STRATEGIC RISK IDENTIFICATION AND QUANTIFICATION TECHNIQUES AND PROJECT ABANDONMENT: EVIDENCE FROM CONSTRUCTION FIRMS IN LAGOS STATE, NIGERIA

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Abstract
Project abandonment remains a persistent challenge in the construction sector, particularly in Lagos State, Nigeria, where financial volatility, regulatory uncertainty, and managerial inefficiencies heighten project risks. This study examined the effect of strategic risk identification and quantification techniques on project abandonment among selected construction firms in Lagos State. A cross-sectional survey research design was adopted, and data were collected from 177 respondents across 37 registered building construction companies. Data were analyzed using descriptive statistics and simple linear regression analysis. The findings revealed that strategic risk identification techniques have a statistically significant effect on project abandonment ($R^2 = 0.194$, $\beta = 0.442$, $t = 6.499$, $p < 0.001$), while risk quantification techniques also significantly influence project abandonment ($R^2 = 0.198$, $\beta = 0.250$, $t = 6.571$, $p < 0.001$). The results indicate that both techniques explain a moderate proportion of variation in project abandonment. However, contrary to a priori expectations, the positive coefficients suggest that higher reported adoption of risk identification and quantification techniques is associated with higher levels of project abandonment. This may reflect endogeneity effects, post-failure risk documentation, or same-source bias inherent in cross-sectional survey designs. The study concludes that while structured risk management practices are statistically significant predictors of project abandonment, their effectiveness may depend on the timing, depth, and strategic integration of these practices. It recommends strengthening proactive risk assessment frameworks, improving financial modelling capabilities, and enhancing managerial competence to ensure sustainable project delivery in Lagos State

Keywords: Construction firms, project abandonment, strategic risk identification, strategic risk quantification techniques

1.0 Introduction

Project abandonment remains a critical challenge in the construction sector, particularly in rapidly urbanizing regions such as Lagos State, Nigeria. The construction industry plays a vital role in economic development through infrastructure provision, employment generation, and contribution to gross domestic product (GDP). However, despite its importance, a significant number of construction projects in Lagos experience delays, suspension, or outright abandonment due to financial constraints, regulatory instability, and weak managerial capacity. These challenges have resulted in substantial economic losses, reduced investor confidence, and inefficiencies in public and private sector project delivery. Empirical studies have consistently shown that ineffective risk management practices are a major contributor to project discontinuity in developing economies (Ajayi et al., 2022; Algremazy et al., 2023; Boateng et al., 2020; Oko-Osi et al., 2023). In Lagos State, the complexity of construction projects is further intensified by macroeconomic volatility,

foreign exchange fluctuations, policy inconsistency, and land administration challenges. These contextual factors increase the exposure of construction projects to strategic risks that, if not properly managed, can escalate into project abandonment. Despite growing attention to risk management in construction research, much of the existing literature has focused on project success metrics such as cost, time, and quality, with limited emphasis on project abandonment as a distinct outcome.

Strategic risk identification techniques are essential for detecting potential threats at the early stages of project planning and execution. Techniques such as brainstorming, expert judgment, documentation review, and root cause analysis have been widely adopted to enhance project performance outcomes (George, 2020; Hernadewita & Saleh, 2020; Sharma & Gupta, 2019). Evidence from Lagos-based studies (Olateju et al., 2024) indicates that while these techniques significantly influence project success, their explanatory power remains moderate, suggesting that many firms adopt risk identification practices at an operational rather than strategic level. Consequently, critical risks such as funding discontinuity, regulatory changes, and contractor insolvency may not be adequately identified during feasibility and design stages, thereby increasing the likelihood of project abandonment. Beyond identification, risk quantification techniques provide a structured approach to estimating the magnitude and financial implications of identified risks. Methods such as probability-impact assessment, sensitivity analysis, scenario modelling, and Monte Carlo simulation enable project managers to evaluate risk exposure and determine appropriate mitigation strategies. Prior studies have demonstrated that inadequate risk quantification contributes to cost overruns, funding gaps, and eventual project discontinuity (Masengesho et al., 2021; Pirwani et al., 2020; Rasheed et al., 2022). In Lagos State, where construction projects are highly sensitive to inflation and foreign exchange volatility, weak financial modelling and risk estimation frameworks often result in under-budgeting and misallocation of contingency reserves, ultimately leading to abandonment.

