

EFFECTS OF PRE-QUALIFICATION CRITERIA ON PERFORMANCE OF CONTRACTORS IN KADUNA STATE, NIGERIA

The effect of pre-qualification criteria on performance of contractors cannot be overemphasized. Problems faced in Project management can be attributed on poor pre-qualification criteria adopted by the public and private sectors as necessitated this study. The study aimed at evaluating the effect of pre-qualification criteria on performance of contractors in Kaduna State. The study sampled 162 supervisors and management staff of Kaduna State Ministry of Land, Works and Housing. The study utilized closed ended questionnaires and adopted both descriptive and inferential method of analysis. The result of descriptive analysis revealed that construction professionals identified financial stability, soundness and Management and technical skills and capability as the most significant factor influencing the choice of prequalification. Also the the overall quality prequalification criteria with mean scores of 3.38 and 3.34 respectively, which indicated that quality prequalification criteria is significant. The study concludes that parties to contract should comply with the procedures leading to contract award such as identification of client's requirements; preparation of clients' strategic brief and identification of procedures, organizational structures and range of consultants.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Contractors are those involved in the construction stage of construction projects and so any decision taken about their selection affects the performance of the project. The process of selecting contractors for a proposed project is a major decision which may influence the progress and success of any construction project. Selecting an inappropriate contractor for a project could therefore lead to project behind schedule, price changes and substandard work (Ologunagba & Akinmusire, 2016).

It is due to inappropriate criteria been selected when evaluating qualification of contractor, inappropriate significance attributed to the criteria and inappropriate methodology applied for the contractor evaluation and selection as identified by Ologunagba and Akinmusire (2016) in their selection and evaluation process. The complexity of contractor selection is attributed to its uncertainty nature. It is due to fuzziness associated with contractor performance, experience, prequalification criteria and qualitative judgment (Ologunagba & Akinmusire, 2016).

The decision made by the client or his representative directly or indirectly affect the success or otherwise of a project outcome (Nkanta *et al.*, 2017). Thus, a wrong approach in selection could lead to project failure. The client is faced with choosing between using competitive bidding and negotiation to select contractor (Ologunagba & Akinmusire, 2016). Most public client organizations adopt a selective approach for inviting tenderer for construction projects. This helps to prevent default and associated overhead costs of

contractors. It enables the clients to assess the liability, competency and capability of potential contractors to satisfactorily carry out the contract.

It also minimizes the potential risks involved in the project (plebankiewicz, 2010). Ologunagba and Akinmusire, (2016) expressed that wrong tendering practice is a major contribution to inefficiency in Nigeria construction industry. However, some contractor selection methods currently in existence are criticized as incomplete and biased and lacking consideration in terms of contractor's performance (Nkanta *et al.*, 2017).

In addition, there have been steady increase in the range of methods used for procurement of construction works in the last two decades For instance, in Nigeria, we have “Due process” which is meant for transparency and accountability, but yet there have not be improvement in the success rate of construction projects. Project management is faced with many problems which can be attributed on poor pre-qualification criteria adopted by the public and private sectors. In the light of the above, this research work focuses on the effect of pre-qualification criteria on performance of contractors in Kaduna State through an in-depth study, analysis and realistic research.

1.2 Statement of the Research Problem

There is emerging acceptance to award of projects to contractors who quote low rates with anticipation of getting jobs. Evidence suggests that this approach accounts for delay in project completion, suspension of projects, poor performance and increase in total cost of the projects (Anyanwu, 2013). A capable construction contractor is requisite in proper procedure and completion of a construction project. However, the objective of the selection process is not only to ensure that the contractors' characteristics and capabilities match the requirements of the project under consideration but also the limitation of potential bidders (Anyanwu, 2013).

In such a case, it is essential not only to judge whether the contractor fulfils the basic criteria, but also to what degree that criterion is fulfilled. Kenneth and Josphat (2016) further assert that contractor selection plays a vital role in the project performance. The appointment of quality contractor for the right project is the most crucial challenge for any decision maker. The critical sources of delay are due to the fact that the project contractor does not have enough working capital, late advance payment, poor planning, poor site management and inadequate contractor's experience (Kenneth & Josphat, 2016). The selection of the contractor is one of the most significant issues affecting the success of a construction project and it is one of the most challenging decision-making aspects of a construction project (Kenneth & Josphat, 2016). In the other words, it means to attain the best outcome in the cost, time, quality triangle for construction project management. All these studies overlooked the contributions and influences of project location on the prequalification. Previous studies on contractors' prequalification criteria in Nigeria were not location specific while studies on geographical peculiarities of contractors' prequalification with particular reference to Kaduna State region are sparse. Thus, it is imperative to evaluate the effect of pre-qualification criteria on performance of contractors in Kaduna State.

1.3 Research Questions

The research will be premised on the following research questions

- i. What are the existing contractors' prequalification criteria that affect the performance of construction industry in Kaduna State?
- ii. What are the factors that influence the choice of prequalification criteria in the performance of contractors in Kaduna State?
- iii. How have the major challenges of prequalification criteria affected the performance of building contractors in Kaduna State?

1.4 Aim and objectives of the Study

The aim of this study is to evaluate the effects of pre-qualification criteria on performance of contractors in Kaduna State with a view of:

- i. To identify and examine the existing contractors' prequalification criteria in the construction industry in Kaduna State so as to determine the most significant criteria.
- ii. To identify and examine the factors that influences the choice of prequalification criteria in Kaduna State.
- iii. To determine how the major challenges of prequalification criteria has affected the performance of building contractors in Kaduna State.

1.5 Justification for the Study

It is part of the intending achievements of this study as a matter of importance to reduce the poor understanding of pre-qualification criteria of contractors in Kaduna State. Additionally, at the completion of this study, it is expected that challenges affecting pre-qualification of contractors in Kaduna State, Nigeria will reduce because it will serve as an eye opener and a stimulating factor to key into the sector. Government and private individuals will be able to have a reasonable data about how contractors perceived pre-qualification criteria; thereby making them adjusts in the techniques and methods employed by them. It is however clear to see the essence of this study is purely awareness test and stimulating pill that will heal our nonchalant attitude towards pre-qualification criteria, as such reducing the gap of literature with respect to this particular area of study. Finally, the study will serve as a reference to students and future researchers on this area.

1.6 Scope of the Study

The study focuses on the effect of pre-qualification criteria on performance of contractors in Kaduna State. This study was limited to building projects in selected public

organizations and on the criteria used in assessing the contractors. The samples were taken from the multitude of projects which the selected public organisations have used in the last 10 years (2009-2019). The prequalification criteria for selection that was used within this period shall be included. The groups of respondents that was selected for this research work are those who have been involved in the contractor selection practices of building project at one time or the other in Kaduna State. The selection of Kaduna State is a conscious one, because it is an administrative hub in northern Nigeria, thus, it selection for the purpose of this study.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Contractor

According to Greenhalgh and Squires (2011) and Anyanwu (2013), a contractor is a professional builder responsible for ensuring that the final finished product of the building conforms to the intentions of both the client and the design team. The activities carried out by the contractor include managing, planning, coordinating, and supervising the site and the staff by providing accommodation for them. Besides, he is also involved in managing health and safety procedures (Towey, 2012).

Generally, the client appoints the main contractor for the execution of a building project under the building contract (Towey, 2012). Huang (2011) asserts that the client's primary area of concern in project execution is centered on the cost and quality of the works. Therefore, the main contractor has to report to the client periodically to ensure that the expenditure is not more than the budget, and the quality of workmanship maintained is within the client's expectations (Towey, 2012).

2.2 Types of Contractor

There are five types of contractors involved in a construction project. Each has specialization in different construction sectors, and thus, their responsibilities are different as well.

(a) Building Contractor

A building contractor is the one whose responsibilities entail carrying out construction works in building-related infrastructures, such as offices, factories, residential buildings, and commercial buildings (Contractors State License Board, 2014). Runner *et al.* (2016)

further describes a building contractor as one who undertakes tasks such as bricklaying, steelwork, concrete work, and plastering, to mention few.

