MANAGEMENT OF PROCUREMENT RISKS IN FEDERAL INLAND REVENUE SERVICE BUILDING CONSTRUCTION PROJECTS IN NIGERIA

ABSTRACT

Procurement in most developing economies is seen and treated as a 'back-office' function, this have confronted government procuring entities with the issues of effective procuring projects within the meagre budget of the government. This subject public building projects to series of procurement risks in the form of fraud, lack of transparency, competitiveness, cost effectiveness and professionalism in the execution of procurement function. Thus, this study examined the management of procurement risks in FIRS building construction projects in Nigeria. The study utilised questionnaires, which were randomly distributed to clients, procurement officers, contractors and consultants. With a response rate of 78.256%, the gathered data were analysed using percentile, mean item score (MIS) and relative importance index (RII). The study found that the major procurement related risks in FIRS building projects are; Kick back (contractor given out money to procurement officials), Lack of cost effective tenders among the bidders, Shadow vendors (submission of inflated invoices for work not delivered), Changes in the bids made after their formal receipt, and Suspicion about conflict of interest. Kick back (contractor given out money to procurement officials), Conspiracy amongst bidders to reduce competition, In-house information leakages to bidders, Shadow vendors (submission of inflated invoices for work not delivered), and Eligibility envelopes received beyond the deadline set for submission; are the prominent procurement related risks that impact on the cost, time, quality and the parties involved in FIRS projects. Also, the most important procurement risk mitigation strategies for FIRS building projects are; Eliminating the cause of the risk, reducing the scope of the contract, adding resources or time to the contract, avoiding contractor with unproven track record, and Using a proven approach instead of a new one. It is recommended that a system of checks and balances is put in place in FIRS building project to forestall the inherent corruption going on. Also, contractors and consultants with integrity should be engaged in FIRS projects.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Until the 1980s, when reforms were implemented to address the state's potential for infrastructure provision due to declining oil revenue, the government had complete control over infrastructure financing in Nigeria (Animashaun, 2011). Nigeria's recent economic downturn has necessitated the introduction of more conservative methods of project delivery. As a result, government procuring agencies are faced with the task of successfully procuring projects within the government's limited budget (Osanyinro and Aghimien, 2017). The African Development Fund (ADF) (2010), discovered that government agencies often rate prospective projects based on their benefit-to-cost ratio and build facilities as funds become available.

Project procurement while adhering to delivery time, expense, and quality constraints has remained a challenge for the design team, contractors, and investment managers. As contractors increasingly take on the role of business organizations with the aim of making maximum profits while assuming the least amount of risk, the procurement method's foundations are gradually shifting from simply meeting clients' needs to risk allocation (Babatunde *et al*., 2010). According to Saruchera (2016), procurement was once regarded solely as a requirement, and in many developed economies, the profession is still regarded as a "back-office" activity. However, according to the International Training Centre of the International Labour Organization (ITCILO) (2012), public procurement has long been marred by inefficiency, corruption, and a disregard for basic "cash for money" considerations.

Public procurement has also had a negative effect on the pace and quality of progress toward achieving national development goals, especially in developing and transition countries. According to Russell and Meehan (2014), public procurement is a duty to provide value to the

people, and it is kept accountable by following regulations, investing the public purse responsibly, and ensuring third-party delivery of contracted goods and services. The effect of procurement operation is under-researched, and certain responsibilities or the effectiveness of regulatory mechanisms are rarely questioned. Lack of business participation through procurement, weak tendering practice, low procurement competence, and lack of risk management are just some of the obstacles that Uyarra *et al*. (2014) identified as preventing public organizations from delivering innovation and policy outcomes. As a result, risk anticipation, risk control, and risk reduction are all part of the procurement risk management framework (Okonjo, 2014). Knowing the key categories of risk encountered in the procurement process will aid in risk evaluation and preparation, as well as devising management and organizational strategies to minimize those risks (United Nation Procurement Practitioners' Handbook (UNPPH), 2012).

As a result, recognizing the relationship between procurement and organizational goals is essential for successful procurement risk management (Okonjo, 2014). Therefore, Murray (2013) observed that procurement related risks have not reduced and the FIRS projects are being delayed unnecessarily which Chen (2018) attributed to lack of appropriate risk management strategies by the organisations.

It is therefore important to understand that risk occur at different stages of the procurement of Federal Inland Revenue Service (FIRS) building construction projects, hence the need to undertake a study to managing the risks in procuring FIRS building projects in Nigeria.

1.2 Statement of the Research Problem

In Nigeria, the major risk in the procurement of public buildings include lack of transparency, competitiveness, corruption, problems of cost effectiveness and professionalism in the execution of procurement functions (Federal Government of Nigeria (FGN), 2007).

Procurement process is often confronted with inherent risk to include unavailability of indices for bids and costs, contractors' delayed payments for completed work, contractors' low managerial and technological ability, and contractors' deliberate refusal to repay loans (Gyamfi and Boateng, 2016).

In Nigeria, the Federal government agencies are mandated to implement the provisions of the act under the supervision and guidance of the Bureau for Public Procurement (BPP) (Federal Government Nigeria (FGN), 2007). The Federal Inland Revenue Service is one of the Federal government agencies responsible for implementing the act under the supervision of the BPP, thus far, the procurement system practiced by the FIRS is constantly challenged with the problems of fraudulent practices, inefficiencies, lack of transparency, problems of professionalism, non-adherence to procurement code of ethics, and problems of cost effectiveness, and corruption. These problems according to Osanyinro and Aghimien (2017) are serious risks which could impair the delivery objectives of any project in meeting with the time, cost and quality requirements. And these have made it difficult to achieve the objectives of the BPP act. To buttress further, Chen (2018) highlighted that most procurement risks occur as a result of little understanding or less attention given to the inheret risks and their management strategies by the parties involved in the procurement.

Unfortunately, in FIRS building projects, the strategies for management of these risks are little understood by the parties involved in the procurement process, and in most cases, the risks are given less attention and thus, most FIRS projects are delayed unnecessarily.

1.3 Research Questions

i. What are the procurement related risks in FIRS building construction projects?

ii. What are the effects of the identified risks on the parties involved in procurement?

iii. What are the effects of the risks factors on FIRS project delivery (Cost, time and quality)?

iv. What are the procurement risk mitigation strategies for FIRS building projects?

1.4 Aim and Objectives

The study is aimed at exploring the principles of managing procurement risks in FIRS building construction projects in Nigeria with a view to meeting the project delivery objectives of time, cost and quality.

To achieve this aim, the following objectives were formulated to:

i. Examine the procurement risks in FIRS building projects

ii. Assess the effects of procurement risks on the key parties involved in procurement (FIRS, contractors, and consultants)

iii. Assess the effects of procurement risks factors on FIRS building project performance

iv. Assess the procurement risk mitigation strategies for FIRS building projects.

1.5 Justification for the Study

To justify the gap for this research, the contributions of the following researchers cannot be over emphasised. The major risk factors associated with building projects listed by Smith (2006) include timely project completion, keeping costs within budgets, and providing built assets that meet the service delivery requirements of agency clients. The unavailability of indices for bids and prices, the unavailability of construction materials, improper inventory management, and risks associated with operating at height were all identified as challenges to procurement by Gyamfi and Boateng (2016). Abdul-razak (2013) investigated the effect of project risk factors on the selection of public works procurement methods in Ghana, finding that financial and design risk factors had the greatest impact on works procured through Non-Competitive Tendering (NCT), with the most significant impact being the delay in retention

release. Murray (2013) looked at the need for procurement management and discovered that there should be a simple distribution of procurement risk, as well as the procurement risk owner being responsible for the audit's completion. Rezakhani (2012) conducted research on the classification of key risk factors in construction projects and proposed a hierarchical risk classification to include all of the relevant key risk factors.

Oyewobi *et al*. (2012) investigated the effect of risk on the contractor's tender figure in public building projects in Northern Nigeria. The study discovered that design flaws, inflation, contractor competence, political instability, and government reforms had the greatest effect on a contractor's tender figure.

Previous studies on procurement risk management have primarily focused on procurement issues, supply chain, creativity, and processes, according to research evidence.

However, these studies did not discuss procurement risk management in a revenue-generating agency like FIRS, which is why the research on the Management of Risks in FIRS Building Project Procurement was made.

The research work will assist stakeholder (FIRS as an institution, contractors, consultants) in playing a sensitive role aimed at improving tendering process, reducing the rate of abandoned project, improve on project delivery in terms of completion time, cost and quality, and also to improve capital budget performance.

1.6 Scope of the Study

The scope of the research covered the management of risks in procurement of FIRS building projects in Nigeria. The study focused on traditional method of procurement which is mostly practiced by the FIRS.

The geographical scope constituted the procurement units of the FIRS in Abuja. The survey includes the client (FIRS), contractors, and consultants who participated in FIRS projects in Nigeria.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Sources of Procurement Risks in Construction Project

According to UNPPH (2012), Risks to effective procurement could emerge out of a few kinds of sources, as follows: Procurement process, project planning, external factors, procurement process, project complexity, unprofessional conduct, corruption and fraud. Economic, political, and even natural influences are examples of external factors.

The UN organization and affiliate government decision-making mechanisms, which are used to approve operations and their budgets, are among the most common external influences. Although political and budgetary considerations are usually outside the procurement officer's control, it is appropriate to start the procurement process with enough lead time and provide appropriate caveats to prospective suppliers when a solicitation is given in advance of authorisation to minimize the risk of late supply, making sure that no binding commitments will be made until and when such authorization is obtained (UNPPH, 2012).

Procurement officers should be included early in the project team and the provision should be reviewed on a regular basis to minimize risks. In certain situations, such as major civil works, this can necessitate reasonable contractual agreements that take into account the inherent risks. Interagency Procurement Working Group (IAPWG, 2006). Corruption, unprofessional behavior and fraud may occur at any point of the procurement process, resulting in the risk of losing organizational resources and budget for unnecessary work, as well as significant harm to the organization's reputation. (IAPWG, 2006).

2.1.1 Procurement risks types

The following are the procurement related risks to be discussed in this chapter:

Fraud, lack of transparency, competitiveness, cost effectiveness and professionalism in the execution of procurement function (Federal Government Nigeria (FGN), 2007).

2.1.2 Fraud as a risk in public procurement

Procurement fraud is characterized as public servants, contractors, or anyone else involved in the procurement process dishonestly gaining an advantage, avoiding a duty, or causing a loss to public property by various means during the procurement process (Basweti, 2013). A kickback, for example, is when a dishonest supplier agent pays a dishonest purchaser agent to pick the supplier's bid, often at an inflated price. Other procurement frauds include bidder collusion to minimize competition, In-house information leakages to bidders. False or inflated invoices are sent for services and goods that are never rendered or work that is never completed. In such schemes, "shadow vendors," or shell companies that are set up and used for billing, can be used. Substituting inferior materials on purpose without the customer's permission, without adequate excuse, "sole source" contracts are used.

Prequalification criteria in specifications are used to unfairly exclude otherwise eligible vendors, and conditions for small-purchase procedures are divided to escape scrutiny during contract approval procedures for larger transactions (Colman, 2016).

2.1.3 Lack of transparency as a risk in public procurement

The term procurement transparency refers to the openness with which procurement processes, procedures, and regulations are followed. Owing to a lack of transparency in the procurement and project delivery processes, corruption in construction contracts is becoming more common (Oyegoke, 2012).

According to the United Nations Office on Drugs and Crime (UNODC), a procurement environment lacking in accountability and competitiveness is a perfect multiplying ground for corruption (UNODC, 2013). Based on this, Kumaraswamy and Dissanayaka (2001) described

transparency as one of the best practices principles of public procurement that will improve value for money, and they went on to clarify that in order to enable contractors to be more sensitive and competitive, contractors should be more transparent, to promote their adequate comprehension, all relevant details should be given to them, as well as all selection procedures and assessment requirements should be clearly defined and made transparent. It's also important to have adequate debriefing arrangements in place for providing response to ineffective contractors (Kumaraswamy and Dissanayaka, 2001). Because of the constraints imposed by national security, the diverse and constantly evolving needs of government, as well as the need for transparency, competition, accountability, and non-discrimination, processes and procedures are important (Oyegoke, 2012). According to Komakech (2016), open procurement processes will help governments and taxpayers allocate resources more efficiently through increasing competition, resulting in higher-quality procurement and budgetary savings.

i. The principal-agent relationship as a source of corruption in procurement

The relationship between the government (the "principal," as defined by politicians) and the bureaucracy (the "agent," as represented by procurement agents) creates opportunities for corruption in procurement (Trepte, 2005). The agent has access to information that the principal does not. In economic terms, there is an informational imbalance. As a result, agent that is corrupt will keep details about the operation, bidders, and goods from the principal.

