction of raw materials to the demolition and disposal of the built products. A Green building is a structure designed to meet certain life cycle based objectives, so that the building can be designed, built, renovated, operated, or reused in an ecological and resource efficient manner. Most green building practices fall into five basic categories: 1.) energy saving by relying on the use of natural light and ventilation or solar power, 2.) land saving, 3.) storm water runoff-reducing rainwater harvesting system, 4.) material conservation during construction is reduced or recycled, and 5.) pollution reduction (ECO Northwest, 2001; Gyadu-Asiedu, Scheublin, and Van Egmond, 2013).

There are several certification systems for green buildings such as LEED (Leadership in Energy and Environmental Design) and HK-BEAM (Hong Kong Building Environmental Assessment Method) (Paumgartten, 2003). According to Yin, (2005), the benefits of buildings constructed according to the standards demanded by the certification system such as LEED can save the equivalent of 250% of their initial costs over their useful lives of approximately 40 years through a 50% reduction in water consumption, average reduction of 9% in operating cost over the useful life of the building (in relation to water and energy), improved quality of internal environment (such as the increase in luminosity and reduction in air conditioning use), as well as average appreciation of 15% in the resale price of such properties (Green Building Council Brazil, 2012).

Nigeria as a country depends largely on crude oil and electricity for its energy supply. Nigeria's housing stock and the demand for energy for domestic uses is rising rapidly due to population growth and urbanization. The country has one of the highest annual urbanization rates in the world, estimated at about 3.7% and demand for new urban houses is growing rapidly (Babanyara & Saleh, 2010; Parnell & Walawege, 2011). The country is faced with environmental degradation, escalating cost of energy, erratic supply and distribution of electricity, and the need to develop a sustainable and efficient energy system. According to a survey in

Nigeria, 60% of the total energy utilization is consumed by the building sector and 40% of these amounts are spent for hot water production and space cooling (Sambo, 2009). In recent years, research shows that sustainability awareness level in the construction industry is still very low and ineffective in Nigeria (Adebayo, 2002; Dahiru, 2005; Dania, 2007; Kennedy, Smith and Wanek, 2002).

The goal of the study was to examine perception of professionals in the built environment regarding sustainable development issues, government policies and constraints limiting their involvement in sustainable development. The five research questions for the study are as follows: 1.) What is the current state of the art practice in the field of awareness for sustainable development around the world? 2.) What is the level of stakeholders' awareness regarding sustainability development issues in Abuja, Nigeria? 3.) How important, feasible, affordable and sustainable is green building development in Nigeria? 4.) What are the constraints limiting participation in sustainability practice in Nigeria? and 5.) What are the cultural specifics of Nigeria that will allow transferring the results to other countries and areas of the world?

2. Literature Review

Several studies identified the barriers to the adaptation or failure of green buildings. For example, Richardson and Lynes (2007) conducted a study on the Canadian context and identified lack of internal leadership between the interested parties, lack of goals that aims at sustainability, lack of recognition for environmentally more sustainable projects and the lack of communication between designers and top management as the four main barriers for the implementation of green building initiatives. Ikediashi et al. (2012) discovered that the main barriers to sustainable facilities management / green building in Nigeria include lack of training and tools, lack of relevant laws and regulation, and lack of awareness. Samari et al. (2013) surveyed 167 professionals in the Malaysian construction industry, to investigate barriers to green building in the country. They found that (a) the level of development of green buildings in Malaysia is not satisfactory, that the government plays a key role in the development of the green building sector; and (b) that the main barriers to green building development are lack of public/credit resources to cover the upfront cost, risk of investment, lack of demand, and higher final price for completed green building units. Bond (2011) used data from Australia and New Zealand in his investigation and found that the main barriers to adoption of green building practices in households are initial costs of sustainable features and lack of information about the benefits and savings of incorporating energy-efficient devices. Zuo and Zhao (2014) reviewed extensive literature on green buildings and found that: (a) green buildings help to improve urban biodiversity and protect the ecosystem by means of sustainable land use; (b) cost savings are associated with improved green building performance, such as energy savings; and (c) green buildings improve human well-being, such as thermal comfort and health.

3. Conceptual Framework for Sustainable Development

There is no universally acceptable definition of sustainable development (SD), virtually all definitions conceive of the term in terms of a tension between the goals of economic development and environmental protection (Geisinger, 1999). According to WCED (1987, p. 308) ‘‘human survival and well-being could depend on success in elevating sustainable development to a global ethics’’. Jabareen (2008) claimed that critical review of the multidisciplinary literature on sustainable development revealed a lack of a comprehensive theoretical framework for understanding sustainable development and its complexities, that the definitions of sustainable development are vague; that there is a lack of operational definitions and disagreement over what should be sustained; the concept is unclear in terms of emotional commitment; and it “remains a confused topic”, “fraught with contradictions”.

The conceptual framework for this study is based on the analysis of seven identified distinct concepts, which composed the theoretical world of sustainability. These concepts are: a.) The concept of ethical paradox, b.) The concept of natural capital stock, c.) the concept of equity, d.) the concept of eco-form, e.) the concept of integrative management, f.) the concept of utopianism, and g.) the concept of political global agenda.

3a. The Concept of Ethical Paradox: Many scholars question the ethics behind the concept and argued that “sustainability is an empty term”, because the current model of development destroys nature’s wealth and hence is non-sustainable. (Geisinger, 1999; Jabareen, 2008). For example, Jabareen (2008) claimed that the paradoxical and dialectical relations between sustainability and development are related to a varied spectrum of ideologies, which ranges between two extreme ethical concepts: the ‘domination of nature’ and the ‘intrinsic right of nature.’ The former is represented by doctrines of ‘light ecology’ and the latter by doctrines of ‘deep ecology’. Between these concepts lie many approaches, which attempt to reconcile this paradox and to address the dialectical relations between development and sustainability. As a result, many approaches were developed around ethical concerns because the issues of values, rights and responsibilities were raised.

The term sustainability belongs originally to the field of ecology, referring to an ecosystem’s potential for subsisting over time, with almost no alteration. When the idea of development was added, the concept could no longer be looked at from the point of view of the environment alone, but from that of society (Reboratti, 1999, pp. 207–209) and the capital economy. This paradox is represented in the most frequently used definition of SD: that of Brundtland Report 1987), which deemphasizes the environment while underlining human needs to be realized through development. Accordingly, sustainability is seen as an environmental ‘logo’ and development as an economic one. The concept of SD aims to mitigate and moderate between the two. Sachs (1993) argued that SD has attracted such a large following because it seems to hold out the promise of bringing about a rapprochement between ecological (sustainability) and economic (development) interests. SD is accordingly deemed able to cope with

the ecological crisis without affecting the existing economic relationships of power. Capitalism and ecology are no longer contradictory when brought together under the banner of SD (Baeten, 2000). The 'limits to growth' have become negotiable and manageable. The concept of SD is also articulated as a discourse of ethics, which specifies human conduct with regard to good and evil (Acselrad, 1999, p. 54).

3b. The Concept of Natural Capital Stock: The concept of natural capital stock represents the natural material assets of development. The term'natural capital stock' as the stock of all environmental and natural resource assets, from oil in the ground to the quality of soil and groundwater, from the stock of fish in the ocean to the capacity of the globe to recycle and absorb carbon. Natural capital includes all natural assets: humans can modify it, and humans can enhance its reproduction, but it cannot be created by humans. Natural capital stock is usually divided into three categories: non-renewable resources, such as mineral resources; the finite capacity of the natural system to produce 'renewable resources' such as food crops and water supplies; and the capacity of natural systems to absorb the emissions and pollutants which arise from human actions without suffering from side effects which imply heavy costs to be passed onto future generations

3c. The Concept of Equity: The most frequently quoted definition of SD—which comes from WCED (1987), emphasizes the equity issue between generations. The UNDP's definition of 'sustainable human development' is also broad in that it encompasses values such as equity, freedom and participation. The United Nations Conference on Environment and Development which convened in Rio de Janeiro, reaffirmed the decisions of the UN Declaration on the Environment from Stockholm 1972, and sought to build upon it with the goal of establishing a new and equitable global partnership and new joint international initiatives among states, key sectors of societies and people recognizing the integral and interdependent nature of the Earth. The Declaration states that all people should have equal rights to development. There are two types of equity according to the literature on sustainability: Inter-generational and intra-generational. Inter-generational equity refers to the fairness in allocation of resources between current and future generations.

3d. The Concept of Eco-form: This concept represents the ecologically desired form and design of the human habitat such as urban spaces, buildings, houses, and communities. A key strand of research into sustainability strategies has focused on ecological design and on defining the urban forms that enable built environments and buildings to function in more sustainable ways than at present. The debate over the ideal or desired urban form dates back to the end of the nineteenth century, since the appearance of Howard's Garden City. It appears that the literature on sustainable development revives the previous debate about urban form, supports existing approaches, and enhances them with environmental rationalization.

One of the predominant views among scholars, planners and policy makers is that 'energy efficiency' is a major consideration in design at the building, community, city and regional levels, considering the issue of global warming and GHG emissions. One of the most

important contributions of the global discourse on sustainability is the rise of an international movement for sustainable habitats, which is working to create a new agenda for re-designing and managing habitats in order to achieve sustainability, since it is viewed that environmental problems also result from a city's design.

3e. The Concept of Integrative Management: This concept represents SD's integrative view of aspects of social development, economic growth and environmental protection. Integrating social, economic and environmental concerns in planning and management for sustainable development has received considerable attention in recent years (UN Habitat Report, 2009; WCED, 1987)). It is believed that in order to achieve sustainability and ecological integrity, i.e. to preserve the natural capital stock, we need integrative and holistic management approaches.

WCED (1987) challenged the prevailing view that economic objectives, such as poverty alleviation and economic growth, should take precedence over environmental concerns, arguing instead that environmental health is a pre-condition of social and economic success. From a policy perspective, the concept of integrative management draws attention to the importance of maintaining a safe minimum standard for all living and non-living assets necessary to maintain ecosystem functions and life support systems, along with at least representative forms of all other living natural assets.

Four broad areas of work were identified: 1.) integrating environmental concerns and development at the policy planning and management levels; 2.) providing an effective legal and regulatory framework; 3.) making effective use of economic instruments and market and other incentives; and 4.) establishing systems for integrated environmental and economic accounting. It argued that an adjustment or even a fundamental reshaping of decision-making may be necessary in order to put the environment and development at the centre of economic and political decision-making. The integrative approach for achieving sustainability, according to Agenda 21, seeks to bring together all stakeholders. It argues that the responsibility for bringing about changes lies with governments in partnership with the private sector and local authorities, and in collaboration with national, regional and international organizations. In addition, national plans, goals and objectives, national rules, regulations and law, and the specific situations in which different countries are placed are the overall framework in which such integration takes place.

3f. The Concept of Utopianism: The utopian concept envisages human habitats (community, city, region and the globe) based generally on the concept of sustainable development. Commonly, utopias related to SD imagine a perfect society, where justice prevails, people are perfectly content, people live and flourish in harmony with nature, and life moves along smoothly, without abuses or shortages. The power of utopian thinking, properly conceived as a vision of a new society that questions all the presuppositions of present-day society, is its inherent ability to see the future in terms of radically new forms and values.

3g. The Concept of Political Global Agenda: This concept represents a new global discourse that has been

reconstructed and inspired by the ideas of 'sustainable development'. Until the 1980s, Western environmentalists were usually concerned with local and national space (Sachs, 1999, p. 42). However, since the early 1990s, SD has become the central adage of environmental policies around the globe, and the environmental discourse has been globalized and transcended national boundaries.

The Rio Summit in 1992 was a significant milestone that sets a new global agenda for SD, and reconstructed a new global environmental discourse. Since the Rio Summit, sustainability has increasingly been conceived of as a challenge for global management, with intelligent, scientific, and instrumental management of the earth perceived as one of the great challenges facing humanity. Notwithstanding the enthusiasm of the Rio spirit, the World Summit on Sustainable Development (WSSD) in Johannesburg (2002) reflected deep disputes between Northern and Southern countries.

3h. Discussion: the theoretical framework of sustainable development: The conceptual analysis identifies seven concepts which together synthesize and assemble the theoretical framework of 'sustainable development'. Each concept represents distinctive meanings and aspects of the theoretical foundations of sustainability. In addition, they have interwoven relations as shown in Figure 1. The concept of ethical paradox rests at the heart of this framework. The paradox between 'sustainability' and 'development' is articulated in terms of ethics. In other words, the epistemological foundation of the theoretical framework of sustainable development is based on the unresolved and fluid paradox of sustainability, which as such can simultaneously inhabit different and contradictory environmental ideologies and practices. Consequently, SD tolerates diverse interpretations and practices that range between 'light ecology', which allows intensive interventions, and 'deep ecology', which allows minor interventions in nature.

The concept of natural capital represents the environmental and natural resource assets of development and preservation. The theoretical framework of sustainability advocates keeping the natural capital constant for the benefit of future generations. The concept of equity represents the social aspects of SD. It encompasses different concepts such as environmental, social and economic justice, social equity, quality of life, freedom, democracy, participation and empowerment. Broadly, sustainability is seen as a matter of distributional equity, about sharing the capacity for well-being between current and future generations of people. Global Agenda Utopia Integrative Management Eco-Form Natural Capital Stock Ethical Paradox Figure 1. The concept of eco-form represents the desired spatial form of human habitats: cities, villages and neighborhood. 'Sustainable' design aims to create eco-forms, which are energy efficient and designed for long life. Its common principles could be explained through the concept of 'time-space-energy compression', which requires reductions in time and space in order to reduce energy usage. The concept of integrative management represents the integrative and holistic view of the aspects of social development, economic growth and environmental protection. It is believed

that in order to achieve ecological integrity, i.e. to preserve the natural capital stock, we need integrative and holistic approaches to management.

Figure 1: The three ring design breaks up sustainability (Brundtland, G.H., ed., 1987)

The concept political global agenda represents a new worldwide political environmental discourse reconstituted around the ideas of sustainability. Since the Rio Summit, this discourse has extended beyond purely ecological concepts to include various international issues, such as security, peace, trade, heritage, hunger, shelter, and other basic services. However, the concept reflects deep political disputes between Northern and Southern countries, where the North demands 'no development without sustainability' and the South demands 'no sustainability without development'.

The concept of utopianism represents visions for the human habitats based on SD. Generally, such utopias envision a perfect society in which justice prevails, the people are perfectly content, the people live and flourish in harmony with nature, and life moves along smoothly, without abuses or shortages. This utopia transcends the primary ecological concerns of sustainability to incorporate politcal and social concepts such as solidarity, spirituality, and the equal allocation of resources.

The environmental aspect of sustainability involves taking care of our surroundings. This includes everything from picking up litter and reducing pollution to wildlife and rainforest conservation. This is the only planet we have, so we'd better take care of it. The social aspect of sustainability involves taking care of We should all aspire to treat ourselves and each other with fairness and respect. We don't have to like everyone we meet, but we all have to share the planet. The economic aspect of sustainability involves taking care of today's world. We need to live responsibly and within our means so that we aren't a burden on others. This is as true for you and me as it is for cities, states and countries around the world. No one can prepare for every situation, but we can still do our best to make sure we can support ourselves.

The interaction between environmental and social aspects of sustainability deals with how we interact with our environment. This can include how we plan and design our homes and cities, and how we take care of the resources we have available to us. We also have to contend with the natural patterns of nature and how they can affect us.

The environmental and economic interactions focus on how the environment affects economics. Environmentally friendly products are becoming more common, making it easier to purchase goods with less packaging, cleaners that are less hazardous to us and our environment and foods can be grown in ways that are better for the environment. However, fossil fuels are becoming harder to come by, and the cost to purchase refined fuels will become more expensive as time goes on. Companies are looking for ways of harnessing renewable sources of energy and in time, these will become more common and less expensive. We need to develop ways to maintain positive economic development that can support itself without negatively impacting the environment.

The overlap between social and economic aspects deals with fair and equitable treatment of people everywhere. Purchasing fair trade goods, where the growers receive a livable wage for selling their crops, is a way to give people in developing areas of the world a chance to earn a better life. Boycotting companies who have an unfavorable environmental track record can send strong message that can result in positive change. Supporting local businesses helps your friends and neighbours to keep money in your local economy. Likewise, some large companies work to protect the environment and support communities around the world with donations and social betterment programs while providing employment for people all over the country or even around the globe.

Sustainability is made up of all three aspects, environmental, social and economic interactions. Striving to buy nothing but organically grown fair trade goods is laudable, but if you can't afford to do so, it's not economically sustainable. Likewise, spending millions of dollars on wetland and wildlife conservation will benefit the species that live in these protected areas, but if we don't have any resources to feed our own people then we're not being socially sustainable.

4. Research Methodology

The procedure involved design of the survey instruments, validating the survey instruments, identifying the population for the study, selection of the samples, conducting pilot survey, conducting the survey, analysis of the collected data, and writing and disseminating the report.

The study population consisted of stakeholders which include property owners, investors, developers, architects, engineers and facility managers in Abuja, Nigeria. Simple random sampling was used to administer question on the built environment professionals. The sample size was calculated using a simplified formula proportion as illustrated by Glenn (2013) as follows:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

Where; n = Sample size, N = Population size in the sample unit, and e = Level of

precision which is + 5% (0.05), at 95% confidence level.

The primary data consists of information obtained through questionnaire survey and structured interview, and the secondary data include data from literature review on governmental implementation of environmental laws and government policies, including published articles/journals and research papers, academics' textbooks and the World Wide Web (internet). The study utilized a simple questionnaire approach in which a total number of 80 questionnaires were randomly distributed to various facilities owners and professionals in built environment in Abuja, Nigeria. Out of 80 questionnaires distributed, 75 questionnaires were successfully completed and returned, and analyzed showing a 93.75% return rate. The questionnaire provided information on respondent's profile such as profession, years of experience and educational qualification, in order to ascertain the reliability of the information provided. A five degree Likert-type scale was adopted and arbitrary values of 1-5 were assigned to each of the degree of agreement, awareness, involvement, or participation, respectively. The ranking method is a form of statistical scale where subjects are ranked according to some specified criterion or on operationally defined characteristics or property. The method is suitable for a number of measures, which is above six and less than thirty (Morenikeji, 2006).

