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EXPLORATORY STUDY ON SUSTAINABILITY PRACTICES OF LOCALIZED AND EXPATRIATE CONSTRUCTION BUSINESSES

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ABSTRACT

The Nigerian construction industry contributes to employment, economic growth and provision of adequate housing and urban infrastructure. However, the activities and the use of natural resources are responsible for the release of greenhouse gases (GHG) and degradation of the environment. The study was aimed at examining sustainability issues in the context of the construction sector with a view to making a comparison between expatriate and localized businesses in Lagos Nigeria. The study showed that the localized businesses' level of awareness of sustainable development is rather low compared to their expatriate counterparts. More so, this level of awareness was seen to have affected the consistency of practising and implementing of these sustainable developments. Expatriate firms were mostly aware about conducting frequent materials audit as a sustainable construction strategy and this was consistent with their construction operations. While localized construction firms associated with protection of the environment as a sustainable construction practice in their site operations. Engaging in sustainable construction practice was essential for the enhancement of the corporate identity of expatriate construction firms while localized firms engaged in sustainable construction practice in order to satisfy the needs of their clients. The study recommended that senior management of each construction firm (expatriate and localized) should ensure to engage in training their staff regularly on sustainable practice. Government should put in place policies that will ensure the localized construction businesses adopts sustainable development agenda in their different businesses at different levels.

Key words: Construction Businesses, Construction Industry, Expatriate, Localized, Sustainability

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1. INTRODUCTION

The construction sector acts as a fundamental piece in the economies of different nations. However, these contributions is most times debatable. Much emphasises has been placed on the construction industry's ability to solve most of man's needs in terms of providing shelter and other infrastructure but with less concern with its effect on the environment. Although, Idoro (2009) opined that the construction industry is the core in measuring the growth and advancement of most economies. Therefore, attention should be given in ensuring that the construction industry performs at its highest delivery. Even though this sector is at the centre of economic growth of most countries, the impressions and influence it generates on the environment and society must be constantly reviewed (Gan *et al*., 2015). Construction firms' perceptions and performance must be assessed and understood to drive the construction industry towards sustainability and this has not been completely captured by existing studies. Change is a continuous process and as such construction businesses should respond rapidly to environmental condition changes (Abu-Bakar et al., 2011).

The government and general public, in recent times are pressuring the construction industry to enhance its unsustainable project delivery approach (Adetunji et al., 2003). This is because the sustainability quest is steadily becoming a crucial focus of several business organizations and corporations since its first launch in the United Nation's report in 1987 (Brundtland, 1987). Localized construction firms are not left out in the discussion of sustainability. Inuwa, Wanyona and Diang'a (2014) summarised that the poor performance of locally owned businesses in Nigeria stems from ineffective management system implemented in these firms, their inexperience, incompetence and bad planning approach. This has in turn forced the government to depend on the expatriate because of their effective project management and delivery (Ugochukwu and Onyekwena, 2014). They have been limited to constructing majorly building projects (Odediran *et al*. 2012), particularly at informal levels.

In the Nigerian construction sector, majority of the construction works are undertaken by the expatriate firms owing to the incapability and insufficiency of the local firms in areas of innovation, monetary capacity, heavy machineries to mention a few (Adam, 1998). The choice for engaging expatriate businesses by government when compared to other localized construction businesses is largely on unskilled competence, lack of proper managerial skills and poor planning. Based on the aforementioned, there have been increased competition over the years between the two (2) parties. A few localized construction businesses have broadened their ability to undertake works for both the private and the public sectors. In Nigeria, locally owned businesses are known to be associated with financial crimes, for instant, the abuse of mobilisation fees (Achuenu, Izam and Bustani, 2000) and the misappropriation of clients' funds meant for projects (Ugochukwu and Onyekwena, 2014), and are disregarded by the government when awarding complex and capital-intensive projects. However, with expatriate businesses operating in the Nigerian construction landscape, this paper presents a theoretical and methodological approach to studying how these businesses and their localized counterparts respond to the sustainable construction agenda in the Nigerian context. The study aims to examine sustainability issues in the context of the construction sector with a view to making a comparison between expatriate and localized businesses in Lagos Nigeria. The following objectives will guide this paper. The objectives of the study are therefore to;

- Assess the level of awareness of sustainable development practices between the expatriate and localized construction businesses
- Examine the practice of sustainable construction in relation to two categories of the construction firms.

