

Evaluating the Factors Affecting Contractors Tender for Project Construction: An Empirical Study of Small Scale Indigenous Contractors in Awka, Nigeria

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Abstract

In Nigeria and other countries' economies, small scale indigenous contractors perform a vital role that significantly impacts economic stability. The small-scale indigenous contractors contribute prominently to the economy by creating more noteworthy work openings, making higher creation volumes, growing conveys, and introducing progression and business capacities in the construction industry. In this research study, a total sample of 250 was used out of 400 small-scale indigenous contractors and other professionals in the construction industry in Awka, Anambra State, Nigeria. Data for the study were generated using a questionnaire, and the collection instrument was validated and endorsed by different professionals in the construction industry before being administered to the respondents. In this study, primary data was generated to evaluate the factors affecting small-scale indigenous contractors in Awka, Anambra State, Nigeria. Different strategies were used to obtain the resulting outcome, which includes regression analysis, ANOVA (Analysis of variance), and descriptive statistics to analyze the relationship between the factors affecting the determinants of the construction project (Companies' strength, project risk, and Competition) and the contractors' decision to bid. The analysis showed that the company's strength, project risk, and competition all positively affect the determination of the slight indigenous contraction's willingness to bid for contracts in Awka, Anambra State, Nigeria. The study showed that the company's strength, project risk, and competition positively impact the contractor's decision to tender for construction projects. This research analyzed and ascertained enough data and information to prove the essential factors influencing small-scale indigenous contractors' decision to

tender for construction contracts. The researcher recommends that contractors should execute the projects or works being handled by them promptly and efficiently, within the required time frame to which can reduce competition from another contractor to use that as an advantage for competition.

Keywords

Project Construction, Tender, Indigenous Contractors Awka-Anambra State

1. Introduction

The construction sector is a dynamic business environment in most countries, guided by the least costly mindset (Dulaimi & Shan, 2002). According to (Dulaimi & Shan, 2002), most construction contracts are awarded based on the bid within the minimum bid amount. However, in addition to cost, a range of other factors are considered. Competitive bidding is usually a means for different contractors to bid for construction projects, and bidding helps to state out the functions of both the contractor and the client in an orderly manner. (Adetola, 2000) defines tendering worldwide as an essential part of the procurement or delivery method of projects. Most public projects pass through tendering because it aids in having a good idea of the project before it is started. (Lou & Alshawi, 2009) also explained in their book that contracting is a strenuous activity with the most critical and crucial tendering process considered. The use of tendering in awarding the construction project is regarded as a standard way of receiving services from the building and construction sector generally and can't be overlooked. The tendering process is defined by (Seeley, 1997) as an effort to explain the factors that decide the most effective tendering method to be implemented and the conditions in which the needs of clients are best served. The tendering process helps provide equal and vital information about the contract from the client to all the contractors bidding for the project. The chosen contractor is then given a level playing ground to perform a proper analysis of the contract and submit their tenders back to the client, who now works hand in hand with the consultants to vet and analyze the tenders submitted. The contract is then awarded to the best contractor whose tender passes all the requirements needed to smoothly run and complete the construction project, thus selecting the contractor whose tender has the best value for money.

According to (Tamimi, 2009), the period of time includes all the steps involved in the tender, starting from when it is advertised to contractors to bid till the last day, which is the submission day. Factors influencing the tender and tender period of contractors depend heavily on the tender type, which can be (design, construction, or invited tender), the size, nature, and importance of the construction project, and the number of details about the project that the tenderers need to reveal (Bina, 2010). (Shash, 1993) clarifies that to secure a contract, a construction company may negotiate with the client or engage in com-

petitive bidding or tendering, which involves other contractors. (Fu et al., 2002) say that the best practical strategy used for the tender process and selection of the best tender amongst contractors is competitive tendering.

