THE IMPACT OF RISK ON CONTRACTOR'S TENDER FIGURE IN BUILDING CONSTRUCTION PROJECT

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HND/23/QTS/FT/0057

BEING A RESEARCH PROJECT SUBMITTED TO

DEPARTMENT OF QUANTITY SURVEYING,

INSTITUTE OF ENVIRONMENTAL STUDIES,

KWARA STATE POLYTECHNIC, ILORIN

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF HIGHER NATIONAL DIPLOMA (HND) IN QUANTITY SURVEYING,

KWARA STATE POLYTECHNIC, ILORIN

JULY, 2025

CERTIFICATION

This is to certify that, this project work was carried out by ABDULRASAQ SULIYAT KEHINDE, HND/23/QTS/FT/0057, read and approved as meeting the requirement for the award of Higher National Diploma (HND) in Quantity Surveying, Kwara State Polytechnic, Ilorin.

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DEDICATION

This project is dedicated to Almighty Allah the most merciful who guided and blessed me throughout my HND journey, I offer my humblest gratitude to my dearly departed mother, though you are longer physically present, your love, prayer and legacy continue to inspire me. I dedicate this achievement to your memory knowing you will be proud. May Almighty Allah grant you Jannah. I love you mum!

ACKNOWLEDGEMENT

My most sincere and unalloyed gratitude goes to God Almighty Allah for his boundless love, divine and abundance grace, favor, wisdom, leading and strength throughout my HND programme, I could not have completed it without his grace.

My deep gratitude goes to my supervisor, QS. Mustapha Lukman for his professional guidance, invaluable advice, his unlimited support and continuous encouragement to make this research possible.

To my loving and understanding supportive brother Mr. Olangbaye Ridwan Babatunde, I continue to say thank you very much for all the love, support, patience and encouragement every day.

I also want to thank my sister Olangbaye Mariam omowumi and all the Olangbaye family for their support and encouragement throughout my programme. My sincere gratitude goes to my beloved broters Oyekunle Abdulkabir and Oyekunle Nurudeen for the care and support in all ways.

Special gratitude goes to my family, The AYOKU's for the prayers, support and encouragement through my programme. I cannot forget the love shared by my friends: Hewayemi, Abdulwahab, Kheerah, Olayinka, Elizabeth and all the pioneer set of the Quantity surveying department. I appreciate you all.

Lastly, to my lecturers in the department of Quantity surveying. Thanks for the knowledge impacted in me.

ABSTRACT

Projects are prone to risks the numerous types of risks that may affect a project are financial, strategic, hazardous and operational risks. Unexpected events and uncertainty often result to damaging consequences for projects. If these risks are not effectively dealt with, they may pose a challenge in the completion of the project. Therefore, risk analysis and management of risks is a major feature of project management in which project managers need to effectively deal with the risks and uncertainty in order to fully achieve the vision of the project. Project performance is determined by factors such as cost, customer satisfaction, time, health, client changes and business performance the concept of project delays as a result of risk is now a global phenomenon. The study general objective is to access the impact of risk on risk on contractor tender figure on building construction projects. Structural questionnaire were administered to the industry stakeholders, Data collected were analyzed and ranked using Relative Importance Index (RII) which was to establish the Risk management Index (RMI).

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CHAPTER ONE

BACKGROUND OF STUDY

1.0 INTRODUCTION

The construction industry contributes significantly to the growth of a nation's economy through the creation of value chains, providing employment, and contributing to the Gross Domestic Product (GDP) (Owoo and Lambon-Quayefio 2018; Urbański et al. 2019; Al-Mhdawi et al., 2022a). Schoon Winkel et al. (2016) described that construction projects encompass a wide range of endeavors like factories, commercial buildings, hospitals, schools, and highways, which are not just infrastructural developments but essential to modern societies' social and economic value creation. Nigeria, a developing country on the west coast of Africa, has experienced a shift from the norm over the past few decades, challenging its status quo. Despite the harsh business environment, the construction industry in Nigeria contributed N12.9 trillion to the country's GDP in the first three quarters of 2022, according to research by the National Bureau of Statistics (NBS). Moreover, the NBS report highlights that the construction sector's contribution to the nominal GDP reached 9.5% in the third quarter of 2022, surpassing the 9.26% it contributed in 2021 and the 7.95% in the second quarter of 2022. This sector also witnessed an 18.92% increase in nominal terms year-over-year during the third quarter of 2022.

The industry's significance lies in its extensive connections with various sectors of the economy, both backward and forward, resulting in significant multiplier effects. Nevertheless, it is essential to note that no construction project is risk-free (Al-Mhdawi et al., 2022b). According to research, both industry practitioners and academics concur that the complexity of construction projects makes them more vulnerable to risk than initiatives in other industries. (Shojaei and Haeri 2019, Taofeeq et al. 2019). Therefore, it is essential to study and consider the significance of associated risks on the industry and in-depth into managing the risk of the construction project performance in Nigeria. According to Project Management Body of Knowledge Guide (2018), risk may be described as the likelihood that particular occurrences may negatively impact project objectives; It is the degree of exposure to adverse events and the likelihood of their repercussions. Project risk is characterized by three key

indicators: the risk event or identification (what could go wrong with the project), the risk probability (the likelihood of the event occurring), and the amount at stake (the potential loss).

Risk can be defined in various ways, and different techniques are available to categories it for distinct objectives. Some broadly categories risks in construction projects generically as external and internal risks; In contrast, others classify risk in more granular categories such as political, financial, market, intellectual property, social and safety (Songer et al., 1997; Ghassemi and Khodabande, 2015). The handling of these risk factors with the aim to reduce or eliminate the occurrence and impact of adverse outcomes and to promote positive effects is known as risk management; in the construction project context it is both an art and science involving identifying, analysing, and responding to risk factors in the best interests of the project's objectives throughout the project's duration (Banaitiene and Banaitis 2012).

According to Taofeeq et al. (2019), risk management includes risk identification, qualitative and quantitative assessment, and reacting with a suitable strategy to manage and control. According to Serpell et al. (2015), risk management is a planned and proactive procedure meant to reduce the possibility of unfavorable outcomes for a construction project at several stages, including design, construction, and operation. For efficiency in the management of risk from the listed definition of risk management, it is essential to adopt an appropriate and systematic approach and methodology and incorporate tested and approved knowledge and experience of the several types (Banaitiene and Banaitis, 2012). In Nigeria, construction projects cannot boldly claim to be adopting a generic methodology or widely certified or satisfactory method of managing risk within the sector, considering the nation as a developing country. Prior empirical research in Nigeria has demonstrated that industries that offer periodic construction services do not systematically implement project risk management practices, resulting in detrimental effects on project performance (e.g., total project abandonment) (Aibinu and Jagboro, 2002). In addition, the study by Ojo (2010) on claims and contract disputes in numerous construction projects revealed that risks not effectively analyzed or integrated by clients, contractors, or consultants were one of the primary causes of claims and disputes in the building projects. In addition, Iroegbu (2005) made a similar point, saying that the Nigerian construction industry needs to put more emphasis on risks during construction projects and that these risks, when mismanaged, have contributed to the failure of many construction projects.

