

# Public Procurement Act 2007 and Contracting Business in Nigeria (Case study of Public Sector organizations)

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## Abstract

*In Nigeria, the Public Procurement Act 2007 (PPA 2007) was enacted to drive and sanitize the implementation of the procurement of goods and services required. However, the effect of public procurement Act 2007 on contracting firms when tendering for a construction projects are capable of impeding the contracting business in Nigeria. In the context of eligibility documents, bidding expenses and contract administration dynamics, the impacts of implementation of the PPA 2007 requires investigation. The answer to this research question is necessary for government to evolve proactive laws, set up regulatory mechanisms to avoid the collapsing of indigenous contracting firms. Survey research design was employ to obtain data, using questionnaire distributed to contracting firms in North-Western region of Nigeria, stratified random sampling method was used to draw the sample size of 272 out of 852 of the population. The primary analytical technique used was Structural Equation Modeling (SEM) to yield information on Goodness-of-Fit, model development and comparison, and confirmatory strategies. SPSS Amos 21 was used for data analysis and model. The results of this study demonstrate that the Public Procurement Act has very high impact on contracting business in terms of the bidding process, documentation and administration of contract. Also, the act has made some impact by increasing transaction costs of doing contracting business in Nigeria despite the fact that it ensures efficiency and effectiveness in awarding of contracts to contractors and consultants. The paper concludes that contracting firms should always abide by the rules and regulation guiding the bidding process in MDAs, this will increase their chances of winning tender in the bidding process. Minimum requirement should be solicited from contracting firms by the public organization (MDAs). Finally an amendment of the Act should be carried out by the legislators in order to consider procurement timeframe flexibility, introduction of e-procurement system section, and other necessary changes.*

**Keywords:** Contracting business, Public Procurement Act 2007, Public Sector and Transaction Costs

## 1. Introduction

### 1.1 Background of this Study

The economy of any country, in terms of both the local and global markets, is a vital aspect of its health. Prosperity, high employment and the efficient use of resources each contribute to the wealth of a country and of individuals, and are key factors in making the country economy most successful. Indeed, at its very simplest level, economics is 'the science of choice'. The significance of the construction industry to the overall wellbeing any country's economy means that most governments are concerned that it becomes a highly efficient industrial sector (Ibrahim, Roy, Ahmed & Imtaiz 2010; Kululanga 2012; Myers 2013; Sawhney, Agnihotri & Paul 2014; Loosemore 2014). Equally the role of the financial sector makes a considerable contribution to the effective management of the economy and the funding of construction projects.

This industry is mostly concerned with development of civil engineering works and heavy infrastructural provisions (roads, bridges, railways, etc.), residential and commercial real estate and their maintenance therein (national bureau of statistics, 2015; Myers 2013; Szymanski, 2006; Ibrahim.et.al 2010). Thus, the continual growth can be explained by the dynamisms of development and the need to accommodate social and demographic changes that happen over time. Factors such as migration and urbanization, a rising middle class with their demands for better living conditions (better houses, road networks) and societal needs for social infrastructure all combine to give the sector the oils for growth (NBS 2015; Sawhney et.al 2014; Gupta 2009).

The contribution of the construction industry in India to the GDP has been above 8 per cent since 2007 (Planning Commission, 2011). Over the a decade, India has continued to be among the fastest growing countries in terms of construction output (Accenture & CIDC, 2012). The total investment in the infrastructure sector during 2012-2017 is estimated to result in construction demand of US\$ 500 billion (ICRA et al., 2011). Apart from infrastructure, the construction industry is also a beneficiary of the growth in the manufacturing and the real estate sectors (CARE Research 2011 cited by Sawhney et.al 2014).

In Nigeria, the construction sector has grown over the years, as a result of demands for real estate and housing and the provision of infrastructure to support an increasing population size, the need to open up communities to foster inter-state and inter-regional trade and movement (NBS 2015). This loosened up the market for construction and services within the industry, to include even local companies, albeit a few, especially in the construction of commercial and non-commercial real estate (NBS 2015; Szymanski, 2006; Ibrahim.et.al 2010) . Also, investors within the sector have increased, the biggest being the Federal Government of Nigeria as a huge chunk of capital formation goes into investments in real estate and infrastructures development. The level of Government interaction within the industry is majorly as regulators, purchasers and financiers. Public private partnership in this area is robust and fuelled by the inability of government to provide the necessary expertise and skills to execute projects (Kululanga, 2012; Adnan, Khalid & Sherif 2006). As a consequence, the industry has recorded an average growth rate of 18.08% between 2010 and 2012. Also, because of the labour intensiveness of construction and construction services, jobs have been created 5.8million, 6.06million and 6.3million in 2010, 2011 and 2012 respectively, there is still potential to expand, in order to accommodate the rising need for services in that sector.

Therefore, as a result of such increased complexity, uncertainty, and time pressure in sector have demand the attention for cooperation among different project actors (Anvuur and Kumaraswamy, 2007). Traditionally, relationships are, however, very competitive and adversarial in the construction industry (Cheung *et al.*, 2003), which to a large extent is due to the customary procurement procedures potentially causing many problems in all stages of the tendering process (Eriksson and Laan, 2007). Therefore, in order to take advantage of collaboration, procurement procedures is one key improvement area and can contribute substantially to project success (Cheung *et al.*, 2003, Eriksson, 2007).

As such, Nigeria enacted legislation on public procurement of goods, works and services in 2007 in order to improve it procurement process. The Act contributed and as well improved the country's standard of living through public expenditure on capital goods and services. On the other hand it is face with many challenges and constraints during its implementation by the various organs of governments' ministries, departments and agencies (MDAs). Many stakeholders have opined that having such an Act in place despite all challenges associated with it is

better far than what the country was before the enactment (Onyema, 2011; EU, 2011). This is because the reform has helped to confront the problems caused by corruption, fiscal irresponsibility, non-value for money, absence of public financial control, paucity, and non-use of certified procurement staff. This problem has resulted in time and cost overrun in many government expenditure (Ogbanna & Kalu, 2012). In addition, the huge cost incurred by the government in the procurement of goods and services could not be reasonably justified. The citizens were either disappointed or were doubtful of the sincerity of the government. Jacob (2010) stated some positive impacts of the Acts. This to include harmonizing the current policies and practices of government public procurement processes, accountability and transparency, establishing pricing standards and benchmarking in the procurement system. However, these impacts and others are the core objectives of the Act as stated in Part II section (4)(a)-(d).

