ASSESSMENT OF THE LEVEL OF AWARENESS OF SUSTAINABILITY PRACTICES AMONG CONSTRUCTION FIRMS IN NIGER DELTA, NIGERIA

Monday Otali* and Anthony Ujene
Department of Building, University of Uyo, NIGERIA
*Corresponding author: otalimonday@yahoo.com

Abstract
The importance of sustainable development in Niger Delta, Nigeria cannot be overemphasised. Hence the aim of this research is to assess the level of awareness of sustainability practices among construction firms in Niger- Delta, Nigeria. Data were obtained using 1179 copies of structured questionnaire, administered by the researcher and research assistants. The methods of data analysis were simple percentage, mean score, Kruskal – Wallis and Bonferroni- Dunnett test. The average mean score of 3.48 indicates that the level of awareness of sustainability practices among the construction firms in Niger Delta is high. The P-value is less than 0.05 significance level, hence the hypothesis was rejected. This indicates that there is a significant difference in the level of awareness of sustainability practices among the states in Niger Delta, Nigeria. This study concludes that there is a significant difference in the level of awareness among the states.This study also concludes that level of awareness of sustainability practices among construction firms in Niger Delta is high. It can be inferred that the high level of awareness will lead to high level of adoption of sustainability practices among construction firms which will in turn lead to high performance of the construction firms.

Key words: Assessment, Awareness, Construction Firms, Niger-Delta, Sustainability Practices

Article history:
Submitted: 19/02/ 2018, Revised: 25/10/2018; Accepted: 31/01/2019, Online: 01/05/2020

INTRODUCTION

Suliman and Abdelnaser (2009)observed that construction accounts for an estimated 40% of all resources consumption and produces about 40% of all wastes including greenhouse gas emissions.The study of Ijigah, Jimoh, Aruleba and Ade (2013) also revealed that major environmental impacts of building construction projects include environmental pollution, depletion of resources and habitat destruction causing destruction of ecosystem, desertification, soil erosion and increasing material wastage. Similarly, Saroop and Allopi (2014) elucidated that, the construction industry globally, is one of the main contributors to the depletion of natural resources and a major cause of unwanted side effects such as air and water pollution, solid waste, deforestation, health hazards, global warming, and other negative consequences.

Construction industry has a role to play in ensuring a healthy-liveable environment and equitable access to social infrastructure and sustainable development in developing countries (Kheni&Akoogo, 2015), and this will help in achieving the sustainable development goal in developing countries. According to Chambers (1993), sustainability is defined as “that which is capable of being sustained; in ecology, the amount or degree to which the earth’s resources may be exploited without deleterious effects. Sustainability at the firm level refers to meeting social and environmental needs in addition to the firm’s profitability (Porter, 2008). Furthermore, Brundtland (1987) reported that the only way to balance the eternal trade off between economic development and environmental protection was through a new approach, namely sustainable development (SD). Brundtland (1987) defined sustainable development (SD) as development that meets the needs of the present without comprising the ability of future generations to meet their needs.

Furthermore, sustainable construction is the application of sustainable development principles in the construction industry. Parkin (2000) described sustainable construction as a construction process that incorporates the basic themes of sustainable development, and it aims at reducing the environmental impact of a building over its entire lifespan, providing safety and comfort to its occupants and at the same time enhancing its economic viability (Addis & Talbot, 2001).

The Niger Delta which is located in the southern part of Nigeria has some peculiar characteristics ranging from the climate, terrain, vegetation, culture, economic activities and value system. The Niger Delta Region of Nigeria produces a significant portion of the aggregate oil wealth of Nigeria. Since 1956 when oil was first discovered in Oloibiri in Southern Nigeria, the Niger Delta

region has accounted for over 90 per cent of Nigeria's oil income (Ujene, 2014). However, the region has perennially suffered from environmental neglect, crumbling infrastructures and services, high unemployment, social deprivation, abject poverty and endemic conflict. This has led to calls for firms operating in the Niger Delta to demonstrate the value of their investments to Nigeria by undertaking increased community development initiatives that provide direct social benefits such as local employment, new infrastructure, schools, and improved health care delivery (Ijaiya, 2014).

Niger Delta region of Nigeria is severely affected by the environmental degeneration as a result of economic activities and oil exploration over the years. According to Kadafa (2012), oil exploration and exploitation which has been on- going for several decades in the Niger Delta, has had disastrous impacts on the environment in the region and has adversely affected people inhabiting that region. The study noted that the region has been rendered one of the five most severely petroleum damaged ecosystems in the world. Similarly, Ite, Ibok, Ite, and Petters (2013)observed that the bulk proven oil reserves of the region has encouraged the influx of visitors and multinational oil corporations whose operations have created serious threats to the livelihood of the coast communities in the Niger Delta region. Destruction of habitats, loss of biodiversity, ecosystem destruction, destruction of farmland to access onshore sites and marine resource areas, and water pollution all have extensive implications on the people's livelihood in the region.

Apart from the environmental degeneration suffered due to oil exploration, the fact that several construction activities which have been on to accommodate the activities and growing population, also add to the degeneration of the environment. Asad and Khalfan (2007) reported that construction has a significant effect on people's quality of life; construction outputs affect the nature, function and appearance of the towns and countryside in which people live and work.

However, the rising global campaign for sustainable construction demands that the challenges be addressed to promote environmentally friendly, social responsibility and economic support. The poor attention being paid to sustainable development agenda in the developing countries poses great danger to present and future generations. It remains unknown, the plan of actions or the current direction of the stakeholders in the construction industries of developing countries regarding sustainable construction (Oni, 2015). Therefore, this study assessed the level of awareness of sustainability practices among construction firms in Niger Delta, Nigeria. The study also tested the hypothesis which states that there is no significant difference in the level of awareness of sustainability practices among the construction firms operating in Niger Delta, Nigeria.

RESEARCH METHODOLOGY

Survey design approach was adopted for the study. Data were obtained using 1179 copies of structured questionnaire, administered by the researcher and research assistants. Data were collected on a five-point scale of 1, 2, 3, 4 and 5 and were assigned to the options of very low awareness, low awareness, moderate awareness, high awareness and very high awareness respectively. The methods of data analysis were simple percentage, mean score, Kruskal – Wallis test and Bonferroni test. The level of awareness of sustainability practices was analysed using mean score and the decision rule is that any sustainability practice whose mean falls between 1.0 -1.8 is of very low awareness, 1.8-2.6 is of low awareness, 2.6-3.4 is of moderate awareness 3.4-4.2 is having high awareness and 4.2-5.0 is regarded as having very high awareness. This is in agreement with Kazaz *etal* (2008). The Kruskal- Wallis test was used to determine the significant difference in the level of awareness of sustainability practices among the construction firms in Niger Delta, Nigeria. The result of the Kruskal- Wallis test showed that there is significant difference in the level of awareness of sustainability practices. Hence, Bonferroni test was used to carry out the post hoc test in order to establish the source of the difference in the level of awareness of sustainability practices.