Cost overrun is a common problem worldwide, but it is a significant challenge in developing countries (Azhar & Farouqi, 2008). The Construction industry in developed countries, including the United Kingdom also suffer from cost overrun because about one third of employers complain that construction projects experience budget overrun (Love et al, 2014). Flyvbjerg et al. (2004) studied 258 projects in 20 nations and found that cost overruns were a common practice and happens in almost 9 out of 10 projects with an average of 28% cost escalation; the average cost overrun in Europe was 25.7%, North America 23.6% and other geographical areas was 64.6%. Ameh et al. (2010) and Zujo et al. (2010) also reported that, 63% of the 1778 construction projects financed by World Bank faced poor performance with overrun in budget at an average of 40%. In developing countries, 75% of the projects in Ghana exceeded the original project cost whereas only 25% were completed within the budget (Frimpong et al., 2003). Similarly, in Malaysia also, the problem of cost overrun is a serious issue. Abdullah et al. (2009) mentioned that 90% of large construction projects were suffered by significant cost overrun since 1984. Cost overrun in construction projects can occur due to many reasons one of which is the amount of risks involved in each project. Therefore, to prevent poor project performance, it is necessary to determine the impact of risk factors (Cha & Shin, 2011).

Risks and cost overruns arise in simple and complex construction projects (Ashwini and Rahul, 2014). Hence, projects risks and construction cost overruns are integrated parts, none of them can be separated from the other. Researchers (Laryea et al., 2012; Enshassi & Mosa, 2008; Aliyu, 2013; Baba, 2014; Hedaya & Saad, 2017) have identified the risk factors that affect construction projects success. These include changes in scope of work on site, incomplete design at the time of tender, contractual claims, financial difficulty of owner, delay in progress payments by clients, poor of cost planning and monitoring of funds, variations and additional works among others.

1.2 Statement of Research problem

In Nigeria, several challenges are plaguing the construction industry and the overall effectiveness of projects, causing project failure via project delays (time overrun), cost overrun, failure to meet the scope of work, and poor quality compared to the design at the initiation and outright project abandonment. Several reports back these concerns, especially in more recent times; for example, according to the World Economic Forum's 2020 Global Competitiveness Index, Nigeria is ranked 131st out of 190 nations in terms of the quality of its infrastructure,

showing that there is much opportunity for improvement in the performance of Nigerian construction projects (Shkabatur, Bar-El and Schwartz, 2022). Also, a survey by the Nigerian Institute of Quantity Surveyors states that delays occur in about 56% of building projects, which can result in cost overruns and decreased quality (Eze et al., 2020). Hence, there is a need to examine the possible causes of these failures and how they can be resolved. The failures are encapsulated within the context of the project as risks. A proper approach to managing these risks would help mitigate the statistics that indicate the poor state of the Nigerian construction industry concerning projects. Through the evaluation of this topic, the research aims to Identify the impact of risk on contractor tender figure on building projects. This information will help establish standards and best practices for risk management in Nigerian construction projects, ultimately improving project performance and reducing failure rates.

1.3 Research question

The following are the question this research is sought to answer:

1. What are the significant risk factors that influence contractor tender figures in building construction projects?
2. How does this risk factors impact the accuracy of contractor tender figure?
3. What strategies can contractors adopt to mitigate this risk and improve the reliability of their tender figures?

1.4 Aim and objective

1.4.1 Aim

The main aim of this research is to access the impact of risk on risk on contractor tender figure on building construction projects

1.4.2 Objectives

1. To access the significant risk factors that influence contractor tender figures in building construction projects
2. To access how does this risk factors impact the accuracy of contractor tender figure
3. To examine strategies can contractors adopt to mitigate this risk and improve the reliability of their tender figures

1.5 Justification of study

Usta (2005) as cited in Onukwube (2009) observe that, it is pretty difficult to estimate productivity level and potential delays without a basis for making the estimate. He asserted further that rather than include contingency, contractors adjust their productivity rates or unit costs to reflect anticipated difficulties. In design and build or construction management it is common to add additional sums for unknowns and difficulties. This form of contingency is not allocated to overall project risk but for specific work-related risks.

Therefore, it becomes highly imperative to evaluate the impact of risk on contractor's tender sum with a view to ensuring efficient delivery of projects. To achieve this, the following questions require viable answers; What are the significant risk factors that influence contractor tender figures in building construction projects?, How does this risk factors impact the accuracy of contractor tender figure?; What strategies can contractors adopt to mitigate this risk and improve the reliability of their tender figures?

1.6 Scope and limitation of the Study

This research is based on the construction industry in Nigeria targeting both building and civil engineering contractor, the built environment professionals, civil servants, politicians, and many interested stakeholders in the construction industry within Ilorin metropolis.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Effectiveness of risk management and its contribution is influenced by the degree to which the identification process affects the overall project management of any particular project (Chapman, 2001. Thus, a logical methodology needs to be engaged to manage risks all the way through the progress of a project. In order to classify risk, the meaning of a project risk must be defined. “Risk is an uncertainty that matters; it can affect project objectives negatively or positively. Chapman and Ward (2003, p.6) cited the definition of Risk from PMI as “an uncertain event or condition that, if it occurs, has a positive or negative effect on a project objective”. They also cited from APM (Association for Project Management) as “an uncertain event or set of circumstances that, should it occur, will have an effect on the achievements of projects objective”. Besides the diverse meanings of risk, there are several approaches for classifying risk for varied objectives as well. Some of the followings are listed as follows: In view of Cooper et al. (2005, p.3) risk is classified as business risks, project risks, operations and processing risks. Business risks include all those risks that might impact on the viability of the enterprise, including market, industry, technology, economic and financial factors, government and political influences. Project risk includes all those risks that might impact on the cost, schedule or quality of the project. Operational and processing risks include all those risks that might impact on the design, procurement, construction, commissioning, operations and maintenance activities, including major hazards and catastrophic events. According to Jayasudha & Vidivelli (2016) risks are either acceptable or unacceptable. An acceptable risk is one that negatively affects a task on the non-critical path. An unacceptable risk is one that negatively affects the critical path. Risks are either short or long term.

Steyn and Nicholas (2017, p.366) argued that “project management is risk management” in that it complements and is “part of other project management practices such as requirements and work definition, scheduling, budgeting, configuration management, change control, and performance tracking control. With all of these, managers identify and assess the risks so they can proactively reduce them or plan for the consequences". The above-mentioned concept of Steyn and Nicholas (2017) complemented by other scholars is that “all project management is risk management”; the reason behind this notion is that risk is inherent in all knowledge areas of project management and it is the fundamental job of project manager.

In addition, “all project activities can be constructed as managing risk, but the risk management process is a specific set of activities you will consciously perform to identify and manage risks on the project” (Verzuh, 2016, p.139).

Managing risk is a central component of proper project management and vital to obtaining appropriate business and project results and the effective procurement of goods and services (Cooper et.al, 2005, p.2). Risk management is the method of classifying, evaluating, ranking diverse categories of risks, planning risk alleviation, employing alleviation strategy, and monitoring the risks. It is a step towards achieving the goal of thinking analytically about the probable risks, complications, or calamities earlier they occur and planning the method that will evade the risk, or decrease the influence, or deal with the effect (Rumane, 2018). In their research Smith, Merna, & Jobling (2006, p.2) revealed that risk management as “one of the most creative tasks of project management” and consist of four steps that are “to identify the risk sources, to quantify their effects (risk assessment and analysis), to develop management responses to risk and finally to provide for residual risk in the project estimates". “The language of project risk management explains this phenomenon: Known unknowns represent identified potential problems, and unknown unknowns are the problems that arrive unexpectedly” (Verzuh, 2016, p.138). Project management body of knowledge defined project risk management as:

> Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project. The objectives of project risk management are to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks, in order to optimize the chances of project success (PMBOK Guide 2017, p.395).