Contractor's decision for tender

(Shash, 1993) believes that the financial implication of carrying out the contract work, which is not customarily recouped immediately, is an essential determinant of a contractor's decision to tender. Similarly, (Harris & McCaffer, 2001) admit that tendering produces a higher front-end expense incurred by the contractor before the award of a contract can lead to an unsuccessful contractor having an increased overhead cost. Although recognizing the difficulty and dynamism of tendering decisions to contractors, (Lowe & Parvar, 2004) argued that a contractor must have a good tender and business approach as the success or failure of a company or a contractor depends on the result of such a decision. The choice is closely linked to a particular project and other uncontrollable factors that affect the project. A decision by the leadership team is challenging to make in a short period. (Binnington, 2004) believes that wrong tendering time is one reason construction projects always encounter different problems that can lead to the incompleteness of projects because contractors don't have enough time to analyze the work and end up submitting an inaccurate tender. In the periods given to contractors to tender for work, the "lemming-like rush" syndrome is expressed.

Clients and their consultants expect tenderers to respond in a limited time frame for the same project. The client and his team spend a long time visualizing, planning, and performing comprehensive documentation of the whole project and how they expect it to be from the start to the completion stage. It is paramount that tenderers be given enough time to understand the project and come up with an accurate tender for submission for a smooth running of the project. According to (Knowles, 1997), in a situation where the time frame given to contractors to submit tenders is inadequate for a proper analysis of the project, it leads to contractors overpricing their tenders to make up for unforeseen risks and other items in the contract, which they did not have enough time to analyze. This problem leads to an overpriced tender or contractors submitting an underpriced tender that lacks accuracy. The contractor's decision to tender depends on some factors that include the tendering duration, the project location, uncertainties/risks involved, client's profile, type of project, size of the project, current contractor's workload, need for work, contractor's experience (Shash, 1993). Also, construction-related operations are being drastically reduced during the global financial downturn. The original tender/no tender decision-making criteria of construction contractors may be modified.

The Nigerian construction industry is made up of all the individuals, organizations who carry out the construction of both building works, which can be residential or non-residential, and also civil engineering works like bridges, which involves all establishments involved in the erection of residential and non-residential buildings and civil engineering works, (Olaloku, 1987). The in-

dustry over the past years achieved a lot in the aspect of construction, which includes the construction of different structures like Industrial buildings, Estates, public buildings, etc. (Jambol & Yusuf, 2004). The industry has recorded some significant achievements, including the development of residential estates, public buildings, industrial complexes, and institutional buildings (Jambol & Yusuf, 2004). In Nigeria's construction sector, over 55 percent of building and engineering works are funded by the federal, state, or local government, making the public sector the dominant force and the greatest in Nigeria's construction Industry (Izam, 2008).

2. Literature Review

2.1. Contingency Theory

In the late 1960s, many contingency plans were generated simultaneously. Traditionally, the theory of contingency has attempted to formulate vast generalizations regarding formal systems usually correlated with or ideally adapted to the use of various technologies. The view in the theory of contingency was derived from (Woodward's, 1958) work who asserted that innovations explicitly define variations in organizational characteristics such as control duration, centralization of authority, and formalization of rules and procedure. According to (Fiedler, 1964), contingency theory (CT) is a class of behavioral theory that claims that there is no correct method to organize and that an organizational technique that brought a positive outcome in some circumstances might not be efficient when applied in another circumstance in an organization. Instead, the best leadership technique for an organization is dependent on some other internal and external limiting factors.

(Mohsini & Davidson, 1986) used contingency theory to analyze the impact of structure and environment on organization output and performance, assessed using the conflicting principle. Ireland (1983: p. 25) suggests that he has used the principle of contingency to classify management decisions influencing the project's success. (Ferry & Brandon, 1999) tried to develop further procurement framework models related to contingency theory and how it affects projects. The lowest tender price is known as the criterion for winning contracts in conventional tenders while tendering for a contract, which is one of the critical causes of project failure because of contractors underpricing to win contracts. As such, (Walraven & De Vries, 2009) stresses that the contractor offers the lowest tender price and profits objective by inserting claims or reducing the specified standards of the project, which makes the tender with the least price dangerous and could lead to suspension of the project awarded. (Walraven & De Vries, 2009) observed that in the late 1980s, as clients began to accept more non-price requirements, client's preferences shifted because clients are more interested in the contractor's performance as the main criteria for contract award.

