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RESEARCH ARTICLE

GREEN PROCUREMENT IN THE BUILDING CONSTRUCTION INDUSTRY: CASE OF NIGER STATE, NIGERIA

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ABSTRACT

Since independence of Nigeria in 1960, the country has been experiencing a high degree of mismanagement of resources particularly in the area of public procurement. There have been existing open abuses to rules and standards in the award and execution of public contracts in Nigeria. Sustainable procurement means appreciating and managing social, ethical, safety, environmental and economic value associated with the supply chain and materials selection. Improving procurement performance helps to establish "purchasing social responsibility. This study attempts to assess sustainable procurement in building construction in Minna, Niger State. This was achieved through assessing the challenges inherent in the procurement system of Niger State and ascertaining the level of sustainable procurement practices existing in the public sector. Survey design method was adopted for the study which include the use of questionnaire and interview. Data for the study were sourced from two sources; which are primary and secondary sources. Findings from the study indicates that there are potential barriers to sustainable construction in Niger State which includes; lack of government commitment, economic conditions, lack of government support/no incentives, and fear of higher investment costs and that sustainability is not integrated into the construction procurement process in Niger State. Based on the findings, recommendations were made such as: incentives and support from the government and regulatory agencies should be made available to firms that are compliant to sustainability goals, so as to encourage the practice of sustainability.

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INTRODUCTION

Since independence of Nigeria in 1960, the country has been experiencing a high degree of mismanagement of resources particularly in the area of public procurement. There have been existing open abuses to rules and standards in the award and execution of public contracts in Nigeria. These were evident in over-invoicing, inflation of contract costs, and proliferation of white-elephant projects and diversion of public funds through all kinds of manipulation of contract system (World Bank, 1999). The regulatory bodies that were set up to ensure compliance with laid down rules and regulations on procurement and award of contracts in the public sector appeared ineffective. This resulted in high level of corruption and enormous wastage of public resources, lack of transparency, accountability, fairness and openness. The situation made foreign and even local investors to lose confidence in the Nigerian economy. It must be noted that the prevailing high level of corruption was closely linked up with the public sector procurement systems, and considering that about ten percent of the gross domestic product (GDP) must pass through the procurement systems. It then became imperative that the public procurement systems must be reformed if Nigeria must achieve economic growth and developmental strides in this new millennium. It was in the light of the above that President Olusegun Obasanjo on assumption of office, in 1999, sought for and obtained the World Bank assistance to undertake a study of the existing procurement and financial systems in Nigeria. The outcome was the proposal submitted by the World Bank to Mr. President in 1999 that was tagged the "Country Procurement Assessment Report" (CPAR) which indicated the need for reform of the procurement law based on the United Nations Commission on International Trade Law (UNCITRAL) which has proven effective in a number of countries in the developed world, even in Lithuania, Estonia and Tanzania (World Bank, 1999). The findings of the Study (CPAR), which covered institutional as well as organizational structures relating to the existing procurement regime, are (World Bank, 1999):

- Proliferation and ineffectiveness of Tender Boards.
- Lack of professionalism in the execution of the procurement functions.
- Weaknesses in bank financed projects.
- Excessive deposit for opening of letters of credit.
- Lack of communication strategy.

- Weaknesses in the export, import and tariff procedures.
- Lack of streamlined quality control practices.
- Lack of knowledge in electronic procurement in the public sector.

It is on the background above that Obasanjo administration reformed the public procurement system in Nigeria. He introduced new procurement system called "Due Process" Policy in 2001, that is transparent, efficient, and effective and which delivers value for money in public finance budgeting and expenditure. This reform constitutes a major landmark in the contemporary Nigeria, which is a deliberate departure from the previous administrations in the country. In the era of global awareness on sustainability (Bryde and Meehan, 2011), whether in the public or private sector, there are rising pressures and expectations on a more efficient and value added deliveries of products and services for their organisational needs (Grönroos, 2006; Walker and Brammer, 2011; and Bryde and Meehan, 2010). All stakeholders from employees and shareholders to taxpayers and government bodies are demanding quality and effective procurement processes and system which can be sustainable (Kalubanga, 2012). According to Walker and Brammer (2009); Bryde and Meehan (2011), "Sustainable procurement means appreciating and managing social, ethical, safety, environmental and economic value associated with the supply chain and materials selection. Improving procurement performance helps to establish "purchasing social responsibility" (Walker and Brammer, 2009); making common sustainable procurement in line with Legislations/initiatives for the selection of materials, suppliers and subcontractors, take account of impacts on environmental, community, responsibility, selection and improved usage of products, works and services" (Bryde and Meehan, 2011).