RESULTS ANALYSIS AND DISCUSSION

This section contains the results of the analysis of data collected for the study. It contains the descriptive results of the response rate of questionnaire, and firm characteristics. This section also contains the result of assessment of level of awareness of sustainability practices among construction firms in Niger- Delta, Nigeria and the result of the hypothesis testing.

Questionnaire Distribution and Response in the Study

One of the research instrument used in this study was structured questionnaire. The questionnaire was administered among the construction firms operating in Niger Delta, Nigeria. The results of analysis were presented in Table 1.

Table 1: Questionnaire Distribution and Response Rate

S/N	States	Number of questionnaire administered on construction firms (NO)	Number of questionnaire returned (NO)	Percentage of questionnaire returned (%)	Average of the Response Rate (%)
1	Abia	117	89	76.1	
2	Akwa Ibom	139	113	81.3	
3	Bayelsa	97	85	87.6	
4	Cross River	143	112	78.3	
5	Delta	133	126	94.7	
6	Edo	149	114	76.5	
7	Imo	105	92	87.6	
8	Ondo	142	109	76.8	
9	Rivers	154	140	90.1	
10	TOTAL	1179	980		83.2

Firm Characteristics

Firms' characteristics comprised of age of construction firms, location of construction firms, ownership of construction firms and size of construction firms.

Age of Construction Firms

Table 2 also shows that more than 95% of the firms have work experience above ten (10) years. It therefore implies that the work experiences of the construction firms are adequate and their responses can be relied on.

Table 2: Age of Construction Firms

Age of Firms	Frequency	Valid Percent	Cumulative Percent
1-5	10	1.0	1.0
6-10	37	3.8	4.8
11-15	161	16.4	21.2
16-20	401	40.9	62.1
Above 20years	371	37.9	100.0
Total	980	100.0	

Location of Construction Firms

Table 3 shows the distribution of construction firms in each state in Niger Delta, Nigeria. The percent of firms in Abia, Akwa Ibom, Bayelsa and Cross river states are 9.1%, 11.5%, 8.7% and 11.4%. Others are Delta, Edo, Imo, Ondo and Rivers with their percents of 12.9%, 11.6%, 9.4%, 11.1% and 14.3% respectively. Table 4 shows a good distribution of the construction firms among the states in Niger Delta. This implies that the results from this study represents the situation in Niger Delta and can be relied on.

Table 3: Location of Construction Firms

States	Frequency	Valid Percent	Cumulative Percent
Abia state	89	9.1	9.1
Akwa Ibom state	113	11.5	20.6
Bayelsa state	85	8.7	29.3
Crossriver state	112	11.4	40.7
Delta state	126	12.9	53.6
Edo state	114	11.6	65.2
Imo state	92	9.4	74.6
Ondo state	109	11.1	85.7
Rivers state	140	14.3	100.0
Total	980	100.0	

Ownership of Construction Firms

The result of analysis on Table shows that the locally owned construction firms account for 96.4% of the total number of firms considered in this study while the foreign owned firms account for 3.6% of the total number construction under consideration in this study. This clearly shows that majority of the construction firms operating in Niger Delta are predominantly locally owned firms.

Table 4: Ownership of Construction Firms

Ownership of Firms	Frequency	Valid Percent	Cumulative Percent
Locally owned	945	96.4	96.4
Foreign owned	35	3.6	100.0
Total	980	100.0	

Size of Construction Firms Under Study in Niger Delta between 2007- 2016

Analysis on Table 5 shows the average percentage distribution of construction firms in Niger Delta according to their sizes over a period of ten years (2007-2016). The analysis shows that small firms account for 84.7%, medium firms account for 11.61 and large construction firms account for 3.73%. This reveals that small and medium construction firms are of the majority. This result is in consonance with Abdullah, Bilau, Enegbuma, Ajagbe, Ali and Bustani, (2012); and Thwala, Ajagbe, Enegbuma, Bilau and Long (2012) who posited that firms in the construction industry have been grouped such that Small and Medium Firms (SMFs) were found to be the majority.

Table 5: Size of Construction Firms Under Study in Niger Delta between 2007- 2016

S/N	YEAR	1-50		50-250		250 AND ABOVE	
		FREQ	PER	FREQ	PER	FREQ	PER
1	2007	857	87.4	88	9.0	35	3.6
2	2008	790	80.6	155	15.8	35	3.6
3	2009	842	85.9	103	10.5	35	3.6
4	2010	821	83.8	120	12.2	39	4.0

5	2011	813	83.0	129	13.2	38	3.9
6	2012	754	76.9	188	19.2	38	3.9
7	2013	811	82.8	131	13.4	38	3.9
8	2014	870	88.8	75	7.7	35	3.6
9	2015	868	88.6	77	7.9	35	3.6
10	2016	874	89.2	71	7.2	35	3.6
AVE.			84.7		11.61		3.73

Level of Awareness of Sustainability Practices among Constructions Firms in Niger Delta, Nigeria

The results on Table 6 show the level of awareness of sustainability practices among the construction firms in Niger Delta, Nigeria. Table 6 shows that the level of awareness of leadership in construction firms in Abia, Akwalbom, Bayelsa, Cross river, Imo, Ondo and Rivers states is high while the level of awareness of leadership in construction in Delta and Edo states is very high. Table 6 also reveals that the overall level of awareness of leadership among the construction firms in Niger Delta was high.

Table 6 shows that there is high level of awareness knowledge management practices among the construction firms operating in Akwalbom, Bayelsa, Cross river, Delta, Imo, Ondo and Rivers state. The only state that construction firms have very high level of awareness of knowledge management practices was Edo while the firms in Abia state have moderate level of awareness of knowledge management practices. Table 6 shows that the overall level of awareness of knowledge management practices among construction firms operating in Niger Delta is high.

Result of analysis of the level of awareness of organisational innovativeness shown on Table 6 indicates that firms Akwalbom, Bayelsa, CrossRiver, Delta, Edo, Imo and Rivers State have high level of awareness of organisational innovativeness while the firms in Abia state have moderate level of awareness. The average mean score of 3.78 shows that the overall level of awareness of organisational innovativeness among construction firms in Niger Delta is high.

Table 6 shows that level of awareness of organisational culture practices among construction firms operating in Niger Delta is high, except those firms operating in Abia and Akwa Ibom states that have moderate level of awareness of organisational culture practices. The average mean score of the construction firms on their level of awareness of organisational culture practices indicates that there is high level of awareness of organisational culture practices among the firms operating in Niger Delta.

The level of awareness of corporate governance among the construction firms in Abia, Akwa Ibom, Bayelsa, Cross River, Imo, Ondo and Rivers states is moderate as shown in Table 6 while the firms operating in Delta and Edo states have high level of awareness of corporate governance. The average mean score of 3.25 shows that the overall level of awareness of corporate governance among the construction firms in Niger Delta is moderate.