Therefore, the Act serves as tool which promotes and integrates social and industrial policies of the central government. Through it the domestic industry and employment opportunities will be boosted by giving preference to national industry in awarding contracts to indigenous contractors and suppliers (Omolara, 2013; Onyema, 2011; Jibrin, Ejura & Augustine, 2014; Olayiwola & Oyegoke, 2009).

In spite of the aforementioned that the Act was able to addresses many issues such as project performance, stable economic climate in the construction industry. Another issue that the public procurement Act is creating, which is a great challenge to both internal and external stakeholders, for which a little or no attention was given to it is the costs incurred during transaction by contracting firms today. These leads to higher cost of construction, less economic efficiency in the procurement chain system. For instance in the United Kingdom UK about 0.57% of the total project value was identified to be spending as the bid costs by the contractors whether they win or lose in a bidding processes (Hughes, 2016). This is against the fact that, such costs make a significant impact on the retained operating turnover for the construction firm or company. This study is conducted with the believe that public procurement Act 2007 would always have an adverse relationship on contracting business in Nigeria (Director – General – Budget office, 2019) and it is necessary to amend the law/Act. These to ensure growth in local economy, increase in revenue generation and a satisfactory job delivery to end users. Thereby, contracting business is efficiently and effectively performs to encourage private sector organizations and improve the country GDP.

### *1.2 Aim and objectives of the study*

In view of the stated problem, the aim of this study is to ascertain the effect of public procurement Act 2007 on contracting firms when tendering for a construction projects in Nigeria. This aim leads to the following objectives:

- i. To find out the extent to which eligibility documents, contract administration and bidding expenses, via PPA 2007 affects contracting business in Nigeria.
- ii. To find out the causal relationship between eligibility documents, contract administration and bidding expenses costs in contracting business in Nigeria.

### *1.3 Research questions*

Based on the objectives of this study some research question need to be answered as follows:

- i. To what extent do eligibility documents, contract administration and bidding expenses via PPA 2007 affects contracting business in Nigeria?
- ii. Is there any correlation between eligibility documents, contract administration and bidding expenses in contracting business in Nigeria?

### *1.4 Research hypotheses*

The following null hypotheses were tested in order to provide answers to the research questions raised.

#### *Hypothesis 1*

H<sub>0</sub>: Eligibility documents, contract administration and bidding expenses those not have significant effect on contracting business in Nigeria.

#### *Hypothesis 2*

H<sub>0</sub>: Correlation between eligibility documents, contract administration and bidding expenses is not significant in contracting business in Nigeria.

### *1.5 Significance of the study*

This study integrates theoretical, empirical and practical issues in public sector procurement, tendering and law into contracting challenges in order to contribute to cross fertilization of business determinant factors in public sector organization in Nigeria. This study provides a structured framework that gives evidence to specific requirements that pose challenges in contracting business in Nigeria, especially in the public sector organizations. The contracting firms and clients (local, state and federal) as well as individuals sometimes rely on researches like this to solve their contracting and public procurement problems.

Legislators, association of contractors and Bureau of public procurement will find this study useful when amending the public procurement Act 2007 as the need arises. Professionals such as procurement consultants, Quantity surveyors, Engineers, Economist development and accountants shall find this study useful. This study targets the public and private sectors working in the field of procurement and construction business, policies, programs, and projects, including accountants, researchers, professors, students and academics.

In the task of ensuring that all the accumulated information generated by this study has an impact on policies, the Nigerian public sector organization shall improve in the area of procurement process and specifically infrastructure administration system. It is hope that finding from this study shall go a long way in shaping expectations about public procurement policies and governance thereby improving contracting business area.

### *1.6 Scope of the study*

The scope of this study is to analyze the effects of public procurement Act 2007 on contracting business in Nigeria, with particular reference to North-West region states which comprises of seven states ( Kano, Kaduna, Katsina, Jigawa Sokoto, Kebbi, and Zamfara). Within the seven states only three states were considered (i.e Kano, Kaduna and Sokoto), the choice of this states is based on the fact that the level of contract firms and public sector organization have been concentrated their (Kuroshi & Lawal, 2014). These states are a fair sample representing the remaining States of the region, because they give birth to the other State during their creation by the federal government. Therefore, most public sector organizations and private contracting firms are situated in those States and construction activities are always high if compared to the remaining States mentioned.

## **2. Literature review**

### *2.1 Procurement concept*

Today Government expenditures are all outlays from the government budget, including those for current expenditures such as public service salaries, maintenance, interest payments as well as capital expenditures such as infrastructure, social amenities and purchase of equipment owned by government (Malcolm, 1987; Onyema, 2011). In order to make sure those expenditure are properly executed, the government employ an internal control system that involves the monitoring of actual income and expenditure against planned income and expenditure on a regular basis, identifying variances, investigating the reasons for significant variances and taking corrective action to ensure a balanced budget at the end of the year. The capital expenditure such as infrastructure the government device a control means such as procurement law to make sure they are executed properly.

Procurement is the process of acquiring goods, works and services, covering both acquisitions from third parties (Onyema, 2011; Sarfo & Mintah, 2013). It involves option appraisal and the critical “make or buy” decision which may result in the provision of goods and services in appropriate circumstances (PPA, 2007). Again, according to Ghana Integrity Initiative (2007), Public Procurement “is the acquisition of goods and services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place for the direct benefit or use of governments, corporations, or individuals, generally via a contract”. It can be said to be the purchase of goods, services and public works by government and public institutions. It has both an important effect on the economy and a direct impact on the daily lives of people as it is a way in which public policies are implemented (Ghana Integrity Initiative, 2007).