Numerous scholars have affirmed that clients generally prefer to use the lowest tender price as the basis for the selection and awarding of contracts to con-

tractors (Drew & Skitmore, 1997), (Waara & Brochner, 2006), and (Walraven & De Vries, 2009). Most clients and contractors handling projects are always concerned about the tender with the lowest price without paying due attention to other necessary details and requirements, which should be considered. A report conducted by Turksis [1] shows that low cost should not be the only basis for contractor selection and that other factors like the capacity of the contractor, which has an impact on the cost, duration, and performance of the project, should be taken into consideration as well (Walraven & De Vries, 2009). (Waara & Bröchner, 2006) discussed how clients used various parameters in Sweden to choose a contractor and how the non-price criteria in the model were implemented. Quality, tender price, feature, technical design, environmental management system, operating costs, maintenance costs, life-cycle costs, operation, length of the project, the capability of the contractor, expertise, training, references, experience and efficiency, construction methods, financial capacity, health and safety, and tender document compliance are multiple requirements used as the basis by the clients in Sweden. (Walraven & De Vries, 2009) stress that the contractor offers the lowest bid price and typically profit by raising claims or reducing the standard of the project. However, according to Fu, Drew et al. (2002), the lowest tender price basis for selecting contractors is very risky and unsafe (Fu, Drew et al., 2002).

To identify that seasoned contractors were more competitive and successful than contractors with less experience, (Fu et al., 2002) used a quantitative study and analysis of data collected from 266 Hong Kong contractors. The contractors' experience covers their experience in tendering process and the construction of building projects. If the business wins or loses, it will benefit from all inputs as knowledge for future strategy formulation. (Fu et al., 2002) believe that contractors gain understanding from all their efforts in tendering for a particular project, whether they win or lose, which helps form a proper strategy for future projects. Tendering is considered a common way to obtain services from the construction and construction industries. Therefore, it has been described as the list of procedures for the client and his team to generate, view, and manage tender documents (Knowles, 1997). According to (Lysons & Farrington, 2006), tendering is a procurement process by which prospective suppliers are requested to make a firm and unambiguous tender for the price and terms under which they will provide specified products or services which, upon acceptance, form the criteria for a subsequent contract (Lysons & Farrington, 2006). (Adetola, 2000) defines tendering as a crucial part of the worldwide project procurement or delivery system. The values of competitiveness, fairness, and accessibility, integrity, transparency, and probity are the foundation of tendering (World Bank, 2008). This simply means that all public bodies are subject to open tendering by regulation before contracts are awarded. However, in the Nigerian tendering system, a system of granting preferences is allowed. As ethnicity in Nigeria's society is disregarded as a factor, such choices are not dependant on race, disability, or gender (Jodie, 2004).

There are guidelines to be followed by contractors and consultants in the Nigerian Construction Industry before tendering for public contracts. The government distinguishes contractors from consultants. Consultants and contractors are expected to register and submit their details on different service provider lists and receive a registration number to apply for the preferences (World Bank, 2008). According to Shash and Abdul-Hadi (1992), a contractor must register on the PP & ADB database of consultants before being eligible to tender for government contracts in Nigeria. A contractor must register on the PP&ADB database of consultants before being eligible to tender for government contracts in Nigeria (Shash & Abdul-Hadi, 1992). The law regulates the selection of procurement procedures by Nigerian public bodies under the Public Procurement Act 2007 (PPA, 2007). Public bodies are expected to use open tendering as an option for procurement procedures and use an alternative procurement process only in time of urgency (Jodie, 2004). On January 1, 2007, after years of abuse of public funds by procurement bodies, the Act of Parliament came into force. The goal is to optimize the economy and productivity by fostering the procurement process's honesty and fairness, ensuring accountability and public confidence, and trust procurement procedures (PPA, 2007).

According to (Lawal, 2007), suggested in the 1990s that citizens, Nigeria's development partners, and civil organizations were concerned about the importance of a sound legislative and institutional structure to regulate Nigeria's public procurement sector as it will lead accountability. In construction contracts, there are many processes involved in tendering process, which starts with the review to certify that work specification is satisfactory to the end-users, an invitation to the tender, selection of the qualified contractor, and lastly, final contract award and monitoring (Mohemad, Hamdan, Othman, & Noor, 2010).