The agent, on the other hand, is at a disadvantage in terms of details when it comes to the suppliers (Trepte, 2005). It may be argued that, in addition to stop data misuse, procurement legislation serves a secondary purpose: assisting the procurement agent in resolving this informational drawback. We can recognize the ways in which procurement policy can resolve and close the potential for corruption by recognizing the informational imbalance essential in these relationships (Trepte, 2005).

ii. Procurement rule and transparency that fight against corruption

The principal cannot actually try to control the conduct of the agent because the agent would have fortunate access to the information required to make the decision.

The principal trusts the agent's professional judgment, which he or she must use to obtain and analyze the required data. Removing such discretion would lessen the procurement process to a solely mechanical operation, with all of the associated implications for quality, expense, and value for money. To make sure that the agent's discretion is correctly used, the principal may use the accountability mechanism to compare the agent's behavior to the regulatory structure (Trepte, 2005). Setting up transparency requirements is a feasible part of the focal's administrative control, since it is only when the expert's activities are direct that they can be verified. Transparency is also a tool used by international regulators to make sure that all entitled dealers have access to the benefits of contention (Trepte, 2005).

As per Trepte (2005), there are various transparency mechanisms that can be identified widely in procurement rules to provide discouragement against corrupt practices:

a. Qualification criteria

Only eligible tenderers are allowed to apply for contracts using objective selection criteria. However, one of the risks is that it becomes a mechanical exercise in obtaining mandatory but potentially unnecessary paperwork from vendors. It is often believed that this will also deter corruption from an anti-corruption standpoint. The development of unnecessary material, on the other hand, merely serves to show that the regulations have been followed while diverting attention away from potentially corrupt conduct. It's also worth noting that complying with ineffective criteria comes at a price (Kaspar and Puddephatt, 2012).

b. Awareness

The obligation to publicize procurement procedures or at the very least request offers from a minimum number of tenderers ensures that procurement agents will not be able to contact only those tenderers with whom they choose to do business (Trepte, 2005).

c. Technical requirements

Any technical requirements or standards that are used must be made available to all tenderers earlier, and no modifications that favour other tenderers will be allowed during the process (Trepte, 2005)

d. Award standard

Transparency is used here to make sure that the agent must mention all of the conditions it plans to use in awarding the contract in tender documents. In most procurement schemes, there are two choices for selecting award criteria: (i) concentrating solely on the lowest price, and (ii) taking the price into account alongside a variety of other (for example, spare part availability, after-sales support, and so on) that will be specified in the bidding documents. Although selecting based solely on price has the advantage of speed and simplicity, it is unlikely to be beneficial in most of the cases where bidders are bidding on differentiated goods. The difficulty is converting intangible aspects of the offer into quantifiable terms that allow for a certain degree of caution on the part of the agent while not allowing for corruption (Trepte, 2005).

The term procurement transparency refers to the openness with which procurement processes, procedures, and regulations are followed. Moreover, Infrastructure UK, (2010) study on infrastructure cost analysis attests to the fact that in adequate transparency is widespread and not limited to the UK. To address the lack of transparency in the UK infrastructure, the report recommends improving access to and use of international infrastructure benchmark data (Oyegoke, 2012).

Transparency, that has long been recognized as a mechanism for combating corruption as a result of a variety of international agreements, is also an important tool for resolving the problems that SMEs face in public procurement (Kaspar and Puddephatt, 2012). Open competition may not carry the day without transparency, unethical dealings will proliferate, and other flaws in the procurement process may be covered up, undermining accountability (Jones *et al*., 2009).

Returning to the public procurement life cycle, it was also noted that efforts to increase transparency could include:

Table 2.1: Showing the transparency in different stages of public procurement

PRE-BIDDING PHASE	•Structured guidelines, protocols, and procedures that are clearly defined, enforceable, and subject to public review
FINDING OUT ABOUT CONTRACT OPPORTUNITIES	• Opportunities are advertised in a transparent manner. • Accessibility for all
APPLICATION FOR CONTRACT OPPORTUNITIES	•Tender documents and instructions that are transparent and consistent.
WINNING CONTRACTS	•Transparent and public selection requirements (experience, quality, value)
POST-BIDDING/ REVIEW OF AWARDS AND APPEALS	•Disclosure of awards •Rationale for awards •Requests for facts and appeal mechanisms

Source: Jones *et al*. (2009)

iii. Greater transparency in open procurement

Through the disclosure, publishing, and distribution of information on available tenders, transparency will increase access to public procurement opportunities. Furthermore, improved transparency and consistency of guidelines and documents will reduce the time it takes to apply bids, saving money and time. Cost and time savings would be tangible advantages. As a result, the organization's productivity and performance improves, as does sales growth as a result of access to new markets or business chances (Ahmed, 2019). The aim of the transparency principle is to eradicate discrimination and open up the procurement market to all available parties (Arrowsmith, 2009). Transparency is an effective method for using public resources in order to improve competition and reduce the risks of distorting and manipulating public resources, United Nations Office for Project Services (UNOPS), 2011). According to Scott and

Julius (2015), one of the many reasons attributed to the failure of Africa's public procurement system is a lack of accountability in the awarding of government contracts.

2.1.4 Lack of professionalism as a risk in public procurement

This section presents the risks that relate to professionalism in building projects which are listed as follows:

i. Understanding procurement professionalism

Professionalism is dependent on human resource staffing, expertise, skills, and capabilities, as well as system controls that affect human conduct. Organisation for Economic Co-operation and Development (OECD), 2007). If procurement officers are not properly qualified, or if they are unaware of all procurement laws and procedures, then significant consequences arise, such as violations of codes of ethics, which lead to the use of unethical procurement methods and, as a result, decreased organizational efficiency (Atkson, 2006).

Lack of professionalism, on the other hand, leads to corruption, which impedes compliance with procurement rules and regulations in procuring organizations and has a negative impact on results (Raymond, 2008). Professionalism in public procurement refers not just to the workforce's levels of education and qualifications, but also to the professional approach to doing business (Raymond, 2008). As a result, an efficient procurement system necessitates the hiring of procurement practitioners who have been qualified and certified by the relevant procurement professional body (Basheka, 2009). According to Lyson and Farrington (2012), procurement is a skilled occupation requiring theoretical expertise, extensive training and education, competence demonstrated by tests and exams, and adherence to a professional code of ethics. Since procurement is becoming more important, only well-trained and experienced staff should be hired to oversee the process.

According to Kalinzi (2014), professionalism in public procurement, allows for functionality, openness, and substantial savings in public spending, which explains why it should be given

due attention. Legislative structure, institutional framework, professional personnel accountability, and modernization procedures such as use of information and communications technology are among the metrics that specifically direct the road to professionalism. As a result, it's important that all stakeholders in the procurement system have a thorough understanding of the process and can effectively coordinate their efforts. There are recognized bodies that have championed excellence in various relevant fields on a global scale.

The Chartered Institute of Procurement and Supply (CIPS), the Chartered Institute of Logistics and Transport (CILT), and the Dutch Association for Purchasing Management (NEVI), to name a few, are among them (Kalinzi, 2014).

According to UNOPS (2011), a procurement specialist, is in charge of a company's or organization's purchasing activities, and to become one, applicants must have a mix of education and work experience in procurement. Professional preparation and education of those responsible for the procurement process and management are needed to ensure public transparency and value for money through procurement transactions.

ii. Professionalism: public procurement values and guiding principles

According to Chartered Institute of Procurement and Supply and National Institute of Government Purchasing (CIPS and NIGP (2012), balancing diverse public interests requires maintaining high standards of job performance and ethical conduct. The following are the guiding principles:

a. Be guided by those with public procurement education, experience, and professional certification.

b. Consistently add value to the company.

c. Continue to grow as a career through education, mentoring, creativity, and collaboration.

d. In order to represent the public good, create, encourage, and facilitate the highest professional standards.

e. Strive for continuous improvement by investing in ongoing preparation, education, and skill development.

f. Public officials' general behaviour, which suggests a lack of professionalism.

According to (Kalinzi, 2014), a core theme of any procurement reform, is the adherence to high standards for ethical conduct of public officers engaged in procurement. Such ethical principles are normally outlined in an Employee Code of Conduct, which is particularly important for public procurement officials. Transparency also includes the successful distribution of codes of conduct to participants and stakeholders. When asked how much they participate in procurement functions, the majority of respondents (69 percent) said they do so on a regular basis, which leaves space for unethical behaviours.

They cited the selling of public properties to themselves as a means of disposal, as well as the awarding of tenders to themselves indirectly or to friends and in-laws, as examples of conflicts of interest. This, according to the survey committee, was a flagrant violation of public procurement ethics. Stakeholders who were not in conventional procurement and had been interested in negotiation or review, as well as members of contracts committees until they were named, accounted for 31% of those who registered otherwise. Others (14%) suggested that elected officials and their immediate relatives be barred from engaging in the PE's public procurement proceedings. These were all council members (UNOPS, 2011).

2.1.5 Lack of competitiveness as a risk in public procurement

Competitiveness applies to the private sector and/or contractors actively participating in the procurement process by making procurement information available to all; advertisement tenders; sourcing reviews; prequalification; and the use of open processes in procurement systems. Competitiveness has many advantages, including possible cost savings for the economy, increased supplier base, and the growth of local industries within the economy, both

of which contribute to economic development and poverty reduction. Competition is the main engine of Value for Money (VFM) in nearly all procurement, and it underpins the foundations of fairness and accountability (Office of Government Commerce (OGC), 2008).

2.2 Risk Management in Procurement

During the procurement process, there are a lot of threats to be aware of.

Every step and stage of the process has global risks and risks, with certain risks being more important at each stage (Abdul-razak, 2013). Understanding the various types of risks encountered during the procurement process aids in risk evaluation and the development of realistic management and operational steps to minimize those risks. Risk management aims to lessen the effect of a risk by lowering the probability of it occurring and/or reducing avoidable effects by planning, tracking, and other appropriate acts (Abdul-razak, 2013). Procurement officers should define and analyze all risk factors that are likely to occur on a project, whether in general or in the particular case, and then decide on the most suitable management solution for each risk/combination of risks. Ignore, minimize, move, handle, and determine which party is best suited to manage each of the defined risks are some of the possible responses (Abdul-razak, 2013).

Risk cannot be completely eliminated in the corporate world or in the public sector; it is a part of the daily working environment in which we function. It can be handled to some degree.

Some risk management strategies are focused on the overall consistency of the procurement process, while others are tailored to particular risks associated with specific procurement categories. The risk analysis and management matrix is a valuable method for analyzing risk and focusing management attention. Activities are put on a risk continuum from "medium" to "high" and an impact continuum from "low" to "high" during procurement planning (IAPWG, 2006).

2.2.1 Risk analysis and management

Risk analysis is a stage in the planning process that aims to determine the source, likelihood, and severity of risks. It assists in focusing attention on threats that need special attention and have the greatest potential for reducing exposure. Each stage of the procurement process comes with its own set of risks. Each stage of procurement preparation should include risk analysis, which should be updated on a regular basis (Abdul-razak, 2013).

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2.2.3 Benefits derived from risk management

Greater trust in the right supply at the right time to support a particular activity goal; better control of uncertainty; reduced risk; enhanced decision making; reasonable forecasts that are less likely to be exceeded; stronger team communication; lower likelihood of harm to the organization's reputation (Ogunsanmi, 2013). When it comes to risk management, it's important to know how much power a party has over the risk and how much they can do about it. Risk management responsibilities should be distributed based on each party's ability to handle the risk. Attempts to hold a party accountable for risks for which it has no power are likely to result in a dispute and additional time and money spent. In reality, such "risk avoidance" keeps the risk in place when it is in the organization's best interests to handle it (Abdul-razak, 2013).

2.2.4 Risk in procurement

In order to achieve project goals, risk management is critical during the procurement process. Many experts in the public sector procurement field have backed this up (Ogunsanmi, 2013). There is a great deal of risk in the procurement cycle (Abdul-razak, 2013). It's important to keep in mind that even the tiniest mistake or inconsistency in procurement procedures or practices will result in allegations (Barden, 2010). He goes on to say that, even though the allegations are eventually proven to be false, they can damage an individual's or a procurement agency's reputation for a long time (Ameyaw and Mensah, 2013).

The Ghanaian construction industry is rife with corruption, which is a clear confirmation of Thai's (2007) findings that public procurement is seen as a source of waste and corruption. Barden (2010) recommends that organizations conduct risk assessments to identify flush points and areas of vulnerability, concerns, and shortfalls in the procurement process in order to successfully mitigate risk within the procurement process. He also emphasized the importance of risk analysis in order to fix perceived flaws and eliminate potential problems (Abdul-razak, 2013). However, since procurement is carried out on a daily basis without due regard for potential risks and the means to mitigate them, whether they are high, medium, or low, Unfortunately, buyers and suppliers often engage in procurement without taking into account risk, which can often be a risk in and of itself (Gilbert and Anthony, 2016). This method of procurement necessitates the development of risk management plans for each procurement in order to determine what risks are present and how to minimize or remove them (Abdul-razak, 2013).

The following is a rundown of the generic areas of procurement risk, according to Rashid (2016).