Procurement is to purchase the right quality of material at the right time, in the right quantity, from the right source, at the right price (Patrick, 2011). The main objectives of procurement include: supplying the organization with a steady flow of materials and services to meet its needs, to buy efficiently and wisely, obtaining by ethical

means the best value for every money spent, to manage inventory so as to give the best possible service to users at lowest cost and protect the government's cost structure (Barly, 1994).

According to Sarpong (2007), procurement is the management of sustainable acquisition of goods, works and services to optimize value for money through a professional, auditable and transparent framework. He believes that any good procurement should have the following principles;

- Efficiency and Effectiveness: all procurement functions should aim at achieving the right quantity and quality at the minimum cost
- Competitiveness: the procurement process should ensure some competition among the competing parties
- Ethical approach: procurement process should avoid all practices that could lead to possible conflict of interest
- Fairness: all procurement should aim at achieving fairness and ensuring that all participating bidders are given equal opportunity to bid
- Transparency: the procurement process should be open enough to avoid giving competitive bidders advantage over other bidders. These are in line with the World Bank's principles of procurement and it is therefore imperative to see these principles in all procurement. Any procurement without these principles and objectives should not be considered as a good procurement and it is not in the interest of the nation since all forms of procurements have these principles.

## 2.2 Public Procurement Act 2007

Public procurement can be described as centrally negotiated legal processes which are guided by political decisions and practically implemented by various local purchasers. It should be acknowledged that public procurement has both economic and social benefits, but the social benefits of public procurement are primarily seen as indirect positive effects from economic savings and environmental improvements (Björn Wickenberg 2004). Procurement is a potential instrument of integrating socially and economically sustainable benefits to stimulate employment programmes.

According to Waara (2007), Public Procurement is any purchasing performed by any public authority within the classical sector or within the utilities sector. The public procurement rules applicable to purchasing entities also depend on whether the total purchase value is over or below certain so-called "threshold values", which differ as regards goods, services and construction works.

Public procurement is the process by which organizations acquire goods and services using public funds. It includes planning, inviting offers, awarding contracts and managing contracts. For procurement to achieve its goals, it should follow these two principles: Professionalism and Value for Money (Economy).

. It is about decades (4<sup>th</sup> June, 2007) ago that Nigeria joined the League of Nations that enacted legislation on public procurement of goods, works and services. The Act contributed and as well improved the country's standard of living through public expenditure on capital goods and services. On the other hand it is face with many challenges and constraints during its implementation by the various organs of governments' ministries, departments and agencies (MDAs). Many stakeholders have opined that having such an Act in place despite all challenges associated with it is better far than what the country was before the enactment (Onyema, 2011; EU, 2011).

This is because the reform has helped to confront the problems caused by corruption, fiscal irresponsibility, non-value for money, absence of public financial control, paucity, and non-use of certified procurement staff. This problem has resulted in time and cost overrun in many government expenditure (Ogbanna & Kalu, 2012). In addition, the huge cost incurred by the government in the procurement of goods and services could not be reasonably justified. The citizens were either disappointed or were doubtful of the sincerity of the government. Jacob (2010) stated some positive impacts of the Acts. This to include harmonizing the current policies and practices of government public procurement processes, accountability and transparency, establishing pricing standards and benchmarking in the procurement system. However, these impacts and others are the core objectives of the Act as stated in Part II section (4)(a)-(d).

Therefore, the Act serves as tool which promotes and integrates social and industrial policies of the central government. Through it the domestic industry and employment opportunities will be boosted by giving preference to national industry in awarding contracts to indigenous contractors and suppliers (Omolara, 2013; Onyema, 2011; Jibrin, Ejura & Augustine, 2014; Olayiwola & Oyegoke, 2009).

All procurements above the threshold values apply procurement directives and must be advertised in the Supplement to the Official Journal for public tenders (PPA 2007). There are a number of different procurement procedures to choose from, depending on whether it is a purchase above or below the threshold values. Many minor purchases are subject to so-called "direct procurement", which do not have to be publicly advertised. However, due



to principles of market competition, direct procurement should not take place repeatedly, and purchases should not be divided into smaller units in order to avoid exceeding the threshold values.

## *2.3 Procurement Process in Public sector organizations*

### *2.3.1 Eligibility documents*

Zielczynski (2008) defined a requirement to be “a condition or capability to which a project, product, service or system most conform”. So, that cost, time and energy will be save throughout the construction period. The issue of construction project requirements includes; lack of review and feedback to the client brief; client change requirements and design frequently; needs of end-users not clearly stated etc (Ann, Yu & Shen, 2013). Ann et.al (2013) recommends that in order to reduce or mitigate the problem of requirement in construction project, an experienced project participant as the client requirement manager should be appointed. In addition to this, a formal procedure to record, manage and track changes in client requirement must be maintained.

Mandatory requirements includes not only Tax, Pencom, ITF, NISTF and IRR, but also the additional evidence to proof to the clients’ the capability to carry out the construction project technically and financially (PPA, 2007) to build confidence both to the clients and other business. Zielczynski (2008); Li et.al (2012 and 2013) summarized many studies and research on bidding success, and identified some components including clients’ needs, contractors’ behavior, transaction environment, information access, project management efficiency and magnitude of the transaction.

The public procurement Act 2007 identified about ten (10) key components in construction project bidding: tax clearance, pension certificate, industrial training certificate, national social insurance, financial capability, equipment ownership, court affidavit, bank guarantee performance bond, advance payment guarantee and interim registration report by BPP.

### *2.3.2 Bidding expenses*

According to Brozowaki, (2001) major equipment manufacturers have calculated that it costs them up to Seventy Five Thousand United State Dollars (US\$75,000) to bid on a complex tender. These costs are eventually passed on to the customer although be it indirectly. Project engineers and tender managers are generally highly paid, skilled people that end up spending much of their time doing secretarial and administrative work managing the tender process rather than adding value to it.