- Examine the impact of implementing sustainable construction practices among construction businesses.

2. JUSTIFICATION OF THE STUDY

The construction sector is extraordinarily massive to be left out when considering its giant contribution to Nigeria's GDP. Hence it is justifiable to conduct a research that adds to knowledge in accordance with the fast growth of the industry. This study is undertaken to compare the sustainable development practices between expatriate and localized construction businesses in Nigeria. The primary importance of this study is that it highlights the different sustainability practise implemented in both study area. Oluwole (2015) reviewed the implementation of sustainable construction in the developing countries; it examined practices and current thinking in sustainable construction; and put forward a structure for ensuring collaborative training and practice within the professionals towards the implementation of sustainable construction in developing countries. His study did not consider that expatriate and localized businesses exist together but operate at difference levels there by developing a gap in knowledge, whereas this study compared these two construction businesses' level of operation and awareness towards sustainable development. Hussin *et al.* (2013) also studied the adoption of sustainable construction by local and expatriate businesses which was carried out in Malaysia not Nigeria while this study critically looked in the construction businesses Lagos state. Tunji-Olayeni *et al.* (2017) explored the strategies for improving development of localized contractors in Nigeria whist this study considered the consistency of practicing sustainable development by the localized and expatriate construction businesses.

3. RESEARCH METHODS

This section presented the general framework which was used for collecting data needed to investigate the comparison between localized and expatriate construction businesses in Lagos Nigeria. The section discusses the method design, the population of the study, study area, sample size, sampling frame and technique, statistical tool used, study instrument, administration of research and operationalization of research variables. Based on the comparative nature of the research, a cross-sectional survey research design was used among the construction businesses. Following Asika (1991) study, population in a research comprises of likely elements, subjects or observations that are of key interest to study. There are numerous building and civil engineering businesses in Nigeria, Lagos state especially ranging from expatriate multinational construction businesses, large localized businesses and small & medium construction enterprises. The Coffey international 2014 classification of businesses sufficiently reflects the difference of the Nigeria construction sector in terms of firm sizes and this was adopted for the selection process. The focus population includes, project managers, architect, quantity surveyor, production manager and director of operations. The study area is Lagos state. This location was chosen due to its commercial and administrative importance to the nation. The large number of construction businesses and activities in this state has necessitated the need to explore the construction stakeholders in Lagos State. Various construction projects with little or no sustainable development implemented have been embarked on to accommodate the ever-increasing population of the state. As a result of the commercial activities in Lagos, the population increases daily with influx of all the tribes in Nigeria. It is therefore a statement of fact that Lagos state has high concentration of construction businesses with completed and on-going projects. A sample size is the number of element of a population that are carefully chosen for a study. It is also the number of the sample subjects to be used for the research (Asika, 1991). A total of 50 construction businesses were initially engaged with for the study but forty (40) businesses showed interest in participating.

4. RESULTS AND DISCUSSION

The results and analysis data generated from questionnaires distributed to professionals in the localized and expatriate constructions businesses. Data collected during the study were presented in charts and analysed by simple percentages and mean scores. For the purpose of this research work, this chapter dealt with the analysis based on the sections in the questionnaire. The questionnaires were classified into five (5) sections based on the research questions formulated in chapter one. Out of Fifty questionnaires distributed only forty (40) were adequately filled and returned.

4.1. Characteristics of the construction businesses

The study was carried out at firm-level on how sustainable practices were incorporated with the construction activities in the operations of the localized and expatriate firms. It was important to identify the characteristics of the firms that participated in the study. Senior staff/professionals were selected from each firm to fill the structured questionnaire.