Despite the recognition of risk management practices in improving project performance, a critical gap exists in understanding how strategic risk identification and quantification jointly influence project abandonment. Existing studies in Lagos have largely examined risk management in relation to project success, with limited attention to abandonment as an outcome variable. This creates a disconnect between theoretical expectations and practical realities, as projects may meet certain performance criteria yet still be abandoned due to unanticipated strategic risks. Furthermore, there is limited empirical evidence on the combined effect of risk identification and quantification techniques on project abandonment within the Nigerian construction context. Given the increasing scale and complexity of construction activities in Lagos State, there is a need to investigate how these strategic risk management practices influence project continuity decisions. Addressing this gap is essential for improving project sustainability, enhancing financial resilience, and reducing the incidence of abandoned projects.

In view of the foregoing, this study addresses the following research questions:

1. To what extent do strategic risk identification techniques affect project abandonment among construction firms in Lagos State?
2. To what extent do risk quantification techniques influence project abandonment among construction firms in Lagos State?

By examining these relationships, the study contributes to both theory and practice by providing empirical insights into how structured risk management techniques can be leveraged to mitigate project abandonment in a high-risk construction environment such as Lagos State, Nigeria

2.0. Literature Review

The construction sector is widely recognized as one of the most risk-intensive industries globally due to its exposure to financial, technical, environmental, and regulatory uncertainties. In developing economies, particularly within Sub-Saharan Africa, construction projects are frequently affected by strategic risks such as funding volatility, policy inconsistency, macroeconomic instability, contractual disputes, and governance challenges. These risks, when not systematically managed, often lead to project delays, cost overruns, and in extreme cases, project abandonment. Within the context of Lagos State, the dynamic economic environment, coupled with rapid urbanization and infrastructural demand, further amplifies the vulnerability of construction projects to strategic risks.

Strategic risk identification refers to the systematic process of recognizing potential threats that may adversely affect project objectives across all phases of the project lifecycle. It involves the use of structured techniques such as brainstorming, expert judgment, documentation review, historical data analysis, and root cause analysis to detect both internal and external risk factors. Effective risk identification enables project stakeholders to anticipate uncertainties and design appropriate mitigation strategies before risks materialize. However, in many construction environments, particularly in developing countries, risk identification practices are often conducted at an operational level, focusing on immediate site-level issues while neglecting broader strategic risks such as long-term financing constraints, regulatory changes, and stakeholder conflicts. This limitation reduces the effectiveness of risk identification in preventing severe project disruptions, including abandonment.

Risk quantification, on the other hand, extends beyond identification by assigning measurable values to identified risks in terms of their probability of occurrence and potential impact. It provides a basis for informed decision-making by enabling project managers to estimate financial exposure, prioritize risks, and allocate contingency resources effectively. Common quantification techniques include probability-impact analysis, sensitivity analysis, scenario modelling, and simulation-based approaches such as Monte Carlo analysis. These techniques are particularly important in construction projects where uncertainty in cost, time, and resource availability can significantly influence project viability. Without robust quantification frameworks, projects are often initiated based on incomplete or overly optimistic assumptions, increasing the likelihood of financial distress and eventual abandonment.

Project abandonment represents the ultimate failure of project execution and is typically the result of accumulated risk factors that exceed a project's capacity for recovery. It occurs when projects are discontinued due to financial insolvency, poor planning, regulatory challenges, stakeholder conflicts, or technical inefficiencies. In many cases, abandonment is not caused by a single risk factor but by the interaction of multiple risks that were either not identified early or not adequately quantified. This underscores the importance of integrating both risk identification and quantification processes within a comprehensive risk management framework.

Conceptually, the relationship between strategic risk identification, risk quantification, and project abandonment can be understood as an interdependent process. Risk identification serves as the

foundation for recognizing potential threats, while risk quantification provides the analytical tools for assessing their magnitude and implications. When these processes are effectively integrated, they enhance the ability of construction firms to anticipate, evaluate, and mitigate risks, thereby reducing the likelihood of project abandonment. Conversely, weak or fragmented application of these techniques limits the capacity of firms to respond to emerging uncertainties, increasing vulnerability to project discontinuity.

Theoretical Review

This study is anchored on the Contingency Theory, complemented by insights from Prospect Theory and Agency Theory, to provide a multidimensional understanding of how strategic risk identification and quantification techniques influence project abandonment in construction firms. The Contingency Theory, originally proposed by Fred Fiedler in 1964, posits that organizational effectiveness is dependent on the alignment between internal processes and external environmental conditions. The theory argues that there is no universally optimal management approach; rather, the effectiveness of strategies depends on situational factors such as environmental uncertainty, organizational structure, and resource availability. In the context of construction project management, contingency theory suggests that risk management practices must be tailored to the specific characteristics of each project and its operating environment.