Sustainability even though has become a prime concern in the procurement for construction (Jones *et al.,* 2010) in recent years. There are several studies that identify a perception ofincreased cost as a significant barrier to green procurement (Walker and Brammer, 2009). Sustainable Procurement is a relatively new and a difficult concept for organisations on global scale. It has risen to become an imperative priority among organisations to meet their future needs. These processes are ahead of procurement maturity towards sustainability by organisations. Effective procurement systems are defined as offering a high level of transparency, accountability and value for money in the application of a procurement strategy (Humphreys *et al.,* 2012). They are critical to development of standardisation and transparency; sustainable procurement in governance policy on sustainability commitments to international pressures (Asian Development Bank, 2011; Grönroos, 2011). Hence, organisations in local context in the procurement development process must have a vested interest in promoting good governance (Nijaki and Worre, 2012). Despite its implied objectives, the current procurement system (Malhotra *et al.,* 2002) had a number of weaknesses which include; red tape process delays and lack of institutional co-ordination characterized the current procurement system in the organisation (Lund-Thomsen *et al.,*2011); mismanagement or unethical conducts upset procurement system (Lund-Thomsen *et al.,* 2011; Oke, 2007);lack ofcoherent management attention to problems caused in theprocurement area(Walker and Brammer, 2009); poor management practices in the procurement sub-system both at procurerand end-user administrations (Nijaki and Worre, 2012); limitation in sustainable procurement knowledge and lack of expertise, inadequate green knowledge of green products relevant to operationallevels (Walker and Brammer, 2009; Stonebraker*et al.,* 2009); and the lack of concentration in the existing regulations and guidelines bygovernments on green sustainability, (Lund-Thomsen *et al.,* 2011). Therefore, this study attempts to assess sustainable procurement in building construction in Minna, Niger State. This was achieved through assessing the challenges inherent in the procurement system of Niger State and ascertaining the level of sustainable procurement practices existing in the public sector.

Literature Review

Concept and Meaning of Sustainable Procurement: Sustainable procurement is about the process of purchasing goods and services that takes into account the social, economic and environmental impact that such purchasing has on people and communities. This includes optimizing price, quality, availability but also environmental life-cycle impact and social impacts linked to product/service's origin (Kalubanga, 2012; Walker and Brammer, 2011). The procurement process is viewed as involving sourcing comprising planning; needs identification; risk assessment; supplier selection; contracting, monitoring and evaluation, and expediting; based on the model definition (Rowlinson and McDermott, 1999). The most regularly cited definition for sustainable procurement originates from the UK Sustainable Procurement Task Force and coherently builds on this concept. The Task Force defines sustainable procurement as "a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy whilst minimizing damage to the environment" (DEFRA, 2006). In other words, sustainable procurement is where the concept of sustainable development and public procurement meet.

The concept is not about public sector procurement alone, there are to be greater challenges in existing private sector procurement processes and structure in developing countries like Nigeria (Boomsma, 2008). These create deficiency in the capacityneeded to ensure sustainability in public procurement. Walker and Brammer (2011), in their international comparativestudy of sustainable procurement in the public sector found out that somesustainable procurement practices are evident in public sector procurement practiceand that the extent and nature of sustainable procurement practices variessignificantly across regions. Sustainable procurement is not a new concept, but it can be a misunderstood one. With both the public and private sectors looking for ever increasing efficiencies in tough economic times, sustainable development, and the wider issues of corporate responsibility, could easily be overlooked as a costly 'nice to have', or an area to merely comply with legislations. However, there is a growing awareness that sustainable procurement may not only protect resources for the future, but also deliver much sought after tangible benefits in the here and now (McDonald, 2014).