In the tender process, many essential steps are involved (Creswel, 1999). First, the tendering process is determined: the client seeking the tender will decide the type of tender to be used and what the tendering process will entail. Second, the tender request is prepared by the client and his team, which includes: the specifications of what is required, the contractual conditions, and how you should respond to the tender request. Thirdly, tenders are invited: the category of importance, difficulty, and organization describes how tenders are invited. Fourth, tenderers respond: tenderers should obtain all important documents related to the tender. It is necessary to attend any pre-tender briefing sessions, explain any discrepancies, arrange your feedback, prepare your response, and send your feedback in the correct order and at the right place and time without delays (Fadhil & Hong, 2002). A debriefing interview with unsuccessful tenderers is also recommended and given (Dozzi et al., 1996). Finally, the contract is established and handled.

The tender length depends heavily on the type of tender (traditional, design and construction, or invited tender), the scale/size, the scope and importance of the project, and the number of details that the tenderers need to reveal (Bina, 2010). According to the Public Procurement Act (PPA, 2005), Procurement

plays a significant role in the economic growth and development of a country (Jodie, 2004). In the construction industry, the tendering process is considered the most crucial and vital phase of the project life cycle. It forms the contractual and legal arrangements between the client, consultants, the contractor, and other project participants (Lou & Aishawi, 2009). Projects in developing countries take special account of living conditions, production levels, policies such as import specifications, the availability of skilled workforce, heavy machinery, and materials, and the stability of the country and client details (Jaselskis & Talukhaba, 1998). In particular, some of the studies have been centered on various contractors of different sizes. Contractors of different sizes can have unique and distinct features. The smaller contractors gave a higher than average value ranking (Egemen & Mohammed, 2007). This ongoing research is based on a similar study performed by Egemen and Mohamed (2007).

2.2. Varying Procurement Strategy

According to (Barclay 1994), if the building is completed at the right time, at the required price, quality standards, and provides the customer with a high level of satisfaction, the project can be efficient. To accomplish a successful task, client selection of an effective procurement system is critical (Love, Skitmore, & Earl 1998). A procurement system is defined (Love et al., 1998) as an organizational structure that assigns individuals and organizations specific roles and authorities and explains the different elements that make up any construction project. (Love, Skitmore, & Earl, 1998) categorized procurement processes into three methods: the traditional/conventional method (design-bid-build), Design and Build, and the Management procurement method.

2.2.1. Traditional Method

In this traditional approach, the owner works together with his team. His consultants first comprehensively design the construction project and then prepare tender documents, including drawings, work schedules, and bills of quantities, which show the project's prices of different work items. Contractors are invited to request tenders, usually on a single-stage competitive basis, to construct the project. The client chooses a suitable contractor through competitive bidding to carry out the project. Lump-sum contracts are also traditional building contracts. Nevertheless, reimbursement and measurement contracts may also be used in the conventional procurement approach (Fu et al., 2002).

2.2.2. Design and Build Systems

(Fu et al., 2002) explained this method where a single team performs all the tasks for both design and construction. A monthly lump sum based on monthly expenditures is the payment for this form. (Ashworth, 2006) argues that by integrating them into a single entity, the building and design system overcomes the issue of having distinct design and construction processes. One of the key reasons employers chose the design-build procurement method is to shorten the

overall length of the project (Cho et al., 2010). This method of procurement guarantees smooth cash flow and financial stability throughout the construction of the project (Kaplanoglu & Arditi, 2010).

2.2.3. Management Method

The role of the management contractor will be advisory to the team at the pre-contract level, and they will be in charge of conducting the works using direct work contracts during construction. With this form of contract, it would be possible to start early on-site and finish earlier. For a management contract to be successful, the client, the design consultants, and the contractor must have faith and team spirit. A formal submission involving a proposed management fee would usually be made by the management contractor in the management delivery system. It will be selected after meetings with the client and his design team. The fee would include the overall management service, calculated as a percentage of the project's total cost, and if the project does not proceed to the site, a service to cover the pre-construction phases. Based on a contract cost plan prepared by a quantity surveyor, project drawings, and a project specification, the management contractor undertakes the project.