Each mean score was calculated by multiplying the frequency by the assigned value and dividing the total by the number of respondents. For example, the mean score for question number 1 in Table 4 was calculated as follows:

$$\text{Mean score} = \frac{1x1 + 3x2 + 11x3 + 41x4 + 19x5}{1x2\ x3\ x4x\ 5} = \frac{299}{75} = 3.987$$

Mean scores between 1.00 – 1.49 is categorized as 1, mean scores between 1.50 – 2.49 is categorized as 2, mean scores between 2.50 – 3.49 is categorized as 3, mean scores between 3.50 - 4.49 is categorized as 4, and mean scores > or = 4.50 is categorized as 5. The 3.99 mean score for question 1 falls under category 5 and can be interpreted to mean that on the average the respondents indicated that they are somewhat aware. The presentation of data obtained was presented using appropriate charts, tables and figures.

Table 1: Field Work Response Rate

Description	Numbers	Percentage
Total target population (stakeholders)	80	100
Undelivered survey (questionnaire)	5	6.25
Delivered questionnaire (stakeholders)	75	93.75

5. Results

Table 1 presents summary of the fieldwork response rate. As shown, out of the 80 respondents that received the questionnaire, only 75 (93.75%) actually returned completed

questionnaire and five questionnaires were discarded for incomplete responses. As a result, only 75 questionnaires were considered for data analysis.

Table 2: Respondent's Age

Age (years)	Frequency	Percentage
26-30	7	9.3
31-35	17	22.7
36-40	20	26.7
Above 40	31	41.3
Total	75	100.0

Table 3: Respondent's Profession

Profession	Frequency	Percentage
Property owner	3	4.0
Architect	21	28.0
Builder	12	16.0
Q/surveyor	10	13.3
C/ M and E Engineer	18	24.0
Planner/Surveyor	10	13.3
Others	1	1.3
Total	75	100.0

Table 2 depicts the respondent's age groups. As shown, majority of the respondents 51 (68%) were in the 36 - 40 group and above 40 years of age. However, out of this figure 31 (41.3%) were above 40 years of age.

Table 3 shows respondent's profession. As shown, 21 (28%) of the respondents were architects, 3 (4.0%) respondents were property owners, and only one respondent works outside the built environment profession.

Table 4 reveals the respondents' level of awareness of sustainable development (green construction). The respondents were asked whether they have heard about the concept of sustainable development or green construction. As shown, the mean score of 3.99 can be interpreted to mean that on the average the respondents indicated that they are somewhat aware of the concept of sustainability. In addition, 41 of the 75 respondents (54.7%) indicated that they are very aware of the concept, and only one (1) respondent indicated that he or she is not aware of the sustainability concept.

The respondents were also asked whether they are aware that

professionals in other fields are conversant about sustainable development issues in Nigeria. The mean score of 3.28 can be interpreted to mean that on the average the respondents indicated that they are aware of the concept of sustainability. As shown, 29 respondents indicated that they are aware, 35 claimed that they are very aware, and 9 respondents claimed that they are very much conversant about sustainable development issues in Nigeria.

Table 4: Respondent's involvement with other professionals in creating awareness

	Frequency (Percentage)					
	Not Involved	Somewhat Involve	Involved	Very Involved	Extensively Involved	Mean Score
	1 (1.00 – 1.49)	2 (1.50 – 2.49)	3 (2.50 – 3.49)	4 (3.50 -4.49)	5 (> or = 4.50)	
1. Have you been involved with other professionals in creating awareness about sustainable design and construction?	0	2	17	45	11	3.87
2. Have you ever been involved in any sustainable development projects before?	6	17	28	19	5	3.87
3. What was your level of involvement in sustainable development projects?	7	18	30	20	5	3.17

N = 75

Table 5: Green Rating Systems

Rating Systems	Frequency	Percentage
LEED, USA	41	54.67%
CASBEE, Japan	6	8.00%
Green Globe, Canada	8	10.67%
Green Star, Australia	12	16.00%
HQE, France	8	100.0

The respondents were further asked whether they are aware of the existence of any sustainable development (green building) projects in Nigeria. The mean score of 3.04 can be interpreted to mean that on the average the respondents indicated that they are aware of the concept of

sustainability. As shown, 54 of the 74 respondents claimed that they are either aware or very aware that sustainable development projects exist in Nigeria.

Table 6: Respondent's involvement with other professionals in creating awareness

	Frequency (Percentage)					
	Not Involved	Somewhat Involved	Involved	Very Involved	Extensively Involved	Mean Score
	1 (1.00 – 1.49)	2 (1.50 – 2.49)	3 (2.50 – 3.49)	4 (3.50 -4.49)	5 (> or = 4.50)	
1. Have you been involved with other professionals in creating awareness about sustainable design and construction?	0	2	17	5	11	3.87
2. Have you ever been involved in any sustainable development projects before?	6	17	28	19	5	3.87
3. What was your level of involvement in sustainable development projects?	7	18	30	20	5	3.17

N = 75

Table 7: Respondent's perception regarding the importance of sustainable Development to Nigeria

	Frequency (Percentage)					
	Not Important	Somewhat Important	Important	Very Important	Extremely Important	Mean Score
	1 (1.00 – 1.49)	2 (1.50 – 2.49)	3 (2.50 – 3.49)	4 (3.50 -4.49)	5 (> or = 4.50)	
1. How important is sustainable design and your profession?	0	2	16	34	23	4.04
2. How important is sustainable development to the construction	0	1	16	41	17	3.99

3. How important is sustainable design and construction to Nigerian economy?	0	3	12	35	23	4.09

N = 75

Table 5 illustrates the respondents' familiarity with green building rating scales and whether they would recommend it to Nigeria. As shown, majority of the respondents (41 out of 75) indicated they are familiar with LEED rating scale and would recommend this to Nigeria.

Table 8: Respondent's Perception Regarding Feasibility, Affordability and Sustainability of Green Development

	Frequency (Percentage)					
	Does not Agree	Somewhat Agree	Agree	Strongly Agree	Very much Agree	Mean Score
	1 (1.00 – 1.49)	2 (1.50 – 2.49)	3 (2.50 – 3.49)	4 (3.50 -4.49)	5 (> or = 4.50)	
1. Do you agree that sustainable development is feasible in Nigeria?	0	3	11	49	12	3.93
2. Do you believe that Nigerians can afford sustainable buildings?	0	0	11	43	21	4.13
3. Do you agree that you can encourage Nigerians to adopt green construction instead of conventional construction?	6	3	24	30	12	3.52
4. Do you agree that sustainable development is practicable in Nigeria, considering the present economic level and the shortage of decent and energy efficient homes?	3	14	40	15	3.81	
5. Do you believe that the Construction of green building will improve the standard of living in the nation?	0	0	15	40	20	4.07
6. Do you agree that it is important to give considerable attention to sustainable development effort at this point in our						

	nation's development?	0	0	9	39	27	4.24
7.	Do you agree that there is an urgent need for sustainable development in Nigeria?	0	0	13	36	26	4.17
8.	Do you agree that sustainable design and construction can help provide a healthier environment for living?	0	1	7	29	38	4.45

N = 75

Table 6 presents the respondents' involvement with other professionals in creating awareness about sustainable development. The mean score of 3.87 can be interpreted to mean that on the average the respondents indicated that they are very involved about the concept of sustainability. As shown, 2 respondents are somewhat involved, 17 involved, 45 respondents claimed that they were very involved and 11 are very much involved. None of the respondents claimed to have not been involved with other professionals in creating awareness about sustainable development.

Table 7 reveals the respondents' perception regarding the importance of sustainable development to Nigeria. The mean score of 4.04 can be interpreted to mean that on the average the respondents indicated that the respondents perceive sustainable development as being extremely important. As shown, the majority of the respondents perceived sustainable development as important 16 (21.3%), very important 34 (45.3%), or extremely important 23 (30.7%) to their profession, the construction industry, and the Nigerian economy. None of the respondents perceived sustainable development as not important.

Table 8 reveals the respondents agree that design and construction of sustainable building is feasible in Nigeria. A mean value of 3.93 suggests that the respondents strongly belief in the concept of sustainable development. As shown, majority of the respondents agree that sustainable development feasible, affordable, and will improve the standard of living in the nation. For instance, when asked whether sustainable development is feasible in Nigeria, 3 (4.0%) claimed that they somewhat agree, 11 (14.7%) claimed that they agree, 49 (65.3%) claimed that they strongly agree, and 12 (16.0%) claimed that they very strongly agrees that sustainable development is feasible in Nigeria. None of the respondents claimed that they do not agree that sustainable development is feasible in Nigeria.

Table 8 also depicts the respondents claim in the affordability of sustainable development by Nigerians. A mean value of 4.13 suggests that the respondents strongly belief that sustainable development is affordable in Nigeria. The respondents neither claimed that they believe nor somewhat believe that sustainable development is affordable by Nigerians, but 11 (14.7%) of the respondents claimed that they believe, 43 (57.3%) claimed that they strongly believe, and 21 (28.0%) claimed that they very strongly believe

that sustainable development is affordable by Nigerians.

6. Discussion

Discussion of Research Question Number One: Research question one addresses the current state of the art practice in the field of awareness for sustainable development. Lack of public awareness and lack of institutional structures for the promotion of sustainable development and environmental issues has been identified as barriers to the adaptation or failure of Green buildings in Nigeria (Ikediashi et al., 2012). Table 6 presents the popular Green Building Rating Systems that are recognized worldwide. In addition, the literature revealed that there is no universally accepted rating system for sustainable development. Instead, each country adopted a system that are based on their cultural diversity, equity, justice, and participatory democracy, involving collaborative process between geographically and culturally diverse group of civil society organizations (CSOs) and researchers, to develop indicators that are critical for sustainable development in that specific region. In addition, it was not established whether the built environment professionals surveyed had any training or certification such as LEED or a University degree in sustainable development. It is reasonable to suggest that the Nigerian government and housing finance institutions are probably to blame for the non-involvement of Nigerians in sustainable development projects. Despite the existence of several environmental laws and policies, most Nigerian legislations crumble at the implementation stage (Ikediashi et al., 2012) probably due to lack of managerial skills.

Discussion of Research Question Number Two: Research question two addresses the level of stakeholder awareness regarding sustainable design and construction in Nigeria. As shown in Table 4, high level of awareness of green construction exists and the majority of the respondents also indicated that they are capable of advising Nigeria to adopt green construction instead of conventional building. This is probably because they are aware that green construction is healthy, requires minimum maintenance, has little impact on the environment and they make use of natural resources. Casual observation revealed that the majority of the existing so called green buildings are not up to standard because they are neither designed nor constructed using acceptable rating systems and materials, and the contractors are not certified to construct green buildings It is expected that the creation of awareness about the importance of green construction would probably increase the demand for sustainability developments.

Discussion of Research Question Number Three: Research question three addresses the importance, affordability and feasibility of green development in Nigeria. Table 7 reveals respondent's perception regarding the importance of sustainable development in Nigeria, and Table 8 reveals the respondents believe regarding feasibility, affordability and sustainability of Green development in Nigeria. As shown in Table 7, majority of the respondents 34 (45.3%) agrees that sustainable development is very important, and 23 (30.7%) agree they are extremely important. In addition,

Table 8 also shows that majority of the respondents claimed that the adaptation of green development principles is both feasible and affordable. However, considering the current state of housing conditions in the country and the government housing policy respondents' claim that green housing (sustainable development) is affordable and practical in Nigerians seems to be unrealistic and over ambitious. In fact, this could be a wake-up call for a re-defining of the concept of sustainability in the developing countries and recognition of sustainable local materials and practices rather than the continuous use of western standards. In addition, there are no guidelines for improving awareness, adaptation, and implementation of green building practices in Nigeria. This calls for a rethink among built environment professionals regarding the way we design, construct, and operate building, to match our current realities with anticipated future challenges. The current effort is focused on reducing the energy intensity of buildings through the use of insulating materials, low energy lighting and natural ventilation, and neither on non-renewable energy nor potentially hazardous toxic materials.

Discussion of Research Question Number Four: Research question four addresses the constraints limiting participation in sustainability practice in Nigeria. The review of the literature revealed that even though there are environmental laws and regulations in the country, these laws are not being enforced on a consistent basis probably because of changing regime. The Nigeria Government also promulgated various laws and regulations, to safeguard the Nigerian environment such as the Federal Environmental Protection Agency Act of 1988 (FEPA Act), and Environmental Impact Assessment Act of 1992 (EIA Act). Other critical barriers identified in the literature include lack of government support and incentives, and lack of relevant building codes and standards. At the moment, the government is yet to pass a 2006 Building codes and standards into law. In addition, the majority of the built environment professionals lack technical knowledge such as professional and scientific training on complexities of the construction and operation of intelligent buildings, lack of government support and incentives, and lack of relevant environmental laws and regulations are some of the critical barriers.

Discussion of Research Question Number Five: Research question five addresses the cultural specifics of Nigeria that will allow transferring the results to other countries and areas of the world. According to the literature, the principle of building life cycle is universal and countries have different cultures that influence their behaviour and choices. As a result, transfer of the results should be limited to areas with similar culture.

7. Conclusion and Recommendation

This paper investigated the awareness, involvement, perception, and agreement of the respondents regarding green building and sustainability issues. Data collected indicated strong levels of awareness existing within the built environment professionals. The study revealed that the provision of sustainable development is important to the

Nigerian construction industry, that sustainable development will improve the standard of living, provide healthier environment for living, and should be encouraged in Nigeria. Finally, review of the literature revealed that technical knowledge such as professional and scientific training on complexities of the construction and operation of intelligent buildings, lack of government support and incentives, and lack of relevant environmental laws and regulations are some of the critical barriers to sustainable development. At the moment, the country needs to develop building codes, setting the minimum design standards for health, safety and welfare of occupant, and the 2006 Building Code that is yet to pass into law could be updated and passed.

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Overcoming the Barriers of Female Students Choice of Built Environment Courses

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***Abstract*:** Many studies have examined the causes of women underrepresentation in construction, barriers to their career progression as well as impact of discrimination and harassment on women construction workers; however, only a few have explicitly examined how the barriers they encountered in their choice of built environment courses could be mitigated. This paper examines overcoming the barriers of female students' choice of built environment courses vis-à-vis determining the medium of knowledge of the built environment courses, reasons for their choice of courses and the challenges the females practising in the built environment faced in the course of their practise. Questionnaire survey was adopted with samples drawn from three different categories of respondents. A total of 298 questionnaires were self-administered to these categories of respondents, out of which 186 (62.4%) were returned. The findings reveal that increase in awareness of opportunities in construction; favourable selection and recruitment criteria as well as availability of equality in policies and procedure are the main influencing factor in career choice amongst women in the built environment profession. The study concluded that the motivating factors responsible for choice of career in the built environment are not the same for the categories of the respondents considered. It was thus recommended that aggressive enlightenment is required in secondary schools to encourage females in the choice of built environment courses which will enhance better representation of women so that the impact of women professionals in the construction industry can be extended.

Keywords: Built Environment, Women, Construction industry, Career, Nigeria

1.0 Introduction

The Nigerian construction industry is the country's second largest employer of labour after agriculture with over one million workers and women represent 49% of the country's population. In spite of this figure, the industry is male dominated and over the decades, there has been an increased concern over the adequacy of women participation and contribution to the Nigerian construction industry. In Nigeria, Construction jobs falls under the classes of economic activities where women have been underscored not to have the privilege to make a successful career (Adeyemi, Stephen, Aina and Emmanuel, 2006). Amaratunga, Haigh, Shanmugam and Elvitigala (2007) found that women face a number of challenges starting with problems in entering the construction industry, to acquiring the higher/senior position in the organization's ranking. Similarly, Paul and Michael (n.d) revealed that children in schools are not enlightened about career prospects in construction. However, this position is gradually changing in Nigerian Universities and Polytechnics as awareness level is on the rise. The same trend is noticed on construction sites and offices (Adeyemi *et al*., 2006).

Foong-ming (2008) revealed that availability of career development prospects proves the willingness and effort of the organisations within the construction industry to cherish employees. Huselid (1995) suggested that human resource practices that work with career related practices could improve knowledge, skills and the capabilities of current and potential employees in an organization, and improves the retaining of quality employees. Career development depends on individual and organizational achievements of professionals. Career advancement and development depend on a well-defined career path opportunity including capabilities, authorizations and accreditations (Strategic Skills Initiative, 2005). Crawford (2002) asserted that due to westernization and globalization, there has been noticeable increase in female population in the engineering and built environment profession. It is essential that women's career dynamic forces are understood in order to know how the industry can maintain its female professionals and managers, this will allow organizations to be compassionate to the decisions and problems their employees are facing (Greenhaus and Callanan, 1994). Also, Ling and Leow (2008) concluded that in order to encourage graduate women in the construction industry, it is expected that company owners/ employers should allow flexible work schedule; allow graduate women to work from home; and should be given the same prospects as their male workers.

Plethora of studies have been carried out to examine the causes of women underrepresentation in construction (Adeyemi *et al.*, 2006), barriers to their career progression as well as the impact of discrimination and harassment on women construction workers (Kolawole & Boison, 1999; Kehinde and Okoli, 2003; Ling and Poh, 2004). Agapiou (2002) reviewed the attitudes of parents, school-age girls and their educators regarding career prospects in construction, it was revealed that females (girls) showed concern in the physical nature of the work in construction and the social implication of working in a male-dominated industry among other factors. However, many of these studies that examined career decision factors are within the

developed countries context and this is evident in the review of literature presented by previous researchers (Dainty *et al.*, 2004a, b; Fielden *et al.*, 2001; Gale, 1994; Ling and Poh, 2004); the review indicates that gender related research has mostly been conducted in developed countries. One of the researches within the African context, in particular Nigeria, explored the under-representation of women in construction (Adeyemi *et al.*, 2006).

Adeyemi *et al*. (2006) observed that research into women's participation in the Nigerian construction industry is scant. The purpose of the study is to investigate who motivated the women to choose her career and to analyse the motivational factors encouraging and discouraging women in Nigeria to choose a professional career in the built environment profession through identifying the barriers they encounter and the needs they express for improving their career path. Ginige, Amaratunga and Richard (2007) revealed that today's building and construction industry is facing a serious problem of skill shortage and has not been able to attract young women pursuing careers in the industry. This resonate the assertion made by Adeyemi *et al*. (2006) that opined that research into women's participation in the Nigerian construction industry is limited. Against this background, this paper:

1. Determines the medium of knowledge of built environment courses by both the female secondary school students and the female students studying the built environment courses
2. Assess the factors that influence women in choosing career prospect in construction and
3. Examine challenges encountered by women practising in the built environment profession.

Increasing women representation in the construction workforce is a reliable solution for fulfilling the skill gap.