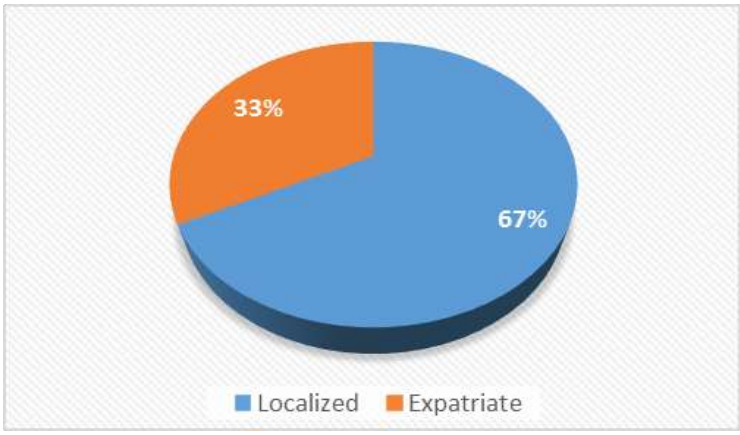

Figure 1 Types of Firm

The Figure 1 showed the breakdown of the construction firms both localized and expatriate firms that were surveyed. The construction firms showed that 27 (67%) were localized construction businesses and 13 (32.5%) were expatriate construction businesses. The uneven number of construction businesses engaged with is due to the fact that there are more localized businesses in the country than there are expatriate businesses. Even though the expatriate firms are few, they still control large percentage of the building and civil engineering projects given by the federal and state governments in the nation. In the construction business there are many sectors that each firm can specialize.

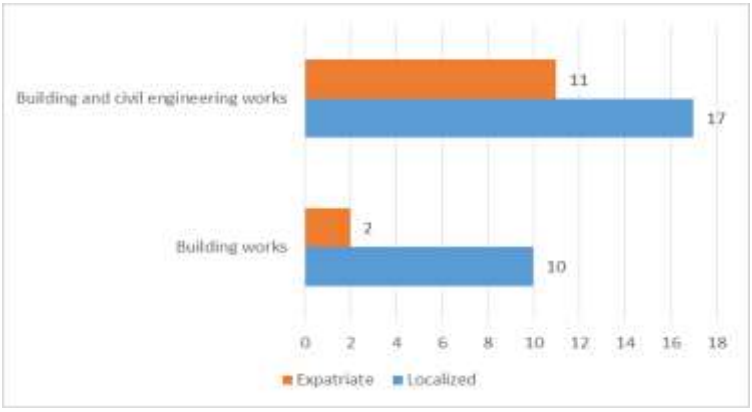

Figure 2 Area of Specialization of businesses

Figure 2 showed the analysis of speciality of the construction businesses surveyed. From Figure 2, the localized firms concentrated more on building works more than the expatriate firms, while the latter focused more on building and civil engineering works which required more expertise. There are more financial commitment in building and civil engineering works which make expatriate firms to go after them than only building works. This further explains that the localized firms may be lacking in the financial capacity and technical expertise to handle civil engineering/heavy construction works which has given the expatriate an advantage in knowledge and skill over their localized counterparts.

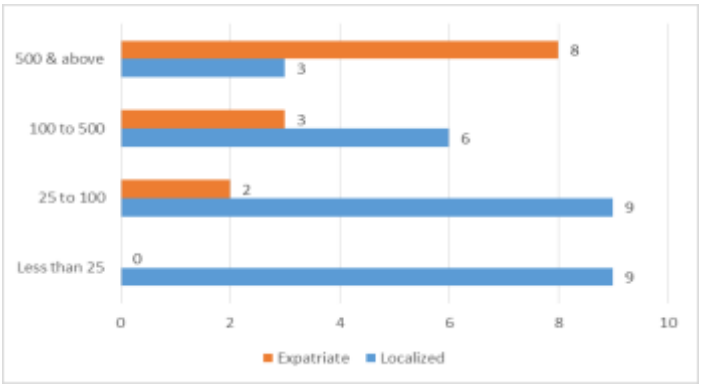

Figure 3 Sizes of Businesses

Figure 3 showed the employment capacities of the two (2) categories of firm analysed. From Figure 3, most of the localized construction firms' employment capacities ranged from 0 – 100 staff strength. For the expatriate construction firms, the employment range was mostly above 500 staff strength. This means that with the high staff strength possessed by the expatriate construction firms, they are able to compete and bid for large number of construction works from different clients in the Nigerian construction environment.