Importance of Sustainable Procurement: In both private and public sectors, there is increasing pressure from customers,building owners, government to put sustainable procurement into practice (Walker and Brammer, 2011). The 2002 World Summit on Sustainable Development stated that

relevant authorities at all levels should: "promote public procurement policies that encourage development and diffusion of environmentally sound goods and services". In response to this, facility managers and procurement professionals have introduced policies and strategies embedding sustainable development concerns (McLennan, 2004; Bryde and Meehan, 2011). Organisations who are currently practicing sustainable procurement met their needs for goods, services and works not for short-term cost gains, but with an outlook to maximizing long-term financial benefits for their organisations and the wider world (Pennanen*et al.,* 2005). Kalubanga (2012) explained that organisations who does so must incorporate "extrinsic cost considerations into decisions alongside the conventional procurement criteria of price and quality". He also highlighted that these considerations are typically categorised as "Environmental", "Economic" and "Social" also known as the "triple bottom line" (Kalubanga, 2012).

Potential Benefits from Sustainable Procurement: Studies reviewed revealed that if implemented effectively, sustainable procurement has the potential to cut costs, shorten timescales, enhance stakeholder relationships, increase sales, reduce risks, enhance reputation and improve profit margins. Kennard (2006) and Kalubanga (2012) indicated that benefits to anorganisation in adopting a Sustainable Procurement Policy will include; control of costs by adopting a wider approach to whole life-cycle costing (The Facilities Society, 2012); improve internal and external standards through performance assessments(Tucker and Pitt, 2009);compliance with national and international environmental and social legislations (DEFRA, 2007);managing risks in the supply chain and CSR (Lamming and Hampson, 1996, Jones *et al.,* 2006);building a sustainable supply chain for the future (Mohd-Noor and Pitt, 2009;Booty, 2009);involvement of the local SME business in the industry (Asian DevelopmentBank, 2011). Others are; better quality of purchasing staff with more satisfying goals and improved performance;education of suppliers towards green products and improving their services;much more proactive internal dialogue and challenge on the demand side;more effective evaluation of proposals and bids; and more sustainable source of supply (Pitt *et al.,* 2005).

Empirical Studies: Several studies have been conducted on sustainable procurement. A 2004 survey was conducted concerning green procurement in Sweden with a sample of 558 public authorities.The results showed that 15% of the 400 respondents stated that they always usedenvironmental requirement, 46% usually did, 27% sometimes did, and 10% seldomor never do (Qiao and Wang, 2011). Qiao and Wang (2011) research reviewed thatfive studies conducted in the EU nations regarding sustainable procurement in 2004,2006, 2007, and 2008 through questionnaires sent to public procurement professionals. The percentage of the respondents who confirm their use ofsustainable procurement varies: 23% in 2004 survey, 32% in 2006 survey, 48% in2007, and 23% in 2008. It was found that only 16% of these procurementprofessionals' documents for procurement indicate the concern for sustainability as amajor requirement in their procurement (Walker and Brammer, 2009).Kalubanga (2012) research also reviewed studies in the European Union found in 2009 that 80% of buyers initiated sustainable procurement programmes in 2008, while 90% see them as "critical" to the survival of their business (Kalubanga, 2012).

MATERIALS AND METHODS

Survey design method was adopted for the study which include the use of questionnaire and interview. The questionnaire was design to obtain information on sustainable procurement through questions related to the current use of sustainable procurement initiatives, drivers for implementation, benefits of using sustainable procurement, and challenges to implementation. So, data for the study were sourced from two sources; which are primary and secondary sources. The primary sources of data are structured questionnaires and interviews conducted with various institutions in Niger State and professionals in the construction industry. The secondary sources of data were obtained from journals, books, related literature materials and archival data from relevant organisations. A sample size of 150 was drawn from the list of registered professionals (Quantity surveyors, Architects, Builders, Engineers and procurement officers) from their respective professional bodies. The questionnaires were analysed descriptively through the use of frequency table, ranking and statistical tools such as paired t-test among others. The interview results were transcribed, sorted, coded and analysed using the deductive analysis method. This method of analysis (deductive) comprises constant comparison between the interview results in order to determine common patterns in the interviewees responses.

RESULTS

Demographic Characteristics of Respondents: The demographic characteristics of the respondents which comprise their role within the institution, educational qualification, working experience, and knowledge of procurement process is discussed under this section. Findings as shown in Table 1 reveal that, procurement officers represent 17.33% of the respondents; Quantity Surveyors (26.67%), Architects (7.33%), Engineers (10.00%), Supply Chain Managers (7.33%) and other professionals (31.33%). This implies that Quantity Surveyor as a single role within the institutions represent the major role.