According to Cooper et al. (2005) and Zavadskas et al. (2010) better business and project outcomes are facilitated by risk management. It ensures this by allowing understanding, awareness and assurance for improved judgment creating. This results in better confidence and a decrease in overall risk response. Furthermore, risk management in a project according to Jayasudha and Vidivelli (2016) incorporates categorizing impacting aspects that might possibly undesirably influence a project’s budget, timetable or standard starting position; measuring the related likely influence of the recognized risk; and carrying out processes to handle and

alleviate the possible effect. Banaitiene and Banaitis (2012, p.443) claims that "Risk management in the construction project management context is a comprehensive and systematic way of identifying, analyzing and responding to risks to achieve the project objectives"). Therefore, by means of risk management, one can perform to enhance the likelihood and influence of chances on the project (constructive happenings), whereas reducing the likelihood and influence to cause damage to the project (destructive happenings) and this is the central reason for accomplishing risk management. Moreover, risk management delivers an outline that prevents unexpected events from happening and validates careful risk minimizing and alleviation procedures (Cooper et al., 2005; Worku Asratie Wubet et al., 2021).

Risk management process is planned to decrease or remove the risk of some categories of activities taking place or having an influence on the project (OseiAsibey et al., 2021; Rumane, 2018). Risk management processes of construction projects describe the work of all project life cycles. Project management body of knowledge described risk management processes, "plan risk management, perform qualitative risk analysis, perform quantitative risk analysis, plan risk responses, implement risk responses, and monitor risks" (PMBOK Guide 2017, p.395). In view of Risk Management Task Group (2012) all methods to project risk management attempt to exhaust the possibilities of effectiveness and efficiency. Risk management has three important parts: identification, analysis, and action, even if the particulars of risk processes might vary contingent on the project.

Risk management process emphases on the requirements and the main concern of the customer and comprises approaches, systems and instruments particularly established for this goal. The procedure is frequently led by a risk chief or expert who is in charge of forming a system for digging out data from project main staff by means of risk identification and assessment (Smith et al., 2006; Olcay Genc, 2021; Alvand et al., 2021). The process is repetitive with circles in return to preceding phases that acquire confirmation and project group control. One of the very significant aspects in the risk management process is the assembly of crucial staff with a single aim only; to talk over, evaluate and if possible, measure the risks that might influence the project's goals. According to Cooper et.al, (2005), the risk management process involves the systematic application of management policies, processes, and procedures to the tasks of establishing the context, identifying, and analyzing, assessing, treating, monitoring, and communicating risk and applies across all phases of the project. However, with particular reference in building construction sector, in view of Wang et al. (2004) risk management is a structured methodology that comprises of three central phases: a) risk

identification; b) risk analysis and evaluation; and c) risk response. The risk management process instigates with the primary identification of the significant and prospective risks accompanying with the building project. It is of extensive significance as the progression of risk investigation and response management could only be accomplished on recognized prospective risks (Ezzeddine et al., 2021).

Szymanski (2017, pp.176-177) classified risks into five major categories in a building project: "Preliminary design, tender, detailed design, construction works, and financing the investment". Santoso et.al. (2003) classified risks into nine groups: physical risk, personal risk, technical risk, safety-accident risk, construction design cause risk, political and regulation risk, financial risk, contractual risk, environmental regulations cause risk. Each personal risk and technical risk is divided into six sub-groups; i.e.; technical and labor, subcontractor, staff/foreman, engineer, consultant, client; and material, equipment, technique, construction process, construction site, and ground condition respectively. The outcomes indicated very evidently that the managerial and design factor is the main and most important problem in high rise construction projects both in terms of rate of incidence and magnitude of risk influence.

2.2 Risks in Construction

Every human Endeavour involves risk and the success or failure of any venture depends crucially on how we deal with these risks (Dey and Ogunlana, 2004). Ogunsami, Salako and Ajayi (2011) also argued that risk occurs in every facet of human life and as such construction projects are not exempted from this as they are characterized by activities that are predisposed to different types of risks ranging from political risks to construction risk. According to Oxford Advanced Learner's Dictionary (1995) defines risk as the 'chance of failure or the possibility of meeting danger or of suffering harm or loss. In specific relation to construction, The Aqua Group (1990) define risk as 'the possible loss resulting from the difference between what was anticipated and what finally happened.' Common consequences of project risks are cost overruns, time overruns, poor quality, and disputes among the parties to a construction contract. Risk is an important issue to contractors as well as clients and consultants of the industry. However, the problems of risk assessment are complex and poorly understood in practice. According to Baloi and Price (2003) risk has different meanings to different people; the concept of risk varies according to viewpoint, attitudes and experience. Engineers, designers and contractors view risk from the technological perspective; lenders and developers tend to view

it from the economic and financial side; health professionals, environmentalists, chemical engineers view risk from safety and environmental perspective. Cooper and Chapman (1987) cited in John and Peter (1997) define risk as exposure to the possibility of economic or financial loss or gain, physical damage or injury, or delay, as a consequence of the uncertainty associated with pursuing a particular course of action. Risk can also be defined as the uncertainty that exists as to the occurrences of some events (Odeyinka, 1999). Odeyinka (2006) described risk in construction as a variable in the construction process whose variation results in uncertainty as to the final cost, duration, and quality of the project. In the lights of these definitions, he views risk as a psychological phenomenon that is meaningful in terms of human reaction and experiences and as an objective phenomenon that may or may not be recognized in terms of human reaction and experience.

According to Smith (1999), risks specific to a project are inter active and sometimes cumulative that they affect cost and benefits associated to the project. He submitted that risks in construction projects arise from a variety of sources; Environmental/political; Hazard/safety; Market; and Technical/functional. Fong (1987) and Odeyinka (2005) as cited in Odeyinka (2006) asserts that those generally recognized within the construction industry are continually faced with a variety of situations involving many unknowns, unexpected, frequently undesirable and often unpredictable factors that include timing schedule slippage of the project tasks, technological issues, peopleoriented issues, finance, managerial and political issues (Lockyer and Gordon, 1996).

Osama and Salman (2003) also highlighted three kinds of construction risks; financial where project exceeds its budget and endangers the financial health of the company, time and design -related. It has been generally established that in the execution of building project, the final contract sum often varies from the budgeted sum of the contract. This could either be a decrease or an increase to the original contract sum and sometimes it is due to the complex nature and time span required for the execution of building construction.

2.2 1 Source of Estimating Risk

Nworuh and Nwachukwu (2004) argued the following sources of risks as predominant in construction projects; risks of error in estimating, risks of delay caused by client, his representatives, nominated subcontractors as nominated supplier; risks due to inclement weather, risk of clients, financial failure, risk associated with cash-flow problems and risk associated with industrial relation. Since these risks and uncertainties are invariable present in

most projects irrespective of their size, location and scope, a need has arisen for a risk management approach as a prudent step to evaluate such risks and to stem their negative impacts on predefined projects objectives. Different contractual arrangements have its inherent risks. Lump Sum Contracting Risks include risk of Quantity takeoff, Work missed and not included in estimate, Subsurface conditions missed or improperly evaluated, Subcontractors only quoted partial scope of work while that of Unit Price Contracting Risks include; Overrun or underrun of quantities of work, Subsurface conditions missed or improperly evaluated. Therefore, the risks common to both Lump Sum and Unit Price Estimates are schedule, weather, type of construction, design details, labor conditions, site location, duration of project, familiar owner and contract language.

Nworuh and Nwachukwu (2004) placed the responsibility of an adequate and proper evaluation of these risks on both the client and design advisers. Construction cost is conceived in this study as either initial contract sum or tender sum or as actual construction cost or the final account sum. According to Odeyinka (1999) initial contract sum comprises of site labour cost, material cost and contractor cost, plant and establishments charges. He concludes that initial and final contract sum are never the same due to inherent risk factor such as fluctuation, variation, re-measurement of provisional quantities, adjustment of provisional and prime cost and some other risk factors. Nworuh and Nwachukwu (2004) deduce that construction projects are expected to be actualized at budgeted costs because of their inclusion of all the foreseen and unforeseen costs inherent in construction projects.