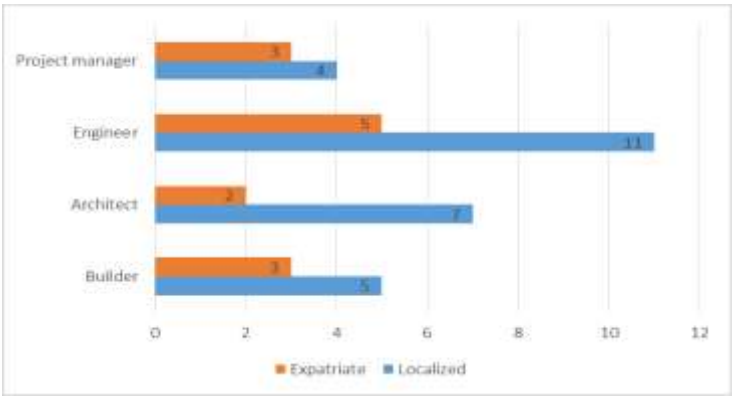

Figure 4 Designation of Respondent

In each of the construction firms surveyed, a respondent was chosen to highlight the practices in each firm. The respondents chosen had first-hand knowledge on the construction practices used on various construction sites by the firm. Figure 4 showed the designated positions of the respondents that were engaged with in the construction businesses. From Figure 4, Engineers had the most proportion in the study for both the localized and expatriate construction firms which is closely followed by the architects and builders. A proportion of 7 (17.5%) Project managers, 16 (40%) Engineers, 9 (22.5%) Architects and 8 (20%) Builders were surveyed in the study.

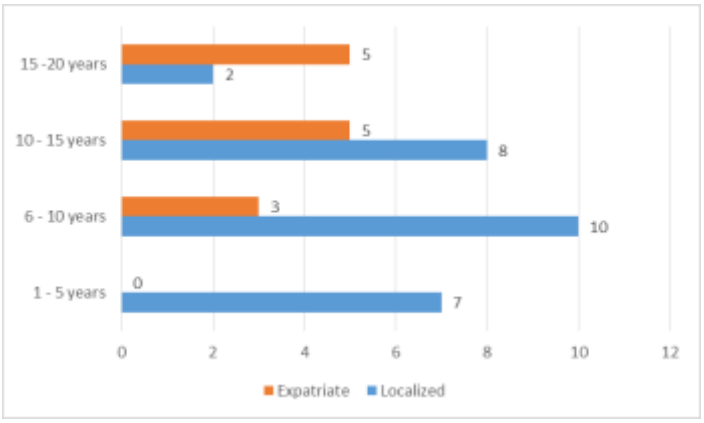

Figure 5 Years of Experience

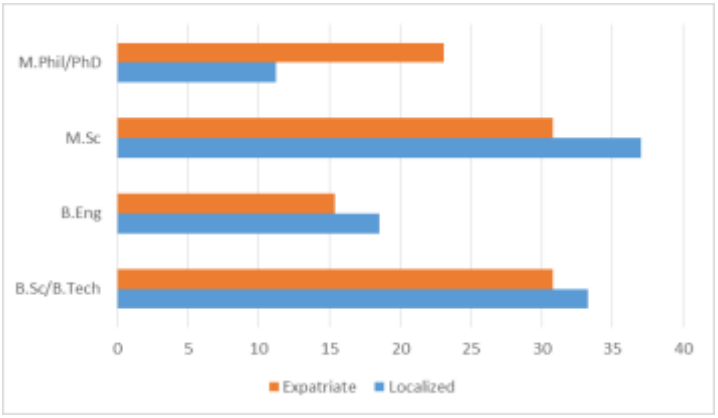

Figure 6 Qualification of Localized and Expatriate Construction Firm Respondents

Figure 5 showed the proportion of work industry experience of the construction professionals in years. From Figure 5, construction professionals in the expatriate construction firms had more work industry experience that their localized counterpart. Most of the construction professionals in the localized firms had up to 10 years work industry experience. The result of the work industry experience is adequate for this study.

