



BUILT ENVIRONMENT PROFESSIONALS' PERCEPTIONS OF SUSTAINABLE URBAN BUILT ENVIRONMENT AND THE WAY FORWARD FOR NIGERIA

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Even before Nigerian gained its independence in 1960, rapid urbanization was a common occurrence and currently, half of Nigeria's 177 million population is in urban dwellings. This urban population is faced with challenges that include lack of basic social amenities and a shortage of houses. The inability to manage urban problems, exacerbated by urbanization, poses a major setback to achieving a sustainable environment. Our study revealed that, although sustainable practices are necessary, there are no institutionalised structures to ensure compliance. The country suffers from a general low level of knowledge about global sustainability. It lacks professional standardization, and faces inadequacies in governance. This study highlights the necessity of major changes.

Keyword: Built environment, Nigeria, Sustainability, Urbanization.

Introduction

The continuous increase of the global population migrating from rural to urban areas seems unstoppable. Tozzi and Horan (2013) also note that in 2006, the urban population surpassed the rural population. Again, it was further observed that, this urbanisation trend started much earlier in the developed countries but today, the urban migration in the developing countries has surpassed that of the developed countries (Tozzi and Horan, 2013; UNDESA, 2012). Nigeria is listed as one of the top ten countries with a fast urban growth and currently 51% of its population are urban dwellers (UNDESA, 2012; Worldometers, 2014). This migration drift has exerted more pressure on the physical growth of the urban areas. As a result there is also a reciprocal demand on the urban infrastructures and services.

In the developing countries, the urbanization trend has made the demand for more housing a topmost priority for many countries. Arif et al., (2009) suggest that, the high population and demand for more housing in the developing countries has made the construction industries of such developing countries to become active. Of particular note also is that, the raw materials required to meet up these housing demand are sourced from the natural environment. Surenran and Sekar (2010) note that, the natural resource is declining in its supply. This is largely to the unbalanced reciprocal activities between the natural and man-made construction activities and processes that are not controlled sustainably.

The housing sector is a major part of the construction industry and this sector is central to the development of any country and constitutes the greater part of the urban built environment (UN-Habitat, 2012). Furthermore, the construction sector and the sustainable practices of the sector's professionals constitute a major factor in addressing the challenges of environmental sustainability (Altomonte, 2008, Allu, 2014a).

Literature Review

This section presents an overview on the key areas of this study's subject area. A review is conducted on; urbanization, climate change, sustainability and the built environment. In order to elaborate the study's underpinning construct. Also, the linkages between these key areas are presented and the possible challenges for the Nigerian context.

Sustainability and Urban Built Environment

The global sustainable Agenda is the ability of all the development strides to meet the needs of the present without compromising the ability of the future generations to also attend and meet developmental needs (WCED, 1987). Also, the blue print of Sustainable Development Agenda 21 was initiated mainly for the following needs:

- **Social and economic dimensions;** in developing countries, poverty, consumption patterns, population, health, human settlements and the integration of environment and development.
- **Conservation and management of resources;** atmosphere, land, forests, deserts, chemical, hazardous radioactive solid wastes and sewages.
- **Strengthening the role of major groups;** women, children and youth, indigenous people, non-governmental organizations, local authorities, workers, business, industries, farmers and technologists.
- **Means of implication;** finance, technology transfer, science, education, capacity building, international institutions, legal measures and information.

The summations of this blue print in regards to this study are; urban population increase, human settlements, environmental development and their implications are the primary concern. However, within the context of the environment Daramola and Ibem (2010) concluded thus;

'Sustainability in this context relates to the ability of the environment to meet the basic requirements for the sustenance of the living and non- living components of the ecological, economic and socio-cultural systems in a manner that does not limit the possibility of meeting the present and future needs of the various components and aspects of the environment.' (Daramola and Ibem, 2010 p.127).

This quotation suggests that, a balanced harmony is required between the natural and man-made environmental features sustainably. While on the context of the built environment, Ebohon et al., (2013) notes that sustainability of the built environment tops the four main operational themes that guide the Sustainable Agenda as enumerated above.

Yet, a study has opined that, in Nigeria, the global sustainable development has not been mainstreamed into the urban built environment and further observed that, the Nigerian urban built environment on-going developments lack control (Lanrewaju, 2012).