The activities involved in the course of tendering warrant expenditure. Each organization will spend to tender for a project. The client’s side too will spend to initiate and run a tendering process. Once competition is used, then the cost of abortive tendering becomes significant; for organizations that fail to win the project will either have to bear the cost of tendering or find a way of recouping. The more construction firms are involved in a bidding exercise the more this abortive cost gets higher. The cost of tendering will usually be subsumed in a firm’s overhead (Chinyio, 2011).

Bidding is a process that takes place to provide a transparent, fairness and value for money in the selection process that is based on laid down criteria. It is most important in organizations that are exposed to a degree of public scrutiny from stakeholders. These stakeholders could be the general public in the case of government departments, or shareholders in the case of businesses. Indeed, there are benefits to the tendering process, but there are also costs. More to the point, if these costs are not managed effectively then they can be quite significant and not provide proportionate returns (Dalrymple et al., 2006; Laryea, 2008).

Bidding or tendering costs occur during three to four phases of any tendering process (Dalrymple et al., 2006; PPA 2007; Laryea, 2008 Rajeh 2014). These are:

- Preparation of tender documents by contractors
- Preparation of response to tender by prospective contractors (Eligibility documents)
- Assessment of submitted tenders and selection of contractor
- Contract Administration before and after award of contract

## *2.4 Contracting development in Nigeria*

In Nigeria, organized construction began in the early 1940’s with a few foreign companies. The ‘oil boom’ that followed about 10 years after Independence led to an upsurge in construction and demand for construction services,

as the country at that period opened up to foreign and local investments and the obvious needs for infrastructure to drive economic growth. Foreign companies have dominated the industry since the 60's and 70's generating revenue for government and jobs for the citizenry (NBS 2015).

However, there have been down sides to this as these companies have been known to import resources and even skilled labour as opposed to using locally manufactured resources and promoting local content. The construction sector has grown over the years, as a result of demands for real estate and housing and the provision of infrastructure to support an increasing population size, the need to open up communities to foster inter-state and inter-regional trade and movement.

This loosened up the market for construction and services within the industry, to include even local companies, albeit a few, especially in the construction of commercial and non-commercial real estate. Also, investors within the sector have increased, the biggest being the Federal Government of Nigeria as a huge chunk of capital formation goes into investments in real estate and infrastructures development. The level of Government interaction within the industry is majorly as regulators, purchasers and financiers. Public private partnership in this area is robust and fuelled by the inability of government to provide the necessary expertise and skills to execute projects.

As a consequence, the industry has recorded an average growth rate of 18.08% between 2010 and 2012. Also, because of the labour intensiveness of construction and construction services, jobs have been created and there is still potential to expand, in order to accommodate the rising need for services in that sector.

Other milestones from this include growth in other the sectors of the economy, such as manufacturing and services sectors that provide intermediate input for construction, also directly and indirectly affect construction and construction services. Businesses such as manufacturing; cement, metal, steel and wood works as well as other services sector record either profits or loss depending on the outcomes in the construction industry.

Although the Nigerian construction industry is still largely dominated by international firms, the local content bill for construction services which was passed in April 2014 is meant to give indigenous construction companies a level playing field as their international counterparts, as well as, making it easier for local businesses to thrive in the industry. We expect to see a rise in the number of local businesses under construction, more jobs created and continual increase in the sector's contribution to GDP. The outcome of this bill can only be felt over time. But indeed, there are prospects for success.

The Nigerian economy has experienced a great change in terms of the volume of activities covered in all sectors of the economy as the post-rebasing data in the construction sector shows a much more optimistic picture, as more modern construction activities have been captured, and prices correctly deflated.

The real GDP for the year 2010 was N54, 612,264.18 million in which construction sector's share of 2.88% was N1, 570,973.47million. The construction sector grew by 21.30% to reach N1, 905,574.90 million in 2011(NBS 2015). A slowdown in growth rate of the construction sector by 14.86% resulted in the sector closing at N2, 188,718.59 million in 2012, hence the share of construction to GDP that same year stood at 3.05%. Part of the reason for the increase in the contribution of the construction sector to GDP is the better capturing of all the economic activities in the construction sector. Prior to rebasing, construction data was mainly sourced from construction of buildings and construction of roads and railways activities. Now, construction activity has been broken down into 11 different activities, bringing the total for the construction sector to 13.

## 2.5 Conceptual framework

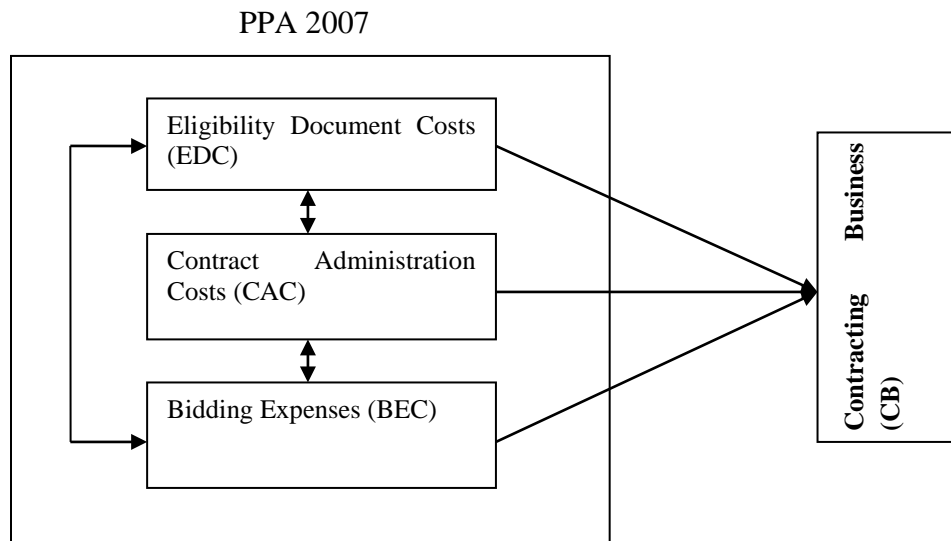


Fig. 1 Conceptual Framework to the Research

Figure 1 above shows the Contracting Business, as dependent variable which is being related to eligibility documents costs, contract administration costs, and bidding expenses. Contracting business is being affected as a result of interrelationship or operations between those factors in the construction project bidding, based on the rules and regulation of the PPA 2007 with an impacts (positively or negatively) on contracting business such as Profitability, Performance, growth, Professionalism, Quality, Delivery time, Competition and Risk.