2.0 Literature Review

The image of the construction industry which makes women uninterested in the industry is compounded by a general lack of information and knowledge about the industry, its career prospects and qualifications that are required (Fielden *et al.*, 2000). The Construction Industry Training Board (CITB) (2003) revealed that parents, educators and school pupils believe that construction industry jobs were limited to joinery, bricklaying, decorating and painting. Also, educators, parents, career counsellors and school undergraduates have insufficient information about the industry. Careers educators and career counsellors provide inaccurate and inadequate information on the construction industry to school undergraduates, graduates and school children. Due to wide range of courses and different career paths, professionals' careers counsellors find the subject for construction confusing (Gale, 1994). However, progress is made among graduate and undergraduate students, in respect to professional studies such as architecture and engineering, the construction industry career opportunity is not satisfactory when compared with other options (Harris, 1989). This is because career choices of girls and encouragement to go into construction occupations, is highly influenced by their teachers, family and friends (Agapiou, 2002). The decision to choose a career in the industry should be made earlier at schools' level

particularly for those who plan to be professionals in the industry.

The more students of both sexes know about the construction industry the more they become interested and likely select a career in the construction industry. School students considering a degree in construction found that, career opportunities in construction, higher education routes to professional status and knowledge of the nature of construction industry professional occupations are extremely important. Hence, careers about construction industry must be spread to school female students (Gale, 1994). Brown (2002) asserted that career choice is the process of selecting a career based on estimation of one's capability, values, and prerequisite skills in creating success in a given profession. It has to do with how the mental image of an individual is prepared and developed. According to Borchert (2002), one of the choices to be made by students is career selection that will have far reaching implications for their future plans. This decision will impact them throughout their lives. The essence of who the student is will revolve around what the student wants to do with their life-long work. The view that students have of the world is dependent on their past history. That history created, in part by the student's environment, personality, and opportunity, will determine how students make career choices. It then follows that how the student perceives their environment, personality, and opportunity also will determine the career choices students make.

Dainty, Neale and Bagilhole (1999) stated that female entrants to the construction industry were not likely to have been due to the advice to join the industry by friends and family or by guidance teachers, or to have been advised by same-sex role models with experience of working in construction but most likely literature read targeted at attracting them to the industry. Madikizela (2008) concluded that the predominating factors influencing their career choice were salary, working conditions, opportunities for promotion and lifelong learning.

Determinants of women choice of career prospect in construction

The workplace/ environment: Women choose a career in the construction industry if the work environment provides good working conditions, a sense of responsibility and is challenging. There has to be variety and pleasant atmosphere with the prospect of continuous steady employment, bringing along a sense of security (Warren, 2003). Many women are drawn to the varied nature of construction. The day to day tasks is different; the spectrum of colleagues varies from labourers to engineers to owners. The circumstances change quickly, requiring flexibility and responsiveness. Some women are drawn to the challenge of specifically entering a field seen as non-traditional for woman (Warren, 2003). Johnson (2003) stated that in recent years, men have become far more accepting of women in the construction industry, yet for some women; it remains an uninviting and at times downright hostile environment. The excitement of choosing the career is clouded by the reality of the circumstances. Some women stated that male company owners frequently funnel subcontracts to their male pals, yet Donnell (cited in Johnson, 2003) stressed that a larger number of women are supervising construction sites and many of the project managers are now

women. This confirms the indication that in the last ten years the views of tolerating women in the construction industry have changed significantly.

Financial benefits: Women who choose construction career found that the work, in addition to giving them a better life financially, matched their background, their interests, personalities and talents. The women felt that money translated into economic freedom, translates into status (Ferguson, 1994). The ability to receive a substantial remuneration package is very important to the women and motivates them to choose their career (Bon, 1992). In the 1980's, when jobs were difficult to get according to Rosen (1987), (cited in Ricki 2007) the most ironic and most upsetting factor then was that the wage declines and the demise of jobs in USA occurred just at the point when large numbers of married women with children needed and wanted well-paid construction industry employment. In Nigeria, with the increase in the level of patronage by both the private and the public sectors of construction activities, there should be awareness that women must ensure they qualify themselves for employment even in difficult times within the construction industry. If they are qualified professionals, the expectation is there to receive a substantial remuneration.

Balancing work, with family and career: Working with people for most women is an attractive and strong motivational factor for choosing a career and results in job satisfaction. A woman wants good managers and colleagues to work with and prefers teamwork. The women want to feel they provide a service and have contact with the public (English, 2006). Balancing job and family responsibilities proved the most important criteria and consideration when attracting women to the profession. Outside forces such as the need to take care of themselves and their children are very important to women. Women often make their choices with their family circumstances and responsibilities in mind (Fearful & Kamenou, 2006).

Level of satisfaction initiated in a construction industry career: Women found a sense of freedom following a career in the construction industry. "I am left alone to do my job all day". They found their job nice and creative and stated it was fun putting a building together. The women also felt a sense of accomplishment and chose their careers because they loved it (Ferguson, 1994).

Characteristics/features needed: It can be said that a job description writes its own profile of a suitable candidate. In choosing characteristics needed for success in the construction industry, both female and male indicated the same four criteria as most important: negotiating skill, patience, professionalism, and self-confidence (Bon, 1992). Qualities seen as the 'natural aptitudes' of women (customer care, communication, catering for peoples domestic and personal needs) are becoming more valued in the industry, this is especially true in managerial level. Women who want a challenge and are motivated to do something different choose a career in engineering and the construction industry (Ferguson, 1994).

3.0 Research Methodology

Data were collected using 3 different sets of structured questionnaires; these were self-administered to Senior Secondary School Three (SS3) students of a Senior Secondary School in Minna, 2013/2014 academic session 500 level

students of the Departments of Architecture, Building, Civil Engineering, Quantity Surveying and Surveying and Geo-informatics of a Federal University in Niger State, and Women Professionals that were employed by 52 construction firms in the Federal Capital Territory, Abuja. Out of the three data sets, only the respondents in the secondary school were randomly sampled by chosen 50% of the total population of 362 while the total population of the remaining two data sets were used (43 from the Federal University and 93 from the female professionals in Abuja). The conclusion about overcoming the barriers of female students' choice of built environment courses have been previously generalised to include secondary schools' students, undergraduate and professionals, this study argues that both undergraduate and professionals basically have different motivating factors compared with secondary schools. The questionnaires were in two sections, the first section covers the profile information of the respondents while the second section covers the general information needed to know how the respondents came about the knowledge of the built environment courses, reasons for the choice of the courses and the challenges confronting the female professionals in practice. A total of 298 questionnaires were administered and only 186 were returned as shown in Table 1. The returned questionnaires were analysed using descriptive statistics.

Table 1: Response rate

Study Area	Number of questionnaires administered	Number returned	Response rate (%)
Science Secondary School (high school)	162	101	62.3
2013/2014 500 level students of Departments of Architecture, Building, Civil Engineering, Quantity Surveying and Surveying and Geo-informatics of a Federal University of Technology	43	29	67.4
Professional women in selected construction firms in Abuja	93	56	60.2
Total	298	186	62.4

4.0 Data analysis and discussion

This study x-rayed the perceptions of three different categories of respondents on the influence of career choice on women or females in the built environment. The argument presented here is grounded on the assertion of del Puerto (2011) who contended that the motivational factors for female career in the built environment are not the same for secondary school, undergraduate students and women professionals. This section thus presents the results of the data and discussion of findings.

Analyses of responses of the secondary school students

Table 2 showed the results of the survey conducted among the secondary school students to investigate how the female students have the knowledge of courses in the built environment, out of which 37.6% of the students have heard about Architecture, 19.8% have heard about Building and Civil Engineering, 20.7% have heard about Quantity Surveying and only 1.98% have heard about Surveying and Geo-informatics.

Table 2: Knowledge of course

Courses	**Frequency**	**Per cent**
Architecture	38	37.6
Building	20	19.8
Civil Engineering	21	20.7
Quantity surveying	20	19.8
Surveying and geo-informatics	2	1.98
Total	**101**	**100**

When the medium of the knowledge of courses was examined as indicated in Table 3, 37.6% of the SS3 students heard about Architecture from their class mates, teachers, and from the internet. 19.8% heard about Building and Quantity Surveying from class mates, family, friends and teachers. 20.7% heard about Civil Engineering from teachers, internet, class mates and newspapers. Only 1.98% heard about Surveying and Geo-informatics from their class teachers. This result is in line with the findings of Courts and Moralee's (1995) who investigated issues relating to gender in the built environment professions and reported that family and friends are the most factors that influence career decisions amongst female in the building profession. This is an indication that 20 years on, the situation remains the same.

Table 3: Medium of knowledge of courses

Response	**Frequency**	**per cent**	**rank**
Architecture (Class mates, teachers, internet)	38	37.6	1
Building (Newspaper, teachers, My family)	20	19.8	3
Civil Engineering (internet, newspaper, mates in school, teachers)	21	20.7	2
Quantity surveying (family, friends, teachers)	20	19.8	3
Surveying and Geo-informatics (teachers)	2	1.98	5
Total	**101**	**100**	

The study investigated the drivers or motivating factors that influence the choice of career of the high school students in the built environment. From Table 4, 39.6% of the final year girls chose the course because they like it, 23.8% of them chose their courses because of career advice, 19.8%, 14.9% chose their career because of their teacher's advice and what their parents wanted respectively. 1.98% chose their career due to peer pressure.

Table 4: Reasons to study the above courses

Reasons		
Peer pressure		
Teacher's advice		
Career counsellor's guide	24	23.8
Parents' decisions	5	14.9
passion	40	39.6
Total	101	

Analyses of responses of female students' studying in the built environment

The respondents in the second category were the final year undergraduate students in the university studying one of the built environment courses. Table 5 showed the analysis of the responses of 500 level female students of Departments of Architecture, Building, Civil Engineering, Quantity Surveying and Surveying and Geo-informatics of the University. From Table 5, 31.0% are in the Department of Architecture, 24.1% are in Civil Engineering, 20.1% are in Quantity Surveying Department, 13.8% are in Building Department and 10.3% are in the Department of Surveying and Geo-informatics.

Table 5: Taxonomy of Department

Department	Frequency	Per cent
Architecture	9	31.0
Building	4	13.8
Civil Engineering	7	24.1
Quantity surveying	6	20.1
Surveying and geo-informatics	3	10.3
Total	29	100

The study considered it essential to investigate the proposed course of study of the female students studying any of the built environment courses prior to the examination of their motivating factor in choosing career in the area. From Table 6, 31.0% chose Architecture, 24.1% chose career in Civil Engineering, while 20.7%, 13.8%, 10.3% chose career prospects in Quantity Surveying, Building, Surveying and Geo-informatics respectively.

Table 6: Proposed course of study

course	frequency	per cent
Architecture	9	31.0
Building	4	13.8
Civil Engineering	7	24.1
Quantity surveying	6	20.7
Surveying and Geo-informatics	3	10.3
Total	29	100

Assessing the medium of knowledge of courses in the built environment revealed that 27.6% of the students knew about their courses from their parents and relatives, 20.7% knew about their courses through career counselling and class teachers, 17.2% knew about their courses from the internet/newspapers and 10.3% knew about their courses from friends and classmates as shown in Table 7. The findings from the survey is partially in tune with the assertion of Clark and Schroth (2009) who investigated academic motivation in undergraduate students and concluded that undergraduates attended college to fulfil the expectation from their families and society.

Table 7: Medium of knowledge about the courses

Medium	Frequency	Per cent
Career counselling/advice	6	20.7
From parents and relatives	8	27.6
From class teacher	6	20.7
From friends/classmates	3	10.3
From internet/Newspapers	5	17.2
Total	29	100

Table 8 indicated what drives the choice of the university's students in choosing career in the built environment. The table showed that 51.7% respondents aspire to become professionals and help to achieve sustainable change, 27.6% have passion for design and construction and 20.7% chose the courses because of pride in professional title like Architect, Engineer.

Table 8: Factors that motivated them to study the courses

Factors	Frequency	Per cent
To help achieve sustainable change in Construction industry.	15	51.7
Pride in professions title like Architect, Engineer etc.	6	20.7
Passion for design and construction	8	27.6
Total	29	100

Based on the argument presented in this paper that the experience as well as motivation among the respondents may be different, the study examines the likely challenges that often prevent female in the built environment from practising their professions after acquiring the knowledge. Thomas and Galambos (2004) and Sanusi (2007) provided the evidence that supported the argument presented here by affirming that academic experience is the factor that has the strongest influence on choice of undergraduate student's career prospect. Table 9 showed that 27.5% of female students view construction as men's work, 31% considered construction as hard and a dirty job for women, 17.24% believed working in the built environment may likely affect their duties as women while 24.1 are scared of competing in "men's world".

Table 9: Reasons for not practicing construction professions

Response	Frequency	Per cent
Construction is seen as men's work	8	27.5
It's a hard and a dirty job for women	9	31.0
It may affect my duties as a woman	5	17.24
Fear of competing with male counterparts	7	24.1
Total	29	100

Analyses of responses of Professional women in 52 selected construction firms in Federal Capital Territory (FCT), Abuja

The third category of respondents were 93 women construction professionals found in the 52 selected construction firms in FCT Abuja. This category of respondents was selected because it was believed that the respondents have better understanding of the involvement of women in construction and related jobs. From Table 10, 28.6% of the professional women are civil engineers, 26.8% are architects, 23.2%, 14.3%, 7.14% are quantity surveyors, builders and surveyors respectively. Of the 56 professional women in the selected firms, 33 are registered professionals with their respective registration bodies.

Table 10: Profession of respondents

Profession	Frequency	Per cent
Architecture	15	26.8
Building	8	14.3
Civil Engineering	16	28.6
Quantity surveying	13	23.2
Surveying and Geo-informatics	4	7.14
Total	56	100

Table 11 showed that 60.7% of the women liked construction as a job, 21.4% were there because of their friends and parents and 17.6% were in the industry because of career counseling and teacher's advice.

Table 11: Cause of motivation

Motivation	Frequency	Per cent
Passion for built environment profession	34	60.7
Career counsellor/teacher's advice	10	17.6
Parents/friends	12	21.4
Total	56	100

From Table 12, 14.30% of the women have the fear of going into competitions with their male counterpart, 35.7%, feel they were underrated and harassed on sites and 50.0% lacked enough confidence to lead and control because they were regarded as the weaker sex.

Table 12: Challenges in a male dominated work place

Challenges	Frequency	Per cent
Fear of competing with male counterpart	8	14.30
Women are under rated and harassed on site	20	35.7
Lack enough confidence to lead and control because they are seen as weaker sex	28	50.0
Total	56	100

Issues affecting the participation of women in the built environment profession

From Table 13, the mean score of 4.96 amounting to 87.1% relative to working against gender stereotypes and expansion of domestic labour pool deemed to be of very high extent and ranked 1st. The mean score of 3.68 amounting to 85.2 % shows that the help to increase the mobility of workers is also high extent and ranked 5th. The analysis of promoting industry careers by improving the image of industry has a mean score of 4.92, amounting to 85.2%, and the development of a highly skilled workforce that will support the future needs of the country has a mean score of 4.96, amounting to 85.2% are of very high extent. Preparing women to be more fully equipped to succeed in gender segregated construction workplaces has a mean score of 4.89 and ranked 3rd, amounting to 81.5% is of very high extent. Help in boosting women and creating educational and career pathways for young and older women in the society has a mean score of 2.21, amounting to 63.0% is of low extent. Promoting female role models to encourage younger workers, has a mean score of 3.64 amounting to 63.0% is of high extent. Developing female-friendly workplaces and better inter-personal skills has a mean score of 1.21, amounting to 66.7% is of very low extent. The analysis showed that most of the issues raised are of high extent for the participation of women professionals in the construction industry.

Table 13: Reasons for the participation of women in the built environment profession

Issues	Mean Score	Standard Deviation	Factor Ranking
Help to tackle a number of human resource challenges		0.799	6th
Help to increase the mobility of workers.		0.746	5th
Help to cope with an aging Workforce.		0.883	8th
Promotes industry careers by improving the image of the industry		0.403	2nd
Help in working against gender stereotypes		0.402	1st

Help in the development of skilled workforce that will support the future needs of the country	0.346	3rd
Help in the career development	0.799	1st
Prepare women to be more fully equipped in gender segregated workplaces	0.402	3rd
Help in boosting women and creating educational pathways.	0.883	8th
Promote female role models to encourage younger workers	0.799	6th
Develop female friendly workplaces and better inter-personal skills.	0.983	10th

5.0 Discussion of results

This study x-rayed the perceptions of four different categories of respondents on the influence of career choice on women or female in the built environment. The study's argument is grounded on the assertion of del Puerto (2011) who contended that the motivational factors for female career in the built environment are not the same for secondary school, undergraduate students and women professionals. The study revealed that most of the secondary schools' students considered were motivated to choose career in the built environment by their teachers and career counselors in their respective schools. Also, the university students studied gained knowledge about career in the built environment through parents, friends and career counselor's guide, while professionals posited that they were motivated by passion they have for the construction industry. This is in line with the assertion of Court and Moralee's (1995) that family and friends influence female students on whether to enter the construction industry or not. However, Maringe (2006) reported that male students consider parents, teachers and career guidance as relatively unimportant to their decision making in respect of career in the built environment compared to their female counterparts. The findings also indicated that work in the built environment is seen as men's work and it's a hard and a dirty job for women as it tends to affect their roles in the house. This finding is analogous to the results that has been reported by previous researchers that the poor image of the industry, which is typically portrayed as promoting adversarial business relationships, poor working practices are among other factors that often discourage women participation in construction (Dainty *et al*., 2000; Fielden *et al*., 2000; Agapiou, 2002). However, Ling and Leow (2008) concluded that in order to retain graduate women in the construction industry, it is recommended that employers should introduce flexible work schedule; allow graduate women to work from home; and give them the same opportunities as their male counterparts. In examining the challenges faced by women that chose career in the built environment, this

study showed that women are seen as a weaker vessel in a male dominated industry and harassed on construction sites. This is in line with Amaratunga *et al*. (2006) who asserted that construction is a male dominated industry which indicates a significant barrier to female recruitment (entry), career progression (development) and retention. This also supports Vinnicombe and Singh (2002) who contended that senior women are rare in many male dominated companies such as construction, so that many women managers have few role models.