Table 6 shows that the level of awareness of stakeholders engagement among construction firms in Abia, Akwalbom, Bayelsa, Imo, Ondo and Rivers is moderate while firms in Cross river, Delta and Edo state have high level of awareness of stakeholders' engagement. The overall level of awareness of stakeholder engagement among the construction firms in Niger Delta is moderate.

Table 6 shows that construction firms operating in six of the Niger Delta states (Abia, Akwalbom, Bayelsa, Imo, Ondo and Rivers) have moderate level of awareness of transparency and measurement while the firms operating in three states namely Cross River, Delta and Edo have high level of awareness of transparency and measurement. The average mean score of 3.27 indicates the overall level of awareness of transparency and measurement among the construction firms in Niger Delta is moderate.

The level of awareness of corporate social responsibility among construction firms in Niger Delta is shown in Table 6 The result of the analysis shows that construction firms in Abia, Akwalbom, Bayelsa, Imo, Ondo and Rivers have moderate level of awareness while firms in Cross river, Delta, Cross river and Edo have high level of awareness of corporate social responsibility. The overall level of awareness of corporate social responsibility among the construction firms in Niger Delta is moderate as indicated by the average mean score of 3.28.

Table 6 shows that the level of awareness of employment practices among construction firms in Abia, Akwalbom, Bayelsa, Ondo and Rivers is moderate. However, the level of awareness of employment practices among construction firms in Cross River, Delta and Edo is high. It was also revealed that the overall level of awareness of employment practices among the firms is moderate.

Table 6 also shows that the level of awareness of protection of the environment among the construction firms in each of the states in Niger Delta is moderate.

Having assessed the level of awareness of sustainability practices among the construction firms in each of the states that make up Niger Delta, it became necessary to have the overall level of awareness of the sustainability practices. Table 6 shows that the overall level of awareness of sustainability practices in Abia, AkwaIbom, Bayelsa and Ondo is moderate while the overall level of awareness of sustainability practices among the firms operating in Cross river, Delta, Edo, Imo and Rivers states is high. The average mean score of 3.48 indicates that the level of awareness of sustainability practices among the construction firms in Niger Delta is high.This shows that the construction firms comprising of foreign owned firms and locally owned firms, small, medium and large construction firms have high level of awareness of sustainability practices. The high level of awareness of sustainability practices was attributed to the agitations for sustainable development in Niger Delta, and series of seminars and workshops organised by the firms with regards to sustainability practices. This study is in agreement with Saroop and Allopi (2014) who elucidated that the awareness of sustainable principles in the construction industry globally is increasing and there is concern by many international and national initiatives to adopt sustainable development principles. It is also in consonance with Noor, Maqsood, Alshanbri, and Sagoo (2015) who stated that sustainable development and construction responsiveness and awareness are escalating around the world. It is in agreement with Michael and Gross (2004) who stated that Companies are becoming aware that they can contribute to sustainable development by reorienting their operations and processes. This position assumes that the firm obtains economic results that are sufficient to enable the business's viability, since the company's first concern must be its survival.Current opinion holds that long-term profits for shareholders are ensured by means of corporate management applying both economic and sustainability criteria. However, this result is at variance with Elinton, (1994); Rao and Holt (2005) who posited that the poor awareness of sustainability practices is a problem among construction firms.It is also at variance with Dania, Larsen, and Yao (2013) who showed that the level of awareness and demand for sustainable construction are generally very poor.This study reveals that is an improvement in the level of awareness of sustainability practices among construction firms in Niger Delta, Nigeria when compared with previous studies.The result of hypothesis which states that there is no significant difference in the level of awareness of sustainability practices among construction firms showed that there is statistically significant difference in the level of awareness among construction firms, hence the hypothesis was rejected.

Table 6: Level of Awareness of Sustainability Practices among Constructions Firms in Niger Delta, Nigeria