It is assumed that contracting business will either be in a high or low performance due to the relationship between the procurement guidelines of construction projects bidding on public contractors, which lead less economic activities on contracting business sector in general. Transaction cost economic theory was used to depict such concept, since it tries to explain the cost incurred between any transactions that occurs among two or more people in the organization. Such transaction can simply be called as a relationship which occurs as a result of transferring the property of ownership to one person based on agreed consideration.

## 2.6 Theoretical framework

After finishing the discussion of the public procurement law and contracting business, we then clarify the underlying theoretical foundations of the procurement and contracting business links. In the existing literature, there are two main theories in explaining the impact of public procurement Act 2007 on contracting business i.e., transaction cost theory (TCT) and principal-agent theory (PAT).

TCT maintains that appropriate governance should be adopted to control potential opportunism caused by uncertainty and asset specificity (Williamson, 1985). The theory argues that well-established contractual governance could be an effective mechanism to control exchange hazards by specifying each party's roles in both stable and changing environments (Liu, Wong, & Liu, 2009; Lui & Ngo, 2004; Williamson, 1985). This perspective is widely used in many studies on procurement and contracting business (Rajeh, 2014; Hakansson, Ford, Gadde, Snehato & Waluszewski, 2009; Hughes, Hillebrandt, Greenwood & Kwawu, 2006). However, TCT also acknowledges that the effectiveness of contracts is constrained when the conditions of bounded rationality and opportunism are admitted (Cannon, Achrol, & Gundlach, 2002; Williamson, 1985). In this case, alternative governance mechanisms such as public procurement Act and contracting law are proposed. However, the nature of relational-based governance under TCT is economic, and the nature of effect is calculative (Williamson, 1985).

The second theory, on which the study is hinged, is the Agency theory, popularly referred to as (Principal-Agent) theory explored by (Ross, Spences & Zeckhauser, 1971). The theory is concerned with the relationship that arises when one party (the principal) engages the services of another party (the agent) in order to achieve certain goals (Hendry, 2011). This is similar to what the current practice in the construction industry, where Client (Principal) enters into a contractual relationship with the contractor(s) or construction firms (Agent), in order to



actualize his dream as stated in the contract documents. Contract systems of this nature can simply be analyzed within the general framework of the agency theory.

The theory tried to resolve the problem that may arise under the condition of asymmetric information between the principal (Client) and the Agent (Contractor). When there is a conflict of interest and where it is difficult or very expensive for the principal to verify what the agent is actually doing (Eisenhardt, 1989). Looking at such statement one can agree that such problems commonly occur in the construction industry which is characterized by the type of procurement method used in Nigeria. On the basis of these assumptions and by a method of deduction, it is possible to find a solution to the problem of contract optimization in the construction industry, when using the PPA (2007) as guidelines.

### 3. Research Method

#### 3.1 Research design

The research designs used for the study were survey with the aim of identifying the variables that are related to the research objectives and their collective and individual association to each other. The structure and procedure is about assessment of thoughts and opinions. It is the type of study that a survey design accommodates. According to Asika (2008) survey design is an efficient and systematic way of collecting data based on individual opinion from broad spectrum setting like a contracting firm's organization. The administered questionnaire is divided into four sections in order to capture the specific objectives of the study. The first section requires the respondents' identification of the major sources of transaction costs under the PPA 2007 in bidding construction projects. The second section contains a expenses incurred by respondents in order to acquire those eligibility documents as required by the PPA 2007 for three years; section three, consists of costs incurred by contracting firms when bidding in various ministries, department and agencies (MDAs) on construction of works; and the last section is the costs incurred by construction firms for managing contract before and after the award by respondents. The questionnaire is designed to permit empirical investigation on various issues relating to the objectives of the study.

#### 3.2 Population

The population of this study is all contracting firms that tender for TETFUND 2015-2017 Normal intervention construction projects in tertiary institutions within the study area of Kano, Kaduna and Sokoto (BUK, FCE; A.B.U Zaria, FCE Zaria, KADPOLY; UDUS, Sokoto) and are being registered in the database of the Bureau of public procurement. This study identified a population of 852 contractors upon which the research analysis is based.

#### 3.3 Sample and sampling technique

The sampling procedure adopted for this research work is stratified random sampling. The sample size is two hundred and seventy two (272) contracting firms from the population of eight hundred and fifty two (852). The sample was determined using Slovin's formula  $n = \frac{N}{1 + N(e)^2}$ , where n is the sample size, N is the population size, and e is the margin of error

N= population of 852

e= Margin error of 5%

Therefore,  $n = \frac{852}{1 + 852(0.05)^2}$

$n = \frac{852}{3.13} = 272$ .

Out of the sample of two hundred and seventy two (272) contracting firms, one hundred and eighty five (185) were successfully used for the study. This constitute 68% of the sample as shown in Table 3.1

States	Total no. of Institutions covered	Population of contracting tenders institutions	of firms per	Sample of contracting firms	of No. of contracting firms used from the sample
Kano	2	322		108	56
Kaduna	3	412		112	97
Sokoto	1	118		52	32
<b>Total</b>	6	852		272	185 or 68% of sample

Source: field survey 2018

### 3.4 Analytical and estimation technique

The study used structural equation modeling (SEM) techniques with the application of SPSS and AMOS software to analyze the relationship of factors in the conceptual framework. There were three main phases of this research. Respondents were instructed to indicate what level they agreed in the manner stated in each of the items on a five – point Likert - scale ranging from 1 (don't know) to 5 (strongly agree). In this step, EFA is utilized. Items with loadings lower than 0.40 were omitted. The Cronbach's Alpha coefficients for all constructs are above 0.7 and the corrected items-total correlations are rather than 0.32, thus all measuring items were retained, and put into the final questionnaire to collect the information.