The respondents most especially the professionals ranked the ability of the industry in helping female workers against gender stereotypes; possibility of career development; and the development of skilled workforce that will support the future needs of the country as the reasons for choosing career in the built environment. The reasons advanced by the professionals were in tandem with the observation of Fisher (2007), who contended that more than ever, the construction industry offers women tremendous opportunities for employment, entrepreneurship and financial security, but women/female professionals represent a huge untapped resource for an industry begging for skilled labour and talented professionals. The issue regarding the lack of female professionals in the construction industry has become more prominent recently, attracting government and industry wide attention due to the skill shortage facing the industry. Parker and Skitmore (2005) also posited that continued career development is paramount to a job satisfaction and reduced job turnover regardless of experience level. However, Gurjao (2006) noted that translating qualifications into employment seems to be the biggest barrier to entry in the construction sector most especially by women who are being referred to as weaker gender.

6.0 Conclusion

This paper explores overcoming barriers for female students' choice in built environment courses. Quantitative research approach was employed to sample the perceptions of females in high school, university and those in practice to achieve the objectives of the research. The study argued that the motivating factors responsible for choice of career in the built environment cannot be the same for the categories of the respondents considered. In spite of the similarities in the significance of the career choice determinants associated with the secondary school students, university and professionals in the construction industry, female decision-making process such as opportunities for promotion or career advancements and life learning opportunities, were considered more important by the professionals. Whereas the source of motivation for secondary school students as well as university females revolves around teachers, parental guidance as well as peer pressure or career counselor.

The findings reported in this study in terms of challenges faced by women in the built environment is not entirely different from what have been found by previous researchers in the construction industry. However, the research findings just like the previously reported researches identified that one of the key implications of the findings presented in this paper is the barriers of uncovering ways of drawing younger people both male and female in secondary schools into the construction industry due to its

unattractive nature for younger people especially women. Therefore, aggressive enlightenment is advocated especially for females in order to increase their participation in the construction industry.

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A Comparative Study of the Engagement of Migrant and Indigenous Artisans on the Construction Sites in Lagos Metropolis and Benin City, Nigeria

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Abstract: It is gradually becoming a norm to find some construction trades in project sites in Nigeria being dominated by migrant artisans from other West African countries, despite the high unemployment rate in Nigeria. The magnitude and spread of these migrants in Nigerian cities deserves research attention in the effort to understand the demographic settings that encourage their influx, and the reasons why contractors often employ them. This research carried out comparative study of the factors responsible for the engagement of migrant artisans in Lagos Metropolis and Benin City, South-West and South-South Nigeria respectively. Based on data from 40 randomly selected construction sites, 20 from each of the cities; it was found that indigenous artisans were dominant on construction sites in the study area with migrant artisans constituting 19.93% in Lagos and 15.67% in Benin City. Contractors in Lagos Metropolis engage the services of migrant artisans more frequently than those in Benin City. The study further revealed that migrant artisans are mainly engaged for tiling, P.O.P. installation and plastering works in Lagos and Benin City. The migrant artisans' ability to work for longer hours (MS= 4.03), achieve better quality of workmanship (MS= 3.94) and reduction in cost (MS= 3.92) were the most important factors accounting for their engagement in Lagos. In Benin City, better quality of workmanship (MS= 4.30), reduction in cost (MS= 4.10) and migrant artisans' ability to work for longer hours (MS= 3.82) were the most highly rated factors. Collaboration for trade test certification between the Federal Ministry of Labour and Productivity and Polytechnics in Nigeria was recommended as a means of achieving adequate training of Nigerian artisans in order to check the increasing engagement of nationals of other countries in construction trades in Nigeria.

Key words: Migrant artisans, indigenous artisans, construction sites, South-West, South-South.

1.0 Introduction

In May 1979, member states of the Economic Community of West African States (ECOWAS) adopted a protocol on the Free Movement of Persons, Residence and Establishment. The Protocol entailed that citizens of member states would be allowed visa-free entry, the right of residency, and the right of establishment in other member states (United Nations Economic Commission for Africa, 2018). In line with this protocol, Nigeria has implemented the 90-day visa-free entry and the ECOWAS travel certificate policy that exempts the holder from intra-regional visa requirements (Adepoju, Boulton and Levin, 2010). Adepoju, Boulton and Levin, (2010) further reported that some migrants enter other member state's territory irregularly, thereby making it extremely difficult to account for all the migrants in each member state. The broad economic impact of this policy on the Community's states, and particularly, on their construction industries has not been adequately studied. Earlier studies thought that the construction industry majorly provides jobs for the citizens of a country (Uwakeh, 2009; Ojo & Adeyinka, 2011). Research attention has not been seriously paid to the emerging competitions, especially among construction artisans from different West African states. Currently, it is known that on many construction sites, a good number of the artisans employed are migrant West African nationals (Togolese, Beninese, Ghanaian, etc) (Chukwuji, 2012; Afolabi, Emeghe, Oyeyipo and Ojelabi, 2016). Constant (2014) asserted that rather than take native-workers jobs, immigrants often fill job vacancies in foreign countries. This raises the question as to whether, given Nigeria's unemployment rate, there ought to be vacancies for artisans that cannot be filled by Nigerians. It is unclear whether employment of migrant artisans in construction sites is a country-wide phenomenon, or whether the construction industry in some Nigerian cities has a preference for the migrant artisans.

Considering the population of Nigeria when compared to other countries in the continent, especially in the West African sub region, nationals of other countries should not out-number Nigerians in any construction trade in construction sites within Nigeria (Afolabi *et al.*, 2016). Nigeria citizens were around 166.2 million people in 2012 (NBS, 2012). In 2016, the country was estimated to have over 178.5 million people, although United Nations' (UN) projections placed the population as high as 186 million (UN, 2016). Benin Republic was estimated in 2015 to have a population of 10.88 million and 11.46 million in 2017 (UN, 2016). This implies that for every 1 Beninese there are 17 Nigerians (the population of Nigeria is 17 times that of Benin Republic). Similarly, the population of Togo is estimated to be 7.69 million as at 2017 (UN, 2016). This means that for every 1 Togolese there are 24 Nigerians (the population of Nigeria is 24 times that of Togo). Ordinarily, the huge difference in population between Nigeria and other West African countries should be a major advantage for her citizens to get employment especially in the construction industry contrary to the observable trend where migrant West African countries skilled construction artisans are predominant on construction site in Nigeria (Olanipekun and Segbenu, 2017).

Oluwale, Jegede and Olamade (2013) claimed that low patronage had driven

Nigerian construction artisans to Okada and Keke NAPEP driving for survival. However, migrant artisans are being patronized, and sustained as a result in Nigeria. Deeper studies are necessary to develop potent models that explain the apparent employment of the migrants at the expense of the native workers.

Many studies have referred to Lagos as the economic hub of Nigeria. Lagos was the capital city of Nigeria between January, 1914 and December, 1991 when the Nigerian capital was relocated to Abuja. Irrespective of this, Lagos, as a mega city, continues to dominate other parts of the country in terms of commerce and industry. National Bureau of Statistics (2014) reported that production is mainly localized around Lagos and its environs. Budgit (2017) reported that Lagos State generated internal revenue of N302.42bn in 2016, which is 3.54 times higher than that of River State which came second on the internally generated revenue table. Edo state made N23.04bn in the same period. Given its proximity and accessibility (even by road) to other countries in the sub-region, Lagos serves as a major gateway into Nigeria for West African migrants. The economy of Lagos differs in size from those of most other cities in Nigeria. Despite this, disparities between the construction industry in Lagos and other cities in Nigeria are hardly studied. Obviously, there are differences in the demography of construction activities in different cities in Nigeria in terms of volume, value, complexity, quality and labour compositions, which merits research attention. This study helps to fill this gap in research by comparing the engagement of West African migrant artisans to indigenous workers in construction sites in Lagos and Benin City.

2.0 Literature Review

Freedom of Labour movement is guaranteed by international laws and conventions, even though this freedom is to be exercised within the laws of the host country. Several studies in the recent years have examined the construction labour migration from one nation to the other with diverse conclusions (International organization for Migration, 2012; United Nations, 2013; Barslund, Busse and Schwarzwälder, 2015; Ihua-Maduenyi; 2015). The use of migrant artisans on construction sites is not unique to Nigeria, but it is a global issue. The recent economic problem resulted in the total population of the European Union increasing by 3.7 million with migrant workers (15-60 years) making approximately half of the increase (Afolabi *et al.*, 2016). According to Ezzeddine (2011) the main cause of labour migration is high unemployment in the migrant home country compared to the host country. However, the experience in Nigeria in the recent years has negated this assertion. While unemployment rates are 7.1% and 1.0% in Togo and Benin republic respectively, Nigeria, where migrant construction artisans are very visible has 14.2% unemployment rate (NBS, 2016).

Another reason advanced for international labour migration as opined by Barslund, Busse and Schwarzwälder (2015) is wage difference between the migrant home country and the host country. Other reasons adduced for labour migration from one country to another are global economic inequality, political unrest and turmoil in the neighbouring countries, and high levels of unemployment and low income rates

in the country of origin, personal debts, financial needs of families and seeking better living standards (Toksöz, Erdoğdu and Kaşka,2012). Afolabi *et al.* (2016) examined professionals' engagement for migrant craftsmen in Lagos State. The study found that the shortage of indigenous artisans in NCI led to the use of migrant craftsmen in Lagos State. Preference of migrant artisans to indigenous construction workers is attributable to poor workmanship and incompetency on the part of indigenous artisans which often lead to defective work (Abiola, 2004). The socio-economic effect of preference of foreign migrant artisans was reiterated by Afolabi *et al. (*2016). The study opined that the engagement of migrant craftsmen in NCI would result in the under-utilization of indigenous craftsmen in the industry and consequently unemployment for local artisans and may as well lead to increased social vices among the unemployed youths. Olanipekun and Segbenu (2017) posited that previous experience, various productive skills and techniques acquired by migrants through their activities at home place them at an advantage over their indigenous contemporaries. Aznar et al. (2017), however, examined factors affecting contractor's bidding success for international infrastructure projects in Australia. The study found that having a competitive advantage and a local partner, and also not competing against a local company were the most important factors; as they significantly increase the chances of success. However, four other factors; having relevant expertise, resource availability, a previous relationship with the client, and a previous relationship with consortium members, are 'essential' to be able to compete; as the absence of any of these four factors results in bid failure.

Olanipekun and Segbenu (2017) found that construction sites in Ondo State are majorly dominated by indigenous artisans. Even though, there were a number of migrant artisans used on specific trade such as tiling and laying of interlocking block. The study concluded that the dexterity of craftsmanship, increasing client satisfaction, ability to obey instruction, need for increased quality and availability of tools to carry out the jobs were the most dominant factors responsible for the preference of migrant artisans over their Nigerian counterparts. The study further found that preference for migrant artisans over local craftsmen is responsible for the increased unemployment rate within the study area. Missing information in literature regarding migrant artisans in Nigeria relates to their spread. Some studies assure erroneously, that what is applicable in Lagos, is representative of the entire country, whereas, as discussed earlier, Lagos, to a large extent does not typify Nigeria economically. This study was, therefore, necessitated by the need to compare the engagement of migrant workers in Lagos and another Nigerian city so as to establish the peculiarity or otherwise of Lagos in the employment of migrant artisans.

3.0 Methodology

The study examined the factors responsible for preference of migrant artisans to their indigenous counterparts on construction sites in Lagos Metropolis and Benin City of Nigeria. Random sampling technique was used to select forty building construction sites in Lagos Metropolis and Benin City (20 in each City). The selected sites were all at either site clearance or

construction of foundation levels when they were identified as case studies for this article. The estimated completion time for each of the projects ranged between nine months and fourteen months. The Clerk of works and the contractor's representative on each site were briefed of the research and the need to keep proper and accurate records of the composition of each trade's workforce, the number of days of work for each trade, and the nationalities of the workers. When the completion period of each project lapsed, the questionnaire designed for gathering data for this survey was administered on the contractor's representative on each site. It should be noted that of the forty selected sites only thirty- seven (92.5%) completed, questionnaires administered on them three months after the estimated completion time. The choice of Lagos Metropolis and Benin City was informed by the fact that Lagos has higher income than Benin, has an international airport, shares a border with other West African states, and has a more boisterous construction industry. These qualities are lacking in Benin.

The selection of the two cities in different regions (South- West and South- South) of the country is also to allow for a regional comparison of results.

The partly open ended questionnaire used for data collection was divided into three sections. The first section dealt with the background information of the respondents to ascertain their suitability to supply the information required of them. The second section was structured in the form of tables for collecting data on the number of migrant workers, their nationalities and trades. In the third section of the questionnaire, the respondents were asked to indicate on a Likert scale of 1(rarely) to 5(very frequent) the frequency of their companies' employment of migrant workers in the different trades. This response helped to validate the data on migrant workers supplied by each respondent. Data for the study were analysed by descriptive statistics using SPSS software.

4.0 Characteristics of Respondents of the Study

Table 1 shows the characteristics of the sampled respondents to the questionnaire. Architects and builders constituted the highest number of respondents with 27% each while quantity surveyors and Civil/ structural engineers have 24.3% and 21.6% respectively. The result shows that the mix of professionals that work as contractor's representative on site cuts across all disciplines in the built environment, and the choice depends on each contracting firm. All the respondents work for contracting organisations; this is expected because the data required can only be gotten from professionals that must always be on site and representatives of consultancy firms are not expected to be on site at every time. Most of the respondents (62.2%) were engaged right from the inception of the project to the end, while only 5.4 percent worked for less than three months on the selected projects. Close to one-third (35.1%) of the respondents hold postgraduate diploma as their highest academic qualification followed by those with bachelor degrees in the various disciplines. All the respondents were professional members of their various professional associations. While 56.8 percent were associate members, 2.7 percent were fellows of their

professional associations. This background shows that the respondents were suitably qualified to supply the data required of them as they have the requisite academic and professional experiences to provide reliable information for the study.

Table 1: Summary of characteristics of questionnaire respondents

Category	Classification	Frequency	Percentage
Profession of respondent	Quantity Surveyor	9	24.3
	Architect	10	27.0
	Civil/structural Engineer	8	21.6
	Builder	10	27.0
	Total	37	100.0
Type of organisation	Contracting organisation	37	100.0
	From inception	23	62.2
Length of time of working on the project	Less than 3months	2	5.4
	More than 3 months	12	32.4
	Total	37	100.0
Highest academic qualification	HND	6	16.2
	PGD	13	35.1
	Bachelor	11	29.7
	Masters	6	16.2
	Others	1	2.7
	Total	37	100.0
Membership of professional body	NIQS	9	24.3
	NIA	10	27.0
	NIA	8	21.6
	NIOB	10	27.0
	Total	37	100.0
Membership type	Technician	1	2.7
	Graduate	6	16.2
	Probationer	8	21.6
	Associate	21	56.8
	Fellow	1	2.7
	Total	37	100.0

5.0 Results

Table 2 shows the frequencies of engagement of the migrant artisans in Benin City and Lagos based on the respondents' opinion. In Benin City, 5.9% never employ the services of the migrant artisans, 52.9% rarely engage them, 35.3% occasionally employ the services of migrant artisans and only 5.9% often engaged them on their construction sites. In Lagos, however, 25% rarely engaged the services of migrant artisans, 50% employed their services occasionally and the remaining 25% engaged their services often.

Table 2: Frequency of engagement of migrant artisans in Benin City and Lagos

Category	Benin City		Lagos	
	Frequency	Percent	Frequency	Percent
Never	1	5.9	0	0
Rarely	9	52.9	5	25.0
Occasionally	6	35.3	10	50.0
Often	1	5.9	5	25.0
Total	17	100.0	20	100.0

Table 3: Frequency of engagement of migrant artisans according to construction trades in Benin City and Lagos based on respondents' perception

	Lagos		Benin City	
Construction Trade	Mean Score	Rank	Mean Score	Rank
Tiling	4.00	1	3.47	1
P.O.P Installation	4.00	1	3.41	2
Plastering	3.30	2	2.94	3
Painting	2.65	3	2.53	4
Block laying	1.90	4	1.94	5
Iron bending	1.75	5	1.94	6
Carpentry	1.75	5	1.59	7
Plumbing	1.65	6	1.53	8
Electric work	1.50	7	1.47	9
Roofing	1.50	7	1.59	7

Table 3 shows the frequency of engagement of migrant artisans according to construction trades based on the respondents' perceptions. In Lagos, migrant artisans are mostly engaged on tiling work and P.O.P installation with a mean score of 4.00 each and ranked 1st, plastering work was ranked 2nd with mean score of 3.30, painting work 3rd with score of 2.65. However, carpentry work (MS=1.75), plumbing work (MS=1.65) and electric work/roofing work (MS=1.50) were ranked 5th, 6th and 7th respectively. In Benin City, tiling work was ranked 1st with a mean score of 3.47, followed by P.O.P installation (MS=3.41) ranked 2nd and plastering work ranked 3rd with a mean score of 2.94. Carpentry/roofing work ranked 7th (MS=1.59), plumbing installation ranked 8th (MS=1.53) and electrical work ranked 9th (MS=1.47) was the least trade where migrant artisans were used.

Table 4 shows the engagement of migrant artisans on construction sites in the study area based on statistics of workers on the selected projects. The results show that in Lagos, migrant artisans are majorly engaged on tiling work, P.O.P installation and plastering with 55.75%, 54.60% and 36.95% respectively. This implies that of the

total artisans that work on the studied projects in Lagos, 55.75%, 54.60% and 36.95% were migrant artisans that worked on tiling, P.O.P installation and plastering respectively. Also, the results further confirm that migrant artisans were not frequently engage for block laying (1.95%), carpentry (0.63%) and electric works (0.52%) in Lagos. However, in Benin City, the results indicated that 37.84% of artisans engaged to work on tiling work were migrant artisans, 32.48% migrant artisans were engaged on P. O.P. installation and 29.21% were engaged on plastering.

Table 5 shows the prevalent rate by nationality of migrant artisans in Benin City and Lagos based on the respondents' experience. Migrant artisans from the Republic of Benin (Beninese) were the most prevalent nationalities on construction sites in Benin City with 35.3%, followed by Togolese with 29.4%. Ghanaian and other nationalities constitute 11.8% and 23.5% respectively. In Lagos, Togolese were the most prevalent migrant artisans with 40.0%. This is closely followed by Beninese with 35.0%. Ghanaian and other nationalities constitute 15.0% and 10.0 % respectively.

