

RELATIONSHIP BETWEEN ADOPTION OF EXISTING PUBLIC PROCUREMENT REGULATIONS AND SUSTAINABLE CONTRACT ADMINISTRATION PRACTICES IN THE TERTIARY EDUCATION SECTOR IN NIGERIA

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ABSTRACT

Purpose: The aim of this research is to establish the relationship between existing public procurement regulations and sustainable contract administration in tertiary education sector projects, with a view to improve the overall performance of tertiary education projects in Nigeria.

Design/methodology/approach: A survey design approach was used in this study. A random sampling technique was used to select four six hundred and thirty five respondents from the Nigerian Tertiary institutions. Structured questionnaire was used as the research instrument for the study. The methods of data analysis were simple percentage, mean score, and Spearman Correlation test. The study revealed a response rate of 62%. Therefore, the response rate of 62% is considered adequate and sufficient for the study.

Findings: The study found that there is strong positive relationship/association between level compliance of public procurement regulations among tertiary institutions in Nigeria, and level of application of sustainable contract administration practices in construction project execution in the tertiary education sector in Nigeria. It is concluded that although, the level of compliance/adherence to existing public procurement regulations significantly influences/supports the implementation of sustainable contract administration practices in tertiary education sector projects in Nigeria, yet extent of support and influence have not attained the optimum expected possibly due to the current level of enforcement of existing public procurement regulations and inadequate framework for the enforcement. The findings of this study have significant influence on the successful contract administration in Tertiary educators as well as sustainability of project executed in the tertiary education sector

Practical implications: The findings of study will help to ensure adequate implementation of sustainability principles in contract administration, thereby enhancing the overall sustainability of the built environment in Nigeria. Furthermore, successful contract administration in Tertiary educators will reduce construction projects abandonment in the sector thereby ensuring a beautiful built environment, and overall environment sustainability of the Tertiary sector in Nigeria

Originality/value – This study recommended that Tertiary institutions in Nigeria should improve on the level of application of sustainable contract administration practices by improving top management support, corporate governance, professionalism in public procurement, effective stakeholder participation, and organizational culture. Furthermore, for public procurement regulations to optimally support and influence sustainable contract administration in tertiary education sector projects, government should ensure adequate enforcement of existing public procurement regulations and encourage satisfactory framework for the enforcement.

Keywords: Nigeria, Public Procurement Regulations, Relationship, Sustainable Contract Administration Practices, Tertiary Education Sector

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1. INTRODUCTION

Adedokun *et al.* (2022) observed that there is growing evidence of cost and time overruns in public tertiary education in Nigeria. Furthermore, Bamidele *et al.* (2019) found that the projects initiated in public tertiary institutions are bedeviled by time overrun. In addition, the rate of project abandonment in the tertiary education sector is also significant (Aghimien and Aigbavboa, 2018). A significant proportion of tertiary institutions sector projects suffered cost and time overruns, which resulted in change of project specifications to meet approved budget (Mangyvat *et al.*, 2020). It was revealed that tertiary education sector projects continue to record abysmal delay despite benefiting from a significant level of funding through the TETFUND (Ogbeifun and Pretorius, 2022). Therefore, promoting good governance is a global quest and effective public procurement is imperative to efficient public service governance. Good governance is manifested through efficient and effective management of public transactions in manner that guarantees value for money. In the public sector, Public Procurement Regulation (PPR) has remained one of the important tools with global acceptability implemented across the world to achieve this objective (Bamidele, 2020a).

Public procurement is the process of generating, managing, and completing contracts for the provision of products, services, construction works, disposal, or a mix of these aspects (Ngwu, 2017). It is further defined as a series of logically related actions that occur or are executed in a specific order and culminate in the completion of a key deliverable or the achievement of a milestone. Construction procurement is the process of identifying, selecting, and commissioning the contributions needed to complete the alteration, refurbishment, maintenance, extension, or demolition of an existing building or structure, as well as the construction of a new building and all other necessary site work (Oso, 2017). It is the acquisition of the wherewithal needed to achieve “social and economic functions” in public institutions. The definitions detailed in this section reveal a strong relationship between institution’s ability and fulfillment of its statutory functions. Therefore, proper management of processes that fulfills the contract has linkages with economic and social welfare of the society (sustainable development). This understanding demonstrates the role of public procurement in the TES in Nigeria; this sector is faced with acute infrastructure deficits (Adedokun *et al.*, 2022).

The objectives for the adoption of the Public procurement regulations were defined as the improving value of money, promoting transparency, accountability, competitiveness and elimination of corruption (Public procurement Act (PPA), 2007). Shwarka (2019) validated the roles of PPA as harmonization of government practices and development of pricing standards. Thus far, several studies have demonstrated these benefits in practical terms including value for money in government procurement. Yahaya *et al.* (2019) declared that despite the challenges inhibiting the performance of PPA in practice, the state of PPR and project performance are better compared with what it was prior the PPA era.