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
LEADERSHIP IN CONSTRUCTION FIRMS: Charismatic Leadership-Idealised Influence																				
emphasizes the importance of having a strong sense of mission	3.25	M.L.A	4.17	H.L.A	3.78	H.L.A	4.08	H.L.A	4.11	H.L.A	4.07	H.L.A	4.52	V.H.L.A	3.50	H.L.A	4.86	V.HL.A	4.08	H.L.A
goes beyond self-interest for the good of the organisation	3.33	M.L.A	4.00	H.L.A	3.85	H.L.A	3.96	H.L.A	4.62	V.H.L.A	4.37	V.H.L.A	3.78	H.L.A	3.71	H.L.A	4.11	H.L.A	4.01	H.L.A
encourages organisational members to think beyond the immediate	3.33	M.L.A	4.02	H.L.A	3.95	H.L.A	4.18	H.L.A	4.17	H.L.A	4.18	H.L.A	3.70	H.L.A	3.75	H.L.A	4.01	HL.A	3.94	H.L.A
Charismatic Leadership-Inspirational Motivation																				
displays a sense of power and confidence	3.49	H.L.A	4.20	V.H.L.A	4.04	H.L.A	4.26	V.H.L.A	4.56	V.H.L.A	4.32	V.H.L.A	4.48	V.H.L.A	4.04	H.L.A	4.36	V.H.L.A	4.22	V.H.L.A
articulates a compelling vision of the future	3.47	H.L.A	4.01	H.L.A	3.88	H.L.A	4.40	V.H.L.A	4.46	V.H.L.A	4.68	V.H.L.A	4.48	V.H.L.A	3.92	H.L.A	4.39	V.H.L.A	4.22	V.H.L.A
expresses confidence that goals will be achieved	3.43	H.L.A	4.24	V.H.L.A	3.75	H.L.A	4.08	H.L.A	4.28	V.H.L.A	4.31	V.H.L.A	4.52	V.H.L.A	3.79	H.L.A	4.30	V.H.L.A	4.10	H.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Intellectual Stimulation																				
re-examines critical assumptions to question whether they are appropriate	3.54	H.L.A	3.87	H.L.A	3.89	H.L.A	4.05	H.L.A	4.66	V.H.L.A	4.56	V.H.L.A	3.65	H.L.A	3.83	H.L.A	3.99	HL.A	4.04	H.L.A
encourages each other to rethink ideas which had never been questioned before	3.34	M.L.A	3.89	H.L.A	3.85	H.L.A	3.96	H.L.A	4.63	V.H.L.A	4.37	V.H.L.A	3.57	H.L.A	3.94	H.L.A	3.81	HL.A	3.96	H.L.A
gets others to look at problems from many different angles	3.53	H.L.A	4.14	H.L.A	3.85	H.L.A	4.01	H.L.A	4.62	V.H.L.A	4.55	V.H.L.A	3.78	H.L.A	3.77	H.L.A	4.09	HL.A	4.07	H.L.A
Individual Consideration																				
considers individuals as having different needs, abilities, and aspirations from others	3.37	M.L.A	3.92	H.L.A	3.80	H.L.A	4.17	H.L.A	4.21	V.H.L.A	4.32	V.H.L.A	3.57	H.L.A	3.70	H.L.A	3.81	HL.A	3.90	H.L.A
focuses on developing the strength of team members	3.35	M.L.A	3.88	H.L.A	3.74	H.L.A	4.24	V.H.L.A	4.25	V.H.L.A	4.25	V.H.L.A	3.74	H.L.A	3.75	H.L.A	3.91	HL.A	3.93	H.L.A
seeks that the interest of employees are given due consideration	3.42	H.L.A	3.95	H.L.A	3.93	H.L.A	4.17	H.L.A	4.29	V.H.L.A	4.37	V.H.L.A	3.70	H.L.A	3.80	H.L.A	3.91	HL.A	3.97	H.L.A
Level of Awareness of Leadership in Construction among Firm in Niger Delta, Nigeria	3.41	H.L.A	4.03	H.L.A	3.87	H.L.A	4.12	H.L.A	4.29	V.H.L.A	4.28	V.H.L.A	3.82	H.L.A	3.77	H.L.A	4.04	HL.A	3.98	H.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Knowledge Management Practices																				
Brainstorming	3.28	M.L.A	3.95	H.L.A	4.00	H.L.A	4.08	H.L.A	4.24	V.H.L.A	4.68	V.H.L.A	3.74	H.L.A	3.72	H.L.A	3.95	HL.A	3.99	H.L.A
Face –to- face interaction	3.19	M.L.A	3.79	H.L.A	3.84	H.L.A	4.03	H.L.A	4.10	H.L.A	4.37	V.H.L.A	3.91	H.L.A	3.70	H.L.A	3.94	HL.A	3.90	H.L.A
Mentoring	2.83	M.L.A	3.59	H.L.A	3.76	H.L.A	4.16	H.L.A	4.27	V.H.L.A	4.49	V.H.L.A	3.43	H.L.A	3.58	H.L.A	3.71	HL.A	3.79	H.L.A
Level of Awareness of Knowledge Management Practices among Firms in Niger Delta, Nigeria	2.86	M.L.A	3.51	H.L.A	3.72	H.L.A	3.94	H.L.A	4.01	H.L.A	4.26	V.H.L.A	3.64	H.L.A	3.48	H.L.A	3.78	HL.A	3.72	H.L.A
Organisational Innovativeness: Employee Strategies																				
Recruiting experienced employee	2.81	M.L.A	3.71	H.L.A	3.60	H.L.A	4.00	H.L.A	4.06	H.L.A	4.25	V.H.L.A	3.96	H.L.A	3.48	H.L.A	3.86	HL.A	3.78	H.L.A
Actively encouraging your employees to seek out improvements and share ideas	3.45	H.L.A	3.73	H.L.A	3.64	H.L.A	3.88	H.L.A	3.99	H.L.A	4.18	H.L.A	3.74	H.L.A	3.61	H.L.A	3.79	HL.A	3.80	H.L.A
Providing or supporting training programs for your Employees	3.16	M.L.A	3.65	H.L.A	3.71	H.L.A	3.94	H.L.A	4.05	H.L.A	4.25	V.H.L.A	3.57	H.L.A	3.51	H.L.A	3.82	HL.A	3.76	H.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Technology Strategies																				
Enhancing your business's technical capabilities	3.34	M.L.A	3.73	H.L.A	3.64	H.L.A	3.95	H.L.A	4.11	H.L.A	4.31	V.H.L.A	3.61	H.L.A	3.67	H.L.A	3.91	HL.A	3.83	H.L.A
Protecting your business's intellectual property	3.30	M.L.A	3.77	H.L.A	3.67	H.L.A	3.98	H.L.A	4.13	H.L.A	4.38	V.H.L.A	3.65	H.L.A	3.70	H.L.A	3.78	HL.A	3.84	H.L.A
Participating in the development of industry standards and practices	3.36	M.L.A	3.79	H.L.A	3.76	H.L.A	3.89	H.L.A	4.05	H.L.A	4.25	V.H.L.A	3.65	H.L.A	3.77	H.L.A	3.79	HL.A	3.83	H.L.A
Marketing Strategies																				
Building relationships with existing clients	3.74	H.LA	3.70	H.L.A	3.66	H.L.A	4.08	H.L.A	4.24	V.H.L.A	4.31	V.H.L.A	3.78	H.L.A	3.82	H.L.A	3.90	HL.A	3.93	H.L.A
Delivering products/services which reduce your clients' costs	3.28	M.L.A	3.68	H.L.A	3.65	H.L.A	4.21	V.H.L.A	4.33	V.H.L.A	4.31	V.H.L.A	3.65	H.L.A	3.70	H.L.A	3.84	HL.A	3.88	H.L.A
Providing a broader range of services to your clients	3.28	M.L.A	3.80	H.L.A	4.67	V.H.L.A	3.98	H.L.A	4.17	H.L.A	4.38	V.H.L.A	3.65	H.L.A	3.74	H.L.A	3.76	HL.A	3.94	H.L.A
Knowledge Strategies																				
Actively monitoring international best practice	3.35	M.L.A	3.67	H.L.A	3.55	H.L.A	4.12	H.L.A	4.21	V.H.L.A	4.31	V.H.L.A	3.83	H.L.A	3.61	H.L.A	3.88	HL.A	3.86	H.L.A
Maintaining a formal system for transferring project learnings into our continuous business processes	3.71	H.L.A	3.58	H.L.A	3.51	H.L.A	3.80	H.L.A	3.90	H.L.A	4.00	H.L.A	3.74	H.L.A	3.50	H.L.A	3.87	HL.A	3.75	H.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Actively monitoring advances in related industries that might be applicable to our business	3.43	H.L.A	3.81	H.L.A	3.67	H.L.A	3.77	H.L.A	3.83	H.L.A	3.82	H.L.A	3.78	H.L.A	3.66	H.L.A	3.72	HL.A	3.73	H.L.A
Relationship Strategies																				
Pursuing partnering on projects	3.28	M.L.A	3.58	H.L.A	3.55	H.L.A	4.07	H.L.A	4.13	H.L.A	3.95	H.L.A	3.70	H.L.A	3.61	H.L.A	3.81	HL.A		
Pursuing alliance projects	3.29	M.L.A	3.75	H.L.A	3.68	H.L.A	4.03	H.L.A	4.05	H.L.A	3.75	H.L.A	3.61	H.L.A	3.61	H.L.A	3.78	HL.A	3.75	H.L.A
Maintaining long-term collaborative arrangements with other businesses	3.26	M.L.A	3.68	H.L.A	3.68	H.L.A	3.90	H.L.A	3.96	H.L.A	3.95	H.L.A	3.57	H.L.A	3.60	H.L.A	3.81	HL.A	3.73	H.L.A