Table 4: Frequency of engagement of migrant artisans based on site data

S/n	Construction Trade	Lagos			Benin City		
		Total number of Artisans	Number of Migrant Artisans	% of Migrant Artisans	Total number of Artisans	Number of Migrant Artisans	% of Migrant Artisans
1	Tiling	502	280	55.76	370	140	37.84
2	P.O.P installer	663	362	54.60	391	127	32.48
3	Plastering	741	274	36.95	493	144	29.21
4	Painting	340	72	21.18	188	15	7.98
5	Iron bending	156	15	9.62	78	6	7.69
6	Plumbing	322	24	7.45	92	8	8.70
7	Roofing	235	7	2.67	177	0	0
8	Block laying	820	16	1.95	460	6	1.30
9	Carpentry	953	6	0.63	342	0	0
10	Electric work	582	3	0.52	252	0	0
	Total	**5314**	**1059**	**19.93**	**2843**	**446**	**15.67**

Table 5: Prevalent nationalities of migrant artisans in Benin City and Lagos

Nationality	Benin City		Lagos	
	Frequency	Percent	Frequency	Percent
Togolese	5	29.4	8	40.0
Beninese	6	35.3	7	35.0
Ghanaian	2	11.8	3	15.0
Others	4	23.5	2	10.0
Total	17	100.0	20	100.0

Table 6 shows the analysis of factors responsible for preference of migrant artisans on construction sites to their indigenous counterpart. The results for Lagos show that the migrant artisans' ability to work for longer hours was

ranked 1st (MS= 4.03), better quality of workmanship was ranked 2nd (MS= 3.94) and reduction in cost was ranked 3rd (MS= 3.92). The three least important factors were: prompt obedience to instructions ranked 11th (MS=3.08), availability of adequate tools to execute the work ranked 12th (MS=2.68) and shortage of indigenous artisans ranked 13th (MS=2.62). In Benin City, Better quality of workmanship was rated (MIS =4.30), reduction in cost (MIS=4.10) and ability to work for longer hours were rated 1st, 2nd and 3rd respectively as the most important factors responsible for preference of migrant artisans to their indigenous counterparts in the study area. While Availability of adequate tools to execute the work (MIS= 3.00), adequate mobilization to site, prompt obedience to instructions (MIS=2.86 each) and shortage of indigenous artisans (MIS=2.45) were rated 10th, 11th and 12th respectively as the least factors responsible for preference of migrant artisans to their indigenous counterparts.

Table 6: Factors responsible for preference of migrant artisans on construction sites in the selected cities

	Lagos		Benin City	
Factors	Mean Score	Rank	Mean Score	Rank
Ability to work for longer hours	4.03	1	3.82	3
Better quality of workmanship	3.94	2	4.30	1
Reduction in cost	3.92	3	4.10	2
Punctuality to site	3.81	4	3.74	4
Superior adherence to health and safety rules	3.73	5	3.65	5
Superior work ethics	3.73	5	3.56	7
Superior understanding of construction works	3.35	6	3.65	5
Ability to yield to correction	3.32	7	3.62	6
Superior eyes for details	3.24	8	3.60	8
Adequate mobilization to site	3.22	9	2.86	11
Greater commitment to timely completion	3.19	10	3.24	9
Prompt obedience to instructions	3.08	11	2.86	11
Availability of adequate tools to execute the work	2.68	12	3.00	10
Shortage of indigenous artisans	2.62	13	2.45	12

6.0 Discussion of Findings

The results of the survey indicate that more constructing organisations in Lagos Metropolis often engage the services of migrant artisans compared to Benin City. Lagos being the entry point for most immigrants to Nigeria aided this finding. In addition, many immigrants will prefer to stay in a city from where they can easily exit the country. This is in addition to the fact that Lagos is the commercial nerve centre of the country where the migrant artisans can easily secure employment. The use of migrant artisans in the study area tends to be common to finishing. Construction professionals in the study area prefer to use migrant artisans mostly on tiling work, P.O.P installation and plastering. This result was similar in both cities, and the two methods of perception survey and site data used gave the same results. This implies that construction professionals in the study area use migrant artisans on finishing to enhance the final output of their construction work. Perhaps, because of their superior workmanship compared to the indigenous counterparts, and also, to recover the lost project time as the

migrant artisans work for longer hours. In the same vein, the use of migrant artisans is less common on block laying, plumbing and electric work respectively. Even though, there is a minor difference in the results obtained through perception survey and site data obtained in the ranking, the study aligns more with the results of the site data because it is more objective. Olanipekun and Segbenu's (2017) finding that professionals in Ondo State engaged migrant artisan mostly on tiling and laying of interlock block aligns with the results of this study.

Migrant artisans from Benin Republic (Beninese) were the most prevalent nationalities in Benin City followed by the Togolese. On the other hand, the Togolese were more prevalent on construction sites in Lagos followed by the Beninese. The result shows that the Beninese and the Togolese are the most commonly engaged migrant artisans in the study area. Apparently, there is a tendency for the migrants from each country to want to cluster in the same area as their kinsmen which are accountable for the concentration of the different nationalities in different parts of the study area.

Furthermore, migrant artisans' ability to work for longer hours compared to their local counterparts was ranked as the most important factor influencing the preference of migrant artisans in Lagos. This result could be as a result of the fact that on many instances, migrant artisans reside on the site where they are engaged, and many of them could start work as early as 7am and close for each day by 6pm, unlike their indigenous counterparts who will start work at 8am and close by 4pm. It is essential to note that majority of migrant artisan do not usually migrate with their families which makes it easier for them to reside on site for the period of their engagement. The extra 3hours daily output by the migrant artisans place them at an advantage over their native peers. Contractors often use this extra productivity to achieve earlier completion time especially as this is often achieved at a reduce cost. This result is at variance with Olanipekun and Segbenu (2017) who found that dexterity of craftsmanship was the most important factor responsible for the preference of migrant craft men to their indigenous counterparts in Ondo State, but similar to the result from Benin City where better quality of workmanship was rated as the most important factor responsible for preference of migrant artisans to indigenous counterparts.

Better quality of workmanship was ranked the second most important factor responsible for preference of migrant artisans to their local counterparts (in Lagos) and first in Benin City. The consensus on better workmanship by the migrant artisans cannot be isolated from the fact that many indigenous artisans are not trade tested to guarantee their competency. The lack of trade test certification in the country was as a result of dearth of vocational centres for such an exercise (Afolabi *et al*., 2016; Olanipekun and Segbenu, 2017). Reduction in cost was also rated (2^{nd} in Benin City and 3^{rd} in Lagos) as a very important factor responsible for the preference of migrant artisans to their local counterparts. The result is attributable to the fact that the migrants do not give as much consideration to personal expenses such as transportation and accommodation as do their indigenous counterparts since majority of such migrant artisans reside on sites where they are engaged.

Shortage of indigenous artisans was rated (in Lagos and Benin City) to be the least important factor that is responsible for the preference of migrant artisans to their Nigerian colleagues. This result implies that even though there is a pool of unemployed local artisans, construction professionals still prefer to engage migrant artisans in specific trades (tiling, P.O.P installation and plastering) on their sites. This can be attributed to the advantages of the engagement of the migrants identified earlier which the employer derives from engaging their services. This result is different from the findings of Afolabi et al., (2016) that shortage of indigenous craft men was responsible for the preference of migrant artisans over their local contemporaries.

7.0 Conclusion and Recommendations

The study examined factors responsible for the preference of migrant artisans over their indigenous contemporaries in Lagos Metropolis and Benin City. Construction companies in Lagos frequently engage the services of migrant artisans more frequently compared to Benin City. The prevalent rate of migrant artisans in Lagos is 19.93% and 15.67% in Benin City. Indigenous construction artisans are dominant on construction sites in the two cities, but the contractors prefer to engage migrant artisans majorly on finishing (tiling, P.O.P installation and plastering). Artisans from Togo (Togolese) are the most common in Lagos while the Beninese are more in Benin City. Migrant artisans' ability to work for longer hours, produce better quality workmanship and reduce cost of labour were the most important factors accounting for their engagement instead of their indigenous counterparts.

In other to address the inadequacy of workmanship by the Nigerian artisans, efforts at training Nigerian artisans on the finishing trades in the construction industry should be pursued deliberately by government and other stakeholders. The various agents of government in charge of vocational training and trade testing should be revived. Moribund vocational centres should be resuscitated and new ones created for this purpose. In addition, there should be an active collaboration for trade testing certification between the Ministry of Labour and Productivity and Polytechnics in Nigeria especially for training qualified POP artisans, plasterers and tilers. Finally, construction companies can help by ensuring that their artisans are trade tested. By requesting the possession of trade test certification from would-be artisans, they will be incentivized to pursue proper training in their trades which will ultimately improve the level of their workmanship.

Contracting organisations should consider providing safe and adequate accommodation on site for their artisans, with a view to making them to work for longer hours and charge lesser hire rates. Besides, deriving the immediate benefit of higher productivity, the contractor will discourage the giving away of jobs to nationals of other countries, thereby increasing the GDP and employment rate of Nigerian.

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An Assessment of Users' Satisfaction with Facilities in Akure Mall, Nigeria

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Abstract: Facilities play a very important role in satisfying users of every building. The success of a shopping mall depends on the tenants' occupancy rate; hence, facility managers strive as much as possible to satisfy tenants in a bid to retain them. In this research, analysis is conducted to assess the users' satisfaction with facilities in Akure Mall through the investigation of the role of facility managers in users' satisfaction; thus, bridging the gap between these two variables "user perception on facilities" and "responsibility of facility managers" to determine "users' satisfaction". Relative Satisfaction Index was used to analyze the satisfaction level based on a survey conducted among tenants of the Akure Mall. The study scored all facilities in the mall well above average. On assessment of the satisfaction of the tenants in the mall, indoor air quality ranked highest on the Relative Satisfaction Index; while a little deficiency in the provision of internet facilities was recorded in both the users' opinion and their satisfaction index. The study indicates that adequate facilities are provided in the Akure Mall, users are satisfied with these facilities and that the performance of the facility management team is excellent. In conclusion, the present state of the mall should be made a benchmark for future improvements.

***Keywords*:** Tenants' satisfaction, User perception, Post occupation experience, Facility

1.0 Introduction

In recent years, there has been a steady improvement in the structure of the sales industry within Nigeria. This improvement can be attributed to some measures put in place by various strata of the government such as ban on street hawking and trade, revamping CBDs in

major cities as well as reforming trading standard. The improvement was escalated by the intervention of some international investors who decided to exploit the continuous demand for stress-free, expedient trading (Euro Monitor International, 2015). The organized retailing sector in Nigeria has also experienced a significant growth and is projected to grow much more rapidly in the immediate future. Ease, luxury and swiftness are the present features of the organized retailing industry as well as offering customers better control, convenience and choice. (Ubeja and Bedia, 2012; Kusuma et al., 2013). Nigerians are increasingly patronizing organized retailing channels such as convenience stores, supermarkets, shopping malls and online stores in cities and rural areas (Philip Consulting, 2014)

A shopping mall contains various department and specialty stores that provides retail services, recreation, relaxation and entertainment options that are specifically designed to meet the needs and satisfy target customers. (Sankar, 2005). According to Ubeja (2015), a shopping mall is an innovative modification of the old-fashioned market place which consist of autonomous retail shops, services and an organized parking structure that is erected and managed as a single unit.

Satisfaction is a client's contentment reaction. It is the term that ascertain whether a product or service is or was pleasurable during consumption. It grades the level of fulfillment derived by consuming a particular product or service, including levels of over- or under-fulfillment (Oliver, 1997). The world today is characterized by excessive competition, a major factor that gives businesses a competitive edge over others is offering exceptional services that exceeds users' expectations thus satisfying the user (Shemwell et al., 1998). As propounded by Zagreus et al. (2004), the level of user (or tenants) satisfaction is the major element to be considered when measuring a building success in terms of its purpose. The users are the primary consumers of the shopping mall as a building; hence it becomes crucial to sustain a satisfactory consumer experience for them (Sujatha and Priya, 2015). The economic satisfaction of getting value for the rent paid for a specific period of time may become unrealizable if the satisfaction of users are inadequate or absent. In other words, if users cannot derive satisfaction from the mall in which they pay to occupy for their business purposes, then it may become economically unfeasible for them and their businesses to remain in such premises (Oladapo and Adebayo, 2014).

One of the major factors that will influence the satisfaction among users is the provision of infrastructures, amenities and mall management support which will assist the retailers in the smooth running of their businesses. Also, it is expected that each user is unique, and their expectations will defer from another; hence, purpose-oriented infrastructure, amenities as well as dedicated managers are required to keep the users satisfied (Sujatha and Priya, 2015). These facilities provided by shopping malls attract tenants and clients to occupy and patronize the shopping mall. Needless to say, the provision of efficient facilities and their effective management is considered a positive indicator of an efficient enterprise (Pitt and Musa, 2009).

In addition, Oluwunmi, Akinjare and Izobo-Martins (2012) opined that the

main aim of providing a facility should be satisfying the users of the facility. Singh (2006) also forwarded the revenue of any enterprise is always positively affected by satisfaction of its clients; while Bowen and Chen (2001) further argued that although users can be easily satisfied, but it is essential to make sure they are exceedingly satisfied.

In this light, the study seeks to investigate the role of facility managers in users' satisfaction with the facilities in shopping malls and commercial properties in general; thus, bridging the gap between these two variables 'user perception on facilities' and 'responsibility of facility managers' to determine users' satisfaction.

2.0 Literature Review

The level of satisfaction attained from using a facility varies according to individual perception. This is according to Anselmsson (2006), who observed that satisfaction is a personal opinion and an individualistic perception and reaction. In a similar light, Zairi, (2000); Lepkova and Zukaite-Jefimoviene (2012) concluded that 'users' satisfaction' is an expression that is very often misused and abused, with many organizations deliberately or ignorantly failing to adequately measure and analyze satisfaction of users with their quality of service. In another light, Ta (2014) noted that existing practice of facility management contains numerous problems, which impinge on all parties concerned. It further asserted that maintenance culture is poor among commercial properties. This, to some extent has contributed to failure of many commercial properties. Aliyu et al. (2016) concluded that more than 60% of the facilities in commercial properties are not appropriately maintained by the facility management team. This is usually due to inadequate budgeted finance and lack of planning for the maintenance of the facilities. Furthermore, tenants' repairs and maintenance requests are not promptly attended to by the managers. It further established that there is an increasing number of complaints amid the tenants of commercial.

In the past, it has been assumed that the physical state of a facility and its structural components can be used to adequately measure 'user satisfactory experience'. Nevertheless, this is not true as a satisfactory experience cannot be appraised from merely assessing the physical and structural state (Makinde, 2015). Bauer (1951); Onibokun (1973) and Oladapo (2006) argued that just because a building engineering and design is sound does not mean that it will satisfy its users. Therefore, the ideal users' satisfaction of a building incorporates both physical and nonphysical components of the building the nonphysical components may include sociocultural, behavioral, individual taste of the users as well as the manner of management deployed in the building (Oladapo, 2006). One of the major problems faced by real estate investment stakeholders such as policy-makers, planners, developers, and others is how to identify relevant factors that determine users' satisfaction. In appraising overall building satisfaction, the building is just a single factor among other factors. Therefore, the components of satisfaction with buildings and facilities is usually different based on individual perception (Adesoji, 2009).

2.1 Justification

Users' satisfaction surveys are important vehicles for enterprises to

determine customer loyalty and assess the degree of improvement that may be required for the facilities to satisfy users' needs and wants. Therefore, there is the need to ensure that users are highly, and not merely satisfied in order to provide competitive advantage at shopping malls (Singh, 2006; and Oluwunmi, 2014). Therefore, to establish efficient and consistent standard in shopping mall facilities, there is a significant need to conduct studies on users' satisfaction with the facilities provided in shopping malls.

According to Wong, Ng, Wong and Wong (2012), many studies have made attempts to investigate the antecedents of customer satisfaction globally. These include studies by Ubeja and Bedia (2012), which focused on customer satisfaction in shopping malls; Anselmsson (2006), which focused on the sources of customer satisfaction within shopping malls; and Dubihlela and Dubihlela (2014), accessed the attributes of shopping mall image, customer satisfaction and mall patronage. Whilst many of these studies have examined customers' satisfaction, little attention has been paid to users' or tenants' satisfaction, which is a significant missing link in the quest for improving the quality of service delivery at shopping malls. Having discussed the significance of determining user satisfaction, as well as the correlation between user satisfaction and customer satisfaction, it is of paramount importance to the real estate investment industry that studies be conducted to evaluate users' satisfaction in shopping malls.

3.0 Research Methodology

The data collection instrument used for the purpose of this research includes both the primary and secondary data collection sources. The primary method of data collection is the administered questionnaire to the tenants in the study area. Also, the secondary method of data collection was sourced from records from the management office of Akure mall. For this study, the survey method of research design was adopted while the research methodology used was quantitative. The target population for this study is the tenants of the Akure shopping mall. There are 62 shops in the mall out of which 45 were occupied, hence, a sample frame of 45 was adopted as the sample size since they are very small in number. Descriptive statistics such as weighted mean score and relative satisfaction index were adopted for this study. Out of the 45 questionnaires administered to the tenants of the shopping mall 42 were retrieved representing 93.33%. This suggests a great percentage of response, thus giving sound footing for further analysis.

4.0 Result and Discussion of Findings

Table 1: Respondents background information

Background Information	Frequency	Percent
Previous tenants of shopping complex/mall		
Yes	25	59.5
No	17	40.5
Total	*42*	*100*
Academic qualifications of respondents		
M.Sc./PGD	2	4.8
B.Sc./B. Tech.	20	47.6
HND	14	33.3
OND/NCE	3	7.1
SSCE	3	7.1
Total	*42*	*100.0*

The result of table 1 above shows the respondent's (occupants) occupational status at other commercial properties prior to their current occupation at the mall under study and the academic qualifications of the individual respondent. As shown on the table, 59.5% of the respondents have been tenants in another commercial property while 40.5% have never been tenants in another property. Also, the table shows that 4.8% of the respondents possess a Post Graduate Degree, 80.9% are University or Polytechnic graduates, 7.1% are OND holders and secondary school graduates each. The distribution shows that a larger percentage of the respondent have been tenants in other commercial properties and are educated, well exposed and capable of answering the questions of this study and as such their response can be relied upon.

4.1 Users' Perception of Facility Provided by the Mall

This section of the study examined users' perception of facility provided by the mall. Perception of the provided facilities was assessed by classifying the facilities into Very Good, Good, Neutral, Poor and Very Poor from the occupant's perspective. The Weighted Mean Score (WMS) of the data collected from the occupants was estimated to represent their collective perception of the facilities.