Applied to the construction industry in Lagos State, contingency theory provides a strong foundation for understanding how strategic risk identification and quantification techniques should be adapted to the region's unique challenges, including regulatory instability, foreign exchange volatility, inflationary pressures, and land administration complexities. Construction projects in Lagos operate within a highly dynamic and uncertain environment, making it imperative for firms to adopt flexible and context-specific risk management approaches. The theory therefore supports the argument that effective risk identification and quantification are not merely procedural activities but strategic processes that must align with prevailing environmental conditions to prevent project abandonment.

Furthermore, contingency theory explains that failure to align risk management practices with environmental realities may lead to ineffective decision-making, underestimation of project risks, and ultimately project discontinuity. For instance, applying generic risk assessment techniques without accounting for local economic volatility or policy uncertainty may result in inaccurate risk projections, thereby increasing the likelihood of project abandonment. Thus, the theory underscores the importance of situational adaptability in risk management as a critical determinant of project outcomes.

Complementing this perspective is the Prospect Theory, developed by Daniel Kahneman and Amos Tversky in 1979. Prospect theory explains how decision-makers evaluate risk under conditions of uncertainty, emphasizing that individuals tend to exhibit loss aversion and are more sensitive to potential losses than equivalent gains. In construction project management, this implies that project managers and stakeholders may either underestimate or overestimate risks depending on their perception of potential outcomes.

Within the framework of this study, prospect theory is particularly relevant to risk quantification techniques. Even when quantitative tools such as probability analysis and scenario modelling are available, decision-makers may distort or bias risk assessments due to cognitive limitations or subjective judgment. For example, managers may proceed with high-risk projects due to optimism

bias or may abandon projects prematurely due to perceived losses exceeding acceptable thresholds. This behavioral dimension helps explain why the adoption of risk quantification techniques does not always translate into reduced project abandonment, as observed in the study's empirical findings.

In addition, the Agency Theory, advanced by Michael Jensen and William Meckling (1976), provides further insight into the relationship between project stakeholders, particularly between project owners (principals) and contractors or project managers (agents). The theory posits that conflicts of interest may arise when agents pursue their own objectives rather than those of the principals, especially under conditions of information asymmetry.

In construction projects, agency problems may manifest in the misrepresentation of project risks, underestimation of costs, or over-optimistic project forecasts by contractors seeking contract approval. This has direct implications for both risk identification and quantification processes. If risks are not transparently identified or accurately quantified due to strategic misrepresentation or inadequate monitoring, project stakeholders may make flawed investment decisions that increase the likelihood of abandonment. Agency theory therefore highlights the importance of transparency, accountability, and proper risk disclosure mechanisms in mitigating project failure.

Integrating these three theoretical perspectives provides a comprehensive framework for understanding the dynamics of project abandonment in construction firms. While contingency theory emphasizes the need for context-specific risk management strategies, prospect theory introduces the behavioral biases that influence risk perception and decision-making, and agency theory highlights the structural and relational challenges affecting risk communication and implementation. Together, these theories explain why the mere adoption of risk identification and quantification techniques may not be sufficient to prevent project abandonment unless they are strategically aligned, behaviorally informed, and institutionally enforced.

Empirical Review

This section reviews empirical studies relevant to strategic risk identification, risk quantification, and project abandonment in construction projects. Unlike prior approaches that present studies in isolation, this review adopts a thematic structure to enable critical comparison and synthesis of findings across related domains.

Risk Identification and Project Outcomes

Empirical evidence suggests that structured risk identification techniques play a significant role in improving project performance outcomes. Studies have consistently shown that techniques such as brainstorming, expert judgment, documentation review, and root cause analysis enhance early detection of project uncertainties and contribute to improved cost, time, and quality performance. For instance, Olateju et al. (2024) found that risk identification techniques significantly influence project success among construction firms in Lagos State, although the explanatory power of the model was moderate. Similarly, Boateng et al. (2020), in a study conducted in Ghana, reported that systematic risk identification practices reduced cost overruns and schedule delays in construction projects. These findings suggest that early recognition of risks improves project planning and execution.