Level of Awareness of Organisational Innovativeness among Firms in Niger Delta, Nigeria	3.32	M.L.A	3.66	H.L.A	3.67	H.L.A	3.94	H.L.A	4.04	H.L..A	4.14	H.L.A	3.70	H.L.A	3.59	H.L.A	3.81	HL.A	3.79	H.L.A
Organisational Culture Practices																				
Power-distance: degree to which power is expected to be equally shared	3.15	M.L.A	3.35	M.L.A	3.66	H.L.A	3.88	H.L.A	3.90	H.L.A	3.70	H.L.A	3.17	M.L.A	3.58	H.L.A	3.64	HL.A	3.58	H.L.A
Uncertainty avoidance: extent to which norms and procedures are relied upon to alleviate the unpredictable future events	3.09	M.L.A	3.57	H.L.A	3.48	H.L.A	3.89	H.L.A	3.94	H.L.A	3.69	H.L.A	3.43	H.L.A	3.53	H.L.A	3.48	HL.A	3.59	H.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Performance orientation: degree to which rewards are encouraged for performance improvement and excellence	3.08	M.L.A	3.40	H.L.A	3.45	H.L.A	3.77	H.L.A	3.81	H.L.A	3.82	H.L.A	3.61	H.L.A	3.37	M.L.A	3.51	HL.A	3.55	H.L.A
Level of Awareness of Organisational Culture Practices among Firms in Niger Delta, Nigeria	3.07	M.L.A	3.38	M.L.A	3.48	H.L.A	3.78	H.L.A	3.81	H.L.A	3.72	H.L.A	3.45	H.L.A	3.41	H.L.A	3.50	HL.A	3.53	H.L.A
Corporate Governance: Shareholders Right																				
Secure ownership registration	3.18	M.L.A	3.39	M.L.A	3.56	H.L.A	4.05	H.L.A	4.00	H.L.A	3.82	H.L.A	3.35	M.L.A	3.45	H.L.A	3.59	HL.A	3.62	H.L.A
Obtain relevant information on a timely basis	2.80	M.L.A	3.04	M.L.A	4.11	H.L.A	3.52	H.L.A	3.48	H.L.A	3.14	M.L.A	3.52	H.L.A	3.24	M.L.A	3.32	M.L.A	3.34	M.L.A
Effective participation and voting in shareholder meetings	3.27	M.L.A	3.00	M.L.A	3.33	M.L.A	3.49	H.L.A	3.55	H.L.A	3.57	H.L.A	3.22	M.L.A	3.23	M.L.A	3.37	M.L.A	3.34	M.L.A
Stakeholders in Governance																				
Performance-enhancing mechanisms for employee participation are permitted	2.76	M.L.A	3.06	M.L.A	3.19	M.L.A	3.44	H.L.A	3.48	H.L.A	3.52	H.L.A	3.39	M.L.A	3.09	M.L.A	3.32	M.L.A	3.27	M.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Stakeholders have a right to access to timely, relevant, and reliable information on governance issues in which they have a right to participate	2.65	M.L.A	3.11	M.L.A	3.16	M.L.A	3.35	M.L.A	3.45	H.L.A	3.39	M.L.A	3.35	M.L.A	2.98	M.L.A	3.40	H.L.A	3.23	M.L.A
Stakeholders and in particular employees have the right to whistle blow to the board without risk of retribution	2.73	M.L.A	2.99	M.L.A	3.26	M.L.A	3.49	H.L.A	3.59	H.L.A	3.63	H.L.A	3.35	M.L.A	3.14	M.L.A	3.34	M.L.A	3.30	M.L.A
Transparency and Disclosure																				
Disclosure of Company objectives	2.99	M.L.A	4.01	H.L.A	3.22	M.L.A	3.54	H.L.A	3.59	H.L.A	3.51	H.L.A	3.26	M.L.A	3.23	M.L.A	3.46	V.H.L.A	3.45	H.L.A
Disclosure of Governance structures	2.71	M.L.A	3.72	H.L.A	3.24	M.L.A	3.36	M.L.A	3.40	M.L.A	3.52	H.L.A	3.30	M.L.A	3.09	M.L.A	3.39	M.L.A	3.32	M.L.A
Disclosure of Governance policies and governance codes	3.63	H.L.A	3.62	H.L.A	3.14	M.L.A	3.26	M.L.A	3.33	M.L.A	3.32	M.L.A	3.17	M.L.A	3.30	M.L.A	3.24	M.L.A	3.33	M.L.A
The Board of Directors																				
Board members exercise duties of loyalty and care	2.67	M.L.A	2.94	M.L.A	3.18	M.L.A	3.43	H.L.A	3.52	H.L.A	3.51	H.L.A	3.30	M.L.A	3.30	M.L.A	3.19	M.L.A	3.24	M.L.A
The board oversees the process of disclosure and communications	2.63	M.L.A.	3.03	M.L.A	3.12	M.L.A	3.39	M.L.A	3.48	H.L.A	3.58	H.L.A	3.17	M.L.A	3.07	M.L.A	3.36	M.L.A	3.23	M.L.A
The board is capable of objective independent judgment	2.72	M.L.A	3.23	M.L.A	3.27	M.L.A	3.44	H.L.A	3.51	H.L.A	3.51	H.L.A	3.52	H.L.A	3.15	M.L.A	3.39	M.L.A	3.32	M.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Level of Awareness of Corporate Governance among Firms in Niger Delta, Nigeria	2.77	M.L.A	3.08	M.L.A	3.22	M.L.A	3.40	H.L.A	3.46	H.L.A	3.45	H.L.A	3.29	M.L.A	3.10	M.L.A	3.30	M.L.A	3.25	M.L.A
Stakeholders Engagement																				
Opportunity risk examinations	2.96	M.L.A	3.50	H.L.A	3.48	H.L.A	3.71	H.L.A	3.75	H.L.A	3.76	H.L.A	3.52	H.L.A	3.41	H.L.A	3.39	M.L.A	3.51	H.L.A
Scope agreement	2.87	M.L.A	3.42	H.L.A	3.35	M.L.A	3.49	H.L.A	3.54	H.L.A	3.69	H.L.A	3.43	H.L.A	3.24	M.L.A	3.39	M.L.A	3.40	M.L.A
Setting of targets for stakeholders	3.00	M.L.A.	3.52	H.L.A	3.41	H.L.A	3.59	H.L.A	3.60	H.L.A	3.69	H.L.A	3.35	M.L.A	3.39	M.L.A	3.26	M.L.A	3.43	H.L.A
Level of Awareness of Stakeholders Engagement among Firms in Niger Delta, Nigeria	2.71	M.L.A	3.12	M.L.A	3.28	M.L.A	3.49	H.L.A	3.52	H.L.A	3.61	H.L.A	3.32	M.L.A	3.17	M.L.A	3.25	M.L.A	3.29	M.L.A
Transparency and Measurement																				
Information Collection Review	2.81	M.L.A	3.30	M.L.A	3.47	H.L.A	3.63	H.L.A	3.66	H.L.A	3.82	H.L.A	3.57	H.L.A	3.35	M.L.A	3.34	M.L.A	3.45	H.L.A
Document Review	2.90	M.L.A	3.36	M.L.A	3.24	M.L.A	3.71	H.L.A	3.71	H.L.A	3.76	H.L.A	3.43	H.L.A	3.27	M.L.A	3.46	H.L.A	3.45	H.L.A
Mapping against Standards	2.90	M.L.A	3.36	M.L.A	3.52	H.LA	3.62	H.L.A	3.61	H.L.A	3.63	H.L.A	3.57	H.L.A	3.39	M.L.A	3.41	H.L.A	3.46	H.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Level of Awareness of Transparency and Measurement among Firms in Niger Delta, Nigeria	2.74	M.L.A	2.99	M.L.A	3.24	M.L.A	3.54	H.L.A	3.54	H.L.A	3.59	H.L.A	3.28	M.L.A	3.12	M.L.A	3.25	M.L.A	3.27	M.L.A
Corporate Social Responsibility																				
Provision of Employment opportunities	2.99	M.L.A	3.70	H.L.A	3.64	H.L.A	3.87	H.L.A	3.84	H.L.A	3.76	H.L.A	3.39	M.L.A	3.55	H.L.A	3.45	H.L.A	3.59	H.L.A
Human capital development	2.88	M.L.A	3.36	M.L.A	3.24	M.L.A	3.40	H.L.A	3.47	H.L.A	3.63	H.L.A	3.61	H.L.A	3.18	M.L.A	3.36	M.L.A	3.36	M.L.A
Peace and security	2.83	M.L.A	3.39	M.L.A	3.28	M.L.A	3.31	M.L.A	3.40	M.L.A	3.69	H.L.A	3.57	H.L.A	3.11	M.L.A	3.43	H.L.A	3.35	M.L.A
Level of Awareness of Corporate Social Responsibility among Firms in Niger Delta, Nigeria	2.89	M.L.A	3.07	M.L.A	3.16	M.L.A	3.46	H.L.A	3.51	H.L.A	3.68	H.L.A	3.23	M.L.A	3.07	M.L.A	3.26	M.L.A	3.28	M.L.A
Employment Practices																				
Training of personnel	2.78	M.L.A	3.51	H.L.A	3.02	M.L.A	3.51	H.L.A	3.51	H.L.A	3.82	H.L.A	3.17	M.L.A	3.17	M.L.A	3.53	H.L.A	3.37	M.L.A
Wages/salary induced motivation	2.71	M.L.A	3.65	H.L.A	3.44	H.L.A	3.45	H.L.A	3.50	H.L.A	3.57	H.L.A	3.17	M.L.A	3.07	M.L.A	3.48	H.L.A	3.36	M.L.A
Teamwork	2.74	M.L.A	3.20	M.L.A	3.15	M.L.A	3.49	H.L.A	3.45	H.L.A	3.51	H.L.A	3.48	H.L.A	3.06	M.L.A	3.41	H.L.A	3.30	M.L.A
Level of Awareness of Employment Practices among Firms in States in Niger Delta, Nigeria	2.84	M.L.A	3.10	M.L.A	2.91	M.L.A	3.41	H.L.A	3.41	H.L.A	3.56	H.L.A	3.45	H.L.A	2.97	M.L.A	3.35	M.L.A	3.24	M.L.A