(b) Civil Engineering Contractor

In the United Kingdom, there is a body named the Civil Engineering Contractors Association (CECA). This body is responsible for delivering, upgrading, and maintaining the infrastructural works of the country, such as drainage systems, culvert, and retaining walls (Civil Engineering Contractors Association, 2016).

(c) Building Services Contractor

They are responsible for the execution of building services related works that include heating, ventilating, and air conditioning (HVAC), lifting, and plumbing works (Anyanwu, 2013). According to the Contractors State License Board (2014), building services contractors are also responsible for the electrical and mechanical installation in a building.

(d) Building Maintenance Contractor

They are responsible for maintaining the facilities from its initial state and upgrading facilities when necessary. Their duties can be classified into day-to-day repairs, annual repairs, and appropriate repairs. All of these works are carried out by the building maintenance contractors (Al-Juahni, 2011).

(e) Specialist Contractor

According to Anyanwu (2013) there are two types of specialist contractors: roofing and landscaping. The specialist contractor is responsible for undertaking the works that require specialized skills which the general contractor cannot effectively carry out (Contractors State License Board, 2014).

2.3 Contractor Selection Process

According to Anyanwu (2013), the process of selecting contractors is categorized into five stages as follows: project packaging, tenderers' invitation, contractors' prequalification, shortlisting, and bid-evaluation. Morledge and Smith (2013) grouped the five processes of contractor selection into three stages. Firstly, pre-qualification, secondly, tender invitation and submission, thirdly, tender evaluation, and acceptance.

2.3.1 Prequalification and compilation of the tender list

Prequalification aims to reduce the number of less qualified contractors among the list of contractors based on laid down criteria. This process aids in eliminating less skilled contractors with little or no experience in the proposed construction work to be carried out. A list of potential contractors is then generated to inform the client the suitable contractors for a specific project (Ogunsemi & Aje, 2006).

The contractor prequalification is often carried out before the issuance of tender documents to bidders. According to Huang (2011) and Plebankiewicz (2012), if a contractor passed the pre-qualification assessment, he can execute projects for the same client without necessarily going through another round of prequalification for subsequent projects. It is unnecessary to check again when a specific project is carried out; it is only necessary to double-check that the information about the contractor is up-to-date. A list named "standing list" is produced. Besides the "standing list," prequalification can also be defined as a group of the most capable contractors who can execute every project. This process can be called "per project prequalification." In this kind of operation, a "shortlist" of contractors is prepared for the client.

2.3.2 Tender invitation and submission

In Nigeria, the local tenders must be advertised in at least one Nigerian language local newspaper, while for international tenders, one advert in the local newspapers in

Malaysian language and one in the English language (Huang, 2011). The tenderers are requested by the client to submit their quotations for the works before the closing date (Chinyio 2011; Gorse *et al.*, 2012). The unpriced tender is provided in the tender documents which comprise notice to tenderers, a form of solicitation, general conditions of the contract, specifications, drawings, and bills of quantities (Chinyio, 2011). In the tender document, the client's requirements and project information are clearly defined as well. Besides, the tender documents must be adequately prepared before calling for tenders (Municipal Association of Victoria, 2008). After completing the tender document, it is then returned to the client for evaluation purposes (Chinyio, 2011).

2.3.3 Tendering

The starting point of a building or engineering contract is for the client to invite one or more contractors to bid for the project with the price which they are willing to execute the construction work (Ogunsemi and Aje, 2006). According to Gorse *et al.* (2012), tendering is defined as a process of inviting the contractors for tender together with the detailed information, such as drawings, bills of quantities, specifications, and performance criteria. All of these documents, which must be returned before the tender closing date, are prepared for the contractors to quote their price. The tender then is evaluated by the consultant and client in terms of quality, time, and cost. It is one of the essential processes in the construction stage that the client must go through before embarking on project execution (Kang *et al.*, 2015). The varieties of tendering procedures which are used for selecting contractors are open tendering, selective tendering, and negotiation tendering (Banaitiene and Banaitis, 2006; Nieto-Morote & Ruz-Vila, 2012).

2.3.4 Tender evaluation and acceptance

After the client has received many tender documents from a large number of tenderers, an evaluation of these tender documents is done by the client's consultant (Chinyio, 2011).

According to Hatush and Skitmore (1997), evaluation is defined as an assessment that is carried out on bids that are submitted by prequalified contractors. This process is similar to the prequalification process, which occurs at the pre-tender stage, but bid evaluation occurs at the post-tender stage. Besides, this bid evaluation does include not only the contractors' capabilities but also the consideration of the tender price (Ogunsemi & Aje, 2006). Morledge and Smith (2013) stated that the tender evaluation process consists of two parts: a desk-top evaluation of the bid submission and an interview. In the process of desk-top assessment, the three elements which need to be assessed are price, technical assessment, and economic evaluation. Furthermore, the contractual terms of the tenders are checked, which may as well include a site visit process (Morledge and Smith, 2013). The next part is the interview between the clients and the pre-qualified contractors. This interview serves as a means of evaluating the appropriate tenderer. It also provides the opportunity to have a better understanding of each other's teams and thus achieve collaboration (Morledge and Smith, 2013). Before awarding the contract to the selected contractor, a report which comprised possible risk and the identified contractual problem is prepared. Negotiation with the selected contractor can be conducted to discuss the solutions to the identified issues (Chinyio, 2011).

2.3.5 Criteria for contractor selection

According to Watt *et al.* (2010), tender evaluation and contractor selection have become so significant for organizations because they ensure the successful delivery of the construction projects. Hence, many countries do practice prequalification and bid evaluation processes in the selection of their contractors nowadays (Ogunsemi & Aje, 2006). Besides, many studies have developed various types of models to determine and analyze the criteria for selecting contractors. These models increase the chances of appointing the most capable contractors who can carry out the construction works. These

are some of the criteria identified in previous studies. Financial capacity of a contractor is one of the criteria that need to be considered during the contractor selection process Idrus, *et al.*, 2011; Nieto-Morote and Ruz-Vila, 2012; (Rashvand *et al.*, 2015). The client needs to identify and analyze the financial position of the contractor (Idrus, *et al.*, 2011). In short, the financial capacity represents the financial standing of the contractor (Enshassi *et al.*, 2013). According to Watt (2010); Idrus (2011); Nieto-Morote and Ruz-Vila (2012); and Rashvand *et al.* (2015), technical capacity is another criterion for the selection of a contractor that should carry out the construction works. Through this criterion, the client can measure the contractor's technical ability and expertise from the qualification of personnel, construction method, or techniques. Through labour and equipment, technical capability can then be established. Rashvand *et al.* (2015) asserts that the management capability of the contractor should be evaluated before acceptance of the contract. According to Rashvand *et al.* (2015), the management capability of the contractor involves the skills of organizing, planning, controlling, and leading to execute the works to achieve the project objectives. In short, a construction project is guaranteed a successful completion of the management capability of the contractor is high.

2.3.6 Contractor reputation

From the previous studies conducted by Ogunsemi and Aje (2006); Watt *et al.*, (2010); Enshassi *et al.* (2013); and Rashvand *et al.* (2015), contractor's reputation is a vital aspect in evaluating contractors during the selection process. If a reputable contractor is selected, the client could be assured that the contractor can execute the contract successfully. According to Enshassi *et al.* (2013), there are three sub-criteria for evaluating the contractor's reputation or image. They include the company's classification, years of experience, and contractor's capital. Previous studies identified that the management of health and safety is one of the criteria for selecting contractors in the tender evaluation

process (Idrus, 2011; Enshassi *et al.* 2013;(Rashvand *et al.*, 2015). During the tender evaluation stage, the client asks the contractor typically to submit his proposed health and safety program. Besides, relevant health and safety records of the previous project are to be forwarded to the client for evaluation purposes. According to Enshassi *et al.* (2013), the financial evaluation of the bid was ranked in the first position of the results. The client or the consultant should be aware of the lowest bid, unbalanced bid, and arithmetic mistakes during the evaluation stage. Besides, the financial status of the contractor can be assessed for the previous three years.