Contract administration refers to the systems of diverse processes covering pre-contract issues and management of client-contractor’s interface during construction project delivery. Based on this understanding, the understanding of contract administration issues in the literature split between pre-contract and post-contract contract management issues. Yahaya *et al.* (2020) established there are pre- and post-contract issues in contract administration. In this thinking, information seeking, bid preparation and document validations are pre-contract contract administration concerns, while monitoring of the project implementation processes is main thrust of post-contract administration issues (Gundus *et al.*, 2020a; 2020b). However, the factual understanding of the terms contract administration deals with post contract management activities essentially to a successful project performance (Uyinmwun and Ogbu, 2018); this thinking emphasizes that only what is established can be administered. However, practically understanding of the components of effective contract administration shows it involves fragments of pre-contract and post-contract management issues. Bellec and Cottard (2016) stated the

important activities involved in contract administration as selecting the contractor, contract negotiation, awarding the contract; project monitoring, cost control, risk management, change management, conflict management and commissioning.

Based on the dearth of consensus about the knowledge of contract administration, parties in the contract interface faces broad ranging expectations that are not properly streamlined, Uyinmwun and Ogbu (2018) therefore called for a modification of mindset in order to understand contemporary issues in contract administration. Successful contract administration therefore demands that these activities are implemented using a sustainable framework and guidelines (Uyinmwun and Ogbu, 2018).

Contract administration affects project outcomes and embraces the diverse challenges that progress during contract implementation (Uyinmwun and Ogbu, 2018). Gunduz. and Elsherbeny (2020) highlighted the importance of contract administration and the consequences of the poor administration in construction projects demanded an additional urgency to investigate application of sustainable contract administration practices. In attempt to resolve the numerous problems facing effective contract administration in construction project delivery, several documents (laws and guidelines) have evolved, but matching implementation with contemporary approaches remains one of the significant issues PPR and public procurement have struggled with over the years (Hughes et al., 2015; Uyinmwun and Ogbu, 2018).

Sustainable contract administration is pivoted on varying problems. Studies have acknowledged the role of the nature of the industry's product, being custom-built, integration of multi-disciplinary ideas, interface management and opportunism (Uyinmwun and Ogbu, 2018). Modification in the procurement practice, strategies and laws, the quests for equity in the distribution and management of risks, greater needs to optimize value, preferences of international partners such as donor agencies and the drives towards relational contracting (Gunduz. and Elsherbeny, 2020). These issues are front-end narratives to the emergent of newer guidelines for contract administration (Uyinmwun and Ogbu, 2018).

Sustainable construction contracts are becoming increasingly important in the construction industry, as more and more companies strive to reduce their environmental impact and meet sustainability goals. Sustainable construction can be defined as the process of designing, constructing, operating, maintaining, and demolishing buildings and infrastructure in an environmentally responsible and resource-efficient manner, while also considering social and economic factors (Kibert, 2016). Sustainable contract administration in construction refers to the integration of sustainability principles into the procurement and management of construction contracts. This approach aims to promote environmental, social, and economic sustainability throughout the construction process, from the design stage to the end of the contract (Tetteh et al., 2019). Sustainable contract administration theory emphasizes the importance of collaborative relationships between the parties involved in the construction project, including the contractor, client, and other stakeholders (Oyedele et al., 2018).

Sustainable contract administration theory provides a framework for integrating sustainability principles into the procurement and management of construction contracts. This approach emphasizes the importance of considering the full life cycle impact of construction projects, stakeholder engagement, performance monitoring, innovation, capacity building, and economic benefits (Shen et al., 2017). The application of sustainable contract administration theory can lead to improved sustainability outcomes and economic benefits for construction projects. Overall, the theory of sustainable contract administration in construction provides a framework for integrating sustainability principles into the procurement and management of construction contracts. This approach emphasizes the importance of collaboration, stakeholder engagement, performance monitoring, and innovation to promote environmental, social, and economic sustainability in construction projects.

The concept of sustainable contract administration in construction also emphasizes the importance of ethical considerations and social responsibility. This includes promoting fair labour practices, protecting human rights, and ensuring that the

project benefits local communities. Sustainable contract administration can also help to promote diversity in the construction industry and reduce discrimination. Furthermore, research has shown that sustainable contract administration can lead to improved project outcomes. For example, a study by Hwang et al. (2017) found that the use of sustainable procurement practices in construction projects can lead to improved project performance, including higher quality, greater innovation, and improved risk management. In addition, sustainable contract administration theory emphasizes the importance of collaboration and communication among stakeholders. This involves promoting open and transparent communication to ensure that all stakeholders are informed and engaged in the project. Collaboration can help to identify potential issues and risks, promote innovation, and build trust among stakeholders. Sustainable contract administration theory recognizes the importance of continuous improvement and learning. This involves evaluating the effectiveness of sustainable contract administration practices and making improvements based on feedback and lessons learned. Continuous improvement can help to promote innovation, build a culture of sustainability, and ensure that sustainability principles are integrated into all aspects of the construction project (Liu and Love, 2016).