Table 6 Continued

SUSTAINABILITY PRACTICES	Mean Score ABS N=89	Remark	M.S AKS N=113	Remark	MS BYS N=85	Remark	MS CRS N=112	Remark	MS DTS N=126	REMARK	MS EDS N=114	REMARK	MS IMO N=92	REMARK	MS ONDO N=109	REMARK	MS RIV N=140	REMARK	COMBINED MS N=980	REMARK
Protection of the Environment																				
Building designs, construction practices and technologies that are environmentally friendly and sustainable	3.16	M.L.A	3.74	H.L.A	3.26	M.L.A	3.76	H.L.A	3.79	H.L.A	3.69	H.L.A	3.52	H.L.A	3.57	H.L.A	3.69	H.L.A	3.60	H.L.A
Effective communication of sustainability and other environmental management issues among contractors, suppliers and other professionals engaged by the organisation	2.89	M.L.A	3.60	H.L.A	3.34	M.L.A	3.49	H.L.A	3.50	H.L.A	3.69	H.L.A	3.52	H.L.A	3.39	M.L.A	3.60	H.L.A	3.47	H.L.A
Development of special training programmes for upgrading knowledge and skills in various discipline required for environmental management	3.54	H.L.A	2.57	L.L.A	3.15	M.L.A	3.31	M.L.A	3.35	M.L.A	3.45	H.L.A	3.52	M.L.A	3.25	M.L.A	3.22	M.L.A	3.25	M.L.A
Level of Awareness of Protection of the Environment among Firms in Niger Delta, Nigeria	2.86	M.L.A	2.76	M.L.A	3.13	M.L.A	3.37	M.L.A	3.39	M.L.A	3.56	H.L.A	3.37	M.L.A	3.05	M.L.A	3.23	M.L.A	3.20	M.L.A
Level of Awareness of Firms'sustainability Practices among Construction Firms in Niger Delta, Nigeria	2.98	M.L.A	3.32	M.L.A	3.23	M.L.A	3.66	H.L.A	3.73	H.L.A	3.78	H.L.A	3.47	H.L.A	3.31	M.L.A	3.51	H.L.A	3.48	H.L.A

V.L.L.A – Very Low Level of Awareness, L.L.A – Low level of Awareness, M.L.A – Moderate Level of Awareness, H.L.A – High Level of Awareness and V.H.L.A – Very High Level of Awareness

Difference in the Levels of Awareness of Sustainability Practices among the Construction Firms in Niger Delta, Nigeria

Hypothesis one which states that there is no significant difference in the levels of awareness of sustainability practices among the construction firms in Niger Delta, Nigeria was tested. Table 7 shows the result of Kruskal Wallis test that was conducted to test the hypothesis which states that there is no significant difference in the levels of awareness of sustainability practices among the construction firms in Niger Delta, Nigeria. The P-value of 0.001 is less than 0.05 significance level, hence the hypothesis was rejected. This indicates that there is a significant difference in the level of awareness of sustainability practices among the states in Niger Delta, Nigeria. This result indicates that the level of awareness of sustainability practices among the firms is higher in some states compared to others. This can be attributed to difference in the level of agitations by the communities, and sensitisation programmes and workshops on sustainable development by the construction firms.