2.2.4.1 Project definition of risk (project not adequately defined)

The project definition stage is the first activity in the contract cycle. Goals are always unclear, or the goals are not adequately translated into an appropriate project. As a result, the final product does not meet the original goals. This problem is often manifested by people 'jumping to a solution' before becoming specific (Abdul-razak, 2013).

i. Defining the goal in practical terms rather than a specific approach is a good idea. This makes it possible to put new ideas or technologies into practice about what they are attempting to accomplish (Abdul-razak, 2013).

ii. Expectations are often set that are impractical or simply impossible to achieve.

iii. The procurement process is vital in this stage. A sound procurement process enables these risks to be avoided, reducing the overall cost of the project, and enhancing the likelihood of a successful outcome.

2.2.4.2 Performance risk (contractor unable to deliver to specification)

According to Rashid (2016) the most important risk to a project's successful completion is the Contractor's inability to perform according to specifications. This increases the risk of wasting money and resources, and weakens the Principal's position when it comes to hiring a different contractor. The following are some suggestions for reducing the risk:

i. Supplier qualification, which includes accreditation for all applicable processes.

ii. Tender appraisal requirements that are comprehensive

iii. Requiring tenderers to provide detailed details on their skills and management plans for key contract areas.

iv. Referring to the Contractor's previous output

v. Similar vetting of any subcontractors

vi. Ensuring the contract terms are acceptable. For example, a staged tendering process.

vii. Require either tried-and-true technology or trials, evaluations, and presentations.

viii. Assuring the financial security of the contractor

ix. Performance-based requirements that allow for the use of the most advanced technologies available

x. Post-delivery (after-sales) obligations that are clearly specified and agreed upon

2.2.4.3 Financial risk (contract costs exceed estimate)

The second most significant risk to a successful project is that its costs would exceed the figures used in its economic justification. This risk can be addressed through a variety of sources and treatments, including the ones mentioned below:

Shared understanding and agreement on project scope; sound competitive tendering processes; fixed or variable prices, contract rates; performance penalties and incentives; coordination of work; cost adjustment process; exchange rate fluctuations; loss or damage to goods; insurances, bank guarantees; project management, cost control; general contract conditions; and method of payment. (Rashid, 2016).

2.2.4.4 Functional risk (task is not done to requirements)

The third biggest risk of a successful contract is that it would fail to meet the specifications. This may be because the conditions are unclear to both the Principal and the Contractor. The following are some of the issues that must be considered.

Is this the most effective way to meet those goals? Is it gone through a cost-benefit analysis? Is it possible to find a consistent list of practical requirements? Is the functional and

technological specifications spelled out explicitly in the specification? Is it possible to assess and confirm that these conditions have been met? Is it clear that the tenderer is aware of the specifications?

A good specification and explanation of work, with clear definitions of relevant documents; site inspections; tender inquiries; obligation for tenderer to obtain all required information; post tender submission; post tender meeting; and sound tender evaluation procedure are all methods of communicating requirements and ensuring that they are understood. (Rashid, 2016).

The following are some of the strategies for ensuring continued compliance with the requirements:

2.2.4.5 Schedule risk (contract takes too long)

Delays in the schedule are a major risk factor, and they can jeopardize the project's completion and costs. Identifying and discussing delivery risks with the contractor (pre and/or post tender); greed contract program with milestones; staged program, including studies and trials if the project is innovative; regular reporting requirements on the contractor's part; regular monitoring of progress and corrective action as needed; payments related to pro forma estimates. (Abdul-razak, 2013).

2.2.4.6 Legal risk (contract is in breach of laws)

The contract will not be carried out in compliance with applicable laws, which is a major danger. This creates a two-fold problem. The applicable laws must first be understood, and then enforcement must be ensured. According to Abdul-razak (2013), the following are some of the high-risk areas:

i. Compliance with international treaties: as the degree of international cooperation on problems perceived to be global rises, the number of these treaties grows.

ii. Other utilities such as power, telecommunications, coal, and railways are harmed. The injured party must be compensated for any damage or interference with other services.

iii. Defending the public from threat or nuisance caused by bombs, noise, vibration, road hazards, chemicals, and other factors.

iv. Restricting access to private property to minimize public nuisance and business interruption. This also extends to landowners whose land is purchased for the purpose of road construction.
v. Adherence to Council standards

vi. Adherence to taxation laws

Other regulations that must be followed include the Road Traffic Act, railway activities, environmental protection, pest plants, forest fires, historic artifacts, and Aboriginal heritage. Labor regulations, such as awards, training, occupational health, safety, and welfare, must all be followed.

2.2.4.7 Prudential risk (contract breaches good business ethics)

This is the possibility of something that may damage the organization's finances or credibility as a result of a lack of probity or discriminatory practices.

These risks must also be handled in accordance with the Prudential Management Framework, which is an overarching collection of standards and procedures to be implemented in private-sector projects and agreements. (Rashid, 2016).

Prudential risk encompasses issues such as:

i. Transparent and equitable tendering practices. Any provision in the contract, or any part of the tendering process, should not benefit or discriminate against any side. This

includes things like tender submission, tender opening, non-conforming tenders, and tender acceptance.

ii. Administrative arrangements must be in place to avoid unauthorized access to information, fraudulent use of authorities, conflicts of interest, and to ensure that all transactions are fair. Any contractually required orders, such as guidance from the Principal's site representative, must be in writing.

iii. Any systems must be secure from unauthorised use and access to information, fraud, unfair advantage, failure and so forth.

2.2.4.8 Political risk (action which, whilst not illegal, has political impact)

Transport is a portfolio that attracts considerable public interest; many people are affected in one way or the other by decisions about the transport system. Consequently, there is always likelihood that a project will attract political interest.

The Agency must ensure that plans are adequately considered in terms of political sensitivity and that they are subject to public consultation. These procedures should be open and clear, so that any political ramifications can be avoided or at least expected. (Rashid, 2016).

i. Proper public interest consideration

ii. Inconvenience to public services

2.2.4.9 Risks to the environment

Any product (both goods and services) has an environmental effect. These effects may occur at any point in the product's life cycle, including manufacturing, distribution, usage, repair, and disposal. Environmental problems, if left unmanaged, have the ability to raise the product's life cycle cost, have a negative effect on human health, lead to habitat degradation, and deplete natural resources. Energy: consumption, production, and sources (renewable); Water:

consumption, efficiency, and sources (potable, non-potable, and recycled); Air: consumption, efficiency, and sources (renewable); Materials: prevent, minimize, reuse, recycle, recover, manage, and dispose of waste; greenhouse gas emissions: avoid, reduce, reuse, recycle, recover, treat, and dispose of waste; air and water pollution: avoid, reduce, reuse, recycle, recover, treat, and dispose of waste; and waste: avoid, reduce, reuse, recycle, recover, treat, and dispose of waste (Rashid, 2016)

2.2.5 Risks mostly linked to procurement system

According to Precoro (2017), the Technical Services Office described the following list of procurement risks based on audit results in the Commission on Audit's Annual Audit Reports: Projects have sat dormant for a long time. Signs to be aware of: There is no Bids and Awards Committee (BAC), and there is no Technical Working Group (TWG) within the BAC; No feasibility analysis was conducted; the proposal was not included in the Annual Procurement Plan (APP); right-of-way (ROW) was not available (claims and payments on early achievements were bloated; ; wasteful work products, incorrect retention deductions from progress payments due to failure to confirm conformance with project plan, advance payment not recouped or not completely recouped, ghost project).Defective projects, unauthorised honoraria for BAC Members, the BAC TWG, and the BAC Secretariat, excess construction materials not turned over to the government, waste materials/salvaged construction materials not turned over to the government, and sub-standard or low quality of work are among the others. (Precoro, 2017).

The following factors contributed to the problem: the approved budget for the contract (ABC) was not feasible, and the BAC failed to conduct proper post-qualification.

Excessive project costs are a concern due to insufficient detailed engineering practices, overestimated quantities of work products, overestimated quantities of materials, overestimated construction length, excessive material prices, and/or excessive labor and/or

equipment rental rates; Price escalation given outside of the prescribed formulae; needless variance orders. Delay in project completion as a risk: triggers can include failure to consider right-of-way acquisition; failure to issue bidding documents on time; failure to consider right-of-way acquisition; failure to consider right-of-way acquisition; failure to consider right-of-way acquisition; failure to consider right-of-way acquisition; failure to consider right-of-way acquisition; failure to consider right- Even though it was expected, a pre-procurement conference was not held; eligibility screening and bid evaluation requirements were not clearly defined; and the bidding process took longer than the law/regulations allowed: Delays in contract award, contract signing, contract acceptance, and/or issuance of the Notice to Proceed; unjustified time extensions; issuance of variation orders; unjustified suspension orders; non-verification of conformance with specifications; non-performance of the activities needed when slippage occurred (calibrated action on project slippage); delayed resumption of work; peace and order situation; non-verification of conformance with specifications; non-performance of the activities required when slippage occurred and the contractor is unqualified – unable to complete the project due to technical or financial constraints. Other risks include a short competition time, which may be caused by non-publication of the Invitation to Apply for Eligibility (IAEB) and to Bid in a national newspaper, insufficient posting of the IAEB, and selective issuance of eligibility forms (only to favored/selected contractors). Another risk is illegal post-qualification, which may result in a contract being awarded to a contractor who has not paid taxes. (Precoro, 2017).

Irregularities in the bidding process can include: eligibility envelopes obtained after the deadline; observers were not invited; incorrect bidder submissions; violations of the "no-contact" policy; and non-validation in compliance with the Disclosure Provision. a rigged/simulated bidding resulted in a repeat order on a previous contract; the prices in the repeat order are higher than the current market price, which is lower than the price in the

original contract; A repeat order was placed that was larger than the initial order; A repeat order was placed after the 6-month period had expired (from the date of the initial contract's notice to proceed); fictitious suppliers submitted quotations. (Precoro, 2017).

Furthermore, the risks associated with the bidder's failure to validate the safety and health policy include the following: worker health and safety were not adequately handled during contract execution.

Another risk is that project completions did not meet expectations due to a lack of checks. Furthermore, contractor failure to repair defects during the defects liability period is a possibility, with the cause being management failure to submit the proper warranty submission. Other risks include: non-application of liquidated damages despite project delays; contract splitting; failure to take advantage of volume discounts; delivery of a product other than that stated in the purchase order; and short/under-delivery. (Precoro, 2017).

The ASOSAI Guidelines for Dealing with Fraud and Corruption, published in October 2003, list the following as warning signs of potential procurement fraud and corruption, which should raise red flags for the auditor: At the requirements definition point, there are risks such as insufficient need analysis, insufficient information about potential suppliers, insufficient examination of current and needed inventory, an excessively short supply duration, needs analysis that is product rather than needs based, and user requirements defined by someone other than the user. and senior officials' unwarranted participation. (Abdul-razak, 2013).

The following are some of the most common risks encountered during the bidding and selection process: unclear specifications; a small number of offers received; documentation indicating unusual involvement of an official; suspicion of conflict of interest; evidence of early receipt of information by some contractors; request for proposal is not properly advertised; unusual handling of the bidding process; Successful contractors use rivals as subcontractors, and the rationale for single source procurement is insufficient. (Abdul-razak, 2013).

Changes in a contract result in a significant increase in the cost of goods and services; changes made without adequate explanation; unwarranted contract extension; complaints about the quality of goods and services received; inadequate inspections and quality assurance of goods and services received; evidence of overcharging. (Abdul-razak, 2013).

Finally, contracts awarded to one contractor or a group of contractors on a regular basis are impacted by excessively high labour payments. (Abdul-razak, 2013).

2.2.6 How to deal with procurement risk

The step by step method according to Precoro (2017), on how to effectively deal with procurement risks within an organisation is stated as follows:

1. **Expert knowledge**

Expert expertise is based on the experience of people who have previously worked on similar sourcing projects. To collect expert information, conduct interviews with individuals, stakeholders, and experts. Interviews with subject matter experts could reveal risks that had not been considered previously (Precoro, 2017).

2. **Historical information**

You or your colleagues may have developed a database of threats faced in previous sourcing and contracting efforts. It would be helpful if you arrange this database by contract form and provide a list of issues that can be classified as threats, as well as their origins and the events that precipitated them. Include the risk reduction strategy that was placed in place, as well as the effectiveness of that plan if it was used to deal with an incident. Previous contract records may also be used to provide historical data. These documents may be stored in a database or in paper files. If you don't have a system in place to collect historical risk data, you should consider creating one (Precoro, 2017).

3. Brainstorming

A brainstorming session is another technique that is commonly mentioned for identifying risks and sources of risk. As a means of preserving relative objectivity, assemble a community of subject matter experts who understand the essence of danger, including stakeholders and others who will not be directly impacted by your activities. This exercise will enable you to compile a comprehensive list of potential risk events as well as their sources. You can then use them to customize the list by applying them to your particular conditions. (Precoro, 2017).