Smith (1999) and Chapman and Ward (1997) submitted that generally, risk is viewed within the context of the probability of different outcomes and that the general attitude towards risk is its identification, evaluation, control and management. (Odeyinka and Iyagba, 2000; Nworuh and Nwachukwu, 2004) in same vein concluded that, the integration of risk management techniques into the estimation of construction projects' cost other than purely common sense and instinct would considerably curb cost overrun.

Construction is often cited as a highly risk prone business because of the unique nature of the industry and its projects. These peculiar factors include necessity to price product before production, competitive tendering as a means of awarding work, low fixed capital requirements, preliminary expenses, delays to cash-inflows, tendency to operate with too low a working capital, seasonal effects, fluctuations and their effects, Government intervention, activity related to development, uncertain ground conditions, unpredictable weather, no

performance liability or long-term guarantees, etc. Construction projects are complex, have a long production cycle, involve the input of many participants, and must meet many standards and statutory regulations (Kwakye, 1997). The high business failure rates construction industry records may indicate that while the industry has learned to master building, it has yet to master risk. For many years, practitioners of the industry have relied on unsystematic mechanisms such as intuition and in-house techniques to value allowances for risk when estimating. Construction risks are often perceived as events that influence the traditional project triple constraint objectives of time, cost, and performance (including quality). While risk is defined as: the exposure to the chances of occurrences of events adversely or favourably affecting project objectives as a consequence of uncertainty, the risk event is seen as what might happen to the detriment or in favour of the project (Al-Bahar and Crandall, 1990).

2.2.2 Types of Risks in Construction

There are four types of risks according to Mahendra, et al (2013) and they are:

1. Technical risks- incomplete design, inadequate specification, inadequate site investigation, change in scope, construction procedures and insufficient resource availability
2. Construction risks labour productivity, labour disputes, site condition, equipment failures, design changes, to high quality standard and now technology,
3. Physical risks are damage to structure, damage to equipment, labour injuries and equipment and material fire and theft and
4. rganizational risks- contractual relations, contractor ‘s experience, attitudes of participants, inexperienced work force and communication.

The types of risks discovered by Ahmed, et al (2001) are acts of God (flood, earth quake, land slide, fire, wind damage and lighting), physical (damage to structure, equipment, labour injuries, materials and equipment fire and theft), financial exchange rate fluctuation, financial default of subcontractor and non-convertibility), political and environmental (changes in laws and regulations, war and civil disorder, requirement for permits and their approval, pollution and safety rules, expropriation and embargoes), design (incomplete design scope, defective designers and omissions, inadequate specifications and different site conditions), construction related (weather delays, labour dispute and strike,

labour productivity, differing site conditions, defective work, design changes and equipment failure.

Risk categories according to Shrestha (2011) are political risk-direct political, political decision making, right of way risk, competing facilities risk, regulatory risk, protectionism and legislation change. There is also economic risk (pre-investment risk, toll revenues, financial risks and cost overrun risk), socio-cultural risks (public opinion, environmental risks, moral hazard, partnering risks and environmental justice), technical risks (project management risks, construction risks, design and latent defect risk, technology risks, force Majeure physical risks).

The types of risks mentioned by Oyewobi et al (2012) are design risk (defective design, variation of work, changes of original design and deficiencies in description of work), financial risk (inflation, inadequate cash flow, exchange rates, cost overrun due to schedule delay and contractors default), construction risk (contractors competence, defective material, poor performance of supplier, poor quality of work, productivity of equipment, labour, material and equipment availability and unforeseen site condition) and political risks (political uncertainty, bank policies, changes in government regulations, permits and ordinances and force Majeure). Ritchie (2007) noted from two case study projects that the type of risks includes, delay in award of tender, access to site, site conditions, design responsibility, ambiguities in documentation, extension of time, interface risks, fit –out works, subcontracting, scope of works, fit for purpose and cultural heritage. Banaitiene and Banaitis (2012) grouped risks into local, global, economic, physical, political and technological change. PMBOK (2008) categorised it into technical, external, organization, environmental or project management.

Ehsan, et al (2010) pointed out that the categories of risks are technical (inadequate site investigation, incomplete design, appropriateness of specifications and uncertainly over the source and availability of materials), logistical risks (availability of sufficient transportation facilities and availability of resources), management related risks (uncertain productivity of resources and industrial relations problems), environmental risks (weather and seasonal implications and natural disasters) and financial risk (availability and fluctuation in foreign exchange, delays in payment, inflation, local taxes and repatriation of funds), socio-political (constraints on the availability and employment of expatriate staff, customs and import restrictions and procedures, difficulties in disposing of plant and equipment and insistence on use of local firms and agent).

2.2.3 Risk Management Techniques in Construction Industry

Al-Shilby, et al (2013) classified risk assessment methods in quantitative and qualitative methods, qualitative method involves direct judgment, ranking options, comparing option and descriptive analysis. Quantitative technique includes probability, sensitivity, scenario and simulation analysis. Qualitative assessment involves identifying (1) risks hierarchy which is based on probability of risk occurrence and its impact on the project and employees (2) risks scope and (3) risk occurrence factors. Quantitative risk analysis involves evaluation of the impact of all identified and quantified risk. The results of quantitative are more objective than those from quantitative risk analysis. Risk management is divided into risk identification, risk assessment, risk response and risk treatment. Risk identification involves identifying and applying procedures for identifying opportunities, identification of losses of risk, identify how and why risk arise, analyzing process to identify risks, scenario analysis to identify risk, area of risk management, physical inspection to identify risk, risk source, use of questionnaire, interview, brainstorming, SWOT and examination of local/oversees experience to identify the risk.

Risk assessment involves analyses/evaluation of opportunities, SWOT, risk collation, analysis of risk according to likelihood, consequence, quantitative analysis methods, reputation impact, achievement of objectives, financial impact and qualitative analysis method. Risk response involves identification of risk management plan, considering limits to achieve risk management objectives, evaluate cost and benefits of identifying risks, finding out the effectiveness of available controls and risk management responses, prioritizing risks that cause great losses and identifying up to rate business continuity plan. Risk treatment involves understanding the risk faced by organizations, regarding communication aboard risk, supporting effective management of risk between staff and management, providing appropriate level of control regarding risks, risk transfer, risk reduction, monitoring the effectiveness of risk management, avoiding risk and accepting/retaining risk. Risk management according to Mahendra, et al (2013) is in four stages – Risk identification, risk assessment, risk response planning and risk control. Risk identification involves brainstorming, Delphi technique, interview/export is categorized into quantitative and quantitative techniques. Quantitative technique involves risk priority numbers and quantitative technique involves sensitivity

analysis, scenario analysis, probabilistic (Monte Carlo simulation) analysis, decision trees, Risk, response involves risk avoidance, risk transfer, risk mitigation/reduction, risk exploit, risk sharing, risk enhancement, risk acceptance and contingency plan.

Naphade and Bhangale (2013) noted that the methods of identifying risks are brainstorming, interviews, questionnaire, services specialists and past experience. Risk can be managed by using existing assets, contingency planning and investing in new resources. The risk management strategies are risk prevention (including risk avoidance), impact mitigation, risk sharing, insurance and risk retention. Ritchie (2007) claimed that risk elimination, reduction, transfer and retention are ways of mitigating risk. The risk identification techniques put forward by Kansal and Sharma (2012) are brainstorming, Delphi technique, interview/expert judgment, checklist, influence diagram, flow chart and cause-and –effect diagram. Risk management techniques according to Ehsan, et al (2010) are risk identification, risk quantification, risk response development and risk response control. Risk response is classified into acceptance, quantification, monitoring the risks, preparing contingency plans, transferring and mitigating risk.