The public procurement is also deemed sustainable when it aids the selection of competent contractors and consultants, aids the selection of a more effective procurement strategy, better project brief, better quality management plan, improved health and safety management plan, better risk management plan, and effective programming and scheduling or project execution (Shwarka, 2019; Nwogwugwu and Adebayo, 2015). Public policies are expected to drive sustainable development objectives. In Nigeria, Yahaya et al. (2019) pointed PPA has social and industrial policies to show inclination towards sustainable development provisions. Hence, the aim of this study is to establish the relationship between existing public procurement regulations and sustainable contract administration in tertiary education sector projects. with a view to improve the overall performance of tertiary education projects in Nigeria.

2. LITERATURE REVIEW

Odeyinka and Yusif (2013) noted that compliance with public procurement guidelines significantly improves the quality of construction projects in Nigeria. The study found that adherence to procurement guidelines resulted in better project planning, selection of qualified contractors, and effective project monitoring and evaluation. In another study by Onwusaka and Okechukwu (2019), it was observed that when public procurement guidelines are followed in the construction process, it results in timely delivery of construction projects, reduction in project costs, and higher efficiency. The study further emphasised that compliance with public procurement guidelines enhances project oversight and transparency, reducing the likelihood of corruption and fraud. Furthermore, public procurement guidelines influence project outcomes, efficiency, and effectiveness in the tertiary education sector in Nigeria.

According to Adeniyi and Akanbi (2017), procurement guidelines have the potential to significantly impact project failure or success, especially in the education sector. The study revealed that non-compliance with procurement guidelines negatively affects project performance, leading to project failure and abandonment. In these studies, compliance with public procurement guidelines in the construction process has a significant impact on project performance in the tertiary education sector of Nigeria. Previous researches emphasized that planning, selection of qualified contractors, effective project monitoring, and evaluation, and overall transparency lead to better outcomes in construction projects. By following procurement guidelines, the Nigerian tertiary education sector can strengthen its construction project delivery process, ensuring more efficient project management and a higher likelihood of project success.

Akinwunmi *et al.* (2019) examined the effect of public procurement guidelines on construction project performance in the higher education sector in Nigeria. The research found that adherence to procurement guidelines improved the quality and timeliness of project delivery. The study also noted that public procurement guidelines

promoted a competitive bidding process, leading to better project outcomes and reducing the likelihood of corruption or fraud.

In another study by Osaji and Okoro (2018), public procurement guidelines were found to influence the quality of design and construction work in the tertiary education sector in Nigeria. The study noted that adherence to procurement guidelines led to the selection of qualified and competent contractors who delivered quality work. Furthermore, the study revealed that public procurement guidelines resulted in better project planning, budgeting, and management, leading to successful project delivery. It is important to note that while public procurement guidelines can have a positive impact on construction project performance in the tertiary education sector in Nigeria, their implementation remains a challenge. For instance, a study by Adeboyejo and Ogunlana (2019) observed that weak institutional capacity and corruption were major hindrances to effective implementation of public procurement guidelines in Nigeria. The research recommended institutional capacity building, ethics training, and frequent monitoring and evaluation as measures to enhance compliance with public procurement guidelines in Nigeria. From both studies, adherence to these guidelines improves the quality and timeliness of project delivery, promotes a competitive bidding process, enhances project oversight and transparency, and reduces the likelihood of corruption or fraud. However, effective implementation of public procurement guidelines remains a challenge, and measures such as institutional capacity building and ethics training are necessary to promote compliance with these guidelines in Nigeria.

Oba *et al.* (2020) found that procurement regulations led to an improvement in administrative transparency, which is important for gaining trust from the public. The authors argue that transparency allows for a better understanding of the decisions made, which can improve accountability in the long run.

Ogwueleka and Achebe (2018) explored the impact of procurement compliance on project performance in Nigeria. The study found a positive correlation between compliance with procurement laws and project performance, indicating that the effective implementation of procurement regulations can lead to better project outcomes. Similarly, Oyewobi and Ajadi (2020) examined the impact of procurement compliance on project success in Nigerian public universities. The findings suggest that compliance with procurement regulations leads to better project outcomes in terms of cost, quality, and timely delivery.