4. Risk control

Every contract has a product or service that it is written about. The risks found are heavily influenced by the essence of the product or service. There will be less unidentified risks if the product has been successfully delivered several times before, and you will have experience dealing with them. Action must be taken to manage the risks after defining and categorizing them. Control accepts that in certain cases, you cannot be able to completely remove danger. You may be able to reduce or eliminate the danger by taking steps to deal with the undesirable outcome in a reasonable manner. There may also be options available that allow you to eliminate the risk entirely or pass the risk to your supplier when it is in both parties' best interests. (Precoro, 2017).

The strategy or tool you use to monitor a risk will be primarily determined by the point in the contract at which it occurs, as well as the amount of knowledge you have about the source or effect of that risk. Regardless of the circumstances, successful regulation necessitates a strategy, or at the very least a sketch of the actions we should take and the conditions under which we should take them. (Precoro, 2017).

You must consider the sourcing activity's purpose, scope, and objectives when creating a plan. You must have a thorough understanding of the product or service being offered, its intent, and

the consumer or stakeholder expectations for the product. You should also be aware of how the contract and its product contribute to the company's strategic goals and business objectives. This experience will assist you in prioritizing your tasks. (Precoro, 2017).

5. Risk triggers

A “precursor to a real risk event” is what a risk trigger is. It warns you that a potentially dangerous incident is about to happen. Each significant risk should have its own set of causes, which you should keep an eye on and be aware of as you handle a sourcing activity or communication. (Precoro, 2017).

Cost overruns on early operations, for example, could indicate that cost forecasts were poorly established and that the contract is on the verge of going over budget. The person in charge of risk management must keep track of the costs associated with such early activities. Cost overruns by a certain date mean that cost forecasts need to be reevaluated (Precoro, 2017).

6. Risks monitoring

Monitoring entails keeping track of current conditions through reports or direct access to the source. It also contains revised likelihood and impact analyses, as well as the discovery of previously unknown conditions. Risks are tracked to ensure that risk responses have been implemented as planned and that risk responses are as successful as intended. If they aren't, you will need to come up with new responses; any documented assumptions are still valid; and risk exposure hasn't changed. If it has changed, further investigation is required; no risk cause has occurred. If a trigger has arisen, contingency plans must be implemented, appropriate protocols and procedures must be followed, and no new risks must be found. If new risks emerge, they must be reviewed and analyzed in the same way as previously established risks were (Sollish and Semanik, 2012).

2.2.7 Procurement risk mitigation strategies

According to New Zealand Government Procurement (NZGP) (2019), risk reduction is the method of influencing risks to be within the overall tolerance levels set for the project and reducing them to as low as reasonably feasible levels (ALARP). Risk reduction is the process of reducing the severity or effect of a risk occurrence. You may do that by lowering the risk's likelihood of occurrence, lowering the risk's effect, or both, to an appropriate level (Sollish and Semanik, 2012). Using proven technologies to minimize the likelihood that the contract's product will not perform is one way to reduce the risk of a risk happening. If the contracted service is a software application, you may prefer to build on a platform that you have previously used successfully rather than one with which you are unfamiliar.

When you minimize risks, you can end up swapping one risk for another. For example, a client could request a fixed-price contract to reduce cost risk, but this may result in a schedule risk if the contractor is unable to provide the service within the specified time frame for the fixed price (Sollish and Semanik, 2012).

The cost of risk reduction should be proportional to the risk's likelihood and consequences. In other words, planning for low-probability, low-impact risks can take less time and money than planning for high-probability, high-impact risks. You must consider the cost of risk reduction when making decisions about risk reduction. The difference in risk exposure divided by the cost of risk reduction is referred to as "risk-leverage" (NZGP, 2019)

i. Contingency Plans

The development of a contingency plan in advance of a potential incident, normally shortly after the risk is detected, is a popular method of minimizing the effect of a risk event.

The aim of this strategy is to keep mission-critical processes and information management systems running in the event of a catastrophic event that causes them to fail to meet minimum requirements. The contingency plan will determine the company's needs and requirements so

that you can be ready to adapt to the event and quickly restore service to the systems that have been rendered inoperable as a result of the event.

If a risk event arises, the plan involves concrete steps to be taken, such as finding an alternative source if the chosen source is unable to fulfill its contractual obligations or a replacement part if the primary part is unavailable (Sollish and Semanik, 2012).

ii Risks avoidance

Eliminating the source of a danger will also eliminate a risk that you can pinpoint. For example, if a shortage of qualified personnel is defined as a risk, the risk can be mitigated by making the contractor employ the expertise required to conduct the contracted services.

Reduce the scope of the contract to eliminate high-risk components, add money or time to the contract, avoid suppliers or contractors with unproven track records, and use an established solution rather than a new one are all risk-avoidance strategies (Sollish and Semanik, 2012).

iii Risks acceptance

Risk assumption may be aggressive, such as preparing a contingency plan for execution should a risk occurrence occur, or passive, such as choosing to deal with threats and their consequences when or if they occur, but not planning for them ahead of time (Sollish and Semanik, 2012).

iv Risk transfer

Transferring risk occurs when liabilities are assigned to other agencies or when insurance is purchased to cover any financial losses that might occur if the risk becomes real.

In most situations, the contractor or supplier is better equipped to manage a specific risk, so moving the risk through negotiations might be the best option. However, there is one caveat: risk transfer can incur additional costs, such as the cost of insurance or an additional sum allowed in the pricing by the provider to be able to deal with the incident if it occurs (Sollish and Semanik, 2012). Transparent processes, competitiveness, role isolation, consistent rules and procedures, uniform records, trained personnel training, effective control mechanisms, and

transparency are some of the steps put in place to mitigate these risks. Transparency, competition, and the division of duties are the foundations of risk reduction since they guarantee that any unethical or deceptive activity is detected. These must be linked to senior management, who will not tolerate such actions and will include processes, controls, authority, and training so that employees can handle the procurement function correctly (UNPPH, 2012). The majority of those involved in the procurement process should consider themselves "risk managers" and be aware of possible risks at any point of the procurement cycle, both in terms of preparation and execution (UNPPH, 2012).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Design

The research design acts as a map of action and a blueprint for data collection, measurement, and analysis (Reza, 2017). It also constitutes the measurement of analysis and collection of data. Clearly research problem determines the type of research design (Ali, 2017)

This research adopted the survey design approach utilising the quantitative method in the form of a well-structured questionnaire survey for management of risk in procurement of FIRS building projects in Nigeria.

3.2 Research Population

Merriam-Webster (2018) dictionary defines population in research as the whole number of people or inhabitants in a country or region from which a sample can be drawn. It can also be characterized as the set of individuals, persons or objects in which an investigator is primarily interested during his/her research problem (Isatolo, 2014).

The population for this study constituted the client 153, contractors 32 and consultants 26 who have participated in procurement activities of FIRS building projects in Nigeria. This comprises a total of 211 participants.

3.3 Sampling Frame

The process of identifying the population and selecting a representative of the population is known as sampling frame. It can also be described as the entire population list from which the sample is drawn (Research Lifeline, 2012).

The sample frame for this study consist of Procurement staff of FIRS = 64, Facility/Project Manager of FIRS = 89, Consultants (QS=5, Arc=4, Builder=6, Engr.=6, Project manager=5) = 26 and Contractors = 32, therefore the total sample frame is 211.

3.4 Sample Size

The number of data sources chosen from the total population is referred to as a sample size. (Research Lifeline, 2012).

For the purpose of this research, the sample size for the questionnaire constitute individual professional that make the sample frame within the targeted population of the study. These include: Procurement staff of FIRS, Facility/Project Manager of FIRS, Consultants (QS, Arc, Builder, Engr., Project manager) and Contractors. This will be a total of 211 respondents for the questionnaires.

Because of large number of the sample size, the number was subject to Taro Yamane formula for finite population Odesola, and Idoro, 2014). The number was then reduced to 138 at 5 percent limit of error and at 95 percent confidence level.

The formula is given by n equals to $\frac{N}{1+N(e)^2}$

Where: n = the required sample size; N = the finite population size; e = the level of significance in this case 0.05 was used; and 1= the unit.

$\frac{211}{1+211(0.05)^2}$ = 138

For the purpose of this research, the sample size was 138 respondents.

3.5 Sampling Techniques

The two main extremes of the sampling technique, according to Laerd Dissertation(2012) are given as the probability and the non-probability sampling.

Any member of the population has a known and non-zero chance of being chosen for the sample in a probability sample (Laerd Dissertation, 2012).

In order to guarantee equal representation for each of the identified groups of professionals in the population, stratified random sampling method will be adopted for the research. The respondents will be first categorized into different strata/groups, that is: procurement staff, contractors and consultants before they will be selected and randomly sampled accordingly.

3.6 Method of Data Collection

The questionnaire developed for this study comprised of questions with closed-ended questions and provided a set of answers from which the respondent must choose. The questionnaires were divided into two sections A and B. The section A request general information of respondents. The section B raised questions on the core objectives of the research. Section B Part 1 raised questions on the type of procurement risks in FIRS building projects. Section B Part 2 raised questions on the effects of procurement risk on the key parties involved in procurement. Section B Part 3 raised questions on effects of procurement risks factors on FIRS building performance. Section B Part 4 raised questions on procurement risk mitigation strategies for FIRS building projects. The research method is quantitative which is in line with the positivist paradigm. It is quantitative because a structured questionnaire containing a list of literature based information prepared by the researcher and administered to the respondents. This helps to validates information from the literature in determining the frequencies and level of agreement with the factors. The results of the questionnaire were the only research data utilized in the study.

The information for this analysis was gathered from primary sources. A primary data source is an original data source, meaning the data was obtained by the researcher directly for a particular research purpose or project (SAGE Research Methods, 2010). They are often data that the investigator collects specifically for a particular reason.

3.7 Method of Data Analysis

The process of reviewing, cleaning, transforming, and modeling data with the aim of illustrating useful details, suggesting conclusions, and assisting decision-making is known as data analysis. Some people divide data analysis into descriptive statistics, exploratory data analysis (EDA), and confirmatory data analysis (CDA) in statistical applications (Lumencandela, 2019). Since this is a quantitative study, the data analysis tool used in this study was descriptive in nature.

These include Relative Importance Index (RII); Mean Item Score (MIS) and Ranking methods. Frequency and percentile were used to analyze the demographic data of the respondents. The Skruskal-Wallis H tests were used to see whether there were any major differences in the respondents' perspectives on procurement risks. Relative Importance Index is a useful technique to calculate the relative importance of predictors (independent variables) when independent variables are correlated to each other.

3.8 Reliability and Validity Tests

The Cronbach's Alpha Test for Reliability and legitimacy was done on the gathered information and the outcome is appeared on table 3.1. Unwavering quality of an examination instrument is the proportions of the exactness and precisions of the embraced estimation method, this test gives the Cronbach alpha worth which isn't be under 0.50. For instance, Oyedele *et al*. (2003) was of the assessment that an alpha estimation of 0.7 or more suggests better and higher unwavering quality and consistency of the exploration instruments. The Cronbach's alpha estimation of the factors tried reaches between 0.801-0.705, with a normal of 0.747, subsequently uncovering that the poll, information gathered are dependable and legitimate.

Table 3.1: Cronbach's Alpha Reliability Statistics

Variables tested	No. of Items	Cronbach's Alpha	Internal consistency
Procurement risks in FIRS building projects	41	0.735	Acceptable
Effects of Procurement risks on key parties involved	41	0.705	Acceptable
Effects of procurement risk on project performance	41	0.745	Acceptable
Procurement risk mitigation strategies	25	0.801	Good

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Demographic Information of the Respondents

Table 4.1 is the result of the analysis of the respondents' demographic information. The analysis shows that most of the respondents sampled are 67.59% are male while 32.41 % are female. In terms of professionals' representation, the result revealed that Quantity Surveyors (36.11%) are more, followed by Engineers (23.15%), then Architects (13.89%) and project managers (13.89%) and lastly builders (12.96%). A look at the year of work experience of the respondents shows that only 15.74% of them have their year of working experience to fall within less than 5 years range, while 27.78% and 33.33% falls between the range of 5 to 10 and 11 to 20 years respectively. Also 17.59% and 5.56% of the population falls between the ranges of 21 to 30 years and above 30 years respectively. However, the average years of working experience of the respondents is calculated as approximately 10.75 years. This implies that they are experienced enough to give a valid response.

In terms of academic qualification, the highest is BSc/Mtech (53.70%), followed by HND (21.30%), then MSc./Mtech (12.96%), ND and Others are 5.56% and 6.48% respectively.

The functions in the organisations shows that 28.70% are consultants, 37.96% are contractors, project/facility manager, and procurement officers are 19.44%.

Based on the result on the respondents' background information, it was concluded that the respondents are well equipped professionally and in terms of experience to give reasonable insight in the subject under consideration.