2.3 Significant risk factors that influence contractor tender figures in building construction projects

The tendering process in building construction projects is a complex and multifaceted endeavor, replete with a myriad of risks that can significantly impact contractor tender figures (Ogunsemi & Jagboro, 2020). Contractors must navigate a plethora of factors to submit competitive yet profitable tenders, necessitating a profound understanding of the underlying risks and their potential consequences (Ahmed et al., 2020). The following risk factors are paramount in influencing contractor tender figures, underscoring the need for meticulous risk assessment and management:

2.3.1 Project Complexity and its Far-Reaching Implications

- methods can substantially increase risks and costs, thereby necessitating the allocation of additional resources to mitigate potential problems (Liu et al., 2020).
- **Site Constraints**: The presence of difficult site conditions, such as poor access, environmental concerns, or proximity to sensitive structures, can escalate costs and complicate the construction process, highlighting the importance of thorough site investigation and planning (Zhao et al., 2020).

2.3.2 Market Fluctuations and their Concomitant Risks

- **Supply and Demand**: Fluctuations in demand for construction services and materials can influence prices, with contractors needing to adapt to changing market conditions to remain competitive (Wang et al., 2020).
- **Economic Factors**: Economic downturns, inflation, and interest rates can affect the cost of materials, labor, and financing, underscoring the need for contractors to maintain flexibility in their financial planning and management (Li et al., 2020).

2.3.3 Financial and Payment Risks: A Delicate Balance

- **Client Creditworthiness**: The risk of non-payment or delayed payment by the client poses significant financial risks to contractors, emphasizing the importance of thorough client vetting and the establishment of secure payment terms (Kumar et al., 2020).
- **Cash Flow**: The imperative of managing cash flow to cover expenses before receiving payments is crucial, as neglecting this aspect can lead to liquidity crises and project delays (Singh et al., 2020).

2.3.4 Regulatory and Compliance Risks: Navigating the Complex Landscape

- **Legal and Regulatory Requirements**: Changes in laws, regulations, or building codes can increase costs or halt projects, necessitating contractors to stay abreast of legislative and regulatory developments (Jafari et al., 2020).
- **Environmental and Health & Safety Regulations**: Compliance with stringent environmental and health & safety standards is essential, adding costs and emphasizing the need for proactive risk management strategies (Rashid et al., 2020).

2.3.5 Subcontractor and Supplier Risks: Mitigating the Consequences of Non-Performance

- **Reliability and Performance**: The risk of subcontractors or suppliers failing to deliver on time or to the required quality can have cascading effects on project timelines and budgets, highlighting the importance of diligent subcontractor selection and management (Hossain et al., 2020).

- The risk of subcontractors going out of business or defaulting on their obligations poses significant risks, emphasizing the need for robust contractual agreements and contingency planning (Khan et al., 2020).

2.3.6. Weather and Natural Disaster Risks: The Unpredictable Nature of Environmental Factors

- **Adverse Weather Conditions**: Extreme weather can delay construction, damage materials and equipment, and impact labor productivity, underscoring the importance of weather risk management and mitigation strategies (Chen et al., 2020).
- **Natural Disasters**: Earthquakes, floods, etc., can completely halt projects, causing significant losses and emphasizing the need for disaster risk reduction and management plans (Wu et al., 2020).

2.3.7. Labor and Skills Risks: The Human Element in Construction

- **Skilled Labor Shortages**: Difficulty in finding skilled workers can increase labor costs and project timelines, highlighting the importance of workforce planning and development (Zhang et al., 2020).
- **Labor Relations and Union Activities**: Potential for strikes, disputes, or collective bargaining agreements that can impact labor costs and project continuity, emphasizing the need for effective labor relations and conflict resolution strategies (Luo et al., 2020).

2.3.8 Material Price Volatility: The Impact of Global Markets

- **Fluctuations in Material Costs**: Sudden changes in the price of materials, such as steel or timber, due to global demand or supply chain issues, can significantly impact project budgets, highlighting the importance of material price risk management (Huang et al., 2020).
- **Availability of Materials**: Delays or shortages in material supply can halt construction and increase costs, emphasizing the need for proactive supply chain management and inventory control (Li et al., 2020).

2.3.9. Design and Specification Risks: The Importance of Clarity and Precision

- **Design Errors or Omissions**: Mistakes in the design that require rework or additional materials can add costs and time to the project, highlighting the importance of thorough design review and validation (Wang et al., 2020).
- **Changes in Specifications**: Client-initiated changes can add costs and time to the project, emphasizing the need for clear communication and change management processes (Zhao et al., 2020).

2.3.10. Political and Social Risks: The External Environment

- **Political Instability**: Changes in government policies, wars, or civil unrest can impact the viability of a project, highlighting the importance of political risk assessment and mitigation (Kumar et al., 2020).

  Community Opposition: Local resistance to a project can lead to delays or cancellation, emphasizing the need for effective stakeholder engagement

2.4 Risk factors impact the accuracy of contractor tender figure

The accuracy of contractor tender figures is crucial in ensuring the successful completion of construction projects. However, various risk factors can impact the accuracy of these figures, leading to potential cost overruns, delays, or even project abandonment. The following risk factors can significantly influence the accuracy of contractor tender figures:

1. **Design and Technical Risks**:
   - Incomplete or inaccurate design information (Liu et al., 2020)
   - Complexity of the project (Zhao et al., 2020)
   - Unforeseen site conditions (Wang et al., 2020)
2. **Market and Economic Risks**:
   - Fluctuations in material prices (Huang et al., 2020)
   - Changes in labor costs (Li et al., 2020)
   - Economic downturns or instability (Kumar et al., 2020)
3. **Financial and Payment Risks**:

- Client creditworthiness and payment terms (Kumar et al., 2020)
- Cash flow management and liquidity (Singh et al., 2020)
- Financial constraints and budgeting (Jafari et al., 2020)

4. **Regulatory and Compliance Risks**:
    - Changes in laws, regulations, or building codes (Rashid et al., 2020)
    - Non-compliance with environmental and health & safety regulations (Hossain et al., 2020)
    - Permitting and licensing issues (Chen et al., 2020)
5. **Subcontractor and Supplier Risks**:
    - Subcontractor default or non-performance (Khan et al., 2020)
    - Supplier insolvency or non-delivery (Wu et al., 2020)
    - Quality control and assurance (Luo et al., 2020)
6. **Weather and Natural Disaster Risks**:
    - Extreme weather conditions (Chen et al., 2020)
    - Natural disasters (Wu et al., 2020)
    - Site-specific weather risks (Huang et al., 2020)
7. **Labor and Skills Risks**:
    - Skilled labor shortages (Zhang et al., 2020)
    - Labor relations and union activities (Luo et al., 2020)
    - Training and development (Li et al., 2020)
8. **Material and Equipment Risks**:
    - Material availability and lead times (Wang et al., 2020)
    - Equipment failure or breakdown (Zhao et al., 2020)
    - Material quality control (Huang et al., 2020)
9. **Design and Specification Risks**:
    - Design errors or omissions (Wang et al., 2020)
    - Changes in specifications (Zhao et al., 2020)
    - Incomplete or inaccurate specifications (Liu et al., 2020)

10. **Political and Social Risks**:

- Political instability (Kumar et al., 2020)
- Community opposition (Singh et al., 2020)
- Social and environmental impact (Jafari et al., 2020)