#### 3.4.1 Structural equation modeling (SEM)

The structural model presented in Fig. 1 explains the relationships between the latent variables by means of the direction of the paths between the variable and the strength of the path coefficients. Whereas the numbers on the arrows directed to the variables in the rectangular boxes represent the factor loadings, the numbers on the arrows between the latent variables in the oval boxes represent the path coefficients. As seen in list of fitness indexes, all parameters conform to recommended values, for both GFI, AGFI, NFI,TLI, CFI,Chi-Sq/df and RMSEA being within the recommended 0.90.

Furthermore, according to Hu and Bentler (1998) and Marsh et al. (1988), most fit indices, but particularly GFI and AGFI, are influenced by sample size and should not be interpreted independently of sample size. A larger sample could generate higher fit indices (Jackson2001). Given the relatively small size of the sample, one can state that the model fits the data well.

#### 3.4.2 Level of Impact of the Transaction costs

The ordinal scale was used to determine the level of impact based on the Regression weight estimate (RWE) computation according to Cohen's (1988) benchmark range of effect size/impacts. The scale was categories into 3 range; from below 0.13 = small impact 0.13-0.26 = Medium impact, 0.26-0.39 = large impact and above 0.39 = very large impact. Any factor that has a regression weight estimate (RWE) within these ranges will be categories as either small impact to very large impact as shown below

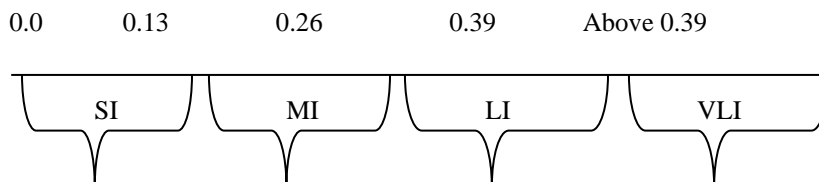


Figure 2 Evaluation Scale Source: (Cohen's 1988)

## 4 Results and Discussion

### 4.1 Principal Component analysis (PCA)

PCA was applied to determine factor structures. To ensure a satisfactory EFA for the data, some standards must be met. First, the KMO (Kaiser-Meyer-Olkin) coefficient must be  $\geq 0.5$ , and the significance of the Bartlett's test must be  $< 0.05$  (Williams *et al.*, 2012). Second, to ensure practical significance of the factor analysis, factor loading must be  $> 0.4$  (Ugulu, 2013). Third, total variance must be  $\geq 50\%$ , and all factors must be extracted at eigenvalue cut-off  $> 1.0$  (Rajdeep *et al.*, 2000).

For EDC, KMO = 0.677 and the Chi-square of Bartlett's test = 289.753 with a significance of 0.000 ( $< 0.05$ ), indicating that the correlation matrix is not an identity matrix. Four elements were extracted and the eigenvalue cut-off of the fourth factor is 1.105 ( $> 1.0$ ); the total variance is 58.104% ( $> 50\%$ ). Thus, factor analysis standards are satisfied and the result is significant.

Similarly, other factors were also determined using SPSS to analyze PCA. The results show that all remaining factors (BEP, and CAC,) had KMO coefficient  $> 0.5$ , and significance of Bartlett's test  $< 0.05$ ; all the factor loadings are  $> 0.7$ ; eigenvalues are all  $> 1.0$ , and account for more than 50% of the variance.

**Table 1: PCA for constructs**

Constructs	Items	Factor Loading	Kaiser Meyer-Olkin (KMO)	Barlett's Test of Sphericity	Total Variance Explained
<b>Eligibility Documents</b>	PenCom Certificate	.911	.677	289.753	51.418
	Social Insurance Certificate	.787			
	Industrial Training Fund	.797			
	Financial Reporting Certificate	.662			
<b>Bidding Cost</b>	Cost Incurred in Bidding 2015	.734	.643	55.001	62.056
	Cost Incurred in Bidding 2016	.840			
	Cost Incurred in Bidding 2017	.786			
<b>Contract Admin</b>	Time taken to negotiate contract	.579	.661	180.459	35.866
	Average number of bids in 2015	.684			
	Average number of bids in 2016	.739			
	Average number of bids in 2017	.746			

Final measurement model was assessed to determine their reliability and validity. This needs investigation into the internal consistency reliability; indicator reliability and convergent validity. Cronbach's alpha and composite reliability (CR) in Table 2 were both used to measure internal consistency reliability and indicator reliability of the construct as suggested by Henseler *et al.* (2009). Recommended value of CR is 0.5 and above, which construct here achieved.

Even though, accepted factor loadings of between 0.5 and 0.7 was suggested by literature (Tabachnick & Fidell, 2001; Henseler *et al.*, 2009; Hair *et al.* 2010) to achieve indicator reliability, recommended individual item reliability was achieved if factor loadings value are  $\geq 0.4$ , with sample  $\geq 200$  (Hair *et al.*, 2010). Table 4.4 showed that all manifest items have a factor loading  $> 0.5$  convergent validity was assessed using average variance extracted (AVE). It measures degree to which a set of indicators represents one and the same underlying construct value of  $\geq 0.5$  was recommended (Hair *et al.* 2010). Table 2 showed the result for the reliability and validity achieved.

**Table 2: Reliability and Validity of contracting business measurement model**

Construct	Item	Factor Loading	Cronbach's Alpha	CR	AVE
Eligibility Document	PenCom Certificate	0.73	<b>0.833</b>	<b>0.564</b>	<b>0.794</b>
	Social Insurance Certificate	0.70			
	Financial Reporting Certificate	0.56			
Bidding Expenses	Cost Incurred in Bidding (2015)	0.57	<b>0.700</b>	<b>0.621</b>	<b>0.830</b>
	Cost Incurred in Bidding (2016)	0.79			
	Cost Incurred in Bidding (2017)	0.63			
Contract Administration	Average number of bids in 2015	0.63	<b>0.735</b>	<b>0.523</b>	<b>0.767</b>
	Average number of bids in 2016	0.83			
	Average number of bids in 2017	0.56			
Contracting Business	Overhead costs	0.67	<b>0.739</b>	<b>0.521</b>	<b>0.812</b>
	Profit retained for future use	0.70			
	Level of competition with other companies	0.57			
	Level of company growth	0.67			