2.3.7 Completeness of tender documents

Enshassi *et al.* (2013) observed that the completeness of tender documents is the primary criterion for selecting contractors. The required bond must be submitted. Furthermore, the shortage of contract offer is also one of the sub-criteria for these criteria. The time and effort are expended in the preparation and compilation of these documents. Therefore, sometimes, there is a shortage of information in the submitted bids. Taxed clearance is another aspect. The client or the consultant can assess the tax clearance certificate of previous projects to check whether the contractor submitted his tax clearance certification on time, or it was delayed (Enshassi *et al.*, 2013).

2.3.8 Contractor past performance

Enshassi *et al.* (2013) have identified that the contractor's past performance is a criterion for selection. The contractor's performance includes the timely execution of a recent project, reasonability of cost and quality level in previous projects. However, Nieto-Morote and Ruz-Vila (2012) considered failure to complete a contract, project delay, and additional expense as dimensions of a contractor's performance.

2.3.9 Experience

Scholars have found that the experience of contractor and staff is a primary criterion for selection of proper contractor (Watt, *et al.*, 2010; Idrus, 2011; Nieto-Morote and Ruz-Vila, 2012; (Enshassi, *et al.*, 2013). This kind of experience can be accessed through evidence of staff training program, the number of trained staff, the project manager's experience and past performance of the workers (Enshassi *et al.*, 2013). If the contractor and his team are skillful and experienced, they can overcome all the challenges as well as guarantee a certain level of work quality. Enshassi *et al.* (2013) opines that quality assurance of the contractor is a criterion that should be assessed during the selection process. Usually, the contractor has to guarantee the quality of work he can execute because it is a critical part of the contract.

2.3.10 Site management

According to Ogunsemi and Aje (2006); and Enshassi *et al.* (2013), the contractor's site management is a criterion for contractor selection during the evaluation stage. A contractor with excellent site management skills and administrative skills adequately monitors the progress of the construction project. They, however, stated that during the evaluation process, it is crucial to assess the ability of the contractor to understand the tender document. This criterion determines the contractor's expertise, knowledge, and experience, and hence makes the client feel secure that the project would complete the project without any delay or cost overrun.

2.3.11 Resources

Earlier studies have shown that it is vital to know the resources within the contractor's reach (Ogunsemi & Aje, 2006; Enshassi *et al.*, 2013). There are two types of resources: physical resources and human resources. These criteria help to indicate whether a

contractor is capable and able to satisfy the needs and requirements of the client or not (Enshassi *et al.*, 2013).

The decision of the client during the selection process may be influenced by the availability of plant and equipment which are part of the physical resources which bring significant influence to on-site productivity (Ogunsemi & Aje, 2006). Idrus (2011) point out that it is necessary to identify the contractor's current workload for the selection. Contractor's current workload, there is a high possibility of determining whether the contractor's resources are available for a particular project or not (Enshassi *et al.*, 2013). According to Watt *et al.* (2010) the tender sum offered by the contractor is also one of the essential criteria for assessing the contractor during the tender evaluation process. Many contractors quote the lowest tender price to attract a client's interest, thereby accepting the contract. However, Ogunsemi and Aje (2006) opine that the "best" tender sum falls between plus or minus 5% of the consultant estimate. The tender price quoted by the contractor is considered unrealistic and may be rejected when it is exceptionally high or ridiculously low. Idrus, (2011) identified that the past relationship between client and contractor is vital for selecting a contractor.

The relationship of the contractors with their previous client(s) speaks volumes about the attitude of the contractors in their earlier projects. It also acts as a guide to foresee the relationship between the client and a contractor in the future. Ogunsemi and Aje (2006); and Idrus (2011) also state that the contractors normally quote the unrealistic completion period when they are tendering for the project. This situation is due to being overconfident and over-optimistic towards the works. Therefore, during the contractor selection process, the client or the consultant must pay attention to the completion period quoted by each tenderer (Ogunsemi and Aje, 2006).

Watt *et al.* (2010) opine that project management expertise is one of the criteria that can be used in the selection process. A contractor who has experts in project management may achieve better results in the project outcome than a contractor with no experts (Watt *et al.*, 2010). Ogunsemi and Aje (2006) identified that the client must select a contractor who responds to every instruction. In the tender document, there is a clause that emphasizes that the contractor must follow the architect's instructions for the private projects and superintending officer's instructions for public projects.

Furthermore, the main task of the contractor is to transform a structure from two-dimensional to physical form. Hence, the contractor cannot make assumptions or decisions by himself; he has to inform the consultant and exhibit the spirit of teamwork in problem-solving (Ogunsemi and Aje, 2006). According to Ogunsemi and Aje (2006); and Banaitiene and Banaitis (2006), the contractor should be selected based on the size and type of the previous projects successfully executed. The contractor's technical and management skills could be assessed based on the size and type of previously completed projects. Using this criterion is important because different kinds of projects require different technical skills.

Salama (2006); and Banaitiene and Banaitis (2006) observed that a firm's history of claims is one of the criteria that the client should be aware of during the selection process. The client should be careful to avoid those contractors that are always failing to perform their responsibilities under the building contract. A previous study conducted by Ogunsemi and Aje (2006) found that the length of time of the contractor in the business is also one of the criteria for selecting the contractor. This criterion interlinks with the experience, technical skills, and resources of the contractor.

The longer the contractor is involved in construction works, the more knowledge is being gained. Many of the previous studies included the progress of the existing project carried

out by the contractor as one of the criteria during the selection process (Idrus, 2011). Presently, a case in point of the various progress monitoring systems is the Critical Path Method (CPM). It is involved in investigating whether the project's development is ahead of or has deviated from the stipulated time, or has deviated from the projected cost at the early stage (Enshassi *et al.*, 2013). By assessing the progress of the existing projects carried out by the contractor, the client can have a clearer picture of the contractor's performance (Idrus, 2011). Banaitiene and Banaitis (2006) argue that the number of previous contracts that the contractors failed to handle correctly is a criterion that can be used for identifying the most capable contractor.

A contractor with less or no failed contract shall be selected, as a failed contract means the contractor is incapable of completing the construction project. The previous study conducted by Ogunsemi and Aje (2006) shows that the procurement system is another criterion that is considered during the selection process. According to Enshassi *et al.*, (2013) this criterion is particularly essential to designing and building of management contracting procurement system. It may be a challenge for a contractor who had never undertaken any designing and building works in the past. It is crucial to evaluate the possibilities of the client becoming bankrupt while selecting contractors to execute any proposed project (Enshassi *et al.*, 2013). When the contractor is insolvent, it puts the client in trouble. The project may come to an abrupt stop without any advance notice. From the previous study conducted by Banaitiene and Banaitis (2006), environmental protection by the contractor was established as one of the criteria for selecting contractors.

It includes oil and chemical spill prevention, waste management, and prevention of pollution (Great Lakes Power, 2016).

Empirical Review of Related Studies

2.4 Factors that Influence the Choice of Pre-Qualification Criteria

Nkanta *et al.* (2017) sought to identify and assess the existing contractors' pre-qualification criteria; examined the determinant factors for the choice of the prequalification criteria in Niger Delta region, Nigeria. The study also aimed to provide information that could enhance contractor's selection in a recessed economy. The study population consisted of the states in the Niger Delta, while the sample was made up of 75 construction consulting firms and 26 public client organisations that were randomly selected. Questionnaire were administered on the entire population, out of which 77 (76.24%) were retrieved and used for analysis. The collected data were analysed using, Mean Item Score (MIS) and Factor Analysis (FA). The findings show that past performance of contractors ranked the most important of the existing pre-qualification criterion followed by experience of the contractor and evidence of incorporation. From the Factor Analysis, 75 factors influencing choice of pre-qualification criteria were reduced to 7 components. The most significant among these was contractor's resources, followed by project related risk (variance explained 6.10%) and technical management. The study concludes that past performance of contractors was the most important existing criterion for contractor pre-qualification in the study area among others while the most determinant factor in the choice of these criteria was contractor's resources, which must be considered in the selection of contractors.