Table 1. Distribution of Respondents according to Work Role within the Institution

Work Role	Frequency Count	Percentage (%)
Procurement Officer	26	17.33
Quantity Surveyor	40	26.67
Architect	11	7.33
Engineer	15	10.00
Supply Chain Manager	11	7.33
Others	47	31.33
TOTAL	**150**	**100**

Source: Researcher's Field Work, 2016

Table 2. Distribution of Respondents according to Academic Qualification

Academic Qualification	Frequency Count	Percentage (%)
GCE A'Level / SSSCE or equivalent	15	10.00
Higher National Diploma (HND)	26	17.33
Bachelor Degree	52	34.67
MBA / MSc	57	38.00
Others	-	-
TOTAL	150	100

Source: Researcher's Field Work, 2016

Table 3. Distribution of Respondents according to Years of Experience

Academic Qualification	Frequency Count	Percentage (%)
0 – 5 years	47	31.33
6 – 10 years	43	28.67
11 – 15 years	31	20.67
16 – 20 years	17	11.33
20 years and above	12	8.00
TOTAL	150	100

Source: Researcher's Field Work, 2016

Table 4. Distribution of Respondents according to Awareness Level of Sustainable Procurement

Awareness of Sustainable Procurement	Frequency Count	Percentage (%)
Yes	113	75.33
No	37	24.67
TOTAL	**150**	**100**

Source: Researcher's Field Work, 2016

Table 5. Distribution of Respondents according to Involvement in Construction Procurement Process

Awareness of Sustainable Procurement	Frequency Count	Percentage (%)
Yes	101	67.33
No	49	32.67
TOTAL	**150**	**100**

Source: Researcher's Field Work, 2016

Table 6. Distribution of Respondents according to Issues Addressed by 2007 Procurement Act

Issues Addressed	Frequency Count	Percentage (%)
Social Issues	12	8.00
Economic Issues	65	43.34
Environmental Issues	45	30.00
Social, Economic and Environmental Issues	17	11.33
None of the Above	11	7.33
TOTAL	116	100

Source: Researcher's Field Work, 2016

The academic qualification of the respondents as shown in Table 2 reveal that GCE A'Level/SSSCE or equivalent represent 10.00, Higher National Diploma (HND) repreent 17.33%, Bachelor Degree represent 34.67%, and MBA/MSc/MTech represent 38.00%. This implies that majority of the respondents fall within the category of MBA/MSc/MTech. This is an indication that the respondents have the capacity to comprehend procurement process. The distribution of the respondents according to their years of experience is presented in Table 3. Respondents with 0-5 years represent 31.33%, those with 6-10 years represent 28.67%, 11-15 years represent 20.67%, 16-20 years represent 11.33% and respondents with 20 years and above represent 8.00%. Findings as shown in Table 4 reveal that majority (75.33%) responded Yes to awareness of sustainable procurement and 24.67% responded No. This implies that most of the respondents are aware of sustainable procurement. The distribution of respondents according to their involvement in construction procurement process reveal that 67.33% of the respondents responded Yes to involvement in construction procurement process and 32.67% said No (see Table 5). This implies that majority are involved in construction procurement process which is also an indication of the level of knowledge/experience in construction procurement process. Findings as shown in Table 6 reveal that 8.00% of the respondents are of the opinion that social issues are addressed by 2007 Procurement Act, 43.34% said economic issues are addressed by 2007 Procurement Act, 30.00% said environmental issues are addressed, 11.33% said social, economic and environmental issues are addressed, and 7.33% of the respondents said none of the listed issues are addressed by 2007 Procurement Act. This implies that majority of the respondents are of the opinion that economic issues are addressed by 2007 Procurement Act.

Challenges to Sustainable Procurement: Findings as shown in Table 7**.** revealed that amongst all the different categories of respondents, the potential barriers to better addressing sustainable construction bypublic clients in Niger State construction projects that ranked 1st are: Lack of government commitment, Economic conditions, Lack of government support/no incentives, and Fear of higher investment costs. This is an indication that there are potential barriers to better addressing sustainable construction by public clients in Niger State construction projects' procurement strategies. Also, findings from the paired t-test revealed that among the different groups of respondents, Procurement Officers have the highest mean value (36.9767), which translates to experiencing most of the barriers.