Table 2: Respondent's opinion on the facilities provided by the mall

Facilities provided by the mall	V. Good	Good	Neutral	Poor	V. Poor	MEAN	Rank
Air conditioner	26(61.9)	15(35.7)	1(2.4)	-	-	4.60	1st
Electricity supply	24(57.1)	18(42.9)	-	-	-	4.57	2nd
Air quality within the mall	22(52.4)	18(42.9)	2(4.8)	-	-	4.48	3rd
Visual comfort (natural and artificial lightening	22(52.4)	18(42.9)	2(4.8)	-	-	4.48	4th
Attractiveness of shop space	20(47.6)	2(50.0)	1(2.4)	-	-	4.45	5th
Shop size	19(45.2)	21(50.0)	2(4.8)	-	-	4.40	6th
Separate toilet facilities for female	18(42.9)	21(50.0)	3(7.1)	-	-	4.36	7th

Doors and windows	17(40.5)	23(54.8)	2(4.8)	-	-	4.36	8th
Thermal comfort (indoor temperature)	18(42.9)	21(50.0)	3(7.1)	-	-	4.36	9th
No of toilets	16(38.1)	24(57.1)	2(4.8)			4.33	10th
Constant water supply to the toilet	14(33.3)	27(64.3)	1(2.4)	-	-	4.31	11th
Wall finishing	15(35.7)	22(52.4)	5(11.9)	-	-	4.24	12th
24 X 7 Mall security	10(23.8)	31(73.8)	1(2.4)	-	-	4.21	13th
Vehicular parking space	12(28.6)	25(59.5)	5(11.9)	-	-	4.17	14th
Escape route	12(28.6)	21(50.0)	8(19.0)	1(2.4)	-	4.02	15th
Acoustic comfort (sound proof)	10(23.8)	23(54.8)	9(21.4)	-	-	4.02	16th
No of CCTV installed	12(28.6)	25(59.5)	5(11.9)	-	-	3.90	17th
No of ATM installed	5(11.9)	27(64.3)	10(23.8)	-	-	3.88	18th
Internet facilities	5(11.9)	17(40.5)	19(45.2)	1(2.4)	-	3.62	19th

The opinion of respondents on the facilities provided in Akure mall is presented in table 2. The table is pointing to the fact that facilities provision seems to be excellent in areas like air conditioner, electricity supply, air quality within the mall, visual comfort, attractiveness of shop space, and shop size with weighted mean 4.6, 4.57, 4.48, 4.48, 4.45, and 4.4 respectively. The weakest three on the list being number of CCTV installed, number of ATM installed and internet facilities with weighted mean 3.9, 3.88, and 3.62 respectively.

From table 2, it can be deduced that users believed that facilities are adequate in quality since the least weighted mean score is 3.62 which is well above the average on a 5-point scale. To distinctively support this, Muhlebach and Alexander (2005) stated the success of a shopping mall is often attributed to ensuring that all systems and facilities are in the best possible state.

4.2 Level of Satisfaction Users Attain from Facilities Provided by the Mall

This section of the study concentrated on determining the level of satisfaction users attain from facilities provided by the Mall. Users' satisfaction with the facilities are assessed by classification into Very Satisfied, Satisfied, Neutral, Dissatisfied and Very Dissatisfied from the occupant's perspective. The level of satisfaction was measured using Relative Satisfaction Index (RSI).

Table 3: Respondent's level of satisfaction with the facilities in the mall

Facilities provided by the mall	Very Satisfied	Satisfied	Neutral	Dis-satisfied	Very dis-satisfied	Mean	RSI	Rank
Air quality within the mall	26(61.9)	15(35.7)	1(2.4)	-	-	4.60	92%	1st
Central AC	25(59.5)	15(35.7)	2(4.8)	-	-	4.55	91%	2nd
Water supply and treatment	23(54.8)	19(45.2)	-	-	-	4.55	91%	3rd
Generator maintenance	20(47.6)	22(52.4)	2(4.8)	-	-	4.48	89.6%	4th
Cleaning services	20(47.6)	22(52.4)	-	-	-	4.48	89.6%	5th
Waste disposal	20(47.6)	21(50.0)	1(2.4)	-	-	4.45	89%	6th

system								
Electricity supply and installation	18(42.9)	24(57.1)	-	-	-	4.43	88.6%	7th
Maintenance of common areas	19(45.2)	22(52.4)	1(2.4)	-	-	4.43	88.6%	8th
Maintenance of interior spaces	21(50.0)	19(45.2)	1(2.4)	1(2.4)	-	4.43	88.6%	9th
General maintenance mechanism	22(52.4)	17(40.5)	2(4.8)	1(2.4)	-	4.43	88.6%	10th
Maintenance of available facilities	16(38.1)	26(61.9)	-	-	-	4.38	87.6%	11th
Maintenance of exterior spaces	17(40.5)	23(54.8)	2(4.8)	-	-	4.36	87.2%	12th
Security facilities	15(35.7)	26(61.9)	1(2.4)	-	-	4.33	86.6%	13th
Parking space	13(31.0)	26(61.9)	3(7.1)	-	-	4.24	84.8%	14th
Lawn/garden/ flower maintenance	15(35.7)	20(47.6)	7(16.7)	1(2.4)	-	4.19	83.8%	15th
Fire services	12(28.6)	22(52.4)	8(19.0)	-	-	4.10	82%	16th
Internet connectivity	6(14.3)	18(42.9)	15(35.7)	3(7.1)	-	3.64	72.8%	17th

Table 3 assess the satisfaction of the tenants of the mall with the facilities in the mall.

The table analyses the respondent's opinion on their individual rated satisfaction with all the facilities provided in the mall. As shown on the table, the responses of the tenants have been compiled to provide better meaning and interpretation to the research using the Relative Satisfaction Index (RSI).

The tenants' opinion revealed that they are most satisfied by air quality within the mall and the central AC with a RSI of 92% and 91% respectively. These two are the most essential characteristics of a shopping mall as noted by Yuan (1996) and the RSI indicates that the users of the mall are very much satisfied with them. Closely followed by those in the RSI ranking are water supply and treatment, power generator maintenance, cleaning service and waste disposal with a RSI of 90%, 89.6%,89.6% and 89%, all this are basic needs of users and customers of a commercial property.

The last five on the RSI ranking scale are security facilities, parking space, Lawn/garden/flower maintenance, fire services, and internet connectivity with a RSI 86.6%, 84.8%, 83.8%, 82% and 72.8% respectively. Though these items are the last five on the list, the tenants are still relatively satisfied with them as the least index is 72.8%.

It can be implied from the table that tenants derive maximum satisfaction from the various facilities provided by the mall. This is because the basic facilities needed by the users had been provided and are in good working condition. Yuan (1996) forwarded that mall facilities such as HVAC systems, adequate parking space, fire extinguisher, restrooms, escalators, lifts, are essential elements that influence satisfaction of mall tenants. Although lifts and escalators are not provided in Akure Mall because it is on single floor, the provided facilities were perceived to

be very good and satisfactory by the tenants.

4.3 Performance of the Facility Manager

This section focused on evaluating the performance of the facility manager. The facility manager's performance is measured by estimating the Weighted Mean Score (WMS) of the occupants' responses on the classification of the duties performed by the facility manager into Very Good, Good, Neutral, Poor and Very Poor.

Table 4: Respondent's opinion on the performance of the facility manager

Activities carried out by the Facility Manager	Very Good	Good	Neutral	Poor	Very Poor	MEAN	Rank
Clean common areas, change light bulbs and make minor property repairs	22(52.4)	20(47.6)	-	-	-	4.52	1st
Generator running and maintenance	23(54.8)	18(42.9)	1(2.4)	-	-	4.52	2nd
Payment of bills to appropriate agencies such as electricity & waste disposal bills	21(50.0)	21(50.0)	-	-	-	4.50	3rd
Market vacant space to prospective tenants	22(52.4)	18(42.9)	2(4.8)	-	-	4.48	4th
Collection and running of service charge account	20(47.6)	22(52.4)	-	-	-	4.48	5th
Ensure that wastes are timely and properly disposed	22(52.4)	18(42.9)	1(2.4)	1(2.4)	-	4.45	6th
Purchase building and sanitary supplies	18(42.9)	24(57.1)	-	-	-	4.43	7th
Coordinate the activities of staffs and contract personnel	17(40.5)	25(59.5)	-	-	-	4.40	8th
Manage and oversee operations, maintenance, administration and improvement	17(40.5)	24(57.1)	1(2.4)	-	-	4.38	9th
Investigate complaints, disturbances, violations and resolve problems	15(35.7)	26(61.9)	1(2.4)			4.33	10th
Inspect grounds and facilities routinely to determine necessity or maintenance	13(31.0)	29(69.0)	1(2.4)	-	-	4.31	11th
Plan, schedule and coordinate general maintenance and repairs	15(35.7)	25(59.5)	2(4.8)	-	-	4.31	12th
Parking management	14(33.3)	24(57.1)	4(9.5)	-	-	4.24	13th
Manage foot traffic for better pedestrian flow	15(35.7)	19(45.2)	8(19.0)	-	-	4.17	14th
Maintain contact with fire & police dept. and other agencies to ensure protection	12(28.6)	24(57.1)	6(14.3)	-	-	4.14	15th
Prepare detailed budgets and financial reports on service	12(28.6)	24(57.1)	6(14.3)	-	-	4.14	16th

charge account							
Resolve legal and environmental issues or disputes between neighbours	12(28.6)	22(52.4)	8(19.0)	-	-	4.10	17th

Table 4 assessed the respondents' opinion on the performance on the facility management team of the mall. The table highlighted the comprehensive list of the duties of every facility management team and ranks the list according to the opinion of the tenants on their performance.

Top on the list is cleaning of common areas and generator running and maintenance with weighted mean score of 4.52 each. These are closely followed by payment of bills, market vacant space, collection and running of service charge account with weighted mean 4.50, 4.48 and 4.48 respectively. The last two duties ranked on the list are 'preparing detailed financial reports on the service charge account' and 'resolve legal and environmental disputes between neighbours' with weighted mean 4.14 and 4.10 respectively which is still a high score on a scale of 5.

This implies that the facility management team to the tenants' opinion are performing their duties efficiently and effectively. As noted by Ismail et al. (2013), to efficiently maintain a successful day to day operation of any shopping mall, the management team must be effective, sensitive to tenants and their needs as well as take swift and informed decisions.

5.0 Conclusion

This study assessed the satisfaction of users with the facilities provided in Akure mall with a view to establish the underlying needs of mall users in order to improve their level of satisfaction. It identified the various facilities provided in malls and evaluated tenant's perception of the facilities as well as assess their satisfaction with the facilities. The result of this study shows that adequate facilities are provided in Akure mall, users are satisfied with these facilities and that the performance of the facility management team is excellent. From the result we can deduce that the facilities in the mall are adequately provided and managed. Therefore, it is unarguably vital to recommend that measures should be put in place so as to make the present performance of the mall a baseline for future performance.

As identified by Yuan (1996) escalators and elevators, are important facilities of a shopping mall. The Akure Mall should have been a multi-floor mall, so elevators and escalators could be provided as this will attract more people (i.e. potential clients of mall tenants) to the mall and thereby increase satisfaction of the retail tenants of the mall. Mall users feels that the CCTV installed within the mall are inadequate, hence it is recommended that more CCTV should be installed within and around the mall and these devices should be located at strategic positions to ensure maximum security within the mall and ensure optimum effectiveness of the devices in case of theft or a security breach. It was also perceived that the internet connectivity within the mall is very poor, and this greatly dissatisfies the users of the mall. It is therefore recommended that the mall management should liaise with telecommunication companies and other internet service provides so as to

concoct a way to improve the internet service within and around the mall.

Morgan and Walker (1988) established that quality of management is one of the most important factors which can affect the success or failure of a shopping mall. Laxity and slackness should not be permitted from the facility management team. Innovative ideas from individual stakeholders such as owners, tenants, managers and customers of the mall should be welcomed. The facility manager should also ensure that all tenants receives a detailed report on the service charge account, so they can get feed-back on the expenses which was financed from the service charge account.

From the study, the Akure Mall from users' perspective is sound facility wise but as compared to other malls like the Apo Mall, Abuja, Ikeja City Mall, Ibadan Mall, it lacks in some significant areas such as acoustic comfort, multiple entry and exit gate, parking space, park time payment, parking arrangement, disable bays, lost and found. Necessary improvements should be made as regards to these facilities and services so as to move Akure Mall up to global standard.

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Urban Growth Issues and Environmental Sustainability in Nigeria

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Abstract: The spontaneous nature of urban growth accompanied by diverse socio-economic, cultural and environmental issues has constituted serious challenge to urban growth and environmental sustainability in Nigeria. The overall aim of this study is to examine the issues of urban growth and environmental sustainability in Nigeria. Causes and consequences and environmental degradation in Nigeria was examined. The target population of the study are the senior members of staff at the Lagos State Environmental Protection Agency in Lagos state. Interview was conducted amongst 4 senior cadre staff of the agency, and it was revealed that Non implementation and enforcement of the laws, Obsolete nature of the laws, Inadequate awareness on the availability and existence of some of the laws, Lack of environmental consciousness, Lack of qualified workforce amongst others are issues involved with environmental degradation and sustainable development, while acknowledging the fact that growth in the urban centers is inevitable and considering the current realities of globalization, industrialization and other related growth agents. Based on this premise, this study recommends the use of appropriate policy and strategies that will make sustainable development thrive in other to secure an environment that is adequate and conducive for the well-being of the urban residents in Nigeria.

***Keywords*:** Urban growth, Environmental issues, Sustainability, Globalization.

1.0 Introduction

There have been diverse growth and developmental issues in recent times across the globe. In a Report on "*State of the World Cities*" the United Nations-Habitat (2007) notes that majority of the world's people now live in cities. The rreport further indicates that almost a

billion people already live in slum conditions around the world and that slums are growing dramatically within the world's poorest cities, particularly, in Sub-Sahara Africa and Asia. Ogunleye (2005) buttressed this from his own study that between 2001 and 2002, the world's urban population had increased by nearly one and a half percent of the total population. This urban growth explosion occurred majorly in the East Asia and Pacific region. In Sub -Sahara Africa, which is largely rural - with only 32 percent of the population living in the urban areas, there is a very high urban growth rate of up to four percent.

According to UN, (1995) between 1990 and 1992, Africa and Asia recorded urban growth of 4.9% and 4.2%, respectively, whereas, urban growth rate in Europe and North America in this period was only 0.7% and 1.0%, respectively. From this report, United Nations projected that 61% of the world population will be urban by 2030 and over half the population in Africa will be urban by 2020 (UN, 2004; Ajala, 2005; Orimogunje et, al, 2009: 53). This phenomenal growth anticipated for the cities has been attributed to the incidence of globalization, industrialization and population explosion (Jiboye, 2005; Osasona et al, 2007).

Increasing population explosions, massive rural-urban migration and urbanization process in the developing countries, global economic integration, increased international trade, capital flows, telecommunication, new waves of technologies, and shifts in the comparative advantage of production continue to play a central role in integrating major urban centers and shaping the spatial organization of the cities (Jiboye, 2005). In this case, most African countries need to be proactive about this in their urban centres but with the rapid rate of uncontrolled and unplanned urbanization, this has brought about severe environmental problems such as pollution, congestion, squalor, homelessness and a generally poor and degrading situation.

Nigeria, with a current population figure above 180 million people - the highest in Sub-Saharan Africa, is also experiencing rapid urbanization (Ajanlekoko, 2001; NPC, 2006). The country has one of the highest urban growth rates in the world, with its cities ranking among the fastest growing in the world. Growing at the rate of around 5.5 percent annually from 1980 to 1993, and more recently, has increased to the rate of 5.8 percent which has resulted in a total urban population of 62.66 million people (or, 43 percent of the national population). By projection, this proportion is expected to increase to more than 60 percent by 2025 (UN, 2007). In as much as one will canvass for economic growth in one's nation, the government should be prepared and plan to absorb the challenges as well. However, it has been established that the degrading condition of the cities' environment in most developing nations affects both economic and national development (Ogunleye, 2005).

In reality, most Nigerian cities have not been able to resolve the problems of urban growth and development. Rather than improving, the urban areas, they continue to experience a more pathetic situation in their physical and environmental conditions Jiboye, (2009). Indeed, going by a UN-Habitat (2006) report, housing related infrastructure has not been given much priority in most developing countries

until quite recently. This developmental challenge thus calls for a reappraisal by all concerned stakeholders. The study aims to identify and evaluate the growth issues in Nigeria by examining the issues of urban growth; causes and consequences of environmental degradation in Nigeria.

2.0 Literature Review

2.1 Urban Growth Issues in Nigeria

City centres such as Lagos, Kano, Ibadan, Cairo, Johannesburg and Addis Ababa, have grown to become large metropolitan urban areas , this means that urbanisation has been on in Africa too. In Nigeria, available report shows that urban population has been growing at an alarming rate of about 47 percent as at 2003 (UN, 2004; Ajala, 2005). Unfortunately, cities in African countries grow without incorporating element of physical planning. Adediran, (2007) opined that Nigeria did not have regulatory standard to guide planning of building and development. Jiboye (2005) made it known that the forces of urbanization and industrialization have brought about changes in production activities, thus resulting in explosive demographic changes with growth rates ranging between 6% and 12% per annum.

Various theories have been used to explain the spread of urban areas. The three major theories are: Concentric Growth Zone Hypothesis (Burgess, 1925) theorized that there are five concentric zones in a city, which were determined by the spatial competition. They include: Central Business District (CBD); the transition zone consisting of residential buildings with business and light manufacturing; working class zone where labourers in nearby factories reside; high income residential zone (residential districts); and the commuters zone which is the outlying suburban areas. Sector Theory (Hoyt, 1939) is a critique of the concentric hypothesis. Hoyt proposed that spatial competition is not the only source of the city's growth; other factors like prestigious location, social kinship and affinity also play important roles. Thus the cities grow in sectors rather than in concentric zones. Multiple nuclei theory was advanced by Harriss and Ullman (1945). It urges that there are distinctive districts where activities are concentrated. While the concentric zone hypothesis proposed that cities grow in zones from the centre outwards, the multiple nuclei theory proposes that these are not necessarily zones, but that similar activities are grouped together in certain districts. However, urban centres do not follow a particular growth theory.

The effect of oil boom in Nigeria in the 70's spurred rapid growth and urbanisation in major cities in the country. Metz (1991) in his study indicated that Nigeria became increasingly urbanised and urban-oriented society after the discovery of oil. This has also led to the urban sprawl; people move from rural areas to urban centres because of the availability of infrastructural facilities in the urban area.