A study by Chirchir and Gachunga (2015) examined the role of pre-qualification of suppliers on organization performance is important. The study seeks to establish the role of procurement pre-qualification on the performance of selected public institutions in Nairobi County. The institutions are: KNH, CAK, KENGEN, KeNHA and CPF. Using a stratified and simple random sampling, a sample size of 103 was drawn from a target

population of 140 employees in departments of procurement of the respective companies. The study used structured questionnaires to interview the respondents and responses analyzed by descriptive statistics. Findings show that majority of the respondents were in support that prequalification of suppliers minimizes the cost incurred in screening and analyzing bids tendered however majority thought that prequalification was not in any way more cost effective when compared with open tendering. The study recommends that there should be measures that re-enforce the existing mechanisms and practices for better selection of suppliers.

2.5 Effects of the Challenges of Tendering Procedures on the Performance of Building Contractors

Owiti *et al.* (2017) undertook a study that sought to assess the effects of procurement process on successful completion of construction projects within Uasin Gishu County. The aim of the study was to determine the effects of procurement control regulations, procurement quality assurance process on successful completion of construction projects in Uasin Gishu County. The study analyzed data using both inferential and descriptive statistics using Statistical Package for Social Sciences (SPSS version 20) and presented using Tables. Procurement process was found to be positively correlated to successful completion of construction Projects. Correlations between procurement control regulations and procurement quality assurance process were $r = .860^{**}$ and $r = .783^{**}$ respectively were also positively and significantly related to successful completion of construction projects where $P < 0.05$. Results revealed that the three constructs namely procurement control regulations, Procurement quality assurance have 74.7% of the variation in successful completion of construction (Adjusted R Square = 0.761). The study recommends that, management county governments and other public entities policy makers must ensure seamless adherence to procurement processes as

enshrined in the public procurement and disposal act 2015 for successful completion of construction projects. The study also recommends that further studies should focus on the mediating effect of human capital on the relationship between procurement processes and successful completion of construction projects.

Rosli *et al.* (2006) in their study looked into the effect of the different procurement systems on the project performance. The study sought to limit its scope to the common systems i.e. traditional system, design and build and management contracting. The study concludes that cost, time and quality are the three most important parameters of project performance. Findings of the study show that in today's highly competitive and uncertain business environment, clients are demanding for better value from their investment. They want their project to be completed on time, within the estimated cost and with the right quality. The study recommends that the construction industry should try to meet the clients' needs. This is because the different procurement method will have different effect on the cost, time and quality of the project. Each project procurement system has its own peculiarity in term of the pre-tender and post tender activities and processes, division of risks between client and contractors, and the effectiveness of project monitoring and control. Ogunsanmi (2013) sought to evaluate the effects of procurement related factors on project performance. The study used the snowballing sampling technique to select forty (40) construction organizations in Lagos metropolitan city that and then thirty-one (31) responses were secured from Architects, Builders, Engineers and Quantity Surveyors. Findings of the study show that procurement selection criteria of cost, time, quality, project characteristics and external environmental factors have effects on project performance. Competitive, open and selective tendering methods have high impacts on project performance.

The study also found that no significant difference was between the impacts of tendering methods on project performance. Variation orders impact project performance with time, cost overruns and disputes and it have effects on project performance. The study concludes that procurement selection criteria, tendering methods and variation orders have impacts on project performance. Cost, time, quality related factors, tendering methods and variation orders strongly affect project performance. Recommendations made by the study were that clients, stakeholders, practitioners and consultants are on the onset to consider tendering methods, use selective, open and competitive tendering approaches and discourage excessive variation orders during construction. Also, the study recommends that policy makers in government, clients, and private developers into housing projects should give adequate attention for selecting appropriate procurement and tendering methods for better management of future projects in Nigeria and other developing countries.

2.6 Existing Contractors' Pre-Qualification Criteria in the Construction Industry

Molla and Asa (2015) identified factors to be considered during the contractors' bid-prequalification process. The study conducted a review of the literature about the contractors' bid prequalification to identify the factors that are currently being practiced by the construction industry, research, and practitioner. The study utilized a literature-review approach to achieve the research goal. Findings of the study show that from 1985 to 2012, a total of 18 major factors, containing a total of 163 minor factors, were used during the contractors' bid prequalification process. This study indicates a wide range of decision criteria that should be considered in contractor prequalification process. The study recommends that the industry needs to identify competent, successful, qualified, and quality contractor in order to have better prequalification processes.

A study by Victoria (2012) was carried out to appraise contractors' prequalification criteria used by public organizations for building projects, for the last six years (2006-2011). Field survey involving ten public organizations in Kaduna was conducted. The study collected data using structured questionnaires of which 60 were distributed to construction professionals/ staff of and 55 responses were returned and 50 used for analysis. The study found that major contractors' prequalification criteria and the sub contractors' prequalification criteria used to assess contractors on building construction works. The relative importance index (RII) was used to compute the mean score of the contractors Prequalification criteria in relation to the overall responses on a criterion were calculated. Findings of the study also show that technical capacity with over 58% of the professionals considered it important among the major prequalification criteria. Health and safety is not appreciated, only 4% of the professionals considered it important. 'Similar projects executed' among the sub contractors' prequalification criteria, with over 60% responses considered it very important and Experience Modification Rating with only 8% responses considered it very important. The study further collected data from 30 contractors' prequalification check lists of completed public building projects in order to check the significant agreement between percentage score allocation to the criteria. The Kendall's test of coefficient of concordance was used by the study to compare ranking of common variables with score rate allocation obtained from sum scores.

The findings show that W value of 0.14 and test of significant of 16.15 agreements, which means that there is significant agreement in some percentage score allocation to criteria from the public organizations. Public organizations placed less emphasis on some contractors' prequalification criteria on the checklist. The study recommends that professionals/ staff should aspire to understand, adopt and implement the requirements of contractors' prequalification criteria of building works. The study also recommends that

public organizations should standardize respective building construction prequalification practices in putting into consideration all criteria on contractors' prequalification checklist with percentage score allocation to each criterion.

Dwarika and Tiwari (2014) analyzed the relevant theoretical methods for contractor evaluation and examined the actual criteria for the selection of contractors. The study aimed to identify the criteria for selection of contractor and bid evaluation means by which different emphases can be recommended to suit the requirements of clients and projects. The study used questionnaire for data collection which were then sent to different project managers in India. The recommends that contractors with a high level experience be considered in pursuit of better evaluation of construction bids both technically and financially. Ologunagba and Akinmusire (2016) in their study evaluated Quantity Surveyors' and Civil/Structural Engineers' perception on the relevance of contractors' prequalification criteria to time performance of civil engineering project. The study's purpose was to determine the impact of contractors' selection criteria on time performance of civil engineering project. The primary data used were obtained from construction professionals in consulting, client and contracting organizations engaging in both private and public projects through a well-designed questionnaire. Regression analysis and Karl Pearson's coefficient of correlation were employed to evaluate the impact as well as relationship between contractors' prequalification criteria and time performance of civil engineering project.

Findings of the study show that contractors' prequalification criteria had both positive and negative relationship with time performance of civil engineering project at varying degree of significance. Also, contractors' prequalification criteria significantly impact on and differently predict time performance of civil engineering project. The study recommends prioritizing reputation and past performance as well as strict adherence to

the impact order of the set of criteria for contractors' prequalification listed in this study would lead to achievement of civil engineering project that meet time target.

Oluwaseyi *et al.* (2010) examined the criteria used to evaluate subcontractors and suppliers during prequalification and tender evaluation and also their mode of selection process so that the project can be completed within time, cost and quality standard. A descriptive research survey was used for the study. The population for the study comprises the professionals in the construction industry. They include quantity surveyors, architect, engineer and contractors. About sixty questionnaires were distributed, but forty-two were retrieved. Random sampling technique was adopted for the study. Statistic package for social sciences was used to analyze the data using descriptive and inferential statistic. Findings of the study show equipment of construction works is the main criterion for evaluation of subcontractors at the pre-qualification stage while bid price is not an importance criterion at tender evaluation stage. Similarly, equipment and information technology was ranked most as the criteria for selection of suppliers. The study recommends that in order for the client to get value for money, the criteria should be strongly considered for the projects to be completed within time, cost and quality standard.