Table 7. The potential barriers to better addressing sustainable construction byNigerian public clients in developing construction projects' procurement strategies

Coding	Barriers to sustainable procurement	Procurement Officer	Rank	QS	Rank	Architect	Rank	Engineers	Rank	Supply chain Officer	Rank	Others	Rank
B1	Economic conditions	4.35	2	4.26	1	4.40	2	4.31	3	3.50	20	4.12	3
B2	Risk associated with implementation of new practices	3.80	20	3.88	6	3.73	22	3.88	13	2.83	38	3.44	29
B3	Sustainable construction is expensive	3.70	24	3.59	25	4.13	7	3.69	23	3.83	13	3.60	21
B4	Lack of clear benefits of sustainable construction	4.00	7	3.38	32	3.93	11	3.94	9	3.17	28	3.36	35
B5	Fewer developers undertake green building projects	3.95	12	3.56	26	3.80	18	3.94	9	3.17	28	3.72	16
B6	Unwillingness to change	4.10	4	3.82	8	4.20	5	3.94	9	2.67	41	3.72	16
B7	Lack of qualified staff	3.15	39	2.71	39	3.00	38	2.69	42	3.00	34	2.96	39
B8	No existing rule in Nigeria to adopt sustainable construction	4.00	7	3.32	33	4.20	5	4.25	4	3.83	13	3.76	15

Continue.....

B9	Lack of government support/no incentives	3.85	15	3.56	26	3.93	11	4.44	1	3.67	17	4.32	2
B10	Lack of awareness	3.40	35	3.29	35	3.40	33	3.69	23	4.00	9	3.80	12
B11	Fear of higher investment costs	3.85	15	3.65	18	3.73	22	3.38	34	4.33	1	3.56	24
B12	Fear of long Pay-back period	3.50	32	3.53	28	3.53	29	3.75	20	3.17	28	3.72	16
B13	Client worries in profitability	3.60	28	3.50	29	3.60	26	3.88	13	3.50	20	3.80	12
B14	Ignorance of life cycle cost	3.60	28	3.79	11	4.20	5	4.00	7	4.00	9	4.12	3
B15	Lack of financial resources	4.00	7	3.62	23	4.27	3	3.38	34	3.50	20	3.48	27
B16	Lack of government policies/support	3.95	12	3.91	4	3.80	18	3.94	9	3.83	13	3.96	7
B17	Lack of building codes on sustainability	3.90	14	3.62	23	3.80	18	4.06	6	4.00	9	4.04	6
B18	Lack of government commitment	4.50	1	4.18	2	4.53	1	4.44	1	4.33	1	4.56	1
B19	Lack of legislation	3.85	15	3.85	7	3.87	15	3.63	26	4.17	5	3.80	12
B20	Lack of good quality leadership	3.55	30	3.15	38	3.67	24	3.44	33	3.17	28	3.52	25
B21	Lack of market segmentation	3.65	26	3.44	31	3.53	29	3.25	38	2.17	41	3.24	37
B22	Lack of motivation and aspiration values of managers	3.65	26	3.65	18	3.33	34	3.63	26	2.83	38	3.40	33
B23	Delay in decision making	3.70	24	3.74	14	3.87	15	3.75	20	3.17	28	3.60	21
B24	Lack of environmentally sustainable materials	4.20	3	3.50	29	4.27	3	3.63	26	3.67	17	3.44	29
B25	Lack of sustainability measurement tools	3.80	20	3.65	18	3.67	24	3.56	30	4.00	9	3.44	29
B26	Lack of exemplar 'demonstration project'	3.45	33	3.29	35	3.53	29	3.81	18	3.33	25	3.52	25
B27	Lack of easily accessible guidance	3.35	36	3.29	35	3.20	37	3.50	31	3.50	20	3.48	27
B28	Lack of technical ability	2.55	42	2.65	40	2.67	39	2.69	42	2.17	41	2.88	40
B29	Chronic skills and labour shortages	2.50	43	2.53	41	2.40	42	2.81	41	1.83	43	2.44	43
B30	Lack of awareness of professionals	2.90	40	2.74	38	2.60	40	3.25	38	3.00	34	2.88	40
B31	Lack of professional knowledge	2.65	41	2.41	42	2.53	41	2.88	40	3.33	25	2.84	42
B32	Lack of awareness of clients	3.75	22	3.32	33	3.27	35	3.88	13	4.33	1	3.96	7
B33	Lack of awareness of benefits	4.00	7	3.91	4	4.07	8	4.25	4	4.17	5	4.12	3
B34	Ignorance or misunderstanding of sustainability and Lack of education and knowledge in sustainable design	3.85	15	3.76	12	4.00	9	4.00	7	4.17	5	3.92	9
B35	Insufficient/inconsistent policies, regulations, incentives and commitment by leadership	4.00	7	3.71	16	4.00	9	3.75	20	4.33	1	3.92	9
B36	Lack of funding and restrictions on expenditure	4.10	4	3.76	12	3.93	11	3.63	26	3.83	13	3.64	19
B37	Separation between capital budget and operational budget	3.75	22	3.74	14	3.53	29	3.69	23	3.50	20	3.36	35
B38	General perception that addressing sustainability leads to incurring greater capital cost	3.30	37	3.65	18	3.60	26	3.38	34	3.33	25	3.20	38
B39	Lack of sufficient time to address sustainability issues	3.30	37	3.65	18	3.27	35	3.38	34	2.83	38	3.40	33
B40	Resistance to change	3.85	15	3.68	17	3.87	15	3.88	13	3.17	28	3.64	19
B41	Lack of long term perspective	3.45	33	4.00	3	3.60	26	3.50	31	3.00	34	3.52	24
B42	Insufficient integration and link up in the industry	4.05	6	3.82	8	3.80	18	3.88	13	3.00	34	3.60	21
B43	Insufficient research and development	3.55	30	3.82	8	3.93	11	3.81	18	3.67	17	3.88	11