Furthermore, Ogwueleka and Achebe (2018) investigated the impact of procurement regulations on project performance in the Nigerian construction industry. The study found that procurement compliance has a positive effect on project quality, project cost, and delivery time. Afolayan and Rotimi (2017) focused on the effect of procurement regulations on the delivery of construction projects in Nigerian universities. The study found that compliance with procurement regulations positively impacted the delivery of projects in terms of quality, cost, time, and client satisfaction. Another study by Adeyemi and Opawole (2015) investigated the impact of procurement regulations on project performance in the Nigerian construction industry, including tertiary institutions. The study found that compliance with procurement regulations positively impacts project performance in terms of quality, cost, and timeliness.

In Ghana, procurement control and monitoring produced positive effects on construction project performance in tertiary institutions (Awuah *et al.*, 2022). However, the study predicated the benefits of the relationship on effective training of procurement staff in the sector on the important of procurement processes.

The study found that the non-compliance with procurement laws and procedures in the tertiary education sector leads to poor quality of construction projects, which negatively impacts the overall infrastructure development of the universities. In related study, Muhktar *et al.* (2021) revealed non-compliance with regulated processes is affecting the time performance of construction in TESP, where delayed payment, unclear and inadequate designs and delayed work approval are prevalent issues. Other studies have also emphasized the role of funding in the performance of TESP in Nigeria.

Armiya'u and Danjuma (2017) examined the impact of procurement procedures on public construction project delivery in Nigeria. The authors found that non-compliance with procurement procedures often leads to delays, cost overruns, and poor project outcomes. Oni and Olubunmi (2018) examined the relationship between public procurement process and project performance in selected Nigerian universities. The authors found that non-compliance with procurement procedures often leads to delays, cost overruns, and poor project outcomes. Dauda and Dauda (2019) examined the relationship between public procurement procedures and project performance in Nigerian universities. The authors found that non-compliance with procurement procedures often leads to delays, cost overruns, and poor project outcomes.

Furthermore, a report by the African Development Bank (AfDB) (2018) highlighted the importance of compliance with procurement laws and procedures for achieving sustainable development in Africa. The report noted that non-compliance with procurement laws and procedures often leads to inefficiencies, corruption, and poor project outcomes, which undermine the achievement of sustainable development goals.

Mugabe *et al.* 2019 assessed the influence of Contract Administration on the implementation of Construction Projects in Rwanda. The population of the study comprised real estate developers, contractors and consultants. The study posited that contract administration plays a major role towards project implementation and subsequently the overall success. The study indicated that stakeholders should bear in mind that construction contracts may not always be successfully implemented, as several factors will mitigate the effective and efficient implementation of construction project. Njagi *et al.* (2020) investigated public participation in contract administration for sustainable procurement management in devolved system of governments in Kenya and noted that the community is involved in contract administration to a great extent through supplier identification, project negotiations, actual supplying of local available materials and ensuring compliance to contractual terms and conditions by the contractors. The study concluded that an improvement in contract administration in public based projects leads to a positive improvement in sustainable procurement management in Kenya.

3. METHODOLOGY

This study empirically established the relationship between adoption of existing public procurement regulations in the tertiary education sector and sustainable contract administration practices in the tertiary education sector in Nigeria. This study focused on public tertiary education institutions in Nigeria comprising of Universities, Polytechnics, and Colleges of Education. The following geopolitical Zones were chosen for the study namely South-west, North-West, North-Central, South-South, South-East and North-East geopolitical zones in Nigeria. A survey design was adopted in the study, and random sampling techniques was used to obtain the sample for this study. One thousand and twenty eight (1028) copies of questionnaire were randomly distributed by the researchers and research assistants among construction professionals, procurement officers, consultants, and contractors, Low-operational/field staff, Middle level-policy implementers, and top management level (formulation of policy) in the Tertiary institutions in Nigeria. The criteria for selection of the professionals were years of experience, educational qualification, and professional development. The questionnaire has three sections. The first section comprises information about the respondents. The second section comprises variables used to assess the extent to which the implementation of public procurement processes in tertiary institutions, while the third section consists of metrics or indicators for assessing sustainable contract administration in the tertiary education sector. The data used in the study were collected using a five-point scale of 1 to 5 (Anyanwu, 2018). Scale 1 represents a very low compliance/performance, while scale 5 represents a very high compliance/performance. Methods of data analysis include simple percentage, mean score, and Spearman Correlation test. Using a 5-point scale, the decision rule in this study is that any performance indicator with an overall mean score of 1.0-1.49, 1.5-2.49, 2.5-3.49, 3.5-4.49, and 4.5-5.0 is considered to have a very low level of compliance/performance, low level of compliance/performance, moderate level of

compliance/performance, high level of compliance/performance, and very high level of compliance/performance respectively (Ogenma 2018)

4. PRESENTATION AND DISCUSSION OF RESULTS

This section presents and discusses results concerning the respondents' characteristics, the influence of implementation of public procurement regulations on sustainable contract administration in the institutions of the geo-political zones.