Table 7: Kruskal Wallis Test for Comparing the Level of Awareness of Sustainability Practices among Construction Firms in Niger Delta, Nigeria

States in Niger Delta	**Mean Rank**	**Decision @ 0.05 Sig. level.**
Abia	278.75	
Akwa Ibom	611.68	
Bayelsa	658.86	
Cross Rivers	934.58	
Delta	992.05	
Edo	1052.83	
Imo	717.84	
Ondo	558.04	
Rivers	760.88	
Chi- Square	422.48	
D.F	8	
P-Value	0.001	Reject

Post Hoc Test on Level of Awareness of Sustainability Practices among Construction Firms in Niger Delta, Nigeria

The result of post hoc test on level of awareness of sustainability practices among construction firms in Niger Delta, Nigeria is shown in Table 8. Because of the significant level in the level of awareness of sustainability practices among construction firms in Niger Delta, Nigeria, a post hoc test was conducted on the states using Bonferroni and Dunnett test (Bonferroni-Dunn test) to determine the source(s) of the difference. The result of Bonferroni's multiple comparisons shows that seven states contributed to the significant difference in the level of awareness of sustainability practices in Niger Delta, except Bayelsa and Imo. This was validated by Dunnett test result which showed that the other seven states have P-values less than 0.05 significant level, except Bayelsa and Imo state which have the P-value greater than 0.05.

Table 8: Post Hoc Test on Level of Awareness of Sustainability Practices among Construction Firms in Niger Delta, Nigeria

	(I) STATES IN NIGER DELTA	(J) STATES IN NIGER DELTA	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Bonferroni	ABIA	AKWA IBOM	-.3391*	.03944	.001	-.4655	-.2128
		BAYELSA	-.4259*	.03944	.001	-.5522	-.2996
		CROSS RIVERS	-.6759*	.03944	.001	-.8022	-.5496
		DELTA	-.7453*	.03944	.001	-.8716	-.6190
		EDO	-.8038*	.03944	.001	-.9302	-.6775
		IMO	-.4802*	.03944	.001	-.6066	-.3539
		ONDO	-.3250*	.03944	.001	-.4513	-.1987
		RIVERS	-.5266*	.03944	.001	-.6529	-.4003
	AKWA IBOM	ABIA	.3391*	.03944	.001	.2128	.4655
		BAYELSA	-.0868	.03944	1.000	-.2131	.0396
		CROSS RIVERS	-.3368*	.03944	.001	-.4631	-.2105
		DELTA	-.4062*	.03944	.001	-.5325	-.2799
		EDO	-.4647*	.03944	.001	-.5910	-.3384
		IMO	-.1411*	.03944	.013	-.2674	-.0148
		ONDO	.0141	.03944	1.000	-.1122	.1404
		RIVERS	-.1875*	.03944	.001	-.3138	-.0611
	BAYELSA	ABIA	.4259*	.03944	.001	.2996	.5522
		AKWA IBOM	.0868	.03944	1.000	-.0396	.2131
		CROSS RIVERS	-.2500*	.03944	.001	-.3763	-.1237
		DELTA	-.3194*	.03944	.001	-.4458	-.1931
		EDO	-.3779*	.03944	.001	-.5043	-.2516
		IMO	-.0543	.03944	1.000	-.1807	.0720
		ONDO	.1009	.03944	.383	-.0254	.2272
		RIVERS	-.1007	.03944	.387	-.2270	.0256
	CROSS RIVER	ABIA	.6759*	.03944	.001	.5496	.8022
		AKWA IBOM	.3368*	.03944	.001	.2105	.4631
		BAYELSA	.2500*	.03944	.001	.1237	.3763
		DELTA	-.0694	.03944	1.000	-.1957	.0569
		EDO	-.1279*	.03944	.043	-.2543	-.0016
		IMO	.1957*	.03944	.001	.0693	.3220
		ONDO	.3509*	.03944	.001	.2246	.4772

Table 8 Continued

(I) STATES IN NIGER DELTA	(J) STATES IN NIGER DELTA	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
	RIVERS	.1493*	.03944	.006	.0230	.2756
DELTA	ABIA	.7453*	.03944	.001	.6190	.8716
	AKWA IBOM	.4062*	.03944	.001	.2799	.5325
	BAYELSA	.3194*	.03944	.001	.1931	.4458
	CROSS RIVERS	.0694	.03944	1.000	-.0569	.1957
	EDO	-.0585	.03944	1.000	-.1848	.0678
	IMO	.2651*	.03944	.001	.1388	.3914
	ONDO	.4203*	.03944	.001	.2940	.5466
	RIVERS	.2187*	.03944	.001	.0924	.3450
EDO	ABIA	.8038*	.03944	.001	.6775	.9302
	AKWA IBOM	.4647*	.03944	.001	.3384	.5910
	BAYELSA	.3779*	.03944	.001	.2516	.5043
	CROSS RIVERS	.1279*	.03944	.043	.0016	.2543
	DELTA	.0585	.03944	1.000	-.0678	.1848
	IMO	.3236*	.03944	.001	.1973	.4499
	ONDO	.4788*	.03944	.001	.3525	.6051
	RIVERS	.2772*	.03944	.001	.1509	.4036
IMO	ABIA	.4802*	.03944	.001	.3539	.6066
	AKWA IBOM	.1411*	.03944	.013	.0148	.2674
	BAYELSA	.0543	.03944	1.000	-.0720	.1807
	CROSS RIVERS	-.1957*	.03944	.001	-.3220	-.0693
	DELTA	-.2651*	.03944	.001	-.3914	-.1388
	EDO	-.3236*	.03944	.001	-.4499	-.1973
	ONDO	.1552*	.03944	.003	.0289	.2815
	RIVERS	-.0464	.03944	1.000	-.1727	.0800
ONDO	ABIA	.3250*	.03944	.001	.1987	.4513
	AKWA IBOM	-.0141	.03944	1.000	-.1404	.1122
	BAYELSA	-.1009	.03944	.383	-.2272	.0254
	CROSS RIVERS	-.3509*	.03944	.001	-.4772	-.2246
	DELTA	-.4203*	.03944	.001	-.5466	-.2940
	EDO	-.4788*	.03944	.001	-.6051	-.3525
	IMO	-.1552*	.03944	.003	-.2815	-.0289
	RIVERS	-.2016*	.03944	.001	-.3279	-.0753
RIVERS	ABIA	.5266*	.03944	.001	.4003	.6529
	AKWA IBOM	.1875*	.03944	.001	.0611	.3138
	BAYELSA	.1007	.03944	.387	-.0256	.2270
	CROSS RIVERS	-.1493*	.03944	.006	-.2756	-.0230
	DELTA	-.2187*	.03944	.001	-.3450	-.0924
	EDO	-.2772*	.03944	.001	-.4036	-.1509
	IMO	.0464	.03944	1.000	-.0800	.1727
	ONDO	.2016*	.03944	.001	.0753	.3279