2.3. Company's Strength

The company's strength represents the success of the project, and the factors that are more critical than average are delegated to the smaller contractors. (Egemen and Mohammed). Company strength entails the readiness of the selected contractor to fulfill the client's tender requirements. These requirements include funds needed for the project completion, company's experience in a similar project, awareness of the situation of the site, access to resources, accessibility of subcontractors, labor supplier's, and amount of work to be done by subcontractors as all these are necessary for smooth completion of the project (Egemen & Mohamed, 2007).

Chua and Li (2000) also believed that the company's current workload during the preparation of bids impacts the company's strength. According to Chua and Li (2000), the company would be motivated to take more risks to determine to bid for the project if the construction project is appropriate to the position of the contractor's firm, which includes the availability of resources and knowledge in the particular form of the project the firm is bidding for, thus making the firm convinced of been more successful than other companies. (Wanous et al., 2000) firmly agree that the contractor's capacity to achieve the condition of the contract is the most severe factor to be considered by contractors while tendering for projects. (Bageis & Fortune, 2009) and (Shash, 1993) agree that it is necessary to have experience with a similar project. But (Lowe & Parvar, 2004) dispute that it is required to have experience with similar projects.

2.4. Project Risk

Every risk has its risk, and the risks can be categorized into two categories of

risks: job-related risks and macro-environmental risks (Egemen & Mohammed, 2007). The job-related are further divided into a few sub-groups, including task uncertainty, job difficulty, contract status, project consultant. A significant element agreed on by many writers is the technical complexity (Wanous et al., 2000), (Egemen Mohammed, 2007) and (Bageis & Fortune, 2009). Macro-environmental hazards include economic conditions, resource availability, and building legislation, and government regulations. Resource availability in a project involves services such as skilled labor, materials, plants, and equipment. Policies relating to licenses, permits, tax, and the minimum wage rate are protected by laws and regulations; dispute and claim provisions (Egemen & Mohamed, 2007). (De Neufville & King, 1991) propose that two solutions may be used to remedy the hazards during bid planning. The first approach is to build the basis for a mark-up level on the risks involved in the project. Adding a contingency to the cost estimate is the second way of hazard remedy in projects as quoted by (Drew & Skitmore, 1997; De Neufville & King, 1991).

2.5. Competition

Competition in the current market means a rise in competition due to the amount of other future lucrative projects on the market, the highest achievable level of mark-up in the current market, and the number of new companies joining the market (Egemen & Mohamed, 2007). (Wanous et al., 2000) and (Egemen & Mohamed, 2007) think competition is not essential. This outcome is argued by several authors who believe that the probability of been selected for a contract is strongly linked to the competition (Shash, 1993), (Chua & Li, 2000) and (Bageis & Fortune, 2009). This has been acknowledged by (Drew & Skitmore, 1997), where contractors are more likely to tender for a more competitive project.

3. Methodology

This part presents the procedures, methods, tools, and techniques used in the research to evaluate the factors influencing contractors tender for project construction for small indigenous contractors in Awka, Anambra, Nigeria. This section includes describing and discussing the different data gathering and analysis techniques and procedures used in the study. The fields of study, data collection sources, and research design, and data presentation and analysis methods are included.

3.1. Research Design

According to (Trochim, 2005), research design provides the glue that keeps the research project together. A method is used to explain how all the main parts of the research project work together to solve the critical research questions. Research experiments are deliberately designed to maximize the likelihood of obtaining the knowledge required to answer a specific question. The question-

naire for the generation of data for this research was used in this analysis. The questionnaire is a method of surveying, and it is an exploratory analysis in research.