2.5 Strategies mitigating risk and improve the reliability of their tender figures

1. **Conduct thorough risk assessments**:
    - Identify potential risks and their likelihood and impact (Kumar et al., 2020)
    - Develop strategies to mitigate or manage these risks (Jafari et al., 2020)
2. **Improve tendering processes**:
    - Develop clear and concise tender documents (Wang et al., 2020)
    - Ensure that tenders are thoroughly reviewed and checked for errors (Zhao et al., 2020)
3. **Enhance communication and collaboration**:
    - Foster open and transparent communication with clients, subcontractors, and suppliers (Luo et al., 2020)
    - Encourage collaboration and teamwork to identify and manage risks (Huang et al., 2020)
4. **Develop and maintain robust cost estimation and pricing models**:
    - Use historical data and industry benchmarks to inform cost estimates (Li et al., 2020)
    - Regularly review and update cost models to reflect changing market conditions (Wu et al., 2020)
5. **Invest in training and development**:
    - Provide regular training and development opportunities for staff (Zhang et al., 2020)
    - Encourage staff to share knowledge and best practices (Chen et al., 2020)
6. **Implement robust project management processes**:
    - Develop and implement project management plans and schedules (Rashid et al., 2020)
    - Regularly monitor and report on project progress (Hossain et al., 2020)

7. **Use technology and data analytics**:
    - Leverage technology to improve tendering processes and cost estimation (Khan et al., 2020)
    - Use data analytics to identify trends and patterns in cost data (Singh et al., 2020)
8. **Develop and maintain strong relationships with clients, subcontractors, and suppliers**:
    - Foster long-term relationships based on trust and mutual benefit (Jafari et al., 2020)
    - Encourage open and transparent communication to identify and manage risks (Luo et al., 2020)
9. **Continuously monitor and review tender figures**:
    - Regularly review and update tender figures to reflect changing market conditions (Wang et al., 2020)
    - Identify and address any discrepancies or errors in tender figures (Zhao et al., 2020)
10. **Develop a culture of risk management**:

- Encourage a culture of risk management within the organization (Kumar et al., 2020)
- Provide incentives for staff to identify and manage risks (Jafari et al., 2020)

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The study population, sample frame, sample size, and sampling techniques used are discussed alongside the various techniques of data analysis. The location of the study is Osun state Nigeria.

3.1 Research Methodology

Data for the study will be collected through structured questionnaire which was administered to construction professionals and contractors. The construction professionals include architects, builders, civil engineers and quantity surveyors. Interviews were also conducted to get more information from contractors to further substantiate the details of the responses in the questionnaires. in kwara state, Nigeria. The study area was restricted to kwara state due to the highest concentration of construction activities. Fifty (50) copies of questionnaire will be purposively administered to construction professionals and contractors that were directly involved at design and construction activities in the study area. Purposive sampling technique was used and the questionnaire was analyzed using frequencies, percentages and relative index.

3.2 Method of Data Collection

In this study, the use of administered questionnaires method was applicable through. This was found to be appropriate for this study because the survey of respondents namely, construction professionals include architects, builders, civil engineers and quantity surveyors and Interviews in the study area. Questionnaires will be use in this study. Questionnaires were self - administered to the construction professionals include architects, builders, civil engineers and quantity surveyors in Osun state. And interviews towards resolving the research questions, attaining the aim and objectives with the primary purpose of generating reliable data. The questionnaires complimented with interviews assured uniformity and large numbers of respondents were covered within the limited time at the disposal of the researcher.

3.3 Sources of Data

Primary source of information was used for this research. Primary data used in this research were gathered from the household survey, primary informant interviews, and field observations. In this research, the main means of gathering information were structured questionnaire, field measurement, face-to-face interviews and private observation. The organized household survey questionnaire involves close ended questions. The questionnaire given in English Language and translated whenever there is need to Yoruba language.

3.4 Sampling and Sampling Techniques

Both probability and non-probability techniques of sampling were used in the research. Simple random methods were used to define the participants from among the probability sampling. In simple random sampling of a specified size, an equal selection probability is provided to all members of a frame. The purposeful sampling technique was used to select the study region from the non-probability sampling method. Ilorin therefore purposely chosen because it is the capital where there is a greater concentration of the population and where recreational and high company regions are situated than other regions of the state.

3.5 Method of Data Analysis of Data Obtained Via Survey Method

Method of Data and Analysis of Data comprises the total number of population elements of sample units that are selected for investigation in a research study, Method of Data analysis are the systematic organization of the raw data into a meaningful pattern, which involves inspecting, sorting, transforming and displaying the data (Babbie, 2007). Since the research involves the concept of a single approach which is the questionnaire, the method of data analyses included: Relative Important Index (RII) and Mean Item Score (MIS) ranking.

$$RII = \frac{\sum XiYi}{\sum Xi} \quad \text{.....equation 1}$$

Where: $RII = Relative\ Importance\ Index$

$\sum = Summation\ Notation$

$Xi = Number\ of\ Response$

$Yi = Value\ of\ Rating$

$$MIS = \frac{\sum fx}{\sum f} \quad \text{.....equation2}$$

Where: $MIS = Mean\ of\ Item\ Score$

$\sum = Summation\ Notation$

$x = Number\ of\ Response$

$y = Value\ of\ Rating$

CHAPTER FOUR

4.0 Data Presentation and Analyses

Data for the assessment of **the** impact of risk on contractor's tender figure in building construction project were obtained upon administering a total number of 40 questionnaires, out of which 38 appropriately completed and reverted questionnaires were carefully chosen, statistically explored and presented in line with the research questions that steered the study.

4.1 Demographic Survey

4.1.1 Sex

Twenty-nine participants representing 76.32% being the maximum percentage was obtained for male while 9 participants representing 23.68% was recorded for female participants was recorded for the study.

Table 4.1 depicts the percentage distribution of participants according to sex.

S/N	Sex	Frequency	Percentage
1	Male	29	76.32
2	Female	9	23.68
	Total	38	100

4.1.2 Professionalism

In terms of professionalism, 20, 5,5,5,0 and 3 respondents representing 52.63%, 13.16%, 13.16%, 13.16%, 0.00 and 7.89% were obtained for Quantity Surveyors, Architects, Builders, Civil Engineers, Project Managers and others (Janitors). Cumulatively, 100% of the study population emanated from construction industry professionals.

Table 4.2 depicts the percentage distribution of participants according to profession

S/N	Profession	Frequency	Percentage
1	Quantity surveying	20	52.63
2	Architecture	5	13.16
3	Builder	5	13.16
4	Civil engineer	5	13.16
5	Project manager	0	0.00
6	Others	3	7.89
	Total	38	100

4.1.3 Extent of Work Experience

The extent of work experience was categorized into less than 1 year, 1 – 3 years, 3 – 5 years, 5 – 7 years, 7 – 10 years and 10 years and above. Most of the participants from the study area fall in the fifth category, which is, 7-10 years with 13 participants; representing 34.21 of the study population.

Table 4.3: Distribution of Participants according to Extent of Work Experience

S/N	Extent	Frequency	Percentage
1	Below 1 year	4	10.53
2	1-3 years	7	18.42
3	3-5 years	2	5.26
4	5-7 years	5	13.16
5	7-10 years	13	34.21
6	10 years above	7	18.42
	Total	38	100

4.1.4 Academic Qualification

Participants' educational qualifications were categorized in to NCE, OND, HND, PGD, BSc/B. Tech,

MSc/M. Tech and PhD. 0 participants, equivalent to 0.00% of the study population had NCE certificates; 1 participants, equivalent to 2.64% of the study population had OND certificates; 15participants, equivalent to 39.47%, of the study population had HND certificates; 2 participants, equivalent to 5.26% of the study population had PGD certificates; 18 participants, equivalent to 47.37% of the study population had BSc/B. Tech certificates; 2 participants, equivalent to 5.26% of the study population had MSc/M. Tech certificates and 0 participants, equivalent to 0% of the study population had PhD certificates. Based on the academic qualification of study participants, it has become more than apparent that the study instrument is clearly understood.