2.7 Theoretical Framework

This study will be anchored on the Agency Theory. The Agency Theory attempts to describe the agency relationship, in which one party (the principal) - delegates work to another party (the agent), who performs that work (Göhlic, 2012). Two problems can arise in such relationships, the desires and goals of the principal and agent can conflict, and it is difficult for the principal to verify what the agent actually is doing. Principal-agent researchers are concerned with a general theory of the principal-agent relationship,

a theory that can be applied to employer-employee, buyer-supplier and other agency relationships.

Agency theory is most relevant in situations in which contracting problems are difficult. These include situations in which there is a substantial goal conflict between principals and agents and sufficient outcome uncertainty to trigger the risk implications of the theory (Watt *et al.*, 2010). Watt *et al.*, (2010) discusses the assumptions of the theory and raises the issue of principals learning about the agents when there is a long term relationship, when there may be less need for outcome-based contracts.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Design

This research was predicated on the descriptive research design approach. The goal of descriptive research design is to describe a phenomenon and its characteristics; this type of research design is more concerned with what rather than how and why something happened (Pennik and Jonker, 2010). Therefore, observation and survey tools are often used to gather information for descriptive research. This study is basically concerned about providing information on effects of pre-qualification criteria on performance of contractors in quality of project delivery in Kaduna. It is also important to note that in descriptive research data can be collected qualitatively or quantitatively, but it is often analysed quantitatively using frequencies, averages, percentage or other analyses to determine relationships. However, this study adopted quantitative research approach. The data collected for this study was cleaned, analysed and integrated to provide answers to the research questions for the study.

3.2 Types and Sources of Data

The research was a survey research and derives the use of both qualitative and quantitative measures for data collection. Furthermore, the data required for the study was sourced from primary and secondary data sources using relevant instrument. The data required for this study was highlighted according to the study objectives.

3.2.1 Primary data required

- i. Demographic characteristic of the respondent (academic and professional qualification, Sex and year of experience)
- ii. Pre-qualification criteria
- iii. Factors influencing pre-qualification criteria
- iv. Challenges of tendering procedure

Data was collected from both primary and secondary sources. The primary data that was collected through the aid of structured questionnaire, and the secondary data was be sourced from journals, conference paper, textbooks and others.

3.3 Instrument for Data Collection

The primary instrument that was used for data collection in this study is the questionnaire.

3.3.1 Questionnaire

A well-structured questionnaire was developed to elicit relevant information for the study. The questionnaire contained open ended and closed ended questions. The questionnaire was developed into section while taking cognizance of the research questions. The first section of the questionnaire was dedicated to issues concerning the sociodemographic attributes of respondents, a section was also used to elicit information on pre-qualification criteria, factors influencing pre-qualification criteria and challenges of tendering procedure.

3.4 Research Population

A research population is known as well-defined collection of individuals or objects known to have similar characteristics. All individuals or objectives within a certain population usually have a common, binding characteristics or trait (Williams, 2007). In view of the research questions highlighted in this study, the research population constituted professionals from the Kaduna State Ministry of Land, Works and Housing. A total of two hundred and eighty-five (285) professionals were selected for this study.

3.5 Sampling Frame

The process of selecting a portion of population to represent the entire population is known as sampling. According to Fellows, (Pennik and Jonker (2010) the objectives of sampling is to provide a practical means of enabling the data collection and processing components of the research to be carried out and ensuring that the sample provides a good representation of the population. For the purpose of this research, the sample constituted only the supervisor and management staff selected in Kaduna State Ministry of Land Works and Housing.

3.6 Sample Size

The sample size in this research was determined by ensuring that it does not fall below the representative size obtained from some statistical estimation theory which is based on the degree of confidence it carries. The number respondent for this study as determined by the researcher is given as (n1), assuming a confidence level of 95%, margin error is given as not more than 5%. Adopting the following samples size of as given by (Krejcie and Morgan, 1970). A total of two hundred and eight five (285) professional were identified and 162 were selected who are mainly supervisors and management staffs. The groups of respondents that was selected for this research work are those who have

been involved in the contractor selection practices of building project at one time or the other in Kaduna State. The selection of Kaduna State is a conscious one, because it is an administrative hub in Northern Nigeria, thus, its selection for the purpose of this study.

3.7 Sampling Techniques

The multi-stage sampling technique was adopted for this study. This implies that the process of identifying firms where the contractors were sampled for this study proceeded from one sampling technique to the other. Hence the purposive sampling technique was used in selecting the firms. Secondly, the simple random sampling technique was adopted for the selection of a supervisor and management staff each within selected firms.

3.8 Method of Data Collection

For the purpose of this research, the tools for collection of data is well-structured questionnaires. The questionnaire is an instrument which is designed to collect data and address the objective of the research. Responses to the questions were presented using descriptive and inferential analysis.

3.9 Method of Data Analysis

Answering research questions is one major objective of data analysis and test the goodness of the data. The study therefore, used both descriptive and inferential methods of data analysis, the descriptive employed the use of Mean Item Score (MIS) method of analysis while the inferential employed the linear regression analysis this was achieved using the SPSS statistical software.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Demographics of Respondents

This subsection of the thesis dealt with presentation and discussion of the results of demographic analysis of the participants in the field survey carried out during the course of this study. A total of four (4) demographic variables were examined.

4.1.1 Gender of respondents

The majority of respondents were male (70% of the sample); females made up only 30% of respondents. This was presented in Fig 4.1. This study was thus of a necessity biased in favour of males, based on the peculiar structure of the Nigerian construction industry, where females are extremely few in number.

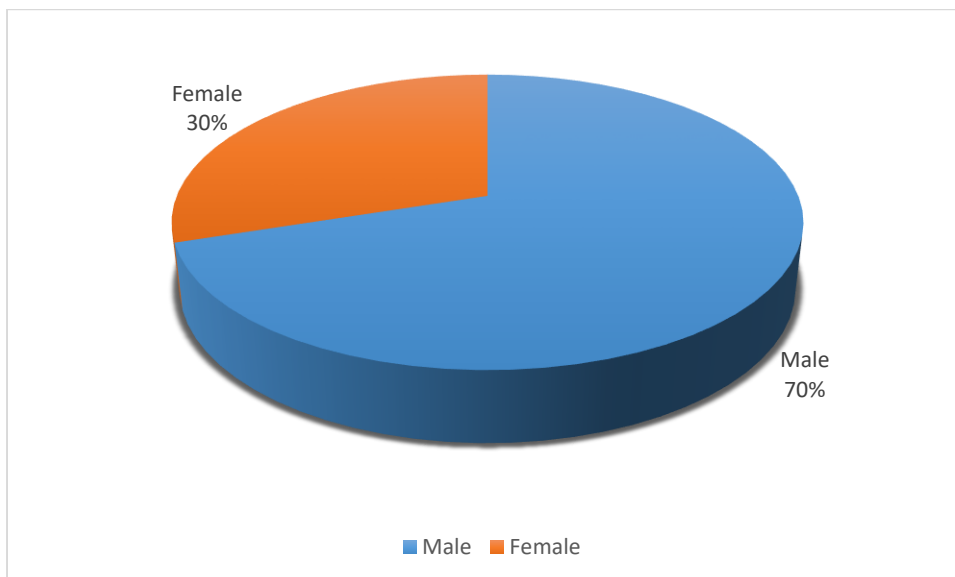


Figure 4.1: gender of the respondents
Source: Field Survey, (2020).

4.1.2 Profession of respondents

Figure 4.2 reveals the pooled result on the profession of the respondents in the study area. The findings reveal that 35% of the respondents are Quantity surveyors, while 27 % are Engineers. Also 18% of the respondents were Architects and the respondents whose profession are Builders, Estate surveyor and Town Planners accounted for 15%, 2% and 3% respectively.