3.2. Population and Sampling Size

(Ngechu, 2004) defines population as a well-defined or set of people, services, elements, events, and a group of things or households being investigated. At the time of the study, the targeted population included construction firms of all categories (small, medium, and large) based in Awka or carrying out construction activities there in the state. A total population of 400 contractors in Awka, Anambra State in Nigeria, was considered by the researcher for the study. According to (Bartlett Kotrlik & Higgins, 2001), a sample of 137 can be drawn from a total population of 400, which has been proven fit for a study by a researcher. However, the researcher selected the sample to be 250 for generalization purposes.

3.3. Data Collection Instrument

Via a questionnaire survey, this research was conducted to collect information on the factors influencing the decisions of contractors to bid. The study was carried out in Awka, an economically significant city in Nigeria. The questionnaire was a standardized form that gave answers to the questions and hypotheses of the study. This tool is divided into sections A and B. Section A deals with the respondents' data, while section B includes research statements postulated in chapter one in line with the research issue. Options or alternatives are offered to select or tick one of the options for each respondent.

3.4. Conceptual Model

In **Figure 1**, the researcher followed the factors that initiate contractors tender to bid for a projet in Awka, Anambra state in Nigeria. It was presented in a visual format which shows how these factors or variables are related.

3.5. Research Hypothesis

The researcher hypothesized that the strength of the firm, the project risk, and

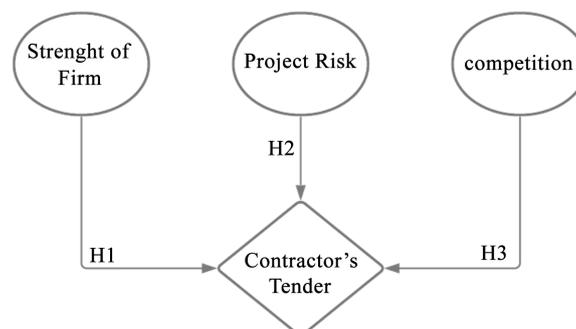


Figure 1. Conceptual framework.

competition among firms all have an appositive impact on contractors' tenders or decision to bid for project construction in Awka, Anambra State-Nigeria.

H₁: The strength of the firm has a significant influence on contractors tender for the construction project in Awka, Nigeria.

H₂: There is a positive association or relationship between project risk and contractors tender for the construction project in Awka, Nigeria.

H₃: There is a positive or significant association between competition among firms and contractor tenders for project construction.

4. Data Analysis and Discussions

Table 1. Demographic features of respondents.

Variable	Sub-scale	Frequency (%)
Gender	Male	188 (75.2%)
	Female	62 (24.8%)
Working Experience	Below 10 years	46 (18.4%)
	10 - 25 years	133 (53.2%)
	Above 26 years	71 (28.4%)
Types of Contractors	Architect	36 (14.4%)
	Civil Engineer	48 (19.2%)
	Quantity Surveyor	52 (20.8%)
	Mechanical Engineer	46 (18.4%)
	Builder	44 (17.6%)
	Electrical Engineer	24 (9.6%)

Source: Field data (2020).

In **Table 1**, Background information of respondents was collected by researchers covering areas such as gender, working experience and types of contract respondents. This information was collected in order to understand and give perspective to the response given by contractors in terms of their knowledge in their bid for project construction. From the set of close-ended questionnaires given to contractors, an analysis of response on contractors background revealed that a significant number of the contractors were males (188) 75.2% while their female counterparts were (62) in number also representing 24.8% of the total respondents that were involved. **Table 1** also revealed that 46 contractors representing 18.4% were below the working experience of 10 years, 133 (53.2%) contractors withing 10 - 25 years and 71 (28.4) contractors with working experience above 26 years. It was also revealed in **Table 1** that several types of contractors that responded to the questionnaires namely architect, civil engineer, quantity surveyor, mechanical engineer, builder and electrical engineer had 36 (14.4%), 48 (19.2%), 52 (20.8%), 46 (18.4%), 44 (17.6%), 24 (9.6%) respectively.