Table 8 Continued

	(I) STATES IN NIGER DELTA	(J) STATES IN NIGER DELTA	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Dunnett t (2-sided)[a]	ABIA	RIVERS	-.5266*	.03944	.001	-.6313	-.4219
	AKWA IBOM	RIVERS	-.1875*	.03944	.001	-.2922	-.0827
	BAYELSA	RIVERS	-.1007	.03944	.065	-.2054	.0040
	CROSS RIVERS	RIVERS	.1493*	.03944	.001	.0446	.2540
	DELTA	RIVERS	.2187*	.03944	.001	.1140	.3234
	EDO	RIVERS	.2772*	.03944	.001	.1725	.3820
	IMO	RIVERS	-.0464	.03944	.780	-.1511	.0584
	ONDO	RIVERS	-.2016*	.03944	.001	-.3063	-.0969

CONCLUSION

This study assessed the level of awareness of sustainability practices among construction firms in Niger Delta and concluded that level of awareness of sustainability practices among construction firms in Niger Delta is high. This high level of awareness implies that there is an improvement in the level of awareness of sustainability practices among construction firms in Niger Delta. This study also concludes that there is a significant difference in the level of awareness of sustainability practices among the states in Niger Delta, Nigeria. It can be concluded that the high level of awareness will lead to high level of adoption of sustainability practices among construction firms which will in turn lead to high performance among the construction firms in Niger Delta. Based on the findings and conclusion of this study, this study recommends that construction firms should sustain the level of awareness of sustainability practices in order to improve on the level of adoption of sustainability practices which will in turn improve on the level of performance of the construction firms operating in Niger Delta,Nigeria.

References

Abdullah, A., Bilau, A. A., Enegbuma, W. I., Ajagbe, A. M., Ali, K. N. and Bustani, S. A. (2012), Small and Medium Sized Construction Firms Job Satisfaction and Evaluation in Nigeria. *International Journal of Social Science and Humanity*, 2**(**1): 35-40.

Addis, B. and Talbot, R. (2001). Sustainable Construction Procurement: a Guide to Delivering Environmentally Responsible Projects*, CIRIA C571*, London, CIRIA.

Asad, S and Khalfan, M.M.A. (2007). Integration of Sustainability Issues within Construction Processes, *Emirates Journal for Engineering Research,* 12 (2): 11-21.

Brundtland, G. H. (1987). *Our Common Future: Report of the World Commission in Environment and Development,* Oxford: Oxford University Press.

Chambers (1993). *The Chambers Dictionary*. Chambers Harrap Publishers Ltd, Edinburgh.

Dania,A. A, Larsen,G. D. and ,Yao, R. (2013). Mainstreaming Sustainable Construction: Case Studies of an Indigenous and Multinational Firm in Nigeria, Working Paper Proceedings, Engineering Project Organization Conference Devil's Thumb Ranch, Colorado.

Elkington, J. (1994). Towards the Sustainable Corporation: Win-Win-Win Strategies for Sustainable Development. *California Management Review*, 36(2): 90-100.

Groves, R. M. (2006). Non Response Rates and Non Response Bias in Household Surveys. *Public Opinion Quarterly*, 70(5):646-675.

Harvey, B. and Wayne, B.(2008). Developing an Operational and Material CO_2 Calculation Protocol for Buildings. Proceedings of the Sustainable Building 2008 (SB08) Conference September 21 -25, 2008, held at Melbourne, Australia.

Ijaiya, H. (2014). Challenges of Corporate Social Responsibility in the Niger Delta Region of Nigeria, Afe Babalola University: *Journal of Sustainable Development Law and Policy*, 3(1): 60-71.

Ijigah, E. A., Jimoh, R. A., Aruleba, B. O. and Ade, A. B. (2013). An Assessment of Environmental Impacts of Building Construction Projects, *Civil and Environmental Research,* 3(1): 93-104.

Ite, A. E., Ibok, U. J., Ite, M.U., and Petters, S.W. (2013). Petroleum Exploration and Production: Past and Present Environmental Issues in the Nigeria's Niger Delta. *American Journal of Environmental Protection,* 1(4): 78-90

Kadafa, A. A. (2012). Environmental Impacts of Oil Exploration and Exploitation in the Niger Delta of Nigeria, *Global Journal of Science Frontier Research Environment and Earth Sciences*, 12(3): 19-28.

Kazaz, A, Manisali E, Ulubeyli S. (2008). Effect of Basic Motivational Factors on Construction Workforce Productivity in Turkey. *J Civil Eng Manage.* 14:95–106.

Kheni, N.A and Akoogo, M.A. (2015).Determinants of Sustainable Construction Practices in Ghana Using Structural Equation Modelling. *Journal of Sustainable Development*; 8(3): 67-78.

Michael, B. and Gross, R.(2004). Running Business like a Government in the New Economy Lessons for Organizational Design and Corporate Governance, *Corporate Governance*,4(3): 32–46.

Noor, M. K.M.A., Maqsood,T. Alshanbri, N. and Sagoo, A.(2015). Perceptions towards Sustainable Construction amongst Construction Contractors in State of Victoria, Australia *Journal of Economics, Business and Management,* 3(10):940- 947.

Oni, O.J. (2015). Accelerating Sustainable Construction in Nigeria: The Professionals' Perspective, *Civil and Environmental Research*,7(10): 61-67.

Parkin, S. (2000). Context and Drivers for Operationalising Sustainable Development, *Proceedings of ICE*, 138: 9-15.

Porter, T. B. (2008), Managerial Applications of Corporate Social Responsibility and Systems-Thinking for Achieving Sustainability Outcomes, *Systems Research and Behavioural Science*, 25: 397- 411.

Rao, P., and Holt, D. (2005). Do Green Supply Chains Lead to Competitiveness and Economic Performance? *International Journal of Operations and Production Management*, 25 (9), 898-916.

Saroop, S. H. and Allopi, D. (2014). Developing Eco Sensitive Infrastructure Solutions with the use of Sustainability Criteria. *International Journal of Science and Technology*, 3(2): 121-126.

Suliman, L. Kh. M., and Abdelnaser, O. (2009). Sustainable Development and Construction Industry in Malaysia, *Economic, Social, Political and Cultural Problems of the Future Society*, 10: 76-85.

Thwala, D. W., Ajagbe, A. M., Enegbuma, W. I., Bilau, A. A. and Long, C. L. (2012), Sudanese Small and Medium Sized Construction Firms: An Empirical Survey of Job Turnover. *Journal of Basic, Applied Scientific Research*, 2(8): 7414-7420.

Ujene, A.O. (2014). Integrating Environmental Priority Concerns in Building Planning and Production in Niger Delta, Nigeria,*Journal of Architcture, Planning and Construction Management,* 4 (2): 36-56.