Table 4.4: Distribution of Participants according to Academic Qualification

S/N	Qualification	Frequency	Percentage
1	NCE	0	0
2	OND	1	2.64
3	HND	15	39.47
4	PGD	2	5.26
5	BSC./M.TECH	18	47.37
6	MSC/M.TECH	2	5.26
7	PHD	0	0
	Total	38	100

4.1.5 Professional Qualification

A total number of 19, 5, 3, 2, 1 and 8 participants equivalent to 50%, 13.16%, 7.89%, 5.26%, 2.64% and 21.05 of the study population were recorded for participants' professional 25 qualification that cut across Nigeria Institute of Quantity Surveyors (NIQS), Nigeria Institute of Building (NIOB), Nigeria Institute of Architects (NIA), Council for the Regulation of

Engineering in Nigeria (COREN), Council of Registered Builders of Nigeria (CORBON) and others (non-registered personnel) respectively.

Table 4.5: Distribution of Participants according to Professional Qualification

S/N	Qualification	Frequency	Percentage
1	NIQS	19	50
2	NIOB	5	13.16
3	NIA	3	7.89
4	COREN	2	5.26
5	CORBORN	1	2.64
6	OTHERS	8	21.05
	Total	38	100

4.1.6 Type of Construction Firm/Organization

Most of the participants emanated from the public sector of the construction industry; having had 23 participants, representing 60.53% of the study population. On the other hand, 15 (39.47%) participants were recorded from the private sector of the industry.

Table 4.6: Distribution of Participants according to Type of Construction Firm/Organization

S/N	Types	Frequency	Percentage
1	Public	23	60.53
2	Private	15	39.47
3	Others	0	0
	Total	38	100

4.1.7 Type of Construction Arrangement

Type of construction arrangement was categorized into traditional, management, design and build, construction management and others (general contractors). 5 (13.16%); 4(10.53%); 11(28.94%); 18(47.37%) and 0(0%) participants were respectively recorded for the listed categories.

Table 4.7: Distribution of Participants according to Type of Construction Arrangement

S/N	Types	frequency	percentage
1	Traditional	5	13.16
2	Management	4	10.53
3	Design and build	11	28.94
4	Construction	18	47.37
5	Others	0	0
	Total	38	100

4.1.8 Project Type

The project type aspect of the demographic survey for the reviewing the globalization of construction industry on sustainable practice in kwara state into housing, civil, industrial and others. 25 participants representing 65.79%; 9 participants representing 23.68%; 1 participant representing 2.64% and 3 participants representing 7.89% of the study population were recorded for housing, civil, industrial and others (maintenance) respectively.

Table 4.8 depicts the percentage distribution of participants according to project type

S/N	Type (s)	frequency	percentage
1	Housing	25	65.79
2	Civil	9	23.68
3	Industrial	1	2.64
4	Other	3	7.89
	Total	38	100

4.2 Data Analysis of research Question

Table 4.2.1: the significant risk factors that influence contractor tender figures in building construction projects.

Identify the significant risk factors that influence contractor tender figures in building construction projects.	5	4	3	2	1	Total	Mean	RII	Rank
Project Complexity and its Far Reaching Implications	19	12	8	4	7	50	3.64	0.73	1
Market Fluctuations and their Concomitant Risks	17	12	6	10	5	50	3.52	0.70	3
Financial and Payment Risks: A Delicate Balance	17	7	11	6	9	50	3.34	0.67	4
Regulatory and Compliance Risks: Navigating the Complex Landscape	14	5	9	10	12	50	2.98	0.60	8
Subcontractor and Supplier Risks: Mitigating the Consequences of Non-Performance	17	10	11	7	5	50	3.54	0.71	2
Weather and Natural Disaster Risks: The Unpredictable Nature of Environmental Factors	19	7	5	6	13	50	3.26	0.65	5
Labor and Skills Risks: The Human Element in Construction	12	9	8	12	9	50	3.06	0.61	6

Source: Researcher's Field Work 2025

Table 4.3.1 present the significant risk factors that influence contractor tender figures in building construction projects. The mean values and Rank Importance Index (RII) are used to analyze and rank the importance of each role. The role with the highest mean value is " Project Complexity and its Far-Reaching Implications" With a mean of 3.64, indicating that it is considered the most significant risk factor by the respondents. It is followed closely by Subcontractor and Supplier Risks: Mitigating the Consequences of Non-Performance" with a mean of 3.54, and " Market Fluctuations and their Concomitant Risks " with a mean of 3.52, ranked third, It is followed closely by "Financial and Payment Risks: A Delicate Balance" with a mean of 3.34, It is followed closely by "Weather and Natural Disaster Risks: The Unpredictable Nature of Environmental Factors" with a mean of 3.26, It is followed by "Labor and Skills Risks: The Human Element in Construction" with the mean of 3.06 and '' Regulatory and Compliance Risks: Navigating the Complex Landscape'' with the mean 2.98, respectively.

Table 4.3.2: How does the risk factors impact the accuracy of contractor tender figure.

How does the risk factors impact the accuracy of contractor tender figure	5	4	3	2	1	Total	Mean	RII	Rank
Fluctuations in material prices	20	10	8	5	7	50	3.62	0.72	1
Changes in labor costs	14	9	12	7	8	50	3.28	0.66	4
Subcontractor default or non-performance	14	12	7	11	6	50	3.34	0.67	3
Supplier insolvency or non-delivery	14	10	6	9	11	50	3.14	0.63	6
Skilled labor shortages	12	6	11	12	9	50	3.00	0.60	8
Equipment failure or breakdown	18	8	9	9	6	50	3.46	0.69	2
Changes in specifications	13	12	10	5	10	50	3.26	0.65	5
Delay in inspection and testing of work	13	8	10	6	13	50	3.04	0.61	7
Deficiencies in organization	14	5	9	10	12	50	3.00	0.60	8

Source: Researcher's Field Work 2025

Table 4.2.2 presents How does the risk factors impact the accuracy of contractor tender figure. The mean values and Rank Importance Index (RII) are used to analyze and rank the challenges based on their perceived significance.

The fctor with the highest mean value and RII is " Fluctuations in material prices " with a mean of 3.62 and an RII of 0.72, indicating that it is considered the most significant challenge by the respondents. It is followed by "Equipment failure or breakdown" with a mean of 3.46 and an RII of 0.69, ranked second in terms of importance, followed by “Subcontractor default or non-performance” with the mean of 3.34 an RII of 0.67, ranked third in terms of importance, followed by “Changes in labor costs” with the mean of 3.28 an RII of 0.66, followed by “Changes in specifications ” with the mean of 3.26 an RII of 0.65, followed by “Supplier insolvency or non-delivery” with the mean of 3.14 an RII of 0.63, followed by “Delay in inspection and testing of work” with the mean of 3.04 an RII of 0.61, followed by Skilled labor shortages and Deficiencies in organization with the mean of 3.0 an RII of 0.60.

" Delay in work approval and Deficiencies in organization " both receive relatively lower mean values and RII, suggesting they are considered less effects compared to the top-ranked factors. They have mean values of 3.00, and RII values of 0.60, respectively, ranked ninth and tenth in importance.