However, despite these positive relationships, the predictive strength of risk identification remains relatively limited across studies. This indicates that identification alone may not be sufficient to

prevent severe project disruptions such as abandonment. Many studies also highlight that risk identification practices in developing economies tend to focus on operational risks while neglecting broader strategic risks such as financial instability and regulatory uncertainty. This limitation reduces the effectiveness of identification processes in addressing long-term project sustainability.

Risk Quantification and Financial Predictability

Risk quantification techniques have been widely recognized as critical tools for improving financial predictability and decision-making in construction projects. Empirical studies show that quantitative approaches such as probability-impact analysis, sensitivity analysis, and simulation modelling enable project managers to assess the magnitude of risks and allocate resources more effectively. Alsaadi and Norhayatizakuan (2021) found that quantitative risk assessment significantly improves cost control and financial forecasting in construction projects. Similarly, Masengesho et al. (2021) reported that integrating quantitative risk modelling with value engineering enhances financial resilience and reduces project discontinuity. Rasheed et al. (2022), in a systematic review of public-private partnership (PPP) projects, identified weak risk quantification frameworks as a major cause of project renegotiation and termination.

Despite these findings, the adoption of advanced quantification techniques remains limited in many developing countries due to technical skill gaps, cost constraints, and institutional weaknesses (Ajayi et al., 2022; Oko-Osi et al., 2023). As a result, many construction firms rely on qualitative or semi-quantitative approaches that may not adequately capture the financial implications of complex risks. This gap between theoretical importance and practical application contributes significantly to project failure and abandonment.

Determinants of Project Abandonment

Project abandonment has been extensively linked to a combination of financial, managerial, and environmental factors. Empirical studies consistently identify inadequate funding, poor planning, contractor insolvency, political instability, and design errors as major drivers of project discontinuity. Across these studies, a common pattern emerges: project abandonment is rarely the result of a single factor but rather the cumulative effect of multiple unmitigated risks. This reinforces the argument that both risk identification and quantification must be effectively integrated to prevent project discontinuity. Albtoush et al. (2022) emphasized that cost performance and timely completion are critical determinants of project sustainability, noting that deterioration in these metrics often precedes project abandonment. Similarly, Oko-Osi et al. (2023) found that inadequate risk financing mechanisms expose projects to liquidity crises, increasing the likelihood of discontinuation. Rasheed et al. (2022) further highlighted that poor risk allocation and weak financial modelling contribute to project failure, particularly in large-scale infrastructure projects.

Synthesis of Empirical Evidence and Research Gap

A critical synthesis of the reviewed studies reveals three major insights. First, while risk identification techniques are consistently associated with improved project outcomes, their explanatory power remains moderate, suggesting that they are often insufficient when applied in isolation. Second, risk quantification techniques enhance financial predictability and decision-making, but their adoption is constrained in developing economies, limiting their practical effectiveness. Third, project abandonment is a multidimensional phenomenon driven by interconnected financial, managerial, and environmental risks.

Despite the growing body of literature, a significant gap exists in understanding the combined effect of strategic risk identification and quantification techniques on project abandonment, particularly within the Nigerian construction context. Most existing studies focus on project success rather than abandonment and treat risk management components in isolation rather than as an integrated system. Furthermore, limited empirical attention has been given to the paradoxical possibility that increased adoption of risk management practices may not necessarily reduce project abandonment, as suggested by emerging evidence from cross-sectional studies. This highlights the need for further investigation into the contextual, behavioral, and institutional factors that influence the effectiveness of risk management practices.

This study therefore seeks to bridge these gaps by examining the joint effect of strategic risk identification and risk quantification techniques on project abandonment among construction firms in Lagos State, Nigeria.

3.0Methodology

This study adopted a cross-sectional survey research design using a quantitative approach to examine the effect of strategic risk identification and risk quantification techniques on project abandonment among construction firms in Lagos State, Nigeria. The cross-sectional design was considered appropriate because it allows for the collection of data from a population at a single point in time and facilitates the analysis of relationships between variables. This design is widely used in construction management research where the objective is to examine associations among variables within real-world settings (Creswell & Creswell, 2018; Gray, 2017). The target population for this study comprised registered building construction companies operating in Lagos State.

According to industry records, there are approximately 69 registered construction firms within the study area. These firms were selected because they are actively involved in project execution and are therefore exposed to strategic risks that may influence project abandonment. A total of 37 construction firms were selected from the population using judgmental (purposive) sampling, based on the following criteria; Firms with at least five (5) years of operational experience, Firms with ongoing or recently completed construction projects and Firms with established project management structures. This selection criterion ensures that only firms with sufficient experience and exposure to project risk dynamics were included in the study. Within these firms, respondents were selected using convenience sampling based on availability and willingness to participate.