4.1. Questionnaire Distribution and Response Rate

The research instrument used in this study was structured questionnaire. The copies of questionnaire were administered among the Tertiary Institutions in Nigeria.

Figure 1 showed that the number of questionnaires administered to Tertiary Institutions in Nigeria were 164, 215, 128, 159, 202, and 160 in South- South, South West, North Central, North East, North West, and South East respectively. The response rate ranges between 18.3% and 90%. North Central received the highest response rate of 90% while North West got the least response rate of 18.3 %. In all, an overall response rate of 62% was achieved. According to Zawedd and Kiyangi (2024), a response rate of 50% is adequate, 60% is good and above 70% is very good. Therefore, the study response rate of 62% is considered sufficient for the study.

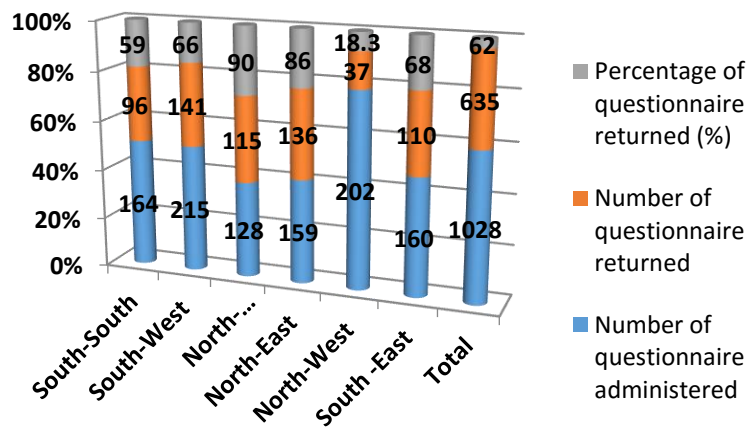


Figure 1: Questionnaire Distribution and Response Rate

4.2. Respondents' Characteristics

4.2.1 Category of respondents

Figure 2 shows that the category of the respondents. These include the Construction professionals, procurement officers, consultants, and contractors. The results revealed that 36.7%, 27.6%, 24.3%, and 11.5% of the respondents were construction professionals, procurement officers, consultants, and contractors respectively.

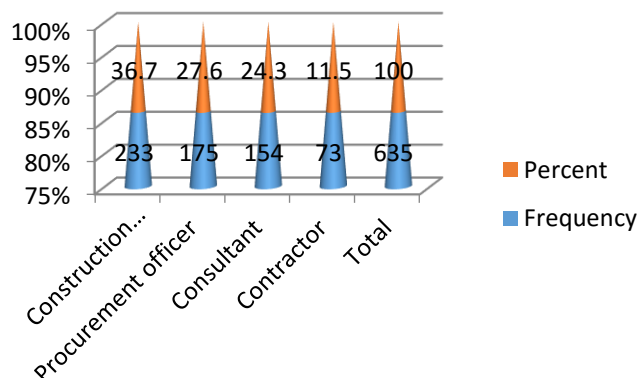


Figure2: Category of respondents

4.2.2 Level in organization

Figure 3 shows that 26.3%, 56.9%, and 16.9% were Low-operational/field staff, Middle level-policy implementers, and Top management level (formulation of policy) respectively.

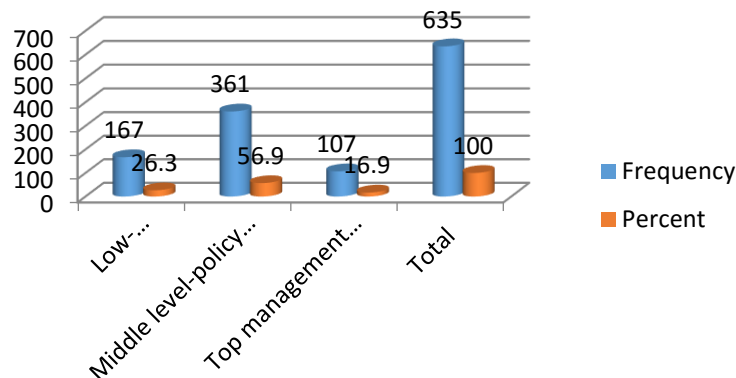


Figure 3: Level in organization

4.2.3 Educational qualification

The result presented in Figure 4 also shows that 63.5% of the respondents have First Degree, while 31.3% of the respondents have First degree and Postgraduate degree. In addition, 5.2 % of the respondents obtained College level and other relevant qualification. This shows that the respondents that participated in this study are well educated and knowledgeable. Therefore, data obtained from them are valid and reliable.