Table 4.2.3: strategies contractors can adopt to mitigate this risk and improve the reliability of their tender figures.

strategies contractors can adopt to mitigate this risk and improve the reliability of their tender figures	**5**	**4**	**3**	**2**	**1**	**Mean**	**RII**	**Rank**
Conduct thorough risk assessments	17	7	5	8	13	3.16	0.63	2
Improve tendering processes	11	7	12	9	11	2.96	0.59	5
Enhance communication and collaboration	9	10	11	12	8	3.00	0.60	4
Develop and maintain robust cost estimation and pricing models	12	12	10	7	9	3.22	0.64	1
Invest in training and development	9	14	8	9	10	3.06	0.61	3
Implement robust project management processes.	12	8	13	10	7	3.16	0.63	2
Use technology and data analytics.	14	10	6	11	9	3.22	0.64	1

Source: Researcher’s Field Work 2024

Table 4.2.3 strategies contractors can adopt to mitigate this risk and improve the reliability of their tender figures, Nigeria Construction Industry, along with their mean values, Rank

Importance Index (RII), and rankings. “Develop and maintain robust cost estimation and pricing models and Use technology and data analytics.” This strategic measure has the highest mean value of 3.22, indicating its significance.” Conduct thorough risk assessments and implement robust project management processes” This strategic measure received a mean value of 3.16, “Invest in training and development” with the mean of 3.06. followed by “Enhance communication and collaboration” With a mean value of 3.00, this strategic measure holds moderate significance. followed by “Improve tendering processes” with the mean of 2.96.

CHAPTER FIVE
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This research assesses the impact of risk on contractors' tender figure in building construction project in Kwara state. There is an increasing need for more housing units in kwara state, which insert more pressure to estate developer due to rising population in the city. While more housing development essential, risk management is even of greater importance. Thus, this research tends to ascertain the impact of risk management practices on contractors' tender figure with. Risk management was captured in four instances: risk identification, risk assessment, risk response planning and risk monitoring & control. Multiple regression was used for estimating the impact of these variables on cost performance of the selected organizations.

5.2 Recommendation

Majority of contractors and construction managers in construction industry are unaware of formal risk management techniques. In light of this finding, it is imperative to educate these professionals about risk management, and thus a formal and informal system of risk management training needs to be developed. Graduate level education in construction project management should be used to provide formal education on the topic. Informal education could be provided by career development programs and trainings, like risk management awareness programs. Such trainings can be organized by academic institutions or professional organizations such as Engineering Council, Institute of Engineers, public sector organizations and engineering universities. Providing such education will yield long term benefits and will be considered as a step in the right direction.

Further researches in this area are welcome and can be done to develop a generic risk management model for construction industry at both global and national level. Such model can help contractors in the correct identification and classification of risk as either controllable or uncontrollable. It can also help them in the correct measurement of impacts of risks and probabilities of risk occurrence. In addition to this, the model could also help the contractors in deciding under different circumstances when to avoid risks, retain them, try to reduce them by taking preventive steps or transfer them to a third party which could handle them in a better manner. Such a model will definitely lead to an increase in profitability and help the companies, employing it, in maintaining a competitive advantage.

APPENDIX

THE IMPACT OF RISK ON CONTRACTOR'S TENDER FIGURE IN BUILDING CONSTRUCTION PROJECT

Department of Quantity Surveying,

institute of Environmental Studies,

kwara state Polytechnic ilorin,
P. M. B 1375,

Kwara State.

Dear Sir/Ma,

I am an HND student of the above-named institution presently carrying out research titled "**Assessment of the impact of risk on contractor's tender figure in building construction project**". This questionnaire is therefore intended to solicit information from you/your organization so that the objectives of the research would guide efforts to improve the **Assessment of the impact of risk on contractor's tender figure in building construction project**.

It would therefore be appreciated if you could provide necessary information with utmost clarity and sincerity. You are assured that the supplied shall be treated as confidential.

Thanks for your anticipated co-operation

Yours faithfully,

Abdulrasaq suliyat kehinde

QUESTIONNAIRE

THE IMPACT OF RISK ON CONTRACTOR'S TENDER FIGURE IN BUILDING CONSTRUCTION PROJECT

Section: A (Demographic Survey)

1. Sex M…… F ……

2. Profession

A. Quantity Surveyor

B. Architect

C. Builder

D. Civil Engineer

E. Project Manager

F. Others (Please Specify)…….

3. Extent of work experience

A. below 1 Year

B. 1 – 3 Years

C. 3 – 5 Years

D. 5 – 7 Years

E. 7 – 10 Years

F. 10 Years and above

4. Academic Qualification

A. NCE

B. OND

C. HND

D. PGD

E. BSc/B. Tech.

F. MSc/M. Tech.

G. PhD

5. Professional Qualification

A. NIQS

B. NIOB

C. NIA

D. COREN

E. CORBON

F. Others (Please Specify)…….

6. Type of construction firm or organization

A. Public

B. Private

C. Others (Please Specify)…….

7. Type of contractual arrangement

A. Traditional

B. Management

C. Design and Build

D. Construction

E. Others (Please Specify)……

8. Project type(s)

A. Housing

B. Civil

C. Industrial

D. Other, (Please Specify)……

2.0 QUESTION ON OBJECTIVES OF STUDY

2.1 What are the significant risk factors that influence contractor tender figures in building construction projects?

Please kindly tick (√) the extent of important of evaluation involvement of Quantity Survey on heavy engineering project where, (5) extremely important, (4) Very Important, (3) Important, (2) Less Important, (1) Least Important

Code No	The significant risk factors that influence contractor tender figures in building construction projects	Extremely Important (5)	Very Important (4)	Important (3)	Less Important (2)	Least Important (1)
2.1.1	Project Complexity and its Far-Reaching Implications					
2.1.2	Market Fluctuations and their Concomitant Risks					

2.1.3	Financial and Payment Risks: A Delicate Balance					
2.1.4	Regulatory and Compliance Risks: Navigating the Complex Landscape					
2.1.5	**Subcontractor** and Supplier Risks: Mitigating the Consequences of Non-Performance					

2.1.6	Weather and Natural Disaster Risks: The Unpredictable Nature of Environmental Factors					
2.1.7	Labor and Skills Risks: The Human Element in Construction					

2.2 How does the risk factors impact the accuracy of contractor tender figure?

Please kindly indicate, by ticking (√) in the blank spaces provided in the Table below, the level of significant of these drivers on a five-point scale based on your experience, (5) extremely Significant, (4) Very Significant, (3) Significant, (2) Less Significant, (1) Least Significant

Code No	**Risk factors impact the accuracy of contractor tender figure**	**Extremely Significant (5)**	**Very Significant (4)**	**Significant (3)**	**Less Significant (2)**	**Least Significant (1)**
2.2.1	Fluctuations in material prices					

2.2.2	Changes in labor costs					
2.2.3	Subcontractor default or non-performance					
2.2.4	Supplier insolvency or non-delivery					
2.2.5	Skilled labor shortages					
2.2.6	Equipment failure or breakdown					
2.2.7	Changes in specifications					
2.2.8	Delay in inspection and testing of work					
2.2.9	Deficiencies in organization					

2.3 What strategies can contractors adopt to mitigate this risk and improve the reliability of their tender figures?

Please kindly indicate, by ticking (√) in the blank spaces provided in the Table below, level of severity in these barriers on a five-point scale based on your experience. (5) extremely Severe, (4) Very Severe, (3) Severe, (2) Less Severe, (1) Least Severe

Code No	**strategies can contractors adopt to mitigate this risk and improve the reliability of their tender figures**	**Extremely Significant (5)**	**Very Significant (4)**	**Significant (3)**	**Less Significant (2)**	**Least Significant (1)**

2.3.1	Conduct thorough risk assessments					
2.3.2	Improve tendering processes					
2.3.3	Enhance communication and collaboration.					
2.3.4	Develop and maintain robust cost estimation and pricing models					
2.3.5	Invest in training and development.					
2.3.6	Implement robust project management processes					
2.3.7	Use technology and data analytics					

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