Table 4.1: Demographic Information of the Respondents

	Variables	Frequency	Valid percent
Gender	Male	73	67.59%
	Female	35	32.41%
	Total	**108**	**100%**
Profession	Architect	15	13.89%
	Builder	14	12.96%
	Engineer	25	23.15%
	Quantity Surveyor	39	36.11%
	Project manager	15	13.89%
	Total	**108**	**100%**
Years of Experience	Less than 5years	17	15.74%
	5-10years	30	27.78%
	11-20years	36	33.33%
	21-30years	19	17.59%
	Above 30	6	5.56%
	Total	**108**	**100%**
Academic qualification	ND	6	5.56%
	HND	23	21.30%
	BSc/Btech	58	53.70%
	MSc/Mtech	14	12.96%
	Others	7	6.48%
	Total	**108**	**100%**
Function in the Organisation	Consultant	31	28.70%
	Contractors	41	37.96%
	Project/Facility manager	15	13.89%
	Procurement Officer	21	19.44%
	Others	0	0.00%
	Total	**108**	**100%**

4.2 Procurement Risks in FIRS Building Projects

Table 4.2 shows the result of the analysis of the procurement risks associated with FIRS building projects. It can be seen that the top five (5) procurement risks under the Fraud as a risk factor in procurement group are; Kick back (contractor given out money to procurement officials) (RII=0.98), Shadow vendors (submission of inflated invoices for work not delivered) (RII = 0.89), Changes in the bids made after receipt (RII=0.88), Suspicion about conflict of interest (RII=0.87), and Conspiracy amongst bidders to reduce competition (RII=0.86). Under

the problems of transparency as a risk in procurement, the top risks factors are; Dishonesty and lack of openness of staff to bidders in procurement process (RII=0.81), Non-adherence to award criteria (RII=0.80), and Improper advertisement of proposal requests (RII=0.77).

For the Professionalism as a risk in procurement, the top risks are; inadequate skill-based and theoretical knowledge of the procurement staff (RII=0.84), and unclear definition of specifications (RII=0.84). The Competitiveness as a risk in procurement, shows that lack of competition among tenderers (RII=0.84), and selective eligibility forms distribution (only to favoured/selected contractors) (RII=0.77), are the top risks factors. Under the Problems of cost effectiveness as risk in procurement, the top risks factors are; Lack of cost effective tenders among the bidders (RII=0.96), In adequate detailed engineering activities (RII=0.86), and Over-estimated quantities of work items (RII=0.78).

Overall, the top five procurement related risks are; Kick back (contractor given out money to procurement officials) (RII=0.98), Lack of cost effective tenders among the bidders (RII=0.96), Shadow vendors (submission of inflated invoices for work not delivered) (RII=0.89), Changes in the bids made after receipt (RII=0.88), and Suspicion about conflict of interest (RII=0.87). The least procurement related risks are; Inadequate justification for single source procurement (RII=0.68), Over-estimated construction duration (RII=0.65), Discrimination or favouritism by any clause in the contract (RII=0.62), Very limited number of offers received (RII=0.56), and Non-adherence to procurement laydown rules and regulations (RII=0.51). These findings are in line with the conclusion of Sollish and Semanik (2012) and Precoro (2017) on the risks factors in procurement system.

Table 4.2: Procurement risks in FIRS building projects

S/No	procurement related risks	RII	Rank	Overall Rank
A	**Fraud as a risk factor in procurement**			
1	Kick back (contractor given out money to procurement officials)	0.980	1	1
2	Conspiracy amongst bidders to reduce competition	0.852	5	7
3	In-house information leakages to bidders	0.798	10	18
4	Shadow vendors (submission of inflated invoices for work not delivered)	0.887	2	3
5	Eligibility envelopes received beyond the deadline set for submission	0.796	11	19
6	Boycotting observers to be invited	0.796	11	19
7	Splitting of contracts	0.728	13	29
8	Suspicion about conflict of interest	0.867	4	5
9	Lowest responsive bidder not selected	0.850	6	8
10	Changes in the bids made after receipt	0.883	3	4
11	Unusual participation in contract documents of the procurement official	0.698	15	34
12	Giving of early of information to some contractors	0.722	14	30
13	Abuse of handling of the bidding process	0.828	8	13
14	Inconsistent evaluation criteria for different bidding process	0.826	9	14
15	There are some exceptions to the tender deadlines	0.830	7	12
16	Inadequate justification for single source procurement	0.680	16	37
17	Discrimination or favouritism by any clause in the contract	0.617	17	39
B	**Problems of transparency as a risk in procurement**			
1	Absence of being honest and lack of openness of staff to bidders in procurement process	0.807	1	16
2	Non-adherence to procurement laydown rules and regulations	0.515	7	41
3	Inadequate publicity (advertisement of procurement procedures for tenders)	0.720	5	31
4	Non-availability of technical specifications to all tenderers	0.696	6	35
5	Non-adherence to selection criteria of tenderers	0.743	4	25
6	Non-adherence to award criteria	0.802	2	17
7	Improper advertisement of proposal requests	0.769	3	23
C	**Professionalism as a risk in procurement**			
1	Inadequate skill-based and theoretical knowledge of the procurement staff	0.844	1	9
2	Inadequate training of procurement staff	0.824	3	15
3	Non-adherence to procurement code of ethics	0.720	4	31
4	Lack of professional membership of procurement staff	0.696	5	35
5	Unclear definition of specifications	0.843	2	10
D	**Competitiveness as a risk in procurement**			
1	Lack of competition among tenderers	0.839	1	11
2	Selective eligibility forms distribution (only to favoured/selected contractors)	0.770	2	22
3	Non-publication of the Invitation to Apply for Eligibility and Bid (IAEB) in a nationally circulated newspaper	0.730	4	27
4	Non posting of the IAEB	0.735	3	26
5	Very little number of offers received.	0.565	5	40
E	**Problems of cost effectiveness as risk in procurement**			
1	Lack of cost effective tenders among the bidders	0.959	1	2
2	In adequate detailed engineering activities	0.865	2	6
3	Over-estimated quantities of work items	0.778	3	21
4	Over-estimated construction duration	0.648	7	38
5	Exorbitant costs of materials	0.763	4	24
6	Excessive rates of labour or rental equipment	0.709	6	33
7	Price increases not given as specified in the formula	0.730	5	27

4.3 Effects of Procurement Risks on the key Parties involved in Procurement

Table 4.3 shows the result of the analysis of the data collected on the Impacts of Procurement Risks on the Parties Involved in Procurement. The result shows the relative impact of these risk factors on the parties. For the client, the risks factors that impact on the client most are: Kick back (contractor given out money to procurement officials) (MIS=4.9), Lack of cost effective tenders among the bidders (MIS=4.74), Shadow vendors (submission of inflated invoices for work not delivered) (MIS=4.46), Changes in the bids made after receipt (MIS=4.44), Suspicion about conflict of interest (MIS=4.37), Conspiracy amongst bidders to reduce competition (MIS=4.29), Lowest responsive bidder not selected (MIS=4.29), Inadequate skill-based and theoretical knowledge of the procurement staff (MIS=4.20), Exceptions to the tender deadlines 9MIS=4.19), and lack of competition among tenderers (MIS=4.19).

The risks factors that impact on the contractors most are: Kick back (contractor given out money to procurement officials) (MIS=4.64), lack of competition among tenderers (MIS=4.89), Changes in the bids made after receipt (MIS=4.63), Lowest responsive bidder not selected (MIS=4.48), Giving of early information to some contractors (MIS=4.36), Conspiracy amongst bidders to reduce competition (MIS=4.29), Exceptions to the tender deadlines (MIS=4.19), Inconsistent evaluation criteria for different bidding process (MIS=4.16), Unusual handling of the bidding process (MIS=4.15), and Unclear definition of specifications (MIS=4.13).

The risks factors that impact on the consultants are: Kick back (contractor given out money to procurement officials) (MIS=4.50), Lack of cost effective tenders among the bidders (MIS=4.45), Non-adherence to procurement code of ethics (MIS=4.19), In adequate detailed engineering activities (MIS=4.18), Splitting of contracts (MIS=4.17), Unusual involvement of procurement official in the contract documents (MIS=4.14), Lack of professional membership of procurement staff (MIS=4.12), Non-adherence to procurement laydown rules and

regulations (MIS=4.11), Lowest responsive bidder not selected (MIS=4.10), Non-availability of technical specifications to all tenderers (MIS=4.08).

Overall, top procurement related risks that impact on the parties involved are: Kick back (contractor given out money to procurement officials) (MIS=4.53), Conspiracy amongst bidders to reduce competition (MIS=4.34), In-house information leakages to bidders (MIS=4.31), Shadow vendors (submission of inflated invoices for work not delivered) (MIS=4.30), Eligibility envelopes received beyond the deadline set for submission (MIS=4.29), Boycotting observers to be invited (MIS=4.07), Splitting of contracts (MIS=4.03), Suspicion about conflict of interest (MIS=4.02), Lowest responsive bidder not selected (MIS=4.01), and Changes in the bids made after receipt (MIS=3.93).

The Kruskal-Walis test was also performed with a 95% confidence rating. The test revealed that the rankings of 70.73 percent of the variables are not significantly different. The perceptions of the different respondents' groups about the variables seem to be consistent.

These risk factors have a significant p-value of greater than 0.05, indicating that they are 'accepted.' only 29.27% of the variables display a statistically significant difference in perception. A significant p-value of less than 0.05 was observed for these risk factors., thus are 'rejected'. It can be concluded that there is consistency in the ranking and views of the respondents regarding the impact of procurement related risks on clients, contractors and consultants.

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Table 4.3a Effects of procurement risks on the key parties involved in procurement

S/No	procurement related risks	Client		Contractors		Consultant		Overall Rank		Skruskal Wallis	
		MIS	Rank	MIS	Rank	MIS	Rank	MIS	Rank	P-value	Decision
A	**Fraud as a risk factor in procurement**										
1	Kick back (contractor given out money to procurement officials)	4.9	1	4.64	1	4.05	4	4.53	1	0.853	Accept
2	Conspiracy amongst bidders to reduce competition	4.29	5	4.29	5	3.65	12	4.07	6	0.000*	Reject
3	In-house information leakages to bidders	4.03	10	3.52	14	3.84	8	3.8	18	0.001*	Reject
4	Shadow vendors (submission of inflated invoices for work not delivered)	4.46	2	3.85	10	3.39	15	3.9	11	0.023*	Reject
5	Eligibility envelopes received beyond the deadline set for submission	4	12	3.81	11	3.47	13	3.76	19	0.000*	Reject
6	Boycotting observers to be invited	4.02	11	4.04	9	4.03	5	4.03	7	0.000*	Reject
7	Splitting of contracts	3.67	13	3.59	12	4.18	1	3.81	17	0.000*	Reject
8	Suspicion about conflict of interest	4.37	4	2.79	17	3.85	7	3.67	26	0.000*	Reject
9	Lowest responsive bidder not selected	4.29	5	4.48	3	4.11	3	4.29	5	0.139	Accept
10	Changes in the bids made after receipt	4.44	3	4.63	2	3.94	6	4.34	2	0.332	Accept
11	Unusual involvement of procurement official in the contract documents	3.51	15	3.57	13	4.17	2	3.75	21	0.107	Accept
12	Giving of early information to some contractors	3.65	14	4.36	4	3.78	9	3.93	10	0.681	Accept
13	Unusual handling of the bidding process	4.15	9	4.15	8	2.78	17	3.69	24	0.0188	Reject
14	Inconsistent evaluation criteria for different bidding process	4.16	8	4.16	7	3.74	10	4.02	8	0.0318	Reject
15	Exceptions to the tender deadlines	4.19	7	4.19	6	3.66	11	4.01	9	0.270	Accept
16	Inadequate justification for single source procurement	3.44	16	3.44	15	3.47	13	3.45	33	0.462	Accept
17	Discrimination or favouritism by any clause in the contract	3.14	17	3.14	16	3.19	16	3.15	37	0.903	Accept
B	**Problems of transparency as a risk in procurement**										
1	Dishonesty and lack of openness of staff to bidders in procurement process	3.9	2	2.21	7	3.14	6	3.08	38	0.835	Accept
2	Non-adherence to procurement laydown rules and regulations	2.55	7	2.56	6	4.12	1	3.07	39	0.109	Accept
3	Inadequate publicity (advertisement of procurement procedures for tenders)	3.56	5	3.83	2	3.56	5	3.65	27	0.189	Accept
4	Non-availability of technical specifications to all tenderers	3.43	6	3.94	1	4.1	2	3.82	16	0.098	Accept
5	Non-adherence to selection criteria of tenderers	3.69	4	3.77	3	4.08	3	3.85	12	0.192	Accept
6	Non-adherence to award criteria	3.94	1	3.67	5	3.58	4	3.73	23	0.000*	Reject
7	Improper advertisement of proposal requests	3.78	3	3.77	3	2.69	7	3.41	34	0.000*	Reject

Table 4.3b: Impacts of procurement risks on the parties involved in procurement (CONT'D)