Figure 6 showed that 4 (30.8%) of the expatriate firms' respondents have B.Sc. /B.Tech. degree, 2 (15.4%) with B.Eng. degree, 4 (30.8%) had M.Sc. degree and 3 (23.1%) of the respondents with M.Phil./PhD degree. Moreover, the localized construction firms' respondents had 9 (33.3%) with B.Sc./B.Tech degree, 5 (18.5%) had B.Eng. degree, 10 (37%) of them with M.Sc. degree and 3 (11.2%) with M.Phil. / Ph.D. degree.

4.2. Awareness of Sustainable Construction Practices

This section compared the level of awareness of the sustainable practices used by the two (2) categories of construction businesses. Figure 7 showed the comparative stacked bars of the level of awareness of localized and expatriate firms in the use of sustainable construction practices. Conducting of frequent materials audits ranked first with 5.00 mean score for the expatriate businesses and ranked seventh for the localized businesses.

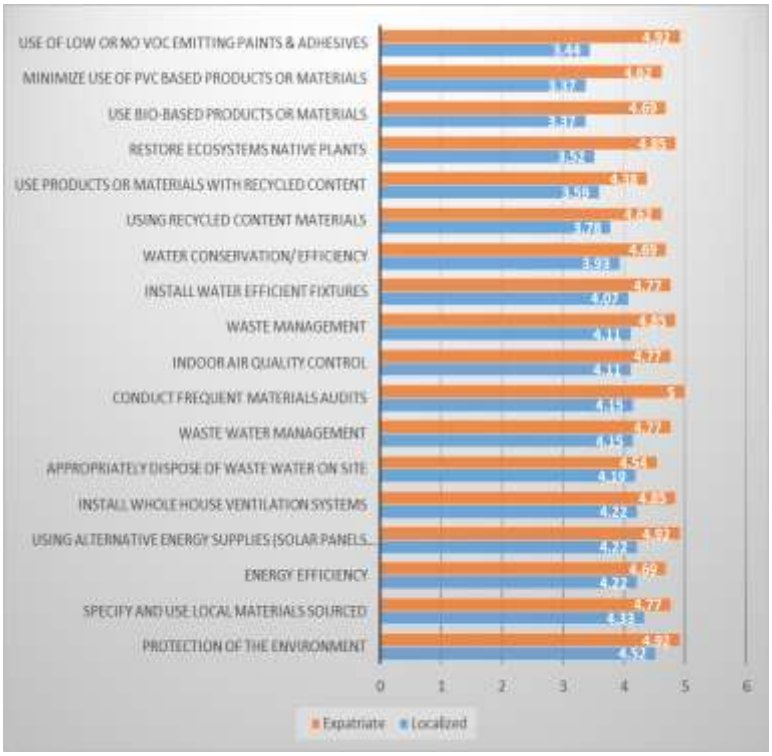

Figure 7 Assessment of the Level of Awareness of Sustainable Construction Practices

This further explains that the expatriate construction businesses consider materials auditing more important as a sustainable practice. This will in turn help to cut down material wastage and select materials suitable for reuse. Protection of the environment with mean score 4.52, use of alternative energy supply such as solar panels with mean 4.22 and use of low/ no VOC emitting paints & adhesives with mean 3.44 ranked first, third and last respectively for the localized businesses but all ranked second for the expatriate construction businesses. This means that localized construction firms most times align sustainable construction practices as protecting the environment. Overall, it is noted that the expatriate construction businesses are more aware of these sustainable practices with the important practices taking first positions where the localized businesses are seen to be less aware of the important basic practices.

4.3. Consistency in the use of the Sustainable Construction Practices

The level of awareness of a practice most times does not constitute that the practices are been used. Therefore, this section measured the consistency in the use of the sustainable construction practices. Figure 8 showed the comparative staked bars of how consistent these construction businesses considered the issues of sustainability in their construction operations. Protection of the environment with mean score 4.56 ranked first by the localized construction firm and ranked third with mean score 4.69 by the expatriate construction businesses. Figure 8 also revealed that conducting of materials audit rank first by the expatriate construction with mean score 5.00 which is also commensurate to the level of awareness, while this practice ranked 5th with the localized businesses which Is also commensurate with their level of awareness which ranked 7th on table 4.7 above. The overall consideration of sustainability in the construction operations is high for the expatriate construction business and on the average for the localized construction firms. This means there is a correlation between the awareness of the sustainable practices and the level of use for the expatriate construction firms. The study further discussed the sustainability practices based on two (2) sub-headings; materials and environment.