According to the result of CFA the model fit was examined by inspecting the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), the parsimonious goodness-of-fit index (PGFI), the comparative fit index (CFI), the root mean square residual (RMR), and the root mean square error of approximation (RMSEA) (Hair et al.2006). The  $\chi^2$  value was 1.990 > 3.00. For the acceptable model fits, the GFI, NFI, TLI and CFI indices should be greater than 0.80, the AGFI greater than 0.80, the RMSEA between 0.05 and 0.08,  $\chi^2$  2=df less than 3.0, the RMR less than 0.05, and the PGFI greater than 0.5 (Brown and Cudeck 1993; Teo and Yu 2005).The model fits the data well. As seen in fit indexes figure 2, all parameters are within recommended boundaries. Furthermore as seen in Fig. 2, all the observed variables load highly and significantly onto their respective latent variables. In addition, all the constructs are positively and significantly correlated with each other.

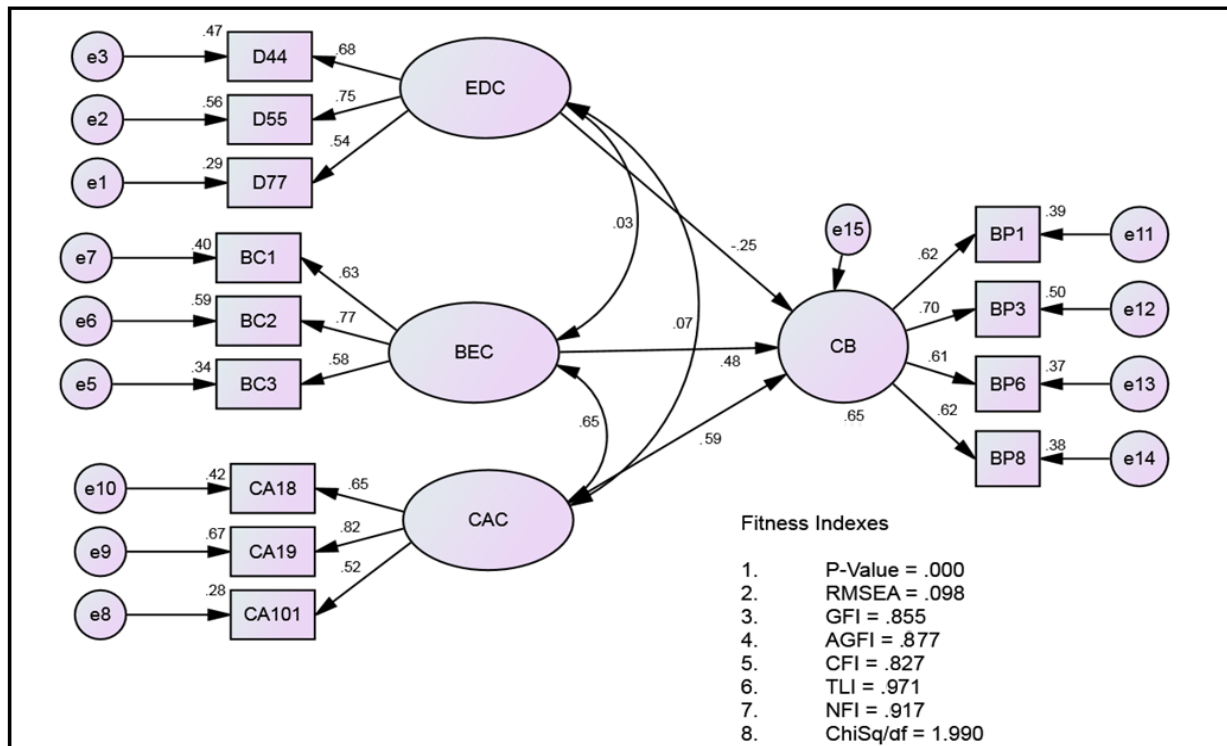


Figure3: The structural equation model (The path coefficients are significant at  $p < 0.05$ .)

Table 3 depicts the result of the impact level “IL” for the sources of transaction costs (eligibility documents, bidding expenses and contract administration). The result shows very high impact of about 0.65, which is  $< 0.39$  from the measurement scale in figure 2. This indicates that eligibility documents, bidding and contract administration costs have an impact on contracting business in the construction industry. These may be attributed to the fact that most contracting firms have to be spending resources throughout the fiscal year in order to succeed in the tendering processes.

Table 3: The results of Impact Testing for the transaction costs sources

Construct	Path	Construct	SI ( $>0.13$ )	MI (.13-.26)	HI (.26-.39)	VHI ( $<.39$ )	Direction of Impact
Contracting Business	← Sources of Transaction Costs					*****	Positive

*Hypothesis 1: Eligibility documents, contract administration and bidding expenses those not have significant effect on contracting business in Nigeria.*

In Table 4, hypothesis 1 is rejected, indicating a significant effect of transaction costs sources on contracting business. The P-value is 0.008, 0.01 and 0.00 which is less than 0.05. Therefore, eligibility documents, bidding expenses and contract administration have significant effect on contracting business at ( $p > 0.05$ ) and the effect is very high as shown in Table 3 above.

Table 4: Hypothesis test result for the structural model



Hypothesis Statement of Path Analysis	Estimate	P-value	Results on Hypothesis
<b>H1:</b> Eligibility Documents costs have a significant impact on Contracting Business in the Construction Industry.	<b>-.25</b>	<b>.008</b>	<b>Significant</b>
<b>H2 :</b> Bidding costs have a significant impact on Contracting Business in the Construction Industry.	<b>.48</b>	<b>.011</b>	<b>Significant</b>
<b>H3:</b> Contract Administration costs have a significant impact on Contracting Business in the Construction Industry.	<b>.59</b>	<b>0.00</b>	<b>Significant</b>

*Hypothesis 2: Correlation between eligibility documents, contract administration and bidding expenses is not significant in contracting business in Nigeria.*

Hypothesis 2 is supported, that the correlation between EDC, BEC and CAC is not significant (strong) Table 5, this indicates that the strength of the relationship between the three latent exogenous construct is not strong. It indicates that the analysis is valid and there is no redundancy among the construct. Consequently, if the measure of correlation is higher than 0.85, then the construct are highly correlated and the discriminant validity has failed (Awang, 2012). Therefore, this study concludes that the correlations between transaction costs sources is not significant (strong) and are valid for the research analysis.