Source: Author's Field Work (2016)

Table 8. One-Sample Test of Means of Barriers to Better Addressing Sustainable Construction byNigerian Public Clients in Developing Construction Projects

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	**Upper**
PRO	55.663	42	.000	36.97674	35.6361	38.3174
QS	54.758	42	.000	35.23256	33.9341	36.5310
ARCH	48.836	42	.000	36.76744	35.2481	38.2868
ENG	58.631	42	.000	36.90698	35.6366	38.1773
SCO	37.267	42	.000	34.41860	32.5548	36.2824
Other	56.717	42	.000	35.93023	34.6518	37.2087

*: Significant at 0.05 level

Source: Author's Field Work (2016)

This could further mean that procurement officers are the most appropriate to tackle these barriers. Findings from the study indicates that sustainability is not integrated into the construction procurement process in the construction industry in Niger State. It is supported by Wyatt (1994) who observed that the importance of integrating that sustainability into the construction procurement process is about managing the construction project during its lifecycle: construction, operation, eventual demolishing and recycling of the resources in order to reduce the waste resulting from the demolishing process when sustainability is integrated into procurement process. It is also in agreement with Raynsford, (2000) who observed that sustainable construction is the set of processes by which a profitable and competitive industry delivers built assets (buildings, structures, supporting infrastructure and their immediate surroundings) which enhance quality of life and offer customer satisfaction; offer flexibility and the potential to cater for user changes in the future; provide and support desirable natural and social environments; maximize the efficient use of resources and that a noticeable issue in Raynsford's definition is the emphasis that is given not, only to' the product but also to the process.

Conclusion and Recommendation

This study assessed the integration of sustainability into Niger State public procurement process. This was carried out through the examination of: barriers to sustainable procurement process. Forty three (43) potential barriers were identified to sustainable construction by public clients in developing

construction projects' procurement strategies, though only twenty six (26) were agreed upon. Among social, economic, and environmental sustainability criteria, only the economic criteria of sustainability is integrated in public procurement process in Niger State. Therefore, it can be said that the integration of sustainability issues into the public procurement process in Niger State is not practiced. Based on the findings of this study, the following recommendations are proferred: With the identified barriers, awareness and sensitization programmes should be organisedon a regular basis by relevant authorities of government and consultants/construction firms in Niger State.

- Stringent policies and laws should be instituted by the government. The implementation and enforcement of these policies and laws should be ensured through adequate supervision.
- Incentives and support from top management should be made available to firms that are compliant to sustainability goals, so as to encourage the practice of sustainability.

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