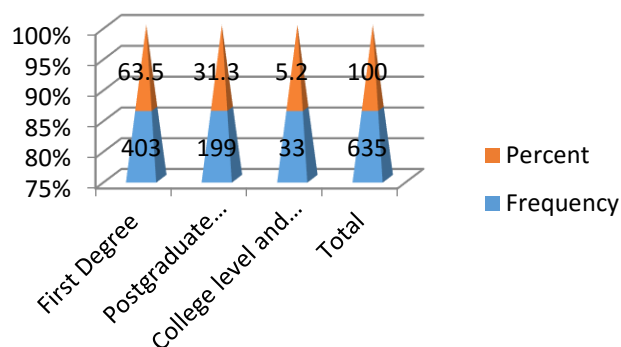


Figure 4: Educational qualification

4.2.4 Overall years of experience with organization

Furthermore, the overall years of experience of the respondents with the organisation was analysed and presented in Figure 5. The result indicated that 0.8%, 35.1%, 43.8%, and 20.3% of the respondents have years of experience with the organizations in the range of 1 – 5 years, 6 – 10 years, 10 - 20 years, and above 20 years respectively. It implies that majority of the respondents considered in this study have worked more 10 years with their respective organizations and in the industry. Hence the information obtained from them are liable.

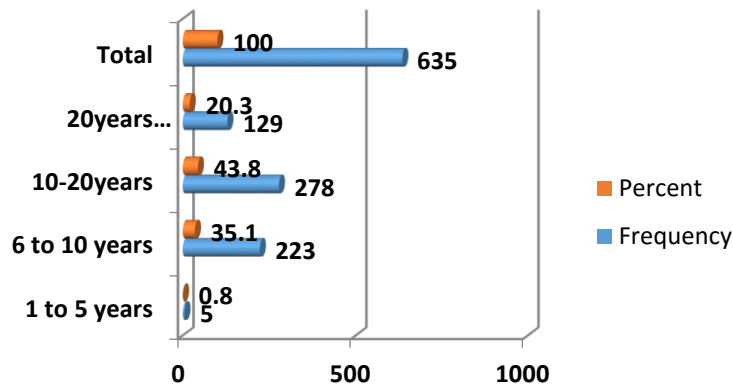


Figure 5 : Overall years of experience with organization

4.2.5 Professional Qualification

The extent of professional development of the respondents was analysed and presented in Figure 6. The results revealed that 77.3% of the respondents are professionally registered with their respective professional bodies while 22.7% of them are yet to be professionally registered. This revealed a high level of professional commitment and development on the part of the respondents.

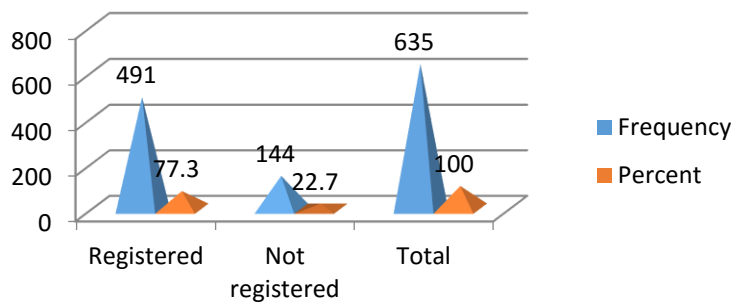


Figure 6: Professional Qualification

4.3. Relationship Between Adoption of Existing Public Procurement Regulations in the Tertiary Education Sector and Sustainable Contract Administration Practices in the Tertiary Education Sector in Nigeria.

Table 1 shows the result of correlation analysis between the level of adoption of existing public procurement regulation in the tertiary education sector and sustainable contract administration practices in the tertiary education sector in Nigeria. The overall correlation coefficient (R) of 0.868 implies that there is strong positive relationship/association between level compliance of public procurement regulations among tertiary institutions in Nigeria, and level of application of sustainable contract administration practices in construction project execution in the tertiary education sector in Nigeria. Furthermore, the p- value of 0.001 indicates that there is significant relationship between level compliance of public procurement regulations among tertiary institutions in Nigeria, and level of application of sustainable contract administration practices in construction project execution in the tertiary education sector in Nigeria. This connotes that the level of compliance/adherence to existing public procurement regulations significantly influence/support the implementation of sustainable contract administration practices in tertiary education sector projects in Nigeria. Table 1 revealed that procurement planning significantly enhances continuous improvement and learning ($R=0.638$; $p\text{-value}=0.004$), promotes collaboration in project delivery ($R= 0.848$; $p\text{-}$

value= 0.002), and mandates the implementation of waste reduction strategies during construction ($R = 0.743$; $p\text{-value} = 0.004$). It also promotes diversity in construction ($R=0.893$; $P\text{-value}=0.003$). Furthermore, procurement planning supports ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities ($R=0.870$; $p\text{-value} = 0.001$).