4.1. Regression Analysis

This segment examines the conclusions based on the knowledge obtained in the

field. The information is used to address the study's three research hypotheses. On contractor's tender to bid for the construction project in Anambra State, Nigeria, multiple regression, specifically stepwise-Multiple regression, was used in risk of the project, strength of the project, and competition. **Table 2** presents the conclusions and processing of the findings obtained from contractors' answers to the study's questionnaire. Three variables are being thoroughly tested to determine the extent to which they can predict the contractor's tender for the construction project in Anambra State, Nigeria. The test showed that the data were distributed normally and that the dependent and independent variables had a linear relationship.

4.2. Model Estimation

The researcher focused on three variables that influence contractor's tender for contractors project in Awka. A study from multiple linear regressions was performed to determine whether adequate evidence was obtained to assist the researcher in determining the presence of a direct correlation or linear model between the dependent variable (Y), credit accessibility, and the independent variable (Z). Multiple regressions were used to assess the linear relationship or bond between the variables listed in the research goals.

Mathematically, the linear Model is stated below as;

$$CT = \beta_0 + \beta_1SF + \beta_2PR + \beta_3CM + E$$

where; CT = Contractors Tender; SF = Strength of Firm PR = Project Risk; CM = Competition; E = Error Termss.

4.3. Main Findings of the Study

Table 2. Regression analysis of factors of contractors' tender on projects construction.

		Unstandardized Coefficients		<i>t</i>	Sig	Collinearity Statistics	
		B	Std. Error			Tolerance	VIF
1	(Constant)	4.479	0.133	31.179	0.00		
	SF	0.877	0.014	-10.935	0.000	1.000	1.000
2	(Constant)	3.918	0.195	20.086	0.000		
	SF	0.826	0.080	10.387	0.000	0.0976	1.025
	PR	0.187	0.045	4.155	0.000	0.0976	1.025
3	(Constant)	0.725	0.085	18.115	0.000		
	SF	0.468	0.055	18.781	0.000	1.071	4.927
	PR	0.796	0.014	13.781	0.000	0.0997	1.146
	CM	0.478	0.023	4.453	0.000	0.989	2.662
Model 1		Model 2		Model 3			
F = 119.579		F = 70.967		F = 117.891			
df = 1		df = 2		df = 3			
<i>p</i> = 0.000		<i>p</i> = 0.000		<i>p</i> = 0.000			
R ² = 0.238		R ² = 0.0.381		R ² = 0.996			
R ² Change = 0.238		R ² Change = 0.619		R ² Change = 0.000			

Source: Field data (2020).

Model 1: $CT = 4.479 + 0.877SF + E$

Based on analysis of Information from **Table 2**, the study created a model to be tested to establish that the Strength of Firm (SF) projected a significant influence on contractors tender for the construction project in Awka, Nigeria. Model 1 was substantially related, which designates a considerable effect of strength of a firm on contractors tender for construction projects; hence, the researchers reject the null hypothesis that the strength of a firm does not influence contractors' tender for projects. This was revealed in a significance value ($p = 0.000$). From The analysis in **Table 2**, it can be detected that the Strength of Firm (SF) (independent variable) has a positive and significant effect on the dependent variable (Contractors Tender for construction Projects). This implies that an increment in the strength of firms, such as readiness of selected contractors to fulfill client's tender requirements, awareness of the situation of the site, accessibility to sub-contractors, and many more, would significantly lead to a higher chance of Contractors' tender for construction Projects. A 1% increase in Strength of Firm (SF) such as those mentioned above would cause an increment in Contractors Tenders by the coefficient (0.877). *The R square of Model 1* further proposes that the Strength of Firm explains 23.8% of contractor's tenders of construction projects in Awka, Nigeria, thus signaling that there might be other plausible factors that account for Contractors Tenders for construction projects. This, therefore, justifies the need for model 2 to test to investigate the different aspects of independent variables that influence Contractors Tenders.