A total of 198 questionnaires were distributed (an average of approximately 5-6 respondents per firm), out of which 177 valid responses were retrieved, representing an 89% response rate. Although the use of non-probability sampling limits the generalizability of the findings, it is appropriate for exploratory and perception-based studies where access to specialized respondents (e.g., project professionals) is required. The unit of analysis for this study is the individual professional within construction firms, while the unit of observation is the firm-level experience of project risk and abandonment. Respondents were drawn from key professional roles directly involved in project planning and execution, including; Project Managers, Site Engineers, Quantity Surveyors, Construction Supervisors, Finance/Procurement Officers. These categories were selected because they possess relevant knowledge of risk management practices and project outcomes within their organizations. The inclusion of multiple professional roles enhances the

reliability and depth of responses. Data were collected using a structured questionnaire designed based on existing literature on risk management and project abandonment.

All items were measured using a 5-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The use of a Likert scale is appropriate for capturing respondents' perceptions and allows for quantitative analysis of relationships among variables. To ensure the validity of the instrument, the study employed content and construct validity procedures. The questionnaire items were developed based on established literature and were reviewed by experts in construction management and project risk analysis to ensure relevance, clarity, and adequacy of coverage. A pilot test was also conducted to refine the instrument and ensure that the questions accurately captured the intended constructs. Feedback from the pilot study was used to improve wording, eliminate ambiguity, and enhance overall instrument quality. The reliability of the instrument was assessed using Cronbach's alpha coefficient to determine internal consistency of the measurement scales. The results are; Strategic Risk Identification Techniques ($\alpha = 0.79$), Risk Quantification Techniques ($\alpha = 0.82$), Project Abandonment ($\alpha = 0.78$). All values exceed the recommended threshold of 0.70, indicating that the instrument demonstrates a high level of internal consistency and is therefore reliable for data analysis. Data collected were analyzed using descriptive and inferential statistical techniques. Descriptive statistics such as frequency distributions, mean scores, and standard deviations were used to summarize respondents' characteristics and perceptions of study variables. To test the study hypotheses, simple linear regression analysis was employed. Regression analysis was chosen because it enables the assessment of the strength, direction, and significance of relationships between independent and dependent variables. All analyses were conducted at a 5% level of significance ($p < 0.05$).

4.0 Results and Discussion

Descriptive Analysis of Participants' Responses

This section delves into the analysis of demographic variables and the hypothesis testing conducted. This phase summarizes the demographic variables and rigorously tests formulated hypotheses, aiming to either validate or refute the proposed conjectures

Table 1:
Demographics Analysis of the Respondent

Variables	Categories	Frequency	Percentage
Gender of the Respondent	Male	156	88.1
	Female	21	11.9
	Total	177	100.0
Age Bracket of the Respondent	18 but less than 30	95	53.7
	30 but less than 40	82	46.3
	Total	177	100.0
Educational Qualification of the Respondent	Bachelor's Degree / HND	74	41.8
	Master's Degree	73	41.2
	Others (ND, SSCE, GCE, etc.)	30	16.9
	Total	177	100.0
Income Bracket of the Respondent	Less than 500,000	34	19.2
	500,000 but less than 1,000,000	102	57.6

	1,000,000 but less than 5,000,000	41	23.2
	Total	177	100.0
Years of Existence of the Respondent in the Business	less than five years	71	40.1
	five years but less than ten years	99	55.9
	ten years but less than fifteen years	7	4.0
	Total	177	100.0

Source: Field Survey, 2026.

The demographic analysis of respondents provides an insightful overview of the characteristics of participants in this study. A total of 177 respondents were surveyed, and their profiles were categorized by gender, age, educational qualification, income bracket, and years in business. The results are summarized in Table 1 and interpreted in detail below. Most respondents were male, accounting for 156 individuals (88.1% of the total sample). In contrast, female respondents accounted for only 21 participants, or 11.9% of the sample. This distribution indicates significant male dominance among the respondents, which may reflect gender representation in the business environment under study or in the market sector from which participants were drawn. Analysis of the age distribution reveals that a slightly higher proportion of respondents, 95 individuals (53.7%), were aged between 18 and less than 30 years. Meanwhile, respondents aged 30 but less than 40 years accounted for 82 individuals, representing 46.3% of the total. This suggests that the sample comprised predominantly young adults and early middle-aged individuals, indicating a youthful demographic actively engaged in the business sector surveyed.