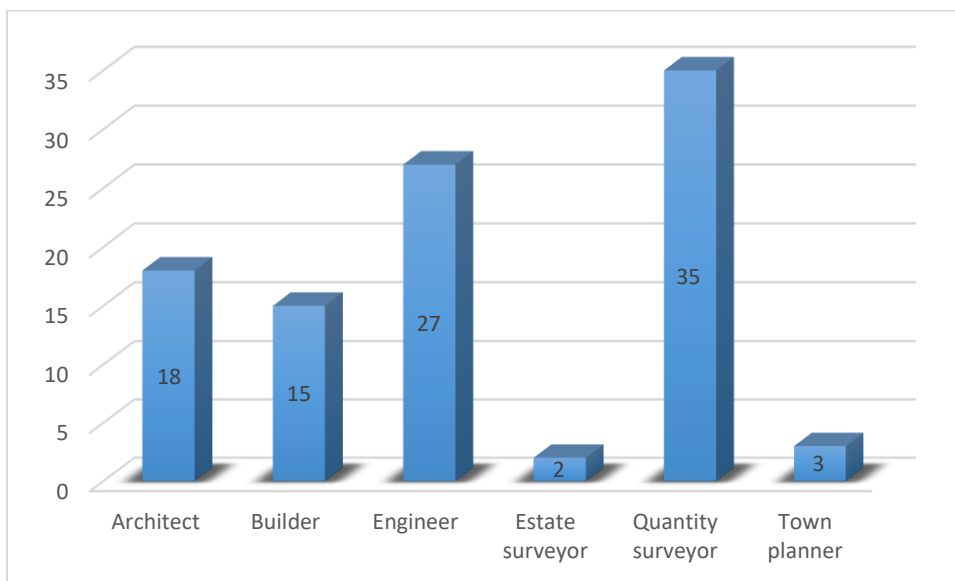


Figure 4.2: Profession of respondents

Source: Field Survey, (2020).

4.1.3 Educational qualification of respondents

Fig 4.3 presented the distribution of the educational qualification of respondents from the survey. Over half (53%) of respondents had HND/BSc, 30% had MSc, 14% OND/NCE and remaining 3% had Ph.D . Therefore, the respondents are adequately knowledgeable in formal construction training.

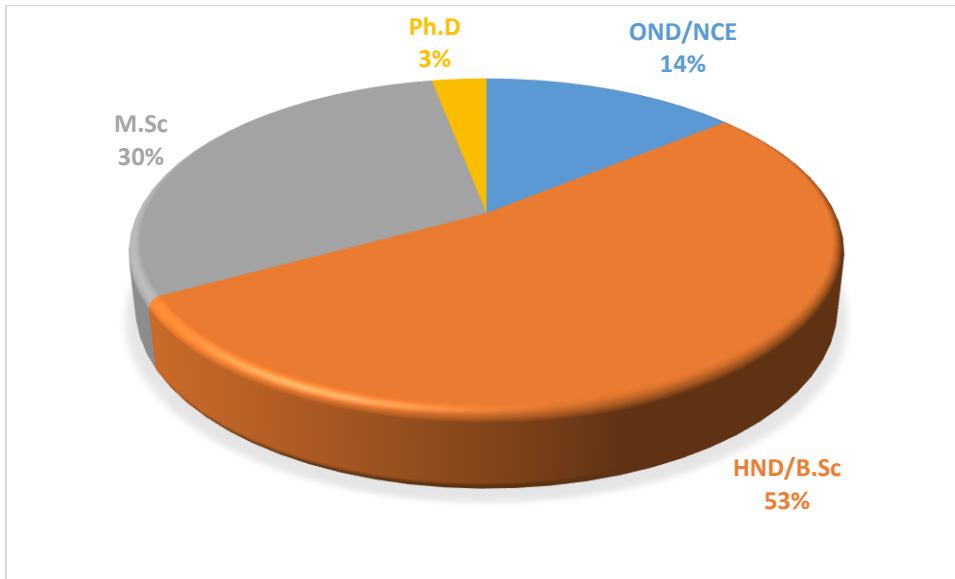


Figure 4.3: Educational qualification of respondents

Source: Field Survey, (2020).

4.1.4 Work experience of respondents

Figure 4.4 shows the work experience of the respondents. The figure shows that 47 respondents had less than 5 years' experience, 210 respondents had 5 - 15 years of experience, 47 respondents had 16 – 25 years of experience and only 20 had more than 25 years of experience.

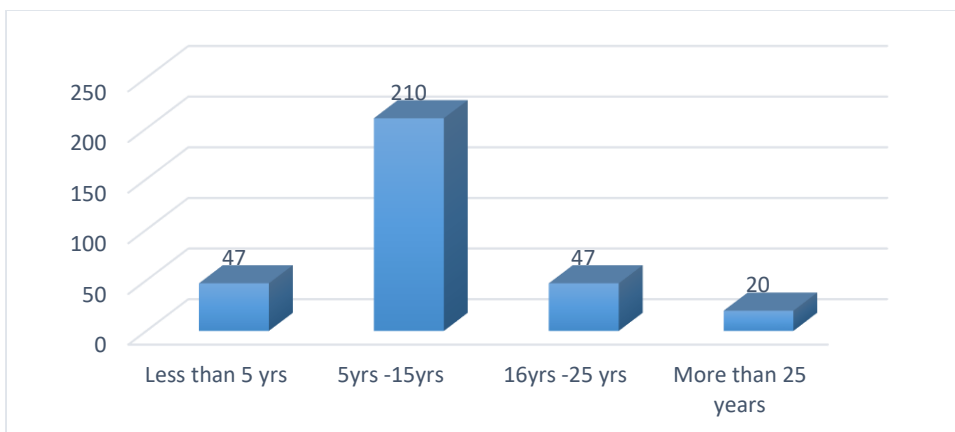


Figure 4.4: Work experience of respondents

Source: Field Survey, (2020).

4.2 Contractors' Prequalification Criteria

This section of the thesis reports the results of analysis carried out in pursuance of Objective One as formulated in Chapter One. The contractors' prequalification criteria in the construction industry were identified by the respondents, who were all contractors, was gauged through the use of Mean Score analysis. Relative Importance Index (R.I.I.) was also performed to provide further evidence of the importance of prequalification criteria. The prequalification criteria were categorized into five: Financial stability, Technical and Management Ability, Experience, Health and Safety, and Quality.

4.2.1 Financial stability

The results of the analysis from Table 4.1 revealed that all of the components of financial stability criteria had low Mean Scores. The range of Mean Scores lay between 2.50- 3.50 which corresponds to “significant” of financial stability. This was buttressed by the overall average value of Financial Stability criteria, which was computed as 3.01. Staff experience of contracting firms, as well as positive credit rating had MS of 2.85 and 2.78 ranked at 4th and 5th. Financial status of the contractors (MS = 3.38), and tendering price (MS = 3.06) were ranked in the 1st and 2nd position of the financial prequalification criteria in the construction industry.

Table 4.1 Financial Stability Prequalification Criteria

Financial Stability	Mean Score	Std Dev	RII	Rank
Financial status	3.38	0.91	0.68	1
Tender price	3.06	1.01	0.60	2
Banking arrangement	2.98	1.00	0.60	3
Staff experience	2.85	0.98	0.57	4
Positive credit rating	2.78	0.97	0.55	5
Overall Financial Stability Prequalification Criteria	3.01			

Source: Field Survey, (2020).