S/No	procurement related risks	Client		Contractors		Consultant		Overall Rank		Skruskal Wallis	
		MIS	Rank	MIS	Rank	MIS	Rank	MIS	Rank	P-value	Decision
C	**Professionalism as a risk in procurement**										
1	Inadequate skill-based and theoretical knowledge of the procurement staff	4.2	1	2.92	5	2.84	5	3.32	36	0.504	Accept
2	Inadequate training of procurement staff	4.05	3	3.13	3	3.53	3	3.57	31	0.721	Accept
3	Non-adherence to procurement code of ethics	3.57	4	3.03	4	4.45	1	3.69	25	0.654	Accept
4	Lack of professional membership of procurement staff	3.45	5	3.87	2	4.14	2	3.82	15	0.929	Accept
5	Unclear definition of specifications	4.13	2	4.13	1	3.27	4	3.84	13	0.289	Accept
D	**Competitiveness as a risk in procurement**										
1	lack of competition among tenderers	4.19	1	4.89	1	3.74	3	4.31	3	0.683	Accept
2	Selective eligibility forms distribution (only to favoured/selected contractors)	3.84	2	2.00	4	2.23	5	2.69	41	0.929	Accept
3	Non-publication of the Invitation to Apply for Eligibility and Bid (IAEB) in a nationally circulated newspaper	3.61	4	2.00	4	3.39	4	3	40	0.096	Accept
4	Non posting of the IAEB	3.63	3	3.00	3	4.08	1	3.57	30	0.402	Accept
5	Very limited number of offers received.	2.78	5	4.00	2	4.06	2	3.61	29	0.645	Accept
E	**Problems of cost effectiveness as risk in procurement**										
1	Lack of cost effective tenders among the bidders	4.74	1	3.65	5	4.5	1	4.3	4	0.000*	Reject
2	In adequate detailed engineering activities	4.15	2	2.88	7	4.19	2	3.74	22	0.497	Accept
3	Over-estimated quantities of work items	3.74	3	3.89	2	3.85	3	3.83	14	0.708	Accept
4	Over-estimated construction duration	3.19	7	3.81	3	3.65	5	3.55	32	0.135	Accept
5	Excessive prices of materials	3.64	4	3.94	1	3.68	4	3.75	20	0.628	Accept
6	Excessive labour or equipment rental rates	3.5	6	3.78	4	2.82	7	3.37	35	0.903	Accept
7	Price increases not given as specified in the formula	3.61	5	3.65	5	3.61	6	3.62	28	0.921	Accept

4.4 Effects of Procurement Risks on Project Performance

Table 4.4 shows the result of the analysis of the data collected on the effects of procurement risks on cost, time and quality performance. The result shows the relative effect of these risk factors on the cost, time and quality. For the cost, the risks factors that have effect on the cost most are; Kick back (contractor given out money to procurement officials) (MIS=4.74), Conspiracy amongst bidders to reduce competition (MIS=4.65), In-house information leakages to bidders (MIS=4.26), Shadow vendors (submission of inflated invoices for work not delivered) (MIS=4.17), Eligibility envelopes received beyond the deadline set for submission ((MIS=4.17), Boycotting observers to be invited (MIS=4.15), Splitting of contracts (MIS=4.11), Suspicion about conflict of interest (MIS=4.09), Lowest responsive bidder not selected (MIS=4.09), and Changes in the bids made after receipt (MIS=4.05).

The risks factors that have effect on time most are; Kick back (contractor given out money to procurement officials (MIS=4.89), Conspiracy amongst bidders to reduce competition (MIS=4.47), In-house information leakages to bidders (MIS=4.24), Shadow vendors (submission of inflated invoices for work not delivered) (MIS=4.21), Eligibility envelopes received beyond the deadline set for submission (MIS=4.18), Boycotting observers to be invited (MIS=4.12), Splitting of contracts (MIS=4.12), Suspicion about conflict of interest (MIS=4.11), Lowest responsive bidder not selected (MIS=4.08), Changes in the bids made after receipt (MIS=4.02).

The risks factors that have effect on quality are; Kick back (contractor given out money to procurement officials) (MIS=4.09), Conspiracy amongst bidders to reduce competition (MIS=4.02), In-house information leakages to bidders (MIS=4.02), Shadow vendors (submission of inflated invoices for work not delivered) (MIS=3.96), Eligibility envelopes received beyond the deadline set for submission (MIS=3.94), Boycotting observers to be invited (MIS=3.94), Splitting of contracts (MIS=3.92), Suspicion about conflict of interest

(3.91), Lowest responsive bidder not selected (MIS=3.88), Changes in the bids made after receipt (MIS=3.850.

Overall, top procurement related risks that have effect on costs, time and quality are: Kick back (contractor given out money to procurement officials) (MIS=4.32), Conspiracy amongst bidders to reduce competition (MIS=4.19), In-house information leakages to bidders (MIS=4.10), Shadow vendors (submission of inflated invoices for work not delivered) (MIS=3.96), Eligibility envelopes received beyond the deadline set for submission (MIS=3.96), Boycotting observers to be invited (MIS=3.94), Splitting of contracts (MIS=3.88), Suspicion about conflict of interest (MIS=3.86), Lowest responsive bidder not selected (MIS=3.85), and Changes in the bids made after receipt (MIS=3.84).

The Kruskal-Walis test was also performed with a 95% confidence rating. The test revealed that the rankings of the (28) 68.29% of the variables are not significantly different. The perceptions of the different respondents' groups about the variables seem to be consistent. These risk factors had a significant p-value of greater than 0.05. thus are 'accepted'. Only (13) 31.71% of the variables demonstrate a major shift in perception. A significant p-value of less than 0.05 was observed for these risk factors. thus are 'rejected'. It can be concluded that there is consistency in the ranking and views of the respondents regarding the effects of procurement risks on cost, time and quality performance.

Table 4.4a: Effects of Procurement Risks on Project Performance

S/No	procurement related risks	COST		TIME		QUALITY		Overall Rank		Skruskal Wallis	
		MIS	Rank	MIS	Rank	MIS	Rank	MIS	Rank	P-value	Decision
A	**Fraud as a risk factor in procurement**										
1	Kick back (contractor given out money to procurement officials)	3.80	8	3.28	14	2.94	4	3.34	30	0.0750	Accept
2	Conspiracy amongst bidders to reduce competition	4.26	2	4.02	5	4.02	12	4.10	3	0.3620	Accept
3	In-house information leakages to bidders	4.17	3	3.31	13	3.69	8	3.72	13	0.1820	Accept
4	Shadow vendors (submission of inflated invoices for work not delivered)	4.11	4	3.87	8	3.58	15	3.85	9	0.0000*	Reject
5	Eligibility envelopes received beyond the deadline set for submission	3.81	7	3.67	10	3.29	13	3.59	18	0.0530	Accept
6	Boycotting observers to be invited	2.19	16	4.02	5	3.94	5	3.38	27	0.327	Accept
7	Splitting of contracts	2.32	14	3.19	15	3.48	1	3.00	37	0.846	Accept
8	Suspicion about conflict of interest	3.76	9	3.86	9	4.02	7	3.88	7	0.325	Accept
9	Lowest responsive bidder not selected	4.65	1	4.21	2	3.69	3	4.19	2	0.011*	Reject
10	Changes in the bids made after receipt	2.99	12	4.47	1	3.84	6	3.77	12	0.033*	Reject
11	Unusual involvement of procurement official in the contract documents	3.41	11	3.64	11	3.83	2	3.63	16	0.061	Accept
12	Giving of early information to some contractors	3.52	10	3.13	17	3.14	9	3.26	32	0.279	Accept
13	Abuse of handling of the bidding process	4.09	5	3.99	7	3.50	17	3.86	8	0.229	Accept
14	Inconsistent evaluation criteria for different bidding process	2.57	13	4.08	4	2.91	10	3.19	33	0.269	Accept
15	There are some exceptions to the tender deadlines	2.21	15	4.12	3	3.66	11	3.33	31	0.114	Accept
16	Inadequate justification for single source procurement	2.17	17	3.44	12	3.47	13	3.03	36	0.082	Accept
17	Discrimination or favouritism by any clause in the contract	4.02	6	3.14	16	3.19	16	3.45	23	0.041*	Reject
B	**Problems of transparency as a risk in procurement**										
1	Dishonesty and lack of openness of staff to bidders in procurement process	4.05	1	3.77	2	3.70	6	3.84	10	0.245	Accept
2	Non-adherence to procurement laydown rules and regulations	3.90	2	3.88	1	4.09	1	3.96	5	0.640	Accept
3	Inadequate publicity (advertisement of procurement procedures for tenders)	3.43	5	3.77	2	3.68	5	3.62	17	0.0388	Reject
4	Non-availability of technical specifications to all tenderers	3.27	6	3.54	5	3.91	2	3.57	19	0.083	Accept
5	Non-adherence to selection criteria of tenderers	2.20	7	3.35	6	3.94	3	3.17	34	0.106	Accept
6	Non-adherence to award criteria	3.89	3	3.33	7	2.86	4	3.36	28	0.000*	Reject
7	Improper advertisement of proposal requests	3.72	4	3.77	2	1.94	7	3.14	35	0.000*	Reject

Table 4.4b: Effects of Procurement Risks on Project Performance (CONT'D)

S/No	procurement related risks	COST		TIME		QUALITY		Overall Rank		Skruskal Wallis	
		MIS	Rank	MIS	Rank	MIS	Rank	MIS	Rank	P-value	Decision
C	**Professionalism as a risk in procurement**										
1	Inadequate skill-based and theoretical knowledge of the procurement staff	4.17	1	4.18	1	2.71	5	3.69	15	0.001*	Reject
2	Inadequate training of procurement staff	3.90	2	3.07	4	3.44	3	3.47	22	0.005*	Reject
3	Non-adherence to procurement code of ethics	3.65	4	3.06	5	3.36	1	3.36	29	0.216	Accept
4	Lack of professional membership of procurement staff	3.24	5	4.12	2	2.91	2	3.42	24	0.000*	Reject
5	Unclear definition of specifications	3.88	3	4.11	3	3.92	4	3.97	4	0.099	Accept
D	**Competitiveness as a risk in procurement**										
1	lack of competition among tenderers	4.09	1	4.86	1	3.88	3	4.32	1	0.229	Accept
2	Selective eligibility forms distribution (only to favoured/selected contractors)	2.56	3	2.00	4	3.57	5	2.71	40	0.290	Accept
3	Non-publication of the Invitation to Apply for Eligibility and Bid (IAEB) in a nationally circulated newspaper	2.19	4	2.00	4	3.03	4	2.40	41	0.092	Accept
4	Non posting of the IAEB	2.17	5	3.00	3	3.40	1	2.85	38	0.082	Accept
5	Very limited number of offers received.	4.02	2	4.00	2	2.22	2	3.41	25	0.041*	Reject
E	**Problems of cost effectiveness as risk in procurement**										
1	Lack of cost effective tenders among the bidders	4.74	1	4.24	1	2.41	1	3.80	11	0.000*	Reject
2	In adequate detailed engineering activities	4.15	2	3.81	2	3.85	2	3.94	6	0.497	Accept
3	Over-estimated quantities of work items	4.05	3	3.71	4	2.44	3	3.40	26	0.245	Accept
4	Over-estimated construction duration	3.90	4	3.73	3	3.50	5	3.71	14	0.640	Accept
5	Exorbitant costs of materials	3.43	5	3.14	6	3.96	4	3.51	21	0.038*	Reject
6	Excessive rates of labour or rental equipment	3.27	6	3.71	4	3.60	7	3.53	20	0.083	Accept
7	Price increases not given as specified in the formula	2.20	7	2.64	7	3.42	6	2.75	39	0.106	Accept

4.5 Procurement Risk Mitigation Strategies for FIRS Building Projects

Table 4.5 shows the result of the analysis of the data gathered on the procurement risk mitigation strategies for FIRS building projects. The top ten (10) strategies for mitigating procurement risks are; Elimination of the risk source (MIS=4.90), Reduce the contract scope (MIS=4.44), Adding contract resources or time (MIS=4.42), Avoiding contractor with unproven track record (MIS=4.33), A proven methodology to be used rather than a fresh one. (MIS=4.26), Communication- Risk may be reduced when communicated (MIS=4.25), Contingency plans- Critical situations planning may decrease the impact if circumstances occur (MIS=4.15), Error tolerant Design - User interfaces that avoid serious repercussions of human mistake (MIS=4.14), Due diligence- Investigation process before committing to a contract (MIS=4.13), and Policies design to reduce risk (MIS=4.06).

The least strategies for mitigating procurement related risks are; Decide to address the risks and impacts if they happen, but do not plan for them in advance (MIS=3.49), Allocating risks to other entities e.g. outsourcing (MIS=3.48), Purchasing insurance to offset any financial loss, should the possibility of the risk becomes reality (MIS=3.40), Additional charges, such as insurance expenses are included in the price charged by the contractor for dealing with the incident. (MIS=3.19), and transferring particular risks to the contractor through negotiation might be better (MIS=3.08).