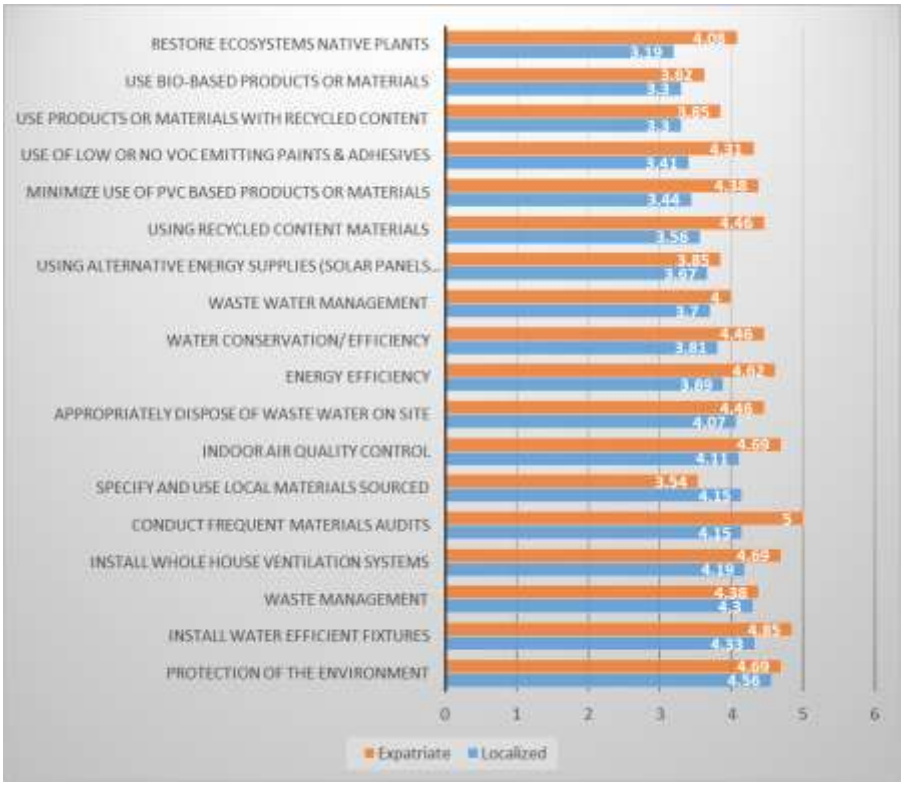

Figure 8 Consistence in the Practice of Sustainable Development Practices

4.4. Materials

According to Tomkiewicz, (2011) the use of materials are the most simplified aspect of practicing sustainability which are more "green friendly": bio-based and recycled content materials as well as locally resourced. From Figure 8, both the localized and expatriate businesses ranked their consistency of use of bio-based materials as very low ranking 16th and 17th with mean score 3.30 and 3.62 respectively. Although the expatriate businesses frequently use recycled content materials more than the localized construction businesses, this is evident in their mean scores and ranking of 7th and 13th respectively.

4.5. Environment

There exists an unbalance in the consistence of practise between protection of the environment and restoration of native plants in the land based ecosystems, the construction businesses seemed to be more consistent in their practice of protecting the environment on their sites than planting to restore the ecosystem balance. Restoration of ecosystem with native plants was ranked 18th with mean score of 3.19 by the localized businesses and ranked 13th by the expatriate businesses which implies that the expatriate construction respondents are little more consistent in their practice of this element. Indoor air quality and liveability are primary elements of sustainability that directly affect the health and wellness of occupants, this can be addressed through awareness, control and reduction of VOC and implementation of universal design.

4.6. Impact of Sustainable Construction Practices on Construction Businesses.

This section sought the perception of construction professionals on the impact of implementing sustainable construction practices on the construction businesses. Table 9 showed the comparative stacked bars of the impact of sustainable construction practices on the two (2) categories of construction businesses surveyed in this study. Expatriate

construction firm respondents have shown that sustainable development practices have enhanced their corporate identity which ranked first in Table 9 with a mean score of 4.54 while it was ranked second in the localized construction businesses with mean score 4.26. Increased profiting ranking second in the expatriate firm category with mean score 4.46 but ranked eighth 8th in the localized construction businesses.