Model 2: $CT = 3.918 + 0.826SF + 0.187PR + E$

Moreover, it is essential for a second model since the first model could not solely predict its influence on Contractors Tenders in Awka, Nigeria, to test the null hypothesis that there is no positive association between project risk and contractors tender for construction project in Awka, Nigeria. In addition to the first research independent variable (Strength of Firm (SF)), Project Risk (PR) appears to have influenced Contractors Tender for construction Projects in Awka, Nigeria. It was revealed that Model 2 is statistically significant ($p = 0.000$) in predicting Contractors Tender for construction projects in Awka, Nigeria. This indicates that in addition to earlier-said strength of a firm, Project Risk Factors such as task uncertainty, job difficulty, contract status, project consultant, economic conditions, resource availability, and building legislation and government regulation, and many more also significantly influences Contractors Tender for construction projects in Awka, Nigeria. Model 2 further revealed the Strength of Firm has a significant positive impact on Contractors Tender for construction projects by its coefficient (0.826). Project Risk factors also significantly affect Contractors Tender for construction projects in Awka, Nigeria, by a coefficient value (0.187). This surmises that a 1% increase in both Strength of Firm and Project Risk factors such as those mentioned above would positively increase Contractors Tender for construction projects in Awka, Nigeria. The R square of model 2 insinuates that the Strength of Firm and Project Risk factors explains 61.9 % of variations in Contractors Tender for construction projects in Awka,

Nigeria. It can be said that the introduction of the new variable (Project Risk) contributed significantly. The Project Risk alone explains this variation as a contribution to this model by 38.1%. This implies that other factors explained the 37.7% of Contractors Tender for construction projects in Awka, Nigeria hence a need for model 3 to fill in the gap.

$$\text{Model 3: CT} = 0.725 + 0.468\text{SF} + 0.796\text{PR} + -0.478\text{CM} + \text{E}$$

As a final point, the study proposed a final model to predict how the Strength of Firm, Project Risk, and Competition factors influences Contractors Tender for construction projects in Awka, Nigeria. The study found that independent variables such as Strength of Firm, Project Risk, and competition significantly ($p = 0.000$) influence the dependent variable (Contractors Tenders for Construction). As earlier mentioned, both Strength of Firm and Project Risk positively predicted contractors tender for construction projects in Awka, Nigeria, as echoed in Model 2. In Model 3, competition of firms in the current market means a rise in competition due to the amount of other future lucrative projects on the market, the highest achievable level of mark-up in the current market, and the number of new companies joining the market predicts contractors tender positively. The positive significance level of all the three independent variables implies that a 1% increase in any of these factors would also cause an increment in Contractors Tender for construction projects in Awka, Nigeria, respectively, by their coefficient values of (0.468), (0.796) and (0.478). The R square for Model 3 showed that 37.7% of the variation in Contractors Tender for construction projects in Awka, Nigeria is caused by Competition factors and Strength of Firm and Project Risk factors. There appears to be a connection between the findings revealed from this study and those done by scholars in the field of research conducted by (Bageis & Fortune, 2009, Chua & Li, 2000, Ege-men & Mohamed, 2007, Kaplanoglu & Ardit, 2010; Lowe & Parvar, 2004; Trochim, 2005). The remaining paragraph of the study concludes the study and offers recommendations of the need to improve upon some things in the Contractors Tender for construction projects in Awka.

5. Conclusion and Recommendations

Based on our findings of the study, it can be concluded that the three factors brought out from this study that is the company's strength, project risk, and competition, are the significant determinants or factors that affect small scale indigenous contractors' decision to bid for construction projects in Awka, Anambra State in Nigeria. It can be seen from the result that competition among firms has the highest impact of 99.6% of influence that put contractors in a position to bid for the construction project in Awka, Anambra State in Nigeria. From the information, it can be said that competition is very vital in the construction industry, which allows the contractors to be on guard to bid and win construction projects towards growth and the expansion of their business. However, the risk of the project and the strength of the project contributed to

38.1% and 23.8%, respectively, which leads to the contractor's tender or the decision in bidding construction project in Awka, Anambra state in Nigeria.

From the researcher, the three factors that lead to the contractor's decision to bid for projects are the main determinants that initiate the contractor's decision to bid for construction projects in Awka, Anambra State in Nigeria. The researcher recommends that contractors execute the tasks or works being handled by them promptly and efficiently, within the required time frame, to reduce competition from another contractor to use that as an advantage for competition.

Conflicts of Interest

The authors declare no conflict of interest in the declaration of this paper.

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