Table 5: Correlation Estimate for each pair of exogenous construct

Construct	Path	Construct	Estimate
EDC	<---	BEC	0.03
EDC	<---	CAC	0.07
BEC	<---	CAC	0.65

*Discussion of the Finding*

The study sought to find out whether the transaction costs sources (eligibility documents, bidding expenses and contract administration costs) had effect on contracting business and to what extent as stated in the hypothesis. The study revealed that a transaction costs source has an impact on contracting business with a very high level impact about 0.65 (65%). Similarly, the impact was significant at  $\alpha = 0.05$ , which reject the first hypothesis. It is clear that this revelation strongly confirms Zielczynski (2008), Ann et.al (2013), Brozowaki (2001) and Chinyio (2001) views, that once competition is used then the cost of abortive tendering becomes significant. From figure 2 there was a strong direct impact between bidding expenses costs and contract administration for contracting business. That is when bidding expenses and contract administration costs goes up by one standard deviation, contracting business will increases by 0.48 and 0.59 respectively. It is also logical, that with growth of bidding and contract administration value there will be an increase of absolute cost. Eligibility documents costs indicates that whenever there is increase of one standard deviation, the contracting business cost reduces by 0.25 as a result of minimum review and feedback to the client, less change order and design, and clearly stated end-user requirement at

*Transaction costs sources and contracting business*

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inception stage. Another possible explanation originates from Williamson (1981), who says that transaction costs are influenced also by specificity of assets, which could probably be our situation. Excessive costs of tendering in Nigeria has been the fact that many contracting firms were not able to participate and compete with other foreign companies. Other three strongest evidences could be explained by size of firms: smaller firms (contracts) will have higher relative transaction cost than bigger ones (economy of scale and due to specialization). When talking about indirect dependencies of relative cost, we can sometimes use the argumentation about contract size again. The results show direct one, aforementioned effect was probably highlighted by complexity of tenders process (less specific and difficult accessible to goods) causing it to be more costly.

## 5 Conclusions and Recommendations

Transaction cost evaluation provides a practical framework for assessing contracting business under procurement governance in Nigeria. Many researchers have applied the TCE concept in different topics in construction (Eccles, 1981; Gunnarson & Levitt, 1982; Reve & Levitt, 1984; Winch, 1989; Lynch, 1996; Bremer & Kok, 2000; Bajari & Tadelis, 2001; Turner & Simister, 2001; Miller et al., 2002; Dudkin & Valila, 2005; Antinori & Sathaye, 2007; Whittington, 2008; Ho & Tsui, 2009; Farajian, 2010; Solino & Gago de Santos, 2010; Aibinu et al., 2011). This study has shown the potential for evaluating the effects of public procurement Act on contracting business in Nigeria within the construction industry. Hence the TCs associated with the tendering stages (e.g. eligibility documents, bidding expenses and contract administration costs) on projects procured through Traditional are determined.

The results of this study demonstrate that the Public Procurement Act has very high impact on contracting business in terms of the bidding process, documentation and administration of contract. Also, the act has made some impact by increasing transaction costs of doing contracting business in Nigeria despite the fact that it ensures efficiency and effectiveness in awarding of contracts to contractors and consultants. The study further revealed that there has been significant effect in the use of the Act. This consequently means that there is complexity and few competitions in procurement activities in Nigeria now. Again, the decisions of procurement entities follow the rules and regulations of the Act and these regulations are not well understood by many contracting firms.

This study has contributed to knowledge, in the area of a lasting reform of the construction industry by understanding the public procurement Act sources of transaction to improve contracting business. It affords the exposure of knowledge and information to network of professionals and contractors. Institutions like Quantity surveyors, Builders, Architect, Engineers Bureau of public procurement shall benefit from this study. Credibility of evaluation is enhanced with greater independence. It provides concise evidences that public procurement Act 2007 have significant impacts on contracting business.

The results of this study are comparable with research findings in similar studies in the field of transaction costs in construction. It is in conformity with statistical research guidelines. Based on the quantitative analysis, the conclusions drawn from the results of the study are to a large extent similar to that established in the research tradition. This study clearly articulates the impact of public procurement Act in terms of transaction costs sources and provides guidance for future research in procurement governance in Nigeria.

### 5.1 Recommendations

Based on the conclusions reached in this study, the following recommendations are hereby made:

- i. The study developed a conceptual framework and tested two hypotheses to explore the effects of procurement guidelines (PG) on contracting business and the correlation between sources of transaction costs in the PG. in view of that contracting firms should improve their understanding of the procurement Act, so as to minimize its effect in their business especially eligibility documents, bidding expenses and contract administration activities.
- ii. There was no strong correlation between the sources of transaction costs under the procurement Act 2007, which can invalidate the research result. Therefore, those transaction costs sources identified are part of major sources of transaction costs in construction bidding in Nigeria. Contracting firms should improve in dealing with them when establishing contracting firm in order to minimize business failure.
- iii. The Bureau of public procurement BPP should try to make sure that MDAs are not collecting higher amount for bidding documents from contractors, which contribute to high transaction costs in Nigeria today.

- iv. Contracting firms should always abide by the rules and regulation guiding the bidding process in MDAs, this will increase their chances of winning tender in the bidding process.
- v. Minimum requirement should be solicited from contracting firms by the public organization (MDAs) which are relevant to the work to be carried out.
- vi. Finally an amendment of the Act should be carried out by the legislators in order to consider procurement timeframe flexibility, introduction of e-procurement system section, and other necessary changes. That could lead development when the Act is in used by the various MDAs, private sector, Professionals and Contractors of the different industry.

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