4.2.2 Technical and management ability prequalification criteria

Under technical and management ability prequalification criteria as presented in Table 4.2, the availability of Company equipment was ranked 1st (MS = 3.48). The Past performance of the company was ranked 2nd (MS = 3.35). Project manager qualification and staff qualification was ranked lowest (3rd, MS =3.27 4th, MS = 3.25). The overall Technical and management ability prequalification criteria was 3.34, which indicated that technical and management ability prequalification criteria is significant

Table 4.2 Technical and Management Ability Prequalification Criteria

Technical and management ability	Mean Score	Std Dev	RII	Rank
Company equipment	3.48	0.87	0.70	1
Past performance	3.35	0.98	0.66	2
Project manager qualification	3.27	0.99	0.65	3
Staff qualification	3.25	1.03	0.65	4
Overall Technical and management ability	3.34			

Source: Field Survey, (2020).

4.2.3 Experience Prequalification Criteria

The results of the analysis from Table 4.3 revealed that all of the components of experience criteria had low Mean Scores. The range of Mean Scores lay between 3.00-3.50 which corresponds to that the level of experience as a prequalification criterion is significant. This was buttressed by the overall average value of experience criteria, which was computed as 3.15. Length of time in business, as well as Experience in the region had MS of 3.21 and 3.20 ranked at 1th and 2nd. Experience edge, size of project (MS = 3.12, MS = 3.12), and type of project (MS = 3.10) were ranked in the 3rd and 5th position of the experience prequalification criteria in the construction industry.

Table 4.3 Experience Prequalification Criteria

Experience	Mean Score	Std Dev	RII	Rank
Length of time in business	3.21	0.85	0.64	1
Experience in the region	3.20	0.94	0.63	2
Experience edge	3.12	0.86	0.62	3
Size of project	3.12	0.83	0.62	3
Type of project	3.10	0.94	0.58	5
Overall Experience Prequalification Criteria	3.15			

Source: Field Survey, (2020).

4.2.4 Health and safety

The results of the analysis from Table 4.4 revealed that all of the components of health and safety criteria had moderate Mean Scores. The range of Mean Scores lay between 3.50- 4.00 which corresponds to that the level of health and safety as pre-qualification criteria is significant. This was buttressed by the overall average value of health and safety criteria, which was computed as 3.62. Company safety policy as well as (OSHA)

incidence rate (points) safety records and Experience in noise control had MS of 3.69 and 3.58, 3.58 ranked at 1th and 2nd respectively.

Table 4.4 Health and Safety Prequalification Criteria

Health Safety	Mean Score	Std Dev	RII	Rank
Company safety policy	3.69	0.81	0.74	1
(osha) incidence rate (points) safety records	3.58	0.82	0.72	2
Experience in noise control	3.58	0.96	0.72	2
Overall Experience Prequalification Criteria	3.62			

Source: Field Survey, (2020).

4.2.5 Quality prequalification criteria

Under quality prequalification criteria as presented in Table 4.5, the quality work was ranked 1st (MS = 3.46). Quality Management was ranked 2nd (MS = 3.44). Quality policy and quality assurance was ranked lowest (3rd, MS =3.43 4th, MS = 3.04). The overall quality prequalification criteria was 3.34, which indicated that quality prequalification criteria is significant

Table 4.5 Quality Prequalification Criteria

Quality	Mean Score	Std Dev	RII	Rank
Quality work	3.46	1.00	0.69	1
Quality management	3.44	0.78	0.69	2
Quality policy	3.43	0.78	0.67	3
Quality assurance	3.04	0.84	0.61	4
Overall Quality Prequalification Criteria	3.34			

Source: Field Survey, (2020).

4.3 Factors Influencing the Choice Prequalification

This section of the study reports the results of analysis carried out in pursuance of Objective two as formulated in Chapter One. The factors that influences the choice of prequalification were identified, and was gauged through the use of Mean Score analysis. Relative Importance Index (R.I.I.) was also performed to provide further evidence of the importance of the factors.

The results of analysis presented in Table 4.6 revealed that construction professionals identified Financial stability and soundness and Management and technical skills and capability as most significant factor influencing the choice of prequalification with mean score 4.24 and same RII of 0.83 but different Standard deviation of 0.74 and 0.76 respectively. Quality management, control and assurance system Key managerial, supervisory and operational personnel experience and availability and Equipment resources and availability were ranked 3rd. The least significant factors were identified as (i) workforce resources and availability

(ii) Current work load and (iii) Credit rating and history, and were thus ranked 13th and 14th. The results obtained all ranged from 3.50 to 4.50, which corresponded to “high extent” of influence of factors towards the choice of prequalification criteria

Table 4.6 Factors influencing the choice of prequalification criteria

Factors influencing the choice of prequalification criteria	Mean Score	Std Dev	RII	Rank
Financial stability and soundness	4.24	0.74	0.83	1
Management and technical skills and capability	4.24	0.76	0.83	1
Quality management , control and assurance system	4.16	0.70	0.82	3
Key managerial, supervisory and operational personnel experience and availability	4.16	0.70	0.82	3
Equipment resources and availability	4.16	0.83	0.82	3
Health and safety performance and plan	4.12	0.74	0.81	6
Length of business	4.04	0.78	0.78	7
Experience in the project's geographic location	4.04	0.82	0.79	7
Attitudinal change	4.00	0.80	0.78	9
Past and current performance	4.00	0.83	0.77	9
Contractor's organization and plan	4.00	0.87	0.75	9
Claim history	3.98	0.79	0.78	12
Workforce resources and availability	3.96	0.72	0.78	13
Current work load	3.80	0.87	0.75	14
Credit rating and history	3.80	0.85	0.75	14

Source: Field Survey, (2020).

4.4 Major Challenges of Prequalification Criteria that Affects the Performance of Building Contractors

This section of the study reports the results of analysis carried out in pursuance of Objective Three, which was identification challenges of prequalification criteria that affects the performance of building contractors. It was also gauged through the use of Mean Score analysis. Relative Importance Index (R.I.I.) was also performed to provide further evidence of the awareness of challenges.

Major challenges of prequalification criteria ranked from 1st to 12th as presented in Table 4.7; Level of experience of Contractor's was ranked 1st (MS = 3.86), while Clarity of works detailed in the tender documents was ranked 2nd (MS = 3.83). Familiarity of contractor/contractor' with the system of construction to be adopted for the proposed

works was considered to be the least important tendering procedures challenge (ranked 12th, MS = 3.55). The overall level of prequalification criteria challenge was 3.69, which corresponded to “High Extent” of influence of challenges.

Table 4.7 Major Challenges of Prequalification Criteria

Major challenges of prequalification criteria	Mean Score	Std Dev	RII	Rank
Level of experience of Contractor’s	3.86	0.72	0.76	1
Clarity of works detailed in the tender documents	3.83	0.65	0.77	2
Awareness of current prices of construction resources	3.81	0.66	0.76	3
Shortness of time available to prepare prequalification criteria document	3.72	0.78	0.72	4
Accuracy of quotations from suppliers and subcontractors	3.69	0.73	0.74	5
Corrupt practices such as collusion amongst contractors	3.67	0.91	0.72	6
Volatility of general price levels in the country	3.65	0.79	0.73	7
Pressure from current workload of the contractor	3.65	0.87	0.72	7
Likelihood of obtaining current prices of construction resources through market survey	3.63	0.91	0.73	9
Pressure arising from current workload of the contractor’s	3.62	0.82	0.72	10
Complexity of the works detailed in the prequalification criteria documents	3.60	0.93	0.72	11
Familiarity of contractor/contractor’ with the system of construction to be adopted for the proposed works	3.55	0.81	0.70	12
Overall level of Major challenges of prequalification criteria	3.69			

Source: Field Survey, (2020).