Table 1 revealed that transparency through removal of third party interest revealed that significantly enhances continuous improvement and learning ($R=0.751$; $p\text{-value}=0.003$), and promotes collaboration in project delivery ($R= 0.680$; $p\text{-value}=0.001$). However, it did not influence the extent of implementation of waste reduction strategies during construction ($R=0.357$; $p\text{-value}=0.163$). The result showed that transparency through removal of third party interest did not promote diversity in construction ($R=0.429$; $p\text{-value}=0.524$). Furthermore, transparency through removal of third party interest supports/encourages ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities ($R=0.786$; $p\text{-value} = 0.002$).

The result in Table 1 showed that the extent of the meetings of institution tender board for ratification of awards significantly enhances continuous improvement and learning ($R=0.797$; $p\text{-value}= 0.004$), promotes collaboration in project delivery ($R= 0.619$; $p\text{-value}=0.002$), and mandates the implementation of waste reduction strategies during construction ($R=0.884$; $p\text{-value}=0.004$). It also promotes diversity in construction within the tertiary educator sector ($R=0.840$; $p\text{-value}=0.001$). In addition, meetings of institution tender board for ratification of awards significantly encourages ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities ($R=0.843$; $p\text{-value} = 0.003$).

Furthermore, Table 1 indicated that strict adherence to procurement guidelines enhances continuous improvement and learning ($R = 0.832$; $p\text{-value} = 0.002$), promotes collaboration in project delivery ($R = 0.698$; $p\text{-value} = 0.004$), and mandates the implementation of waste reduction strategies during construction ($R = 0.782$; $p\text{-value} = 0.002$). It also promotes diversity in construction ($R = 0.657$; $p\text{-value} = 0.001$). Furthermore, strict adherence to procurement guidelines supports ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities ($R = 0.812$; $p\text{-value} = 0.003$).

In addition, Table 1 showed that due diligent study of contractors/consultants financial and technical information significantly enhances continuous improvement and learning ($R = 0.7463$; $p\text{-value} = 0.003$), promotes collaboration in project delivery ($R = 0.842$; $p\text{-value} = 0.003$), and mandates the implementation of waste reduction strategies during construction ($R = 0.791$; $p\text{-value} = 0.004$). It also promotes diversity in construction ($R = 0.683$; $p\text{-value} = 0.002$). Furthermore, due diligent study of contractors/consultants financial and technical information supports ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities ($R = 0.837$; $p\text{-value} = 0.002$).

Table 1: Correlation between the adoption of existing public procurement regulation in the tertiary education sector and sustainable contract administration practices

Level Compliance of Public Procurement Regulations among Tertiary Institutions in Nigeria	Level of Application of Sustainable Contract Administration Practices in Construction Project Execution in The Tertiary Education Sector in Nigeria		
	Correlation Coefficient (R)	p-value	Decision/Remark @ p- value =0.05
Procurement planning			
Enhances continuous improvement and learning	0.638	0.004	Reject
Promote collaboration in project delivery	0.848	0.002	Reject
Mandates waste reduction strategies during construction	0.743	0.004	Reject
Promotes diversity in construction	0.893	0.003	Reject
Support ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities	0.870	0.001	Reject
Transparency through removal of third party interest			
Enhances continuous improvement and learning	0.751	0.003	Reject
Promote collaboration in project delivery	0.680	0.001	Reject
Mandates waste reduction strategies during construction	0.357	0.163	Accept
Promotes diversity in construction	0.429	0.524	Accept
Support ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities	0.786	0.002	Reject
Meetings of institution tender board for ratification of awards			
Enhances continuous improvement and learning	0.797	0.004	Reject
Promote collaboration in project delivery	0.619	0.002	Reject
Mandates waste reduction strategies during construction	0.884	0.004	Reject
Promotes diversity in construction	0.840	0.001	Reject
Support ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities	0.843	0.003	Reject
Strict adherence to procurement guidelines			
Enhances continuous improvement and learning	0.832	0.002	Reject
Promote collaboration in project delivery	0.698	0.004	Reject
Mandates waste reduction strategies during construction	0.782	0.002	Reject
Promotes diversity in construction	0.657	0.001	Reject
Support ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities	0.812	0.003	Reject
Due diligent study of contractors/consultants financial and technical information			
Enhances continuous improvement and learning	0.746	0.003	Reject
Promote collaboration in project delivery	0.842	0.003	Reject
Mandates waste reduction strategies during construction	0.791	0.004	Reject
Promotes diversity in construction	0.683	0.002	Reject
Support ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities	0.837	0.002	Reject
Spearman Correlation analysis using the combined mean	0.868	0.001	Reject