Given the important of sustainability of the built environment and the Nigerian context underpins the reasons to engage on this inductive in-depth inquiry on the perceptions of the built environment professionals. Views expressed from this investigation would therefore, inform recommendations and suggest areas for future studies.

Urbanization

The urban built environment came to due to urbanization as result of migration from the rural areas to the urban centres. The migration trend is mainly for the reasons for better life and alternative source of livelihood. This has been observed in an earlier study carried out by Mosha (2013) observed that,

urbanization is prompted by socio-economic and environmental problems globally. Similarly, other research notes that, in the Nigerian context, the reasons for urbanization includes; climate change related problems, land conflict, poverty, illiteracy, and loss of biodiversity (Adebayo and Jegede, 2010; Oloyede, 2010; Mosha, 2011). Furthermore, it has been observed that, the Nigerian urban centres are characterised by; lack of public satisfaction, corruption, lack of effective government interventions on urban development, acute shortage of housing and more importantly non-compliance to buildings standard (Ademuliyi, 2010; Oloyede, 2010; Lanrewaju 2012; Osuocha and Njoku, 2012).

Controlling this continuous migration trend is no longer the main problem but improving the quality of life the urban centres offer, in order to meet the expectations of migrants (Arigbigbola, 2011). Allen (2009) agrees with Arigbigbola's argument, however, he went further to opined that; "*Rapid urbanisation is arguably the most complex and important socio-economic phenomenon of the 20th and 21st centuries*". Allen also observed that, "*It is therefore somehow surprising that, within the international debate, it is only recently that cities and the urbanisation process started to be looked at through a 'sustainability' lens*" (Allen, 2009 pp.1).

From the preceding paragraph, it is noted that, although the urbanization trend seems unstoppable, the concern for this movement is not to discourage it but to make it meaningful and worthwhile to the migrants **sustainably**.

Meanwhile the urban centres in Nigeria and by implication the built environment continue to grow. This growth rose from 5.8% in 2004 to 43% in 2010 to the present 51% (Lanrewaju, 2012, Osuocha and Njoku 2012). However, this urban growth is not reciprocated by sustainable economic growth and urban infrastructural sustainability. In addition to the challenges of climate change being experienced globally. These negative developments are also common to other African countries (Daramola and Ibem, 2010).

In view of this development, an African regional initiative was formulated through the New Partnerships for African Development (NEPAD) in order to address the urbanization related problems in some selected African cities. Not much has been achieved, probably due to the large scale approach of the initiative. It is on this premise that, this study adopts a sector based approach to attempt to unveil the challenges posed and the way forward for the urban built environment in Nigeria.

Climate Change

The most causal activity that projects the negative impacts of climate change is anthropogenic in nature (IPCC, 2007; Berang-Ford, 2011; Hondula et al. 2014). These human activities are mainly from the built environment (IPCC, 2007; Robert and Kumbert, 2011). While the manifestations of climate change effects and impacts are on both the natural and the built environment (Pyke et al., 2012) and these are noted to be a continuous global phenomenon (Sathaye et al., 2006; NASA, 2011). In Nigeria, evidence abounds on the destructive effects of climate change across all six geographic regions (Obioha, 2008; Building Nigeria's Response to Climate Change (BNRCC), 2011; Allu, 2014b). Many studies also agree that climate change impacts pose the most negative challenge to sustainability of the environment (Bond, 2009; Dudley et al, 2010; VijiyaVenkataRaman et al., 2012; Allu et al., 2013). It is on this premise that, other researchers assert that the built environment as a sector, through its professionals can address the challenge posed by climate change (Ogbonna and Allu, 2011). This assertion is achievable when these professionals fully understand the concept of sustainability adapts it and practice sustainably (Krippendorff, 2006).

Literature reviewed from the preceding sections summarily, establishes that there is an interrelationship between climate change, the built environment and also between urbanization and the built environment. Again the effects and impacts of climate change are also on the devastating with the increase in housing demands due to the rapid urbanization. These reciprocal demands and the negative climatic manifestations are not without environmental challenges. However, it has also been concluded that the challenges posed by these relationships are solvable when the built environment professionals understand the workings of sustainable concepts and their applications.