Table 4.5 Procurement risk mitigation strategies for FIRS building projects

S/No	procurement risk mitigation strategies	MIS	Rank	Overall Rank
A	**Risk avoidance (Doing something else or take a different route)**			
1	Elimination of the risk source	4.90	1	1
2	Reduce the contract scope	4.26	3	5
3	Adding contract resources or time	3.99	4	13
4	Avoiding contractor with unproven track record	4.44	2	2
5	A proven methodology to be used rather than a fresh one.	3.98	5	14
B	**Risk Reduction (Optimize-mitigate)**-Doing something to reduces the impact or probability of a risk			
1	Communication- Risk may be reduced when communicated	3.98	8	14
2	Contingency plans- Critical situations planning may decrease the impact if circumstances occur	3.64	9	18
3	Error tolerant design-User interfaces that avoid serious repercussions of human mistake	4.33	2	4
4	Due diligence- Investigation process before committing to a contract.	4.25	3	6
5	Policies design to reduce risk	4.42	1	3
6	Controls built in to process such as approvals designed to reduce procurement risks	3.49	11	21
7	Process enhancements like automation of error reduction procedures	3.61	10	19
8	Establishing standards to guide procurement practices and decision making	4.14	5	8
9	Verifying information with Authoritative information sources	4.13	6	9
10	Validation of information before it is accepted by system	4.15	4	7
11	Compliance training for procurement employee design to reduce compliance and reputational risks	3.40	12	23
12	System testing- is a core risk reduction techniques	3.08	13	25
13	Review of decisions and implementations by experts can reduce risks	4.04	7	11
C	**Risk Acceptance (Do nothing)**			
1	Accept the repercussions of risk event (when it occurs)	3.19	3	24
2	Development of a plan of contingency if the risk occurs	3.60	1	20
3	Decide to address the risks and impacts if they happen, but do not plan for them in advance	3.48	2	22
D	**Risk Transfer (Sharing)**			
1	Allocating risks to other entities e.g. outsourcing	4.06	1	10
2	Purchasing insurance to offset any financial loss, should the possibility of the risk becomes reality	4.01	2	12
3	Additional charges, such as insurance expenses are included in the price charged by the contractor for dealing with the incident	3.84	4	17
4	Transferring particular risks to the contractor through negotiation might be better	3.92	3	16

4.6 Discussion of Results

The study revealed that major procurement related risks in FIRS building projects are; Kick back (contractor given out money to procurement officials), Lack of cost effective tenders among the bidders, Shadow vendors (submission of inflated invoices for work not delivered), Changes in the bids made after receipt, and Suspicion about conflict of interest. These results are line with the findings reported by Coleman (2016) who stated that kickback, for example, is when a dishonest supplier agent pays a dishonest purchaser agent to pick the supplier's bid, often at an inflated price, Basweti, (2013) who also explained that procurement fraud is characterized as public servants, contractors, or anyone else involved in the procurement process dishonestly gaining an advantage, avoiding a duty, or causing a loss to public property by various means during the procurement process. Komakech (2016) stated that open procurement processes will help governments and taxpayers allocate resources more efficiently through increasing competition, resulting in higher-quality procurement and budgetary savings. Kalinzi (2014) which says professionalism in public procurement, allows for functionality, openness, and substantial savings in public spending, which explains why it should be given due attention.

It was further revealed that procurement related risks that impact on the parties involved are: Kick back (contractor given out money to procurement officials), Conspiracy amongst bidders to reduce competition, In-house information leakages to bidders, Shadow vendors (submission of inflated invoices for work not delivered), and Eligibility envelopes issued after the deadline has passed, Boycotting observers to be invited, Splitting of contracts, Suspicion about conflict of interest, Lowest responsive bidder not selected, and Changes in the bids made after receipt.

Procurement processes will help governments and taxpayers allocate resources more efficiently through increasing competition, resulting in higher-quality procurement and budgetary savings.

Professionalism in public procurement, allows for functionality, openness, and substantial savings in public spending, which explains why it should be given due attention, these results were in conformity with Komakech (2016) and Kalinzi (2014).

The study found that procurement related risks that impact on costs, time and quality are: Kick back (contractor given out money to procurement officials), Conspiracy amongst bidders to reduce competition, In-house information leakages to bidders, Shadow vendors (submission of inflated invoices for work not delivered), Eligibility envelopes issued after the deadline has passed, Boycotting observers to be invited, Splitting of contracts, Suspicion about conflict of interest, Lowest responsive bidder not selected, and Changes in the bids made after receipt.

These results are conformity with the findings reported by Basweti, (2013) who also explained that procurement fraud is characterized as public servants, contractors, or anyone else involved in the procurement process dishonestly gaining an advantage, avoiding a duty, or causing a loss to public property by various means during the procurement process. It is also in line with the findings by Coleman (2016) who stated that kickback, for example, is when a dishonest supplier agent pays a dishonest purchaser agent to pick the supplier's bid, often at an inflated price.

It was found that the most important procurement risk mitigation strategies for FIRS building projects are; Elimination of the risk source, Reduce the contract scope, Adding contract resources or time, Avoiding contractor with unproven track record, A proven methodology to be used rather than a fresh one, Communication - Risk may be reduced when communicated, Contingency plans- Critical situations planning may decrease the impact if circumstances occur, Error tolerant design- User interfaces that avoid serious repercussions of human mistake, Due diligence- Investigation process before committing to a contract, and Policies design to reduce risk. These results are line with the findings reported by Sollish and Semanik (2012) which stated that using proven

technologies to minimize the likelihood that the contract's product will not perform is one way to reduce the risk of a risk happening, eliminating the source of a risk will also eliminate a risk that you can pinpoint. For example, if a shortage of qualified personnel is defined as a risk, the risk can be mitigated by making the contractor employ the expertise required to conduct the contracted services The development of a contingency plan in advance of a potential incident, normally shortly after the risk is detected, is a popular method of minimizing the effect of a risk event, using proven technologies to minimize the likelihood that the contract's product will not perform is one way to reduce the risk of a risk happening. Reduce the scope of the contract to eliminate high-risk components, add money or time to the contract, avoid suppliers or contractors with unproven track records, and use an established solution rather than a new one are all risk-avoidance strategies, which are all in line with the findings of (Sollish and Semanik, 2012).

4.7 Summary of Findings

i. The major procurement related risks in FIRS building projects are; Kick back; non-adherence to award criteria; lack of cost effective tenders among the bidders, shadow vendors; changes in the bids made after receipt, and suspicion about conflict of interest.

ii. The procurement related risks that impact on the parties are: for the clients this includes: Kick back; Shadow vendors; Changes in the bids made after receipt; dishonesty and lack of openness of staff to bidders. For the contractors: kickbacks; Changes in the bids made after. A major risk on the consultants include splitting of contracts.

iii. The study found that procurement related risks that impact on cost, time and quality are: Kick back (contractor given out money to procurement officials), Conspiracy

amongst bidders to reduce competition, In-house information leakages to bidders, Shadow vendors (submission of inflated invoices for work not delivered), Eligibility envelopes issued after the deadline has passed, Boycotting observers to be invited, Splitting of contracts, Suspicion about conflict of interest, Lowest responsive bidder not selected, and Changes in the bids made after receipt.

iv. The most important procurement risk mitigation strategies include: Reduce the contract scope; Adding contract resources or time; Avoiding contractor with unproven track record, A proven methodology to be used rather than a fresh one; Contingency plans; Error tolerant design-user interface; Due diligence; and Policies design to reduce risks.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study concludes that the major procurement related risks in FIRS building projects are: Kick back; lack of cost effective tenders among the bidders, shadow vendors; changes in the bids made after receipt, and suspicion about conflict of interest. The procurement related risks that impact on the clients are: Kick back; shadow vendors; changes in the bids after receipt; dishonesty and lack of openness of staff to bidders. For the contractors, kickbacks; and changes in the bids after receipt are the major factors. A major risk on the consultants include splitting of contracts.

The study concludes that the procurement related risks that impact on costs, time and quality are: Kick back; conspiracy amongst bidders to reduce competition, In-house information leakages to bidders; shadow vendors; eligibility envelopes issued after the deadline has passed; boycotting observers to be invited, splitting of contracts, suspicion about conflict of interest.

The study concludes that the most important procurement risk mitigation strategies for FIRS building projects are: elimination of the risk source; reduce the contract scope; adding contract resources or time; avoiding contractor with unproven track record, a proven methodology to be used rather than a fresh one.

5.2 Recommendations by the Study

From the findings and conclusion, the study makes the following recommendation

1. A system of checks and balances be put in place in FIRS project to forestall the inherent corruption going on there. Also, contractors and consultants with integrity should be engaged in FIRS projects.
2. Staff who have respect for in-house information be engaged to avoid information leakages. Conspiracy tendencies should be regularly checked to ensure that competitiveness in the bidding process is maintained.
3. The system of splitting contracts should be minimised. also, bids should not be received after the set deadline of submission.
4. Even though it is not always the case, lowest responsive tenderers should be considered in the contract awards, especially if the process was competitive.
5. Making of changes in bids after their formal receipt should be avoided, unless it's a change affecting all the tenderers.
6. Efforts should be put in place to eliminate all sources of risks if possible, reducing contract scope.
7. Ensure effective and efficient Communication among the parties as regards issues and problems that might trigger risks.

5.3 Contribution to Knowledge

From the findings, the following are the contribution of the research to knowledge;

1. The study has contributed in deepening the knowledge of procurement risks in FIRS building projects
2. The impact of procurement risks on parties and key project measurement parameters were found and this could help key decision makers in coming up decisions to avoiding this effects.

3. Delay in times, cost overruns, and poor quality of work caused by deficiencies in procurements of procurement risks will be tackled better in future projects especially were there records (historical data).
4. The study has also added to the existing body of knowledge available procurement and risks in public projects and construction management within the construction industry

5.4 Area for Further Research

The study recommends the following further research;

1. A Similar study that would assess the contribution of procurement risks to project failures and abandonment within the construction industry should be embarked on.
2. A study that will develop a framework for managing procurement risks in infrastructure projects could be embarked upon.
3. The effect of procurement risk in oil and gas construction projects could be studied so that comparison can be made.

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Appendix A

QUESTIONNAIRE

Department of Quantity Surveying,
School Environmental Technology,
Federal University of Technology,
P.M.B. 65,
Minna, Niger State.
13th January, 2020

Dear Participant,

MANAGEMENT OF PROCUREMENT RISKS IN FIRS BUILDING CONSTRUCTION PROJECTS IN NIGERIA

I request for your assistance in filling the attached questionnaire, I am a Master student in Quantity Surveying**,** Department of Quantity Surveying, School of Environmental Technology, Federal University of Technology Minna, Niger State conducting research on ***"Management of procurement risks in FIRS building construction projects in Nigeria".***

Please note that all information provided will be used for academic purposes, therefore, do not include your name or telephone number in your response. If you have questions or observations at any time about the survey or procedures, please contact me on:

08035916269, or my e-mail: elhussayn@gmail.com

Thank you very much for your support.

ZUBAIRU, Hussaini
DEPARTMENT OF QUANTITY SURVEYING,
FEDERAL UNIVERSITY OF TECHNOLOGY MINNA,
P.M B. 65,
MINNA, (GIDAN KWANU CAMPUS).

Dr. I. Saidu
Project Supervisor

SECTION A: GENERAL INFORMATION OF RESPONDENTS

1. Name of Organisation (Optional) _____
2. Gender: Male ☐ Female ☐
3. Profession: Project manager ☐ Builder ☐ Quantity Surveyor ☐ Architect ☐ Engineer ☐ Other, please specify _____
4. Years of experience in the construction industry: Less than 5 ☐ 5-10 ☐ 11-20 ☐ 21-30 ☐ Above 30 ☐
5. Academic Qualification: ND ☐ HND ☐ BSc/ BTech ☐ MSc/MTech. ☐ Others, please specify_____
6. Function in the Organisation: Consultant ☐ Contractor ☐ FIRS Project/Facility Manager ☐ FIRS Procurement Staff ☐ Others, please specify_____

SECTION B: RESEARCH OBJECTIVES

Objective No 1: To examine the procurement related risks in FIRS building projects.

The following are the procurement related risk factors in FIRS building projects, please kindly respond by placing a tick in the appropriate box to demonstrate your level of agreement with the risk factors using scale of 1 to 5 (Most frequent) 4 (Frequent) 3 (Fairly frequent) 2 (Undecided) to 1 (Not Frequent).