4.4. Discussion of Findings

The overall correlation coefficient (R) of 0.868 implies that there is strong positive relationship/association between level compliance of public procurement regulations among tertiary institutions in Nigeria, and level of application of sustainable contract administration practices in construction project execution in the tertiary education sector in Nigeria. Furthermore, the P- value of 0.001 indicates that there is significant relationship between level of compliance of public procurement regulations among tertiary institutions in Nigeria, and level of application of sustainable contract administration practices in construction project execution in the tertiary education sector in Nigeria. This connotes that the level of compliance/adherence to existing public procurement regulations significantly affects/supports the implementation of sustainable contract administration practices in tertiary education sector projects in Nigeria.

The study revealed that procurement planning significantly enhances continuous improvement and learning, promotes collaboration in project delivery, and mandates the implementation of waste reduction strategies during construction. In the same vein, It facilitates diversity in construction. Furthermore, procurement planning supports ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities.

The study revealed that transparency through removal of third party interest significantly enhances continuous improvement and learning, and promotes collaboration in project delivery. However, it did not influence the extent of implementation of waste reduction strategies during construction. The result showed that transparency through removal of third party interest did not promote diversity in construction. However, transparency through removal of third party interest supports/encourages ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities.

Moreso, the study showed that the extent of the meetings of institution tender board for ratification of awards significantly enhances continuous improvement and learning, promotes collaboration in project delivery, and mandates the implementation of waste reduction strategies during construction. It also promotes diversity in construction within the tertiary educator sector. Furthermore, meetings of institution tender board for ratification of awards significantly encourages ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities.

The study indicated that strict adherence to procurement guidelines enhances continuous improvement and learning, promotes collaboration in project delivery, and mandates the implementation of waste reduction strategies during construction. It also promotes diversity in construction. Furthermore, strict adherence to procurement guidelines supports ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities.

The result showed that due diligent study of contractors/consultants financial and technical information significantly enhances continuous improvement and learning, promotes collaboration in project delivery, and mandates the implementation of waste reduction strategies during construction. It also promotes diversity in construction. Furthermore, due diligent study of contractors/consultants financial and technical information supports ethical responsibility such as fair labour practices, protecting human rights, and ensuring that the project benefits local communities.

This study is in consonance with Yahaya *et al.* (2019) who posited that Public policies are expected to drive sustainable development objectives. Yahaya *et al.* (2019) pointed that public procurement regulation has social and industrial policies to show inclination towards sustainable development provisions.

5. CONCLUSION AND RECOMMENDATIONS

This study assessed the relationship between existing public procurement regulations and sustainable contract administration in tertiary education sector projects. The study found that there is strong positive relationship/association between level compliance of public procurement regulations among tertiary institutions in Nigeria, and level of application of sustainable contract administration practices in construction project execution in the tertiary education sector in Nigeria. The study indicated that there is significant relationship between level compliance of public procurement regulations among tertiary institutions in Nigeria, and level of application of sustainable contract administration practices in construction project execution in the tertiary education sector in Nigeria. It is concluded that although, the level of compliance/adherence to existing public procurement regulations significantly influences/supports the implementation of sustainable contract administration practices in tertiary education sector projects in Nigeria, yet extent of support and influence have not attained the optimum expected possibly due to the current level of enforcement of existing public procurement regulations and inadequate framework for the enforcement.

The findings of this study have significant influence on the successful contract administration in Tertiary educators as well as sustainability of project executed in the tertiary education sector. The findings of study will help to ensure adequate implementation of sustainability principles in contract administration, thereby enhancing the overall sustainability of the built environment in Nigeria. Furthermore, successful contract administration in Tertiary educators will reduce construction projects abandonment in the sector thereby ensuring a beautiful built environment, and overall environment sustainability of the Tertiary sector in Nigeria. It is recommended that Tertiary institutions in Nigeria should improve on the level of application of sustainable contract administration practices by improving top management support, corporate governance, professionalism in public procurement, effective stakeholder participation, and organizational culture. In addition, stakeholders should bear in mind that construction contracts may not always be successfully implemented, therefore adequate consideration should be given to several factors that can mitigate or drive the effective and efficient implementation of construction projects. Furthermore, for public procurement regulations to optimally support and influence sustainable contract administration in tertiary education sector projects, government should ensure adequate enforcement of existing public procurement regulations and encourage satisfactory framework for the enforcement.

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