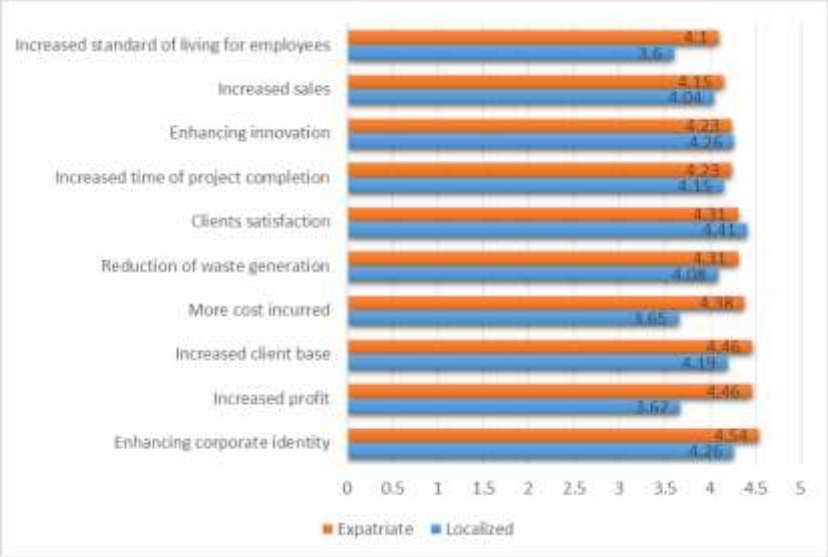

Figure 9 Impact of Sustainable Construction Practices on Construction Businesses.

This explains that the localized businesses do not consider increase in profit as an important impact of implementing sustainable construction. For the two (2) categories of construction businesses, the impact varies. While localized construction firms were more concerned about client satisfaction in implementing sustainable construction, the expatriate firms implemented it based on enhancing their corporate identity in the construction industry. These impacts identified in this study can be harnessed to understand how each of the firms can be encouraged to continuously implement sustainable practices in their construction operations.

5. CONCLUSION AND RECOMMENDATION

The study was aimed at examining sustainability issues in the context of the construction sector with a view to making a comparison between expatriate and localized businesses in Lagos Nigeria. The study showed that the localized businesses' level of awareness of sustainable development is rather low compared to their expatriate counterparts. More so, this level of awareness was seen to have affected the consistency of practising and implementing of these sustainable developments. Expatriate firms were mostly aware about conducting frequent materials audit as a sustainable construction strategy and this was consistent with their construction operations. While localized construction firms associated with protection of the environment as a sustainable construction practice in their site operations. Understanding of the impact of these sustainability practices need to be clear to all construction stakeholders including the clients to increase the motivation to practice and engage sustainability. For expatriate firms, engaging in sustainable construction practice was essential for the enhancement of their corporate identity while localized firms engaged in sustainable construction practice in order to satisfy the needs of their clients. In conclusion, without a clear understanding of the lifecycle costs or long run cost, added value and benefits to the construction industry and its consumer, sustainability will not be achieved. Construction businesses especially the localized construction businesses must understand the reasons for

the need to embrace sustainable practices. Within the limit of this research, the recommended that senior management of each firm (expatriate and localized) should ensure to engage in training their staff regularly on sustainable practice and the need for it and increased awareness on innovative strategies that can be engaged in the Nigerian construction industry. Government should put in place policies that will ensure the localized construction businesses adopts sustainable development agenda in their different businesses at different levels. Sustainability can be incorporated as a pre-qualification requirement in the procurement process. In this case, construction projects that sustainable practices have been used would be clearly stated for pre-qualification purposes. This can affect the construction sector profoundly considering the large number of government client participation in the Nigeria construction sector. The impacts and benefits should be very well emphasized, especially the marketing benefits to the firm and its staff, the long run cost saving for the clients and the economic development for the government and country at large.

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