In view of the above argument, this study further examines views of the primary stakeholders- the built environment professionals, in order to gauge their perceptions. This study through an intuitive survey attempts to explore its findings and its implications for achieving a sustainable urban built environment for Nigeria.

Methodology

The review from the preceding sections provided the secondary data for this study. An inductive inquiry approach was employed for the collection of its primary data. Since the study was specific to the built environment professionals, a non-probable sampling method became the most suitable technique (Saunders et al., 2009; Dawson, 2011). Thus, face-to-face group interviews were conducted amongst four professions (architects, builders, structural engineers and planner) within the built environment. The interviews were carried out between July and August 2014 and it formed part of a larger research previously undertaken. Five Semi-structured questions guided the interviews, which last a maximum of about 60 minutes. All questions were asked in order to validate earlier discourse underpinning this study and to provide recommendations for the way forward. In order to save time the interviewees from each profession had their interviews scheduled for the same day, this arrangement also provided a relaxed atmosphere for discussions. Therefore, four interview sessions were conducted. Although the findings were discussed simultaneously, where there are deviations in views based on specific profession lens, verbatim responses are captured. Each of the profession is symbolised with the first letter of their profession for easy identification as responses are discussed (shown in Table 1). Thus, the symbols for Architects = A, Builders = B, Engineers = E, and Planners = P were used while discussing their responses. A descriptive analysis derived from an inductive discourse provided the findings for this study.

Findings

Preceding the findings are the characteristics of the participations presented below in Table 1 below.

Table 1. demographic characteristic of participants

s/n	Profession	No. of Females (%)	No of Males (%)	Total no of participants
1	Architects (A)	2 (40%)	3 (60%)	5
2	Builders (B)	1 (20%)	4 (80%)	5
3	Engineers (E)	1(20%)	4 (80%)	5
4	Planners (P)	2(40%)	3 (60%)	5
	Total	7 (35%)	13 (65%)	20 (n=20) (100%)

The demographic characteristics from Table 1 show that, all the selected 4 professions were equally represented in the survey by the total number of 20 interviewees (n=20). However, as much as the researcher tried to also balance their gender, only the participants who were readily available and gave their consent were interviewed. As such there were only 7 (35%) females professionals as against the 13 (65%) male professionals. This does not affect the study's focus because it was not based on a gender premise but to seek general professional perceptions of sustainable urban built environment in Nigeria.

The first question sought to know if the interviewees are aware of challenges within the urban built environment and their responses prompted other follow-up questions thus:

Question 1: Are there challenges in the urban built environment due to urbanization? Why?

All the interviewees affirmed that there are challenges in the Nigerian urban built environment and also gave reasons why they thought so. Their reasons were:

- Too many people are seeking greener pastures, therefore limited infrastructures
- There is a high demand for housing
- Infrastructures especially housings units are hurriedly built, therefore compromising standards

Question 1a: What types of standards in regards to your profession are compromised?

Responses from A includes: Standards that have to do with design requirements, material specifications and improper site supervision. Corruption on the part of buildings approving agencies is appalling. Another respondents stated that, “...not many people can afford the services of an architect and so the build sub-standard and bribe government officials to look the other way”

Responses from B includes: compliance to specifications, lack of adherence to design requirements and insistence for test analysis where required. A verbatim response was “Lack of adequate government supervision and monitoring process for new infrastructures in Nigeria is a major challenge”.

Responses from E includes: Inability of government to also adhere to set out laws, cutting corners in terms of standards of materials and services supply, compromising on proper spans and building loads.

Responses from P includes: “...there is lack of control on planning regulations especially in the federal capital Abuja. A situation that has caused a lot of challenges for the urban built environment in Nigeria.” Others suggested lack of awareness and coordination amongst planning authorises,

There were overlaps in these responses, indicating that the interviewees are well aware of the challenges. Although the question was general in nature all professionals in strong terms are seemly not satisfied with the role of government in maintaining standards. However, none of the professionals question the role of their professional bodies.

Question 2: What are your views on the sustainability in the urban built environment?

The researcher observed that **question 2** seem to be most difficult because, it took a longer period for any response to come through, however, after the researcher explained what sustainability meant all interviewee responded and their comments to **question 2** suggested that:

- Sustainability in itself is a win-win approach to development.
- Not many infrastructures within the built environment are sustainable.
- No much knowledge on sustainability is available to professionals.
- Professional and non professionals need to engage with sustainable practices.
- Sustainability needs to be enshrined in the any physical development, particularly for buildings.