SN	Procurement related risks in FIRS building projects	5 Most Frequent	4 Frequent	3 Fairly Frequent	2 Undecided	1 Not Frequent
A	**Fraud as a risk factor in procurement**					
1	Kick back (contractor given out money to procurement officials)					
2	Conspiracy amongst bidders to reduce competition					
3	In-house information leakages to bidders					
4	Shadow vendors (submission of inflated invoices for work not delivered)					
5	Eligibility envelopes received beyond the deadline set for submission					
6	Boycotting observers to be invited					
7	Splitting of contracts					
8	Suspicion about conflict of interest					
9	Lowest responsive bidder not selected					
10	Changes in the bids made after their formal receipt					
11	Unusual involvement of procurement official in the contract documents					
12	Evidence of early receipt of information by some contractors					
13	Unusual handling of the bidding process					
14	Inconsistent evaluation criteria for					

	different bidding process
15	Exceptions to the tender deadlines
16	Inadequate justification for single source procurement
17	Discrimination or favouritism by any clause in the contract
B	**Problems of transparency as a risk in procurement**
1	Dishonesty and lack of openness of staff to bidders in procurement process
2	Non-adherence to procurement laydown rules and regulations
3	Inadequate publicity (advertisement of procurement procedures for tenders)
4	Non-availability of technical specifications to all tenderers
5	Non-adherence to selection criteria of tenderers
6	Non-adherence to award criteria
7	Improper advertisement of proposal requests
C	**Professionalism as a risk in procurement**
1	Inadequate skill-based and theoretical knowledge of the procurement staff
2	Inadequate training of procurement staff
3	Non-adherence to procurement code of ethics
4	Lack of professional membership of procurement staff
5	Unclear definition of specifications
D	**Competitiveness as a risk in procurement**
1	lack of competition among tenderers
2	Limited issuance of eligibility forms (only to favoured/selected contractors)
3	Non-posting of the Invitation to Apply for Eligibility and to Bid (IAEB) in a newspaper of general nationwide circulation
4	Inadequate posting of the IAEB
5	Very limited number of offers received.
E	**Problems of cost effectiveness as risk in procurement**
1	Lack of cost effective tenders among the bidders

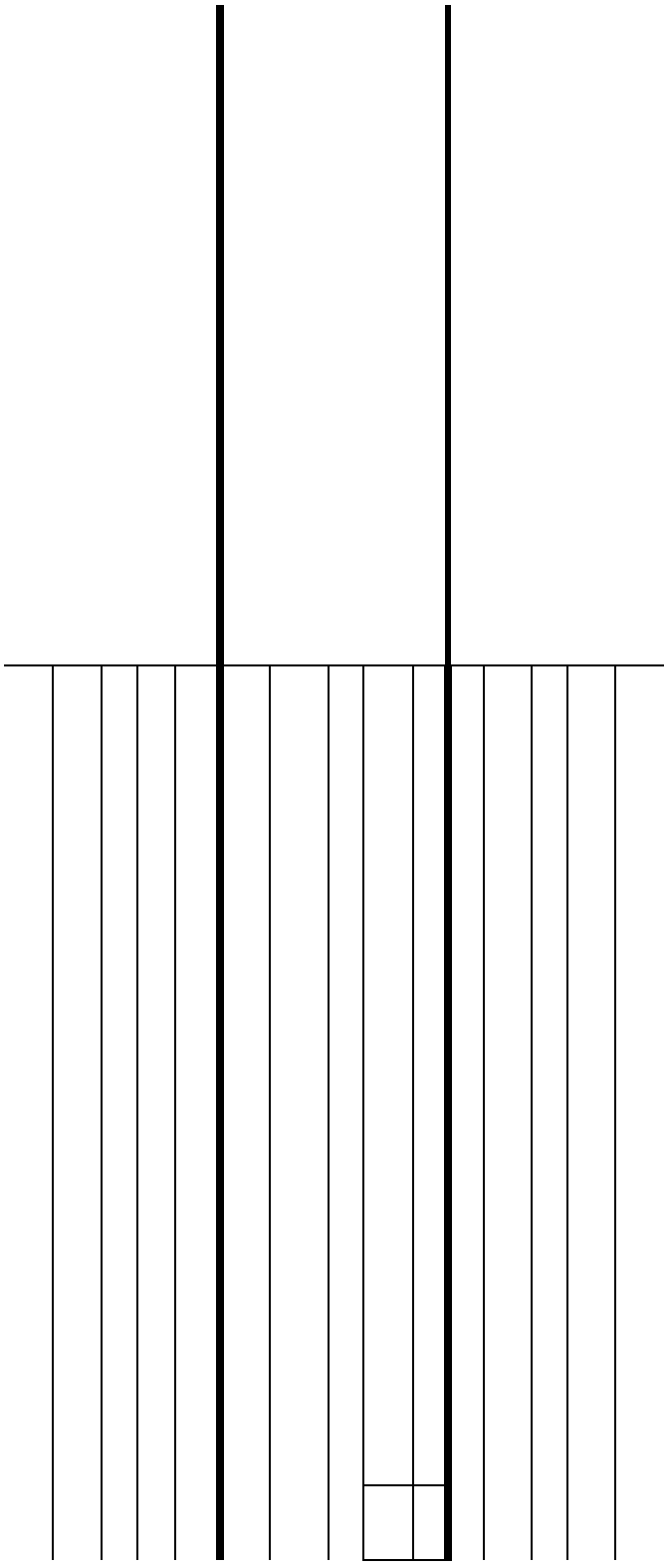
2	In adequate detailed engineering activities			
3	Over-estimated quantities of work items			
4	Over-estimated construction duration			
5	Excessive prices of materials			
6	Excessive labour or equipment rental rates			
7	Price escalation granted not in accordance with the prescribed formulae			

Objective No 2: To assess the effects of the identified risks on the parties involved in procurement (FIRS, contractors and consultants).

The following are the procurement related risk factors in FIRS building projects that have impacts on the parties involved, please kindly respond by placing a tick in the appropriate box to demonstrate your level of agreement using scale of 1 to 5 (Very high impact) 4 (High impact) 3 (Moderate impact) 2 (Little impact) to 1 (Very little impact).

SN	Procurement related risks in FIRS building projects	FIRS (client)	Contractors	Consultants
A	**Fraud as a risk factor in procurement**			
1	Kick back (contractor given out money to procurement officials)			
2	Conspiracy amongst bidders to reduce competition			
3	In-house information leakages to bidders			
4	Shadow vendors (submission of inflated invoices for work not delivered)			
5	Eligibility envelopes received beyond the deadline set for submission			
6	Boycotting observers to be invited			
7	Splitting of contracts			
8	Suspicion about conflict of interest			
9	Lowest responsive bidder not selected			
10	Changes in the bids made after their formal receipt			
11	Unusual involvement of procurement official in the contract documents			
12	Evidence of early receipt of information by some contractors			
13	Unusual handling of the bidding process			
14	Inconsistent evaluation criteria for different bidding process			
15	Exceptions to the tender deadlines			
16	Inadequate justification for single source procurement			
17	Discrimination or favouritism by any clause in the contract			

B	**Problems of transparency as a risk in procurement**	
1	Dishonesty and lack of openness of staff to bidders in procurement process	
2	Non-adherence to procurement laydown rules and regulations	
3	Inadequate publicity (advertisement of procurement procedures for tenders)	
4	Non-availability of technical specifications to all tenderers	
5	Non-adherence to selection criteria of tenderers	
6	Non-adherence to award criteria	
7	Improper advertisement of proposal requests	
C	**Professionalism as a risk in procurement**	
1	Inadequate skill-based and theoretical knowledge of the procurement staff	
2	Inadequate training of procurement staff	
3	Non-adherence to procurement code of ethics	
4	Lack of professional membership of procurement staff	
5	Unclear definition of specifications	
D	**Competitiveness as a risk in procurement**	
1	lack of competition among tenderers	
2	Limited issuance of eligibility forms (only to favoured/selected contractors)	
3	Non-posting of the Invitation to Apply for Eligibility and to Bid (IAEB) in a newspaper of general nationwide circulation	
4	Inadequate posting of the IAEB	
5	Very limited number of offers received.	
E	**Problems of cost effectiveness as risk in procurement**	
1	Lack of cost effective tenders among the bidders	
2	In adequate detailed engineering activities	
3	Over-estimated quantities of work items	
4	Over-estimated construction duration	
5	Excessive prices of materials	
6	Excessive labour or equipment rental rates	
7	Price escalation granted not in accordance with the prescribed formulae	



Objective No 3: To assess the effects of the risks factors on FIRS building project delivery (Cost, Time and Quality)

The following are the procurement related risk factors that have effects on project delivery cost, time and quality, please kindly respond by placing a tick in the appropriate box to demonstrate your level of agreement with the risk factors using scale of 1 to 5 (Very high effect) 4 (High effect) 3 (Moderate effect) 2 (Little effect) to 1 (Very little effect).

SN	Effects of the risks factors on FIRS building project delivery (Cost, Time and Quality)	**COST**					**TIME**					**QUALITY**				
		5	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
A	**Fraud as a risk factor in procurement**															
1	Kick back (contractor given out money to procurement officials)															
2	Conspiracy amongst bidders to reduce competition															
3	In-house information leakages to bidders															
4	Shadow vendors (submission of inflated invoices for work not delivered)															
5	Eligibility envelopes received beyond the deadline set for submission															
6	Boycotting observers to be invited															
7	Splitting of contracts															
8	Suspicion about conflict of interest															
9	Lowest responsive bidder not selected															
10	Changes in the bids made after their formal receipt															
11	Unusual involvement of procurement official in the contract documents															
12	Evidence of early receipt of information by some contractors															
13	Unusual handling of the bidding process															
14	Inconsistent evaluation criteria for different bidding process															
15	Exceptions to the tender deadlines															
16	Inadequate justification for single source procurement															
17	Discrimination or favouritism by any clause in the contract															
B	**Problems of transparency as a risk in procurement**															
1	Dishonesty and lack of openness of staff to bidders in procurement process															

2	Non-adherence to procurement laydown rules and regulations				
3	Inadequate publicity (advertisement of procurement procedures for tenders)				
4	Non-availability of technical specifications to all tenderers				
5	Non-adherence to selection criteria of tenderers				
6	Non-adherence to award criteria				
7	Improper advertisement of proposal requests				
C	**Professionalism as a risk in procurement**				
1	Inadequate skill-based and theoretical knowledge of the procurement staff				
2	Inadequate training of procurement staff				
3	Non-adherence to procurement code of ethics				
4	Lack of professional membership of procurement staff				
5	Unclear definition of specifications				
D	**Competitiveness as a risk in procurement**				
1	lack of competition among tenderers				
2	Limited issuance of eligibility forms (only to favoured/selected contractors)				
3	Non-posting of the Invitation to Apply for Eligibility and to Bid (IAEB) in a newspaper of general nationwide circulation				
4	Inadequate posting of the IAEB				
5	Very limited number of offers received.				
E	**Problems of cost effectiveness as risk in procurement**				
1	Lack of cost effective tenders among the bidders				
2	In adequate detailed engineering activities				
3	Over-estimated quantities of work items				
4	Over-estimated construction duration				
5	Excessive prices of materials				

6	Excessive labour or equipment rental rates					
7	Price escalation granted not in accordance with the prescribed formulae					

Objective No 4: To assess the procurement risk mitigation strategies for FIRS building projects.

The following are the procurement risk mitigation strategies in FIRS building projects, please kindly respond by placing a tick in the appropriate box to demonstrate your level of agreement with the risk mitigation strategies using scale of 1 to 5, 5= (Strongly agree) 4 =(Agree) 3= (Undecided) 2= (Disagree) 1= (Strongly disagree).

SN	Assess the procurement risk mitigation strategies for FIRS building projects.	5 Strongly agree	4 Agree	3 Undecided	2 Disagree	1 Strongly disagree
A.	**Risk avoidance (Doing something else or take a different route)**					
1	Eliminating the cause of the risk					
2	Reducing the scope of the contract					
3	Adding resources or time to the contract					
4	Avoiding contractor with unproven track record					
5	Using a proven approach instead of a new one.					
B.	**Risk Reduction (Optimize-mitigate)**-Doing something to reduces the impact or probability of a risk					
1	Communication-communicating risk may serve to reduce it					
2	Contingency plans- Planning for critical situations can reduce the impact of such events should they occur					
3	Error tolerant design-User interfaces that prevent human error from having serious consequences					
4	Due diligence- Investigation process before committing to a contract.					
5	Policies design to reduce risk					
6	Controls built in to process such as approvals designed to reduce procurement risks					
7	Process improvements such as					

automating steps to reduce errors

8 Establishing standards to guide procurement practices and decision making

9 Verifying information with Authoritative information sources

10 Validation of information before it is accepted by system

11 Compliance training for procurement employee design to reduce compliance and reputational risks

12 System testing- is a core risk reduction techniques

13 Review of decisions and implementations by experts can reduce risks

C. Risk Acceptance (Do nothing)

1 Accept the consequences of the risk event (when it occurs)

2 Developing a contingency plan for execution should the risk event occur

3 Deciding to deal with the risks and their consequences when or if they occur but not planning for them in advance

D. Risk Transfer (Sharing)

1 Allocating risks to other entities e.g. outsourcing

2 Buying insurance to cover any financial loss should the risk become reality

3 It comes with additional costs, such as the cost of insurance or additional amount tacked on to the pricing by the contractor in order to deal with the event when it occur.

4 Transferring particular risks to the contractor through negotiation might be better