Lagos, Ibadan, Port Harcourt and Calabar grew very rapidly as commercial and administrative centers in Nigeria. However, a dominant urban feature common to them is the degrading state of the physical environment. Lack of well planned growth pattern that comes with urbanisation process is likely one of the factors responsible for the diverse environmental problems in these cities (Jiboye, 2005). There will be too much

pressure on the urban facilities and services like housing, education, public health and a generally decent living environment. Considering the need for sustainable development and the challenges posed by the diverse environmental problems associated with urbanization process in Nigeria, urgent effort is required to control the rate at which urban population and the spread of cities increases; effort is also required to control the decline in the quality of urban infrastructure as well as that of overall standard of living of the people in Nigeria.

2.2 Environmental Degradation: Causes and Consequences

The interaction between human and the environment propelled different types of human related activities and if not properly managed could translate into environmental problems. Omisore and Akande (2003) opined that the fall in the condition and integrity of the environment arising from the mismanagement of human and the environment results in "environmental degradation". It can be inferred from this that the overexploitation of the available resources in the environment could resort to environmental degradation.

This could be as a result of different factors including rapid urbanization due to overpopulation, accelerated industrialization, unplanned and uncoordinated physical development resulting from poor urban management and ineffective control policies, insufficient urban infrastructure such as housing and efficient transportation system to cater for the population upsurge. A World Bank report (1995) also buttressed this by indicating that technological advancement and economic development are factors which also cause environmental degradation. The effects of this environmental problem exist in different forms such as drought, desertification, deforestation, flood and erosion, pollution, housing congestion leading to slums and unsanitary situation, loss of bio-diversity and all forms of deplorable physical conditions. The resultant effect of these problems has adverse socio-economic, cultural and environmental consequences on the wellbeing of the people and the physical development of any nation (Jiboye, 2003). Omisore and Akande (2003), from their own study, affirmed that environmental degradation also has effect of human health, welfare as well as the overall quality of a community environment.

At the urban level, environmental problems affect the urban poor disproportionately because of poor quality and overcrowded housing and the inadequacies in the provision of water, sanitation, drainage, health care and garbage collection. The urban poor also often live in environmentally unsafe areas, such as polluted sites near solid waste dumps, open drains and sewers, and near industrial sites (see plates 1-3). Though the impacts of climate change on the urban poor have not been fully studied, this is emerging as an area of increasing concern as they may further exacerbate the risks of negative environmental effects for the urban poor through sea level rise, warming temperatures, uncertain effects on ecosystems, and increased variability and volatility in weather patterns (Baker, 2008).

Plate 1: A typical urban slum situation in Ajegunle Lagos, Nigeria.

Plate 2: An unsightly drainage channel used as refuse dumps in the core of Ibadan, Nigeria. (Source: Laurent Fourchard)

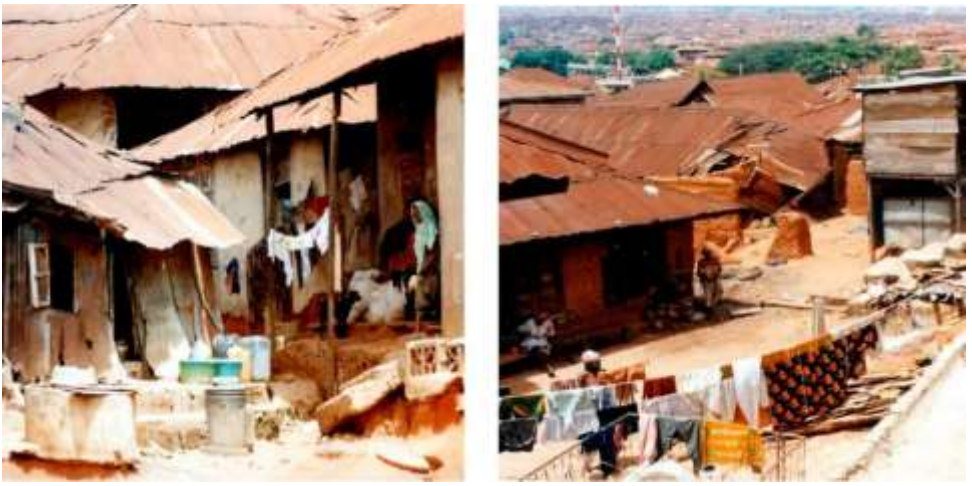

Plate 3: A chaotic urban housing situation in Ibadan, Nigeria
(Source: Laurent Four chard)

2.4 Sustainable Development and Environmental Sustainability

"Sustainable Development" is a concept that has been in existence even before the turn of the century. It came into general usage following publication of the 1987 report of the Brundtland Commission — formally, World Commission on Environment and Development. It is a socio-ecological process characterized by the fulfillment of human needs while maintaining the quality of the natural environment indefinitely. According to Jiboye, (2009) the commission which was set up by the United Nations General Assembly defined sustainable development as "development that meets the needs of the present generation without compromising future generations to meet their own needs".

Since then, several other definitions have been advanced to explain the concept of sustainable development. The National Affordable Housing Agency of Britain (NAHA,2006) defined it as a means of ensuring a better quality life for everyone, now and for generations to come. It is the process of building our communities so that we can live comfortably without consuming all of our resources. This implies, living in a sustainable way by conserving more of the things we all need to share - this is not just about consuming resources, but includes changing our culture to make conservation a way of life (Mediawiki, 2008).

Environmental sustainability consists of both natural and built environments; in which case, the natural environment serves the purpose of supporting human life and activities, while the built environment provides shelter and security for various human activities and also facilitates the activities - especially in towns and cities (Folarin, 2003).

Issue of sustainable development has been the main theme of deliberations in many Conferences and Summits such as 1992 Rio-de-Janeiro's Conference, 1996 Istanbul Habitat II Summit, 2000, New York MDG Summit and 2002 World Summit in Johannesburg, and several others. The issue of environmental

sustainability and sustainable development became part of major global discussions for the first time in1992, during the United Nations' Rio-de Janeiro Conference on Environment and Development (Olanrewaju, 2003). Also, the 1996 Habitat II in Istanbul brought to the fore the issue of sustainable human settlement and adequate shelter for all (UN-Habitat, 2007). It was at the 2002 World Summit in Johannesburg that member nations further reaffirmed their commitment to the principles and programmes of the Rio conference on sustainable development (Jiboye and Omoniyi, 2010).

The United Nations Millennium Development Goals Summit in September 2000 at New York saw the need for sustainable development and the commitment governments need to address key development issues and sets broad goals in order to eradicate poverty by the year 2015. Since the Rio Earth Summit in 1992, sustainable development has emerged as a new paradigm of development, integrating economic growth, social development and environmental protection as interdependent and mutually supportive elements of long-term development. Sustainable development thus emphasizes a participatory, multi-stakeholder approach to policy making and implementation, mobilizing public and private resources for development and making use of the knowledge, skills and energy of all social groups concerned with the future of the planet and its people (Desai, 2002).

2.5 The Need for Sustainable Urban Environment in Nigeria

While urban growth is rapidly increasing in some places, the urban size is becoming more enlarged and astonishing in many other parts of the developing world. Between 1950 and 1990, there was a fivefold increase to 1.5 billion in the number of urban residents in developing countries; about 37 percent of the population of the Third World Countries (TWC) now lives in cities. This implies that the world as at today is now a global village and it has effect on every person directly or indirectly. The United Nations has projected a further tripling of the total to 4.4 billion by 2025, during which it is expected that nearly two-thirds of the citizens of the developing world will live in cities. In the aggregate, cities in the developing world are growing by an estimated 160,000 persons per day. The number of cities with at least 1 million inhabitants has gone from 31 in 1950 to 180 in the early 1990s and is expected to rise to more than 300 by the end of the century (Gizewski and Homas-Dixon, 1995).

The effect of this phenomenal growth is that a host of intractable problems often accompanies it. A United Nation's Millennium (2005) project report indicated that about 900 million people are estimated to live in slum-like conditions characterized by insecure tenure, inadequate housing, and a lack of access to water or sanitation. The report also indicated that the highest share of slum dwellers is in Sub-Saharan Africa and South Asia, and this accounted for more than 70 percent of the urban population in many cities. Both West and East Asia (excluding China) have registered a rise in the number of slum dwellers since 1990, but a slight decline in the proportion. The same phenomenon is occurring in landlocked developing countries, small island developing states, and L*east Developed Countries (LDC).*

Furthermore, the report revealed that all developing regions have experienced substantial environmental degradation over the past decades, which could very well worsen as a result of long-term, man-made global climate change. Many countries are adversely affected because their natural resource base - specifically the forests, fisheries, soil, and water that survival and livelihoods depend on are progressively degraded and subject to rising levels of pollution. Each year, roughly 15 million hectares of forest are cleared in developing countries, resulting in increases in vector-borne diseases, declines in the quantity and quality of water, increased flooding, landslides, and local climate changes. The report concluded that lack of good data and indicators on the environment hides the extent to which most developing regions have suffered extensive environmental degradation over the past decades and are not on track to achieving environmental sustainability (UNDP, 2005).

In Nigeria, the problems of slum formations and urban degeneration are common occurrence in major cities - particularly, in Lagos and Ibadan which are probably among the largest cities in the country (See Plates 1-3). Over the years, these problems have constituted major challenges to sustainable urban development. Official response to the situation through urban renewal, slum upgrading and outright clearance has not achieved any success in stimulating any form of sustainability. For instance, the effect of Maroko slum clearance in Lagos in the early 1990s has led to several untold hardships and consequent homelessness experienced by most of the affected victims (Jiboye and Ogunsakin, (1997) ; Abiodun, 1997). In view of these numerous challenges of urban growth, the need thus arises for a radical approach, using appropriate policy options towards sustainability of the urban environment in Nigeria.

3.0 Methodology

The Federal Environmental Protection Agency (FEPA) in Nigeria has been saddled with the responsibility of monitoring, analysing and giving report on the environment as necessary. This body was formulated prior to the dumping of toxic waste in Koko Village, in Delta State through decree 58 of 1988 and 5a (amended) of 1992. A law was promulgated following this attack and this necessitated the establishment of this agency. Federal government promulgated the Harmful Waste Decree 42 of 1988. Federal Environmental Protection Agency are to enforce the environmental law, establish environmental plan, education and guidance, proffer strategic environmental assessment, oversee the waste management system. With this, the institutional arrangement or mechanism for environmental protection will be in place.

In order to ascertain the issues and causes involved in environmental degradation interview was conducted amongst the staff of Lagos State Environmental Protection Agency (LASEPA) in Lagos Island office, Nigeria. From the interview conducted it was revealed that ggenerally, our people like to abuse the law, by not respecting other people's right when it come to issues in general and the environment is not an exception in this area on the attitude of the populace on non compliance and enforcement of the law. It was further stated that the problems associated with non-compliance and enforcement of environmental laws are as follows;

a. Non implementation and enforcement of the laws
b. Obsolete nature of the laws re quiring major reviews.
c. Inadequate awareness on the availability and existence of some of the laws
d. Lack of environmental consciousness
e. Lack of qualified workforce
f. Corruption among the top hierarchy
g. Misappropriation of Ecological fund
h. Lack of Government interest /inadequacy
i. Lack of database
j. Poor funding of activities and operations
k. Economic considerations
l. Lack of maintenance culture and facilities
m. Use of internal environmental audits
n. Dearth of environmental pressure groups
o. Weak enforcement of existing laws and regulations
p. Lack of environmental know how and technology
q. Lack of or inadequate state of the art in-situ instruments for rapid detection of the banned goods and products.

In view of this, all mentioned above are in no small measures affect implementation of environmental policies, programmes and regulations especially African countries which tend to slow the pace of awareness campaign to protect and sustain our environment.

The general cliché that ignorance of the law is not an excuse for non-compliance of the environmental regulation in the world over and the presence of blatant contravention of environmental laws in Nigeria and other third world countries cannot be over emphasized.

4.0 Suggested Wayout for Environmental Sustainability

Development under the contemporary paradigm refers to a qualitative improvement in the standard of living of human beings rather than a quantitative increase in the economic indices; it is measured in terms relative to the individual's access to economic, social and environmental factors which are necessary to improve his standard of living. Sustainable development thus espouses the intrinsic link between socioeconomic, cultural and environmental development as well as the right of the individual to improved living condition in any given society or nation. For instance, a socially, economically or an environmentally sustainable system should achieve distributional equity; provide adequate social services including health, education, housing as well as functional and livable environment among many others (Jiboye, 2009). Nevertheless, the ultimate challenge of sustainable development strategies is how to integrate all aspects of development - particularly within the socio-economic and environmental framework towards achieving "sustainability".

The need to achieve sustainability of the cities' urban environment is central to the achievement of a virile and sustainable nation. Existing urban realities have shown that a lot of work needs to be done if Nigeria is to achieve any sustainable development. However, it has been argued that commitment to sustainable development both for the present and future generations will be meaningless if collaborative approach is not employed (Oyeshola et, al, 2009).

Poverty is a major threat to urban growth and development in Nigeria. It can jeopardize the political stability, social cohesion and environmental balance of our cities, and until it is tackled decisively, sustainable development will remain a mirage (Olanrewaju, 2003). The need to ensure sustainability in our cities is imperative and this depends largely on the application of the principle of sustainable development advocated by the Commission on Environment and Development - whereby, developmental efforts should not only concentrate on solving present problems but also consider future challenges and needs. As part of its efforts, the United Nations Centre for Human Settlements (UNCHS) while responding to the complex environmental problems facing the nations also launched the Sustainable Cities Programmes which aimed at providing municipal planning and management capacity (Monghtin, 2003). So far, the impact of such programmes on most cities in the developing nations - particularly in Nigeria is yet to be realized.

5.0 Recommendation

To achieve sustainable growth requires that all stakeholders have to be actively mobilized towards ensuring that the following strategies; some of which have been outlined in the UN Millennium Project (2005), are realizable.

1. For effective governance in cities, most especially in a developing country like Nigeria, there is need to foster a collaborative partnership between local authorities and communities with the support of the national government. Local Authorities are the city planners, financiers, and providers of infrastructure services. Their performance depends on good governance at city level—involving civil society, including communities living in informal settlements, and working with the urban poor as partners in making cities work, not seeing them as obstacles, as is too often the case today.
2. Government on its part should ensure that adequate funds are disposed for shelter provision for the vulnerable group of the urban population. Housing finance policies should integrate the lower-income group by providing easy access to long-term housing loans with sustainable interest. Disbursement of such loans should be done through recognized Cooperative Unions or community groups in other to encourage self-help housing delivery.
3. Existing policies relating to housing and urban development should be reviewed and reinvigorated. It should be people oriented in other to minimize all possible restrictions on security of tenure, access to land and cost of construction materials. Efficient land market and sustainable land policies are indispensable; therefore, existing land-use decree should be changed to facilitate easy access to land, while the urban and regional planning laws of the country should also be reviewed to allow for effective slum upgrading and urban renewal.
4. Urban renewal scheme should embrace a participatory approach when considering such as the only possible option to slum clearance and rehabilitation. In this regard, the stakeholders should be involved

in decision and implementation processes. The involvement of community groups' leaders is very essential in this regard. Community organizations can provide a voice for the urban poor and ensure that their interests are met in slum upgrading and urban planning. Federations of slum dwellers have access to unique information on informal settlements—information central to successful upgrading. They should be involved as equal partners from the beginning of the planning processes.

5. Lastly, the improvement of rural communities should be integrated into the developmental process. This will help in stemming the rate of rural-urban migration as well as reducing the level of rural poverty. Above all, there is the need for government and its agencies to imbibe the right political will and commitment while formulating and implementing its programmes. Essentially, planning strategy for housing, infrastructural provision and urban management must make the people its focus. To complement the upgrading of individual informal settlements, citywide infrastructure and services need to be extended and upgraded. In addition, effective regulation of industrial water and air pollution must complement an urban development strategy to ensure a safe urban environment. Solid waste disposal using well designed landfills and, in some cases, wastewater and sewage treatment also need to be provided.

6.0 Conclusion

This paper notes that the features and occurrence of globalization, industrialization and population explosion are key factors responsible for spontaneous urban growth rate in major cities of the developing nations. The implications of such growth are degrading environment, congestion, homelessness, slum formation, and poor living conditions among most poor urban residents. The city has been identified as the engine of growth to propel national economic development (Akhmat & Bochum, 2010); however, such growth within the context of urbanization should be guided towards improving the environment rather than harming it (Newman, 2002; Jiboye, 2009).

This growth according to the concept of "sustainable development" must be sustainable in order to take care of the present needs without compromising the ability of future generation to meet its own needs. To achieve this requires collaborative efforts by all those concerned with development. Thus, a participatory, multi-stakeholders' approach to policy-making and implementation is required in this regard (Desai, 2002).

Government on its own part should take a holistic approach by embracing and incorporating the development of rural communities into the sustainable plan agenda in order to reduce the rate of rural- urban migration as well as the poverty and inequality bedeviling the nations socially, culturally, and economically. These strategies if put in place, will inevitably stimulate sustainable growth and secure a qualitative environment that is conducive for the well-being of all.

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Standardization of Plant and Equipment in a Developing Country; Techno-Economic Considerations

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Abstract: Standardization is critical in the promotion of "uniformity, consistency, reliability, public trust and international acceptability in valuation reports. Globalization has linked the world economy more closely than ever before as financial crisis in one country may likely have a ripple effect on other countries. In this regard each country must align its valuation standards with global expectations particularly in the valuation of plant and equipment. This paper is aimed at evaluating the extent of compliance to valuation process amongst Nigerian Estate Valuers with respect to plant and equipment valuation with a view to enhancing uniformity and reliability. A content analysis of valuation reports from randomly selected 26 firms in Lagos was carried out. The reports were evaluated to verify if they are in sync with acceptable valuation process and standards. Findings from the study showed that most of the reports are scanty in content with respect to machine capacity, serial and model number, make of machine, type of defect, basis and method of valuation among others. The paper recommended a more intensive training of valuers and an urgent need for specialization and production of a comprehensive valuation standard and manual to address these shortcomings.
Keywords: Equipment, Guidelines, Manual, Plant, Standardization, Valuation

1.0 Introduction

Plant and machinery valuation is a generic specialization within the valuation discipline, just as we have specialization in Medicine, Law and Engineering among others. As a specialization, valuation of plant and machinery existed within the general valuation principles, practice and methodology. Like any other assets, the

value of plant and machinery revolves on the characteristics or attributes of individual plant and machinery on the one hand, and the totality of the valuation environment within which it is engaged- the interacting variable forces of technical/physical (volume, capacity, model, speed, machine attributes productivity/output), economic (production efficiency, utility, marketability), legal (ownership structure, limiting condition), institutional and the production system in which the plant and machinery is engaged (Ifediora 2009, Otegbulu and Babawale 2011).