4.5 Discussion of Findings

The study was aimed at evaluating the effects of pre-qualification criteria on performance of contractors in Kaduna state. The objectives were to identify and examine the existing contractors' prequalification criteria in the construction industry in Kaduna State so as to determine the most significant criteria, to identify and examine the factors that influences the choice of prequalification criteria in Kaduna State and to determine how the major challenges of prequalification criteria has affected the performance of building contractors in Kaduna State. Findings revealed that:

1. Financial status of the contractors (MS = 3.38), and tendering price (MS = 3.06) were ranked in the 1st and 2nd position of the financial prequalification criteria in the construction industry
2. Under technical and management ability prequalification criteria as presented in Table 4.6, the availability of Company equipment was ranked 1st (MS = 3.48). The Past performance of the company was ranked 2nd (MS = 3.35).
3. Length of time in business, as well as Experience in the region had MS of 3.21 and 3.20 ranked at 1th and 2nd. Experience edge, size of project (MS = 3.12, MS = 3.12), and type of project (MS = 3.10) were ranked in the 3rd and 5th position of the experience prequalification criteria in the construction industry.
4. Company safety policy as well as (OSHA) incidence rate (points) safety records and Experience in noise control had MS of 3.69 and 3.58, 3.58 ranked at 1th and 2nd respectively.
5. The quality work was ranked 1st (MS = 3.46). Quality Management was ranked 2nd (MS = 3.44). Quality policy and quality assurance was ranked lowest (3rd, MS

=3.43 4th, MS = 3.04). The overall quality prequalification criteria was 3.34, which indicated that quality prequalification criteria is significant

6. The results of analysis revealed that construction professionals identified Financial stability and soundness and Management and technical skills and capability as most significant factor influencing the choice of prequalification with mean score 4.24 and same RII of 0.83 but different Standard deviation of 0.74 and 0.76 respectively.
7. Major challenges of prequalification criteria ranked from 1st to 12th as presented in Table 4.7; Level of experience of Contractor's was ranked 1st (MS = 3.86), while Clarity of works detailed in the tender documents was ranked 2nd (MS = 3.83). Familiarity of contractor/contractor' with the system of construction to be adopted for the proposed works was considered to be the least important prequalification criteria challenge (ranked 12th, MS = 3.55). The overall level of prequalification criteria challenge was 3.69, which corresponded to "High Extent" of influence of challenges.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

In view of the research findings it can be concluded that there is significant effects of pre-qualification criteria on performance of contractors in Kaduna state Nigeria. The prequalification criteria were categorized into five: Financial stability, Technical and Management Ability, Experience, Health and Safety, and Quality. The overall average level of this identified criteria were found out to moderate and significant. The study also concluded that Financial stability and soundness and Management and technical skills and capability as most significant factor influencing the choice of prequalification in the study. Finally major challenges of tendering procedures was revealed to be the level of experience of Contractor's and Clarity of works detailed in the tender documents .

It is therefore clear that the effects pre-qualification criteria on performance of contractors in Kaduna state Nigeria is significant.

5.2 Recommendations by the study

In view of the conclusion of the study, the following recommendations are made:

The following recommendations have been made based on the findings of the study:

1. As part of reform policy in the construction industry, it is hereby recommended that parties to contract should comply with the procedures leading to contract award such as identification of client's requirements; preparation of clients' strategic brief and identification of procedures, organizational structures and range of consultants; preparation of outline proposal, and effect pre-qualification criteria through seminars and workshops

2. Construction professionals need to be educated on improvement in formal education attained by contractor through short courses offered in higher institutions
3. Contractors professionals should be encouraged on ethical practices by all stakeholders

5.3 Areas for Further Studies

In view of the limitations of this study, the following areas can be researched in the nearest future:

- i. Carryout on other locations within and outside the Nigeria to help identify key prequalification criteria influencing the choice of contractors.
- ii. Decision maker's perceptions on contractor prequalification criteria.

5.4 Contribution to Knowledge

The findings of this study has made the following significant impact in the research domain of pre-qualification criteria:

- i. By providing information on existing contractors' prequalification criteria in the construction industry in Kaduna State and the level significance.
- ii. Also key factors that influences the choice of prequalification criteria in Kaduna State were identified.
- iii. And finally the major challenges of tendering procedures were examined and the effect on the level performance of building contractors in Kaduna State were significant.

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APPENDIX A

Table 3.1
Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	163	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

APPENDIX B

*Department of Quantity Surveying,
School of Environmental Technology,
Federal University of Technology Minna,
Niger State, Nigeria.*

Dear respondent,

The researcher is a student of Federal University of Technology Minna, this questionnaire is to elicit information for a master of technology (M. TECH) research project at Federal University of Technology, Minna, titled “**EFFECT OF PRE-QUALIFICATION CRITERIA ON THE PERFORMANCE OF CONTRACTORS IN KADUNA STATE**”. The questionnaire attached herewith is to elicit your views on the topic. The information requested of you will be treated with **CONFIDENTIALITY** and will be used for academic purpose only.

Yours faithfully,
FAROUK USMAN ABDUL,
Department of Quantity Surveying,
FUT Minna.

SECTION A

Demographic Information on Respondents

Please provide information for the main item as requested by selecting one of the options provided by ticking.

Please provide information about the respondent as requested by selecting one of the options provided. Thank you.

A Gender of respondent	1	Female	
	2	Male	

B Profession of respondent	1	Architect	
	2	Builder	
	3	Engineer	
	4	Estate Surveyor	
	5	Quantity Surveyor	
	6	Town Planner	
	7	Other (specify)	

C Education attainments	1	OND/NCE	
	2	HND/B.Sc	
	3	M.Sc	
	4	Ph.D	

D Work experience of respondent	1	Less than 5 yrs	
	2	5 yrs – 15 yrs	
	3	16 yrs – 25 yrs	
	4	More than 25 yrs	

SECTION B

SECTION B

1. The following are the existing contractors' prequalification criteria in the construction industry in Kaduna State. Please tick according to the level of significance, ranging from the least significant to the most significant in a scale 1-5.

S/N	CONTRACTORS PREQUALIFICATION CRITERIA	Least significant (1)	Less significant (2)	Significant (3)	More significant (4)	Most significant (5)
	FINANCIAL STABILTY					
1	Positive credit rating					
2	Financial status					
3	Banking arrangements					
4	Tender price					
5	Staff experience					
	Technical and management ability					
1	Staff qualification					
2	Project manager qualification					
3	Past performance					
4	Company equipment					
	Experience					
1	Experience edge					
2	Size of project					
3	Length of time in business					
4	Experience in the region					
5	Type of project					

	Health and safety					
1	(OSHA) incidence rate (points) Safety record					
2	Company safety policy					
3	Experience in noise control					
	Quality					
1	Quality management					
2	Quality work					
3	Quality policy					
4	Quality assurance					

2. The following are the Factors that influences the choice of prequalification criteria in Kaduna State are listed below. Please tick according to the level of significance, ranging from the least significant to the most significant in a scale 1-5.

S/N	FACTORS INFLUENCING THE CHOICE OF PREQUALIFICATION	Least significant (1)	Less significant (2)	Significant (3)	More significant (4)	Most significant (5)
1	Health and safety performance and plan					
2	Quality management, control, and assurance system					
3	Financial stability and soundness					
4	Management and technical skills and capability					
5	Key managerial, supervisory and operational personnel experience and availability					

6	Equipment resources and availability					
7	Contractor's failure to complete a project					
8	Past and current performance					
9	Workforce resources and availability					
10	Claim history					
11	Length of time in business					
12	Contractor's organization and plan					
13	Current workload					
14	Experience in the project's geographic location					
15	Credit rating and history					

3. The following are the major challenges of tendering procedures that affects the performance of building contractors in Kaduna State. Please pick according to their frequencies on building projects, ranging from the least frequent to the most frequent on a scale 1-5.

S/ N	MAJOR CHALLENGES OF TENDERING PROCEDURES	Least frequent (1)	Less frequent (2)	frequency (3)	More frequent (4)	Most frequent (5)
1	Shortness of time available to prepare tender					
2	Accuracy of quotations from suppliers and subcontractors					
3	Level of experience of Contractor's					
4	Corrupt practices such as collusion amongst contractors					

5	Clarity of works detailed in the tender documents					
6	Complexity of the works detailed in the tender documents					
7	Familiarity of contractor/contractors with the system of construction to be adopted for the proposed works					
8	Volatility of general price levels in the country					
9	Pressure from current workload of the contractor					
10	Pressure arising from current workload of the contractor's					
11	Awareness of current prices of construction resources					
12	Likelihood of obtaining current prices of construction resources through market survey					