These comments are reflections of the low level of the operational capacity these respondents have and some selected comments from the professionals were:

- “From group A: “I have not yet come across any approval documents that requires a professional to rate or indicate the level of sustainable compliance”
- From group B: “It is difficult to point a building and say, that building is sustainable”
- “The truth is that I am not too sure of sustainability because I am conversant with green architecture.”

These responses re-echoed the suggestions of earlier researchers that professionals can promote sustainability in the built environment only when the professionals fully understand the concepts of

sustainability. Thereafter, sustainable practices can be expected. However, the verbatim responses suggest that these professionals may require a compliance manual to guide and enhance their capacity for sustainable professional practices.

Question 3: Impacts of climate change on urbanization?

Question 3 sprang an interesting discussion from three groups (A, E, and P), were a total of 5 (25%) interviewees did not believe that climate change is real and two quotations below reflect their arguments thus:

- “ I am not a believer of the climate change story and for that reason I cannot comment on its relationship with urbanization”
- “Climate is climate, there is no change to it, after all from time immemorial we have always had seasons and not changes”

Both responds who proffered these negative views did not agree to comment further. This study observed that they may be at the state of denial despite the many negative manifestations of climate change in Nigeria. On the other hand, 75% of the respondents were of the opinion that climate change and urbanization are interrelated and offered the comments to suggest that, recent rural urban drift are related to climate change for the following reasons:

- Rural farmlands are being abounded because of poor yield as a result of reduction in rainfall and or desertification.
- Shrinking of water level in low laying rural fishing communities
- Inadequate water supply from rainfall which aided dry season farming
- Loss of shelter and farmland to erosions and flash floods

Respondents were also of the opinion that the large urban population due to urbanization exerts high demands on the available urban infrastructures. Respondents again blamed governance for not adequately providing alternatives to the rural populace who are affected by climate change related catastrophes and therefore forcing victims to migrate to the urban centres.

Question 4: What professional strategies are available to ensure sustainable professional practices within the built environment?

Question 4 generated the following suggestions on the need for sector based strategies required to ensure sustainable professional practices within the urban built environment in Nigeria.

- Continuous Professional Development Programme (CPDP) for all the professionals within the built environment sector.
- The introduction of sustainable development education courses in higher education
- To reward sustainable compliance by professional bodies
- To set sustainable targets by each profession
- To have a harmonised sector based minimum sustainable compliance standards.
- To encourage collaborations amongst the built environment professionals.
- To organise training workshops.

Overall, the respondents were perceived to have acknowledged the interconnection between climate change, urbanization and sustainability. From their suggestions on how their professions can promote sustainability study observed that these professionals are susceptible to learning new ways that can improve and enhance their practices and in the longrun help to achieve a sustainable urban built environment for Nigeria.

Conclusion

This study has presented from literature the following: the continuous global trend of urbanization and how rapid the trend has been in Nigeria. The challenges of this trend have also been highlighted. Notably also is that all these are happening at the time the world is experiencing a shift in its climatic conditions, exasperated by the anthropogenic activities leading to climate change. Although the global migration trend has been on-going however, recent happenings by the effects and impacts of climate change seem to have added to the need to migrate to the urban centres in Nigeria. This situation has added more pressure on the limited infrastructural provisions, particularly housing. On the other hand the built environment professionals are overwhelmed with professional expectation from the demand for new buildings and the earlier studies have noted that buildings contribute largely to causal processes of climate change. Additionally, these professional are expected to align with the global concerns for sustainable development especially within the built environment.

As noted by the WCED (1987) and the blue print for Sustainable Development, the ability to ensure all aspects of developments are sustainable. This study agrees with this mandate and sought the perceptions of the built environment professionals on their understanding and perceptions on the way forward to achieving a sustainable built environment for Nigeria. This study identifies with its findings and suggests that the each profession within the built environment draw out a sustainable manuals and guide, institutionalised sustainability in training and practices of its members and encourage collaboration within and outside the profession. Additionally, government should formulate easy to understand policies and establish agencies that would promote and sustainability in the urban built environment and other aspects of developments.

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