Although valuation of plant and machinery has existed within the general appraisal practice since about the 16th century, it has not received appropriate attention in appraisal as real estate in spite of its pervasive influence on the economy and the standard of living of the people.

However, the increased volume of plant and machinery due to industrialization, rapid economic changes, quickening pace of globalization of investments and unprecedented advances and development in new technology have greatly improved the place of plant and machinery as object of valuation for almost all purposes. The valuation profession is likely to face a period of significant change in coming years, in terms of how the valuation process is managed, the role of the valuer as well as the added value to clients (RICS, 2017).

Today various valuation bodies have specialties or faculties in plant and machinery. Thus the Royal Institution of Chartered Surveyors (RICS) has created within its professional practices, specialization or faculties of plant and machinery. Also the American Society of Appraisers (ASA) has machinery and Technical Specialties (MTS) as part of her professional examination syllabus (ASA 2000) cited in (Otegbulu and Babawale, 2011). The Nigerian Institution of Estate Surveyors and Valuers also has created a faculty of plant and machinery.

The growing need for plant and equipment valuation calls for its standardization in line with global best practices. It has become a constant feature in companies annual financial reporting and reported under the non-current asset section by accountants relying on valuation reports from professional Estate Valuers. In addition to this, the valuation of plant and machinery is also required for other purposes like secured lending, insurance, taxation, merger and takeover bid etc. The application of 2005 international financial reporting standards (IFRS) has a subsequent impact on the financial sector as a whole. The accountants have to choose between the historical cost and market value approach in the determination of the value of clients' assets (Nasir 2013). In Nigeria, as in most other countries, the implementation of IFRS has an overwhelming effect on the financial system especially for plant and machinery valuation for financial reporting.

Section 16 of IAS recognized the role of valuers in the valuation of asset and the IVS provides guidelines for their valuation (plant and machinery inclusive). All these are meant to standardize valuation reporting in line with international best practices. However, the major challenge is that most valuers are not aware of these standards and when they are aware are not familiar with its provisions. In

addition to this, most countries have not been able to domesticate these standards for local consumption. In Nigeria, domestication of the IVS has been on piece meal basis, until recently when an extensive Nigerian valuation standard is being developed by the Estate Surveyors and Valuers Board of Nigeria. The lack of enforceable valuation standards specific to Nigerian property markets has resulted in subjective practices in valuation. The worst affected is plant and machinery valuation due to a deep technical and economic knowledge required in compliance with international best practices. Unavailability of information data bases have contributed to wide variability in the performance of local valuers. According to Isaac and Steley (2000), valuation is regarded as a matter of opinion subjective to an individual's assessment of different factors. To address this, valuation standards at national and international levels will play important roles in the promotion of ethics, integrity and impartiality amongst valuers (Hemphill, Lim, Adair, Crosby and Mcgreal 2014) cited in (Narayan, Biwas and Sahib 2017). For the avoidance of doubt, standardization will help in minimizing bias, and bring uniformity in asset valuation in line with global best practices. According to Pearce (2007), valuation standards should address four key requirements:

- Set out the principles of governing the guidelines and the approach to valuation. For instance, the standard should lay out the correct treatment of valuation within the company's balance sheet
- Cover ethical considerations – that is they should define the best practice, dealing with such matters as conflict of interest in terms of engagements
- Cover technical considerations, including for instance, points on the valuation of plant and machinery and the calculation of provisions for depreciations
- Ensure that the mechanism for proposing, formulating and modifying standards are responsive to pressures and requirements.

Standardization is a global trend and nations must respond to it with respect to valuation practice if they must remain relevant and connected to the global market and economy. Globalization has linked the world's economies more closely than ever before as the financial crisis in Thailand dragged down stock exchange in South-Korea, Malaysia and Indonesia, contributed to the Russian government defaulting on roble-backed bonds and almost halted the longest period of growth in American history (Berger, Nast and Rauback 2002). In recent times there have been complaints from valuation clients like the banks, security and exchange commission, Asset Management Company of Nigeria (AMCON) on the inconsistency and unreliability of valuation reports. These inconsistencies will no doubt lead to valuation errors of variance and inaccuracy. This calls for the need for the entire property industry to speak with one voice. This study is therefore aimed at evaluating the extent of compliance to valuation process with respect to plant and equipment valuation with a view to enhancing uniformity and reliability.

The valuation process is a systematic procedure used by appraisers (valuers) to provide answers to clients question about value and value related issues. It begins when the appraiser understands and identifies the appraisal problem at hand and concludes when the appraisal report provides or reports the solution to the client. The number and manner of steps taken to resolve the problem depends on the nature of the valuation engagement and data availability. The goal of the valuation process is to produce a well supported value opinion which shows that the valuer has considered all material factors that affect the value of the asset being appraised (American Society of Appraisal (ASA, 2011; Ekeocha, 2012)

Studies such as Gambo (2014) evaluated the response of Nigerian Valuers to international valuation standards application; how far the journey? Babawale (2012); An Assessment of the current standard of real estate valuation practice in Nigeria; Dugeri, Gambo, and Ajayi (2012); Internalising International Valuation Standards: Relevance and Applicability issues in the Nigeria Context had looked at different issues on valuation standards, not in relation to plant and machinery but land and buildings. Therefore, this paper will be the first study on valuation standards for plant and equipment in Nigeria.

2.0 Review of Related Literature

2.1 Importance of Valuation Standard

Valuation standard have a significant role to play in helping to regulate professional practice, at national, regional or global levels, promote professional ethics, integrity, impartiality and trust in valuation reports (RICS 2014). Absence of standards will introduce chaos and anarchy in valuation practice by making valuation subjective to individual valuers. Many professional bodies and government agencies are under pressure to regulate the valuation profession vide reviewing of regulatory environment, valuers training and compliance with standards. In some developing countries, many government agencies are yet to come to terms with the need for them to use the services of trained and regulated professional valuers. RICS (2014) further indicated that at the international level, the international valuation standards council (IVSC) have become the recognized body that produces the international valuation standards (IVS). The IVSC also encourages member countries to domesticate the IVS so as to reflect local peculiarities. In the study on valuation accuracy in Nigeria, Ogunba and Ajayi (1998) noted among others that there is a degree of inadequate understanding and wrong application on methods on the part of some valuers. Valuation standards could help in streamlining this.

2.2 Valuation Variance, Inaccuracy and Standards

The problem of variation in value estimates among valuers lies at the very heart of the set of skills assembled by

the valuers as well as the valuers experience and judgement (Aluko 1998, Ajayi 1998, Baum and Crosby 1998). Valuers inconsistency in the application of valuation models is a potential source of valuation bias. IVS 2017 is very comprehensive and have introduced new dimensions to help the valuer to arrive at a reliable valuation opinion. There is a strong public interest in the integrity of the valuation process. Consistent and transparent standard in valuation are not only the responsibility of the valuation profession, but also that of the government and other stakeholders.

The public who use the valuation services expect valuers to meet fundamental standards and demonstrate independence (Gilbertcon and Preston 2005). This is due to the central role of asset valuation in financial decisions. In most emerging markets and some matured markets, valuation practice has remained inconsistent and suffers lack of transparency. Inaccurate valuation is adverse to healthy development of the property and financial markets. In Nigeria, the standard of valuation practice needs much improvement if the valuation profession is desirous of remaining relevant in the market. The two major errors in valuation is that of inaccuracy and variance. Valuation accuracy deals with the discrepancy between previous independent valuation and the transaction price of the property precisely. Put, it is the ability of a valuation to correctly identify the target (Crosby, Matysiak 2002; Nasir 2006; Otegbulu, 2018), Valuation variance on the other hand, refers to the difference between the valuation produced by different valuers working on the same asset at the same time. It is essentially a theoretical measure used to indicate the reliability of a valuation or the robustness and potential accuracy of the valuation (Bowles, McAllister and Tubert 2001)

Teasing from various sources, Hiironen, Niukanen, Laitala , Olrankammen (2014), identified the followings as factors contributing significantly to inaccuracy in valuation:

- The nature and state of the property market (Millington 1985, Bowles et.al 2001, Dunse et.al 2010
- Quantity and quality of Data (Dunse et.al 2010, French and Gabrelle 2004
- Definition of value (Millington 1985, Baum and Crosby 1988, p 5)
- The integrity of the valuer (Levy and Schuck 1999)
- Complexity of the property (Brethom and Wyatt 2002)
- Valuation methodology (Baum and Crosby 1988, p.20)
- Skill, experience, and judgement of the valuer (Gallimore 1998) and
- Clients influence (Levy and Schuck 1999, Amidu and Aluko 2007)

The need for accurate valuation is based on the fact that valuation is both a guide and a decision making tool. It provides the basis for asset performance measurement and related investment advice. In effect, a well researched and

supported valuation could significantly contribute to the financial well-being of the client. Conversely, a shoddy inaccurate valuation could lead to incalculable financial loss to real estate investors (Renaud 2000 cited Addas-Dappach 2001)

It is important that investors and other parties who rely on the valuation of industrial asset (Plant and Machinery) be confident that the figures produced by plant and machinery valuers shadow the realistic value/price of the asset under consideration in line with the purpose of valuation. By sending wrong signals to the market participants, inaccurate valuation leads to sub-optimal decisions which results in incalculable financial loss to investors and financial institutions. Inaccurate valuation, therefore, jeopardize the future of the property industry (Milington, 1985, Brown, 1991 and Parker 1998, Otegbulu and Babawale 2011).

Valuation standard is essential as a result of growing concerns from auditors, bankers, financial analysts and company directors that a consistent basis of valuation is used to enable valid comparisons to be drawn for the valuation of fixed assets worldwide. The increasing demands from local and international companies, financial institutions and other stakeholders for current valuations, reflecting the importance of asset values in the issue of shares (share floatation), acquisitions, mergers takeovers and for secured lending have been part of the reasons for the formation of IVS (Nasir 2013). Standards have always come up as a panacea for challenges in valuation practice. For instance, the RICS responded to the 1970 property crash in the United Kingdom (UK) by publishing the Red book, that set out standards of valuation and professional conduct expected of valuers, while the federal government in the United State of America (USA) responded to the "savings and Loans" crisis of the late 1980 by insisting on uniform appraisal standards and the licensing of valuers in each state which led to the state certification of all valuers along with adoption in each state of the revised uniform standard of professional practice.

Unfortunately, the lesson learnt from UK and USA were not applied elsewhere including Nigeria when similar problem occurred. To the valuation profession in Nigeria, it is an opportunity for more valuation jobs without providing standards that will give confidence to the valuation process.

3.0 Valuation Practice and Standards

There are various standards in use by Nigeria Valuers. They include; International Financial Standard (IFS) and International Accounting Standards (IAS), RICS Red book, Estate Surveyor and Valuers Registration Board valuation template.

The recent edition of the International valuation Standard IVS (2017) made comprehensive provisions for the valuation of assets of all categories

including plant and equipment. Valuing plant and equipment is different from other types of assets such as real estate and intangibles because the value may be different depending on the premises of particular valuation, liquidation (partial and full) value, orderly liquidation or forced liquidation, going concern, financial reporting, secured lending etc. The valuer has to look at the appropriate standards and guidelines for the particular purpose and premises of valuation. Sec 20.5 of the IVS 2017 states that the valuation of plant and equipment will formally require consideration of a range of factors relating to the asset itself, its environment and physical, functional and economic potential. Examples of such are factors relating to the asset; covering, technical specifications, useful economic life, asset condition and maintenance history, depreciation, premises of value and current location, limited tenure, installation costs etc. Environment related which covers; location in relation to raw material, (including nature of demand e.g. transitory and infinite) impact of environment and legislation that may restrict utilization or imposes additional decommissioning or operating costs, licenses to operate certain machines in some countries may be restricted. Economic related covering the actual or potential profitability of the asset based on comparison of operating costs with earnings, the demand for the product manufactured, the potential of the asset to be put into more valuable use. The provisions of IVS 2017 are very similar to that of 2011 with regards to the valuation of plant and equipment.

Inspite of the provisions of the IVS and other local standards most valuers in Nigeria rarely comply with the provisions in their valuation. Few of the practitioners will indicate in the opening ambit of their report that reliance is made to the provisions of IVS, the redbook, Nigeria Institution of Estate Surveyors (NIESV) guidance notes and Estate Surveyors and Valuers Registration Board of Nigeria (ESVARBON) Valuation template. The only compliance to the mentioned standards in the report is definition of market value. There are no technical details like capacity, model Number, Serial Number, Country of manufacture, existence of special foundation or not, cabling and piping, installation and transportation costs. They rarely relate their valuation process to IFS or IVS or any other standard. The critical area of value measurement with regard to IFS 13 and IAS 16 are ignored. Very few indicated their purpose and basis of valuation. In some cases purpose and basis of valuation are treated as the same. There is no uniformity in the manner or format of valuation reporting. Under the section for condition, the machine is just described as good, fair or poor without any remark on the nature of the defect. There are issues that need to be addressed by the forthcoming ESVARBON Green Book. The green book (valuation standards of Nigeria- forthcomin) shoulgd also address the issue of scrap and salvage value in the valuation of plant and

equipment. The provision of Economic and functional obsolescence which is often ignored by valuers in Nigeria should be addressed.

4.0 Methodology

In order to ascertain fully the valuation pattern of Nigeria valuers in the valuation of plant and equipment, a content analysis of 26 (twenty six) valuation reports on plant and equipment from 26 valuation firms in Lagos Nigeria was carried out. The reports were randomly collected from as many valuers that are ready to respond to the request.

This paper evaluated the level of compliance to international best practices by practicing Estate Valuers in Lagos in the valuation of plant and equipment. This is based on twenty-four items which are of importance in achieving accuracy in plant and equipment valuation, an improper inventory and data collection is fundamental source of error in asset valuation. Some of these items include:

- Purpose, basis and method of valuation
- Micro and macro identification – This deals with machine details like model number, serial number, capacity of plant and machines among others. The paper also reviewed issues like provision of depreciation – physical deterioration, functional obsolescence and economic obsolescence. Lastly, the study examined the application of valuation standards by valuers. These are very critical to the reliability and accuracy of a valuation report.

5.0 Data Presentation

Table 1: Check List for Valuation Report on Plant and Equipment

Valuation Consideration	No of Compliant Firms	Percentage	No of non-Compliant Firm	Percentage
Purpose of Valuation	6	23.00	20	77.00
Basis of Valuation	8	30.76	18	69.23
Method of Valuation	6	23.00	20	77.00
Description of production process	1	3.84	25	96.16
Physical deterioration	5	19.23	20	80.77
Economic obsolescence	-	0.00	26	100.00
Functional obsolescence	-	0.00	26	100.00
Machine Capacity	3	11.54	23	88.46
Cabling	-	0.00	26	100.00
Piping	-	0.00	26	100.00
Special Foundation	-	0.00	26	100.00
Installation and incidental expenses	2	7.69	24	92.31
Maintenance History	-	0.00	26	100.00
Make of Machine	10	38.46	16	61.54
Year of purchase or Installation	7	26.92	19	73.08
Model	8	30.76	18	69.23
Serial Number	6	23.00	20	77.00

Extras	1	3.84	25	96.16
Application of Valuation Standards:				
IVS	4			
RICS Red book	2			
Local Standard	3	34.62	17	65.38
Condition	26	100.00	0	0.00
Nature of Defect	0	0.00	26	100.00

Result from table 1 shows that a high level of non-compliance to Valuation Standard with regards to plant and equipment Valuation.

The level of inconsistency in valuation reporting needs much to be desired. Any investor with a good understanding of valuation reporting will scarcely rely on such valuation reports. They lack most of the attributes that will lead to accurate determination of value. In addition the reports convey little or no information on the plant being valued. Without indicating the capacity and model of a machine, how do you determine the cost new of similar machines. The same applies to the make and country of manufacture. Cabling and piping could be very expensive and from the content analysis they were ignored by most valuers. None of the valuation report examined provided for functional and economic obsolescence. Due to poor understanding of the subject of plant and equipment valuation some valuers ignore inclusion of special foundation which in some cases could be as deep as 6-10 meters of reinforced concrete. Finally only 23% of the reports analyzed indicated the method of valuation used. This is a very serious omission. The valuer must indicate the method of valuation used and demonstrates what level of value measurement he has applied in his valuation.

Model and serial numbers are important for proper identification and valuation of machines. The model number has an effect on the value of the machines. Installation costs could be very expensive and only 7.69% of the reported works included it. The installation cost should be depreciated also.

6.0 Findings

- There's evidence that most of the valuers engaged in machinery/equipment valuation lack the necessary skill and expertise.
- There is wide inconsistency in valuation reporting showing lack of understanding of the valuation process with respect to plant and equipment measurement.
- There is a general lack of adherence to standards. Findings from the reports showed that there are as many standards as individual valuers carrying out valuation.
- Plant and machinery is practiced as an all corners affair due to absence of specialization.

7.0 Recommendation

- There is need for special training and certification for those practicing plant and equipment valuation
- An enforceable valuation manual and standards will be useful in sensitizing the practice as this will enhance consistency, uniformity and reliability of valuation reports.
- Specialisation should be encouraged in the area of plant and equipment

valuation as this will ensure that only those with the proper learning and skills are admitted to practice plant and equipment valuation.

- Regular courses in this area of specialization should be introduced by way for continuing professional development

8.0 Conclusion

In the light of the above, there is need for more training for valuers both in practice and tertiary institution to improve their skill in plant and equipment valuation. Information skill and knowledge is key to valuation accuracy. To minimize inaccuracy, the valuers must adhere to a uniform standard taking into consideration the utility of the asset, and its contribution to the production and services for which it is designed and developed. He should have sufficient knowledge on production process, plant layout and balances in different sections as conditioned by micro economic forces. There is a strong public interest in the integrity of the valuation process, as the public who uses the valuation services expects that valuers should adhere to fundamental standards and demonstrate independence of mind, integrity and objectivity. The training and experience of a valuer are important for the valuer to carry out good and reliable inventory in plant and equipment valuation. Derry (1991) asserts that ensuring that exact content of appraisal is right if properly inventoried is not always given deserved attention and that error in establishing the schedule of assets at this stage can lead to greater inaccuracies than later mistakes in the valuation process. The valuation fraternity must speak with one voice by adhering to the same valuation standards if valuers want to remain relevant. Findings from the content analysis are clear indications that there is urgent need for retraining of valuers, specialization and enforcement of standards.

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