Regarding educational attainment, 74 respondents (41.8%) held a bachelor's degree or Higher National Diploma (HND), while 73 respondents (41.2%) had attained a master's degree. The remaining 30 respondents (16.9%) possessed other qualifications, including National Diploma (ND), Senior Secondary Certificate (SSCE), General Certificate of Education (GCE), and similar credentials. These findings demonstrate a highly educated sample, with over 83% of respondents holding at least a first-degree level qualification, suggesting that participants are well-informed and likely to have a good understanding of business operations and market dynamics. Income analysis indicates that 102 respondents, representing 57.6% of the sample, earned between 500,000 but less than 1,000,000 Naira. A smaller proportion, 41 respondents (23.2%), earned between 1,000,000 but less than 5,000,000 Naira, while 34 respondents (19.2%) earned less than 500,000 Naira. This income distribution suggests that most participants fall within the mid-income bracket, reflecting a moderate level of financial capacity that may influence their business operations, investment decisions, and consumption patterns. An analysis of business experience shows that most respondents had been operating their businesses for 5 years or fewer, totaling 99 individuals (55.9% of the sample). Those with less than five years of business experience constituted 71 respondents (40.1%), while a small fraction, 7 respondents (4.0%), had been in business for ten years but less than fifteen years. This indicates that the surveyed population is largely composed of relatively young businesses with growing operational experience, suggesting potential for expansion and adaptability in the market.

Descriptive Analysis of Research Variables

Table 2:

Risk Identification Techniques

Variables	SCALE LEVEL					MEAN	STD
	SD	D	U	A	SA		
	1	2	3	4	5		
Group approach is frequently adopted strategy among Units heads in properly identifying risk spots in my organisation (brainstorming)	0	0	0	49	128	4.7232	.44870
My organisation uses diagrammatical lay down structure (flow chart) in risk identification (flowchart)	0	0	0	146	31	4.1751	.38117
Interview sections are usually granted among experts in identifying risk (expert judgment)	0	0	0	161	16	4.0904	.28756
Risk survey/questionnaire is often designed in our quest for identifying risk elements within my organisation (risk survey)	0	0	0	157	20	4.1130	.31748
There is an existing diagrammatical structure for identifying causes and possible effects of risks in my organisation (cause and effects diagram)	0	0	0	153	24	4.1356	.34333
My organisation often engaged in documentation review of possible identified risk (documentation review)	0	0	4	118	55	4.2881	.50173
Industry-knowledge based experience is always among techniques which informs our decision to properly identifying possible risk areas in my organisation (industry-knowledge based experience)	0	0	0	155	22	4.1243	.33085
My organisation takes historical information of possible identified risks in the line of our operational activities (historical information)	0	0	4	152	21	4.0960	.36437
Root cause analysis is often carried out in respect of possible risk occurrence in the course of our organisation activities (root cause analysis)	0	0	4	126	47	4.2429	.48002
My organisation has an existing risk checklist to possibly identify any risk occurrence relating to our operational activities (checklist)	0	0	4	126	47	4.1299	.39894

Source: Researchers' Computations, 2026.

Table 2 reveals that the organisation makes extensive use of multiple risk identification techniques, as evidenced by the consistently high mean scores ranging from 4.0904 to 4.7232, all of which are well above the benchmark mean of 3.0. The absence of responses in the Strongly Disagree and Disagree categories across all items indicates a uniformly positive perception of risk identification practices within the organisation. Most responses fall within the Agree and Strongly Agree categories, demonstrating that respondents strongly affirm the regular application of these

techniques. The relatively low standard deviation values, ranging from 0.28756 to 0.50173, further suggest a high level of consistency in opinions, indicating consensus among respondents.

Brainstorming through group approaches recorded the highest mean score (4.7232), making it the most frequently adopted strategy for identifying risk spots. Documentation review (4.2881) and root cause analysis (4.2429) also recorded relatively high mean values, showing that the organisation not only identifies risks but also systematically reviews records and investigates underlying causes. Other techniques such as flowcharts, cause-and-effect diagrams, risk surveys, expert judgment, industry knowledge, historical information, and risk checklists all recorded strong mean scores above 4.0, confirming their regular use in the organisation. The findings demonstrate that the organisation adopts a comprehensive and structured approach to risk identification by integrating collaborative methods, analytical tools, formal documentation processes, and experience-based techniques. The high level of agreement across all variables indicates that risk identification is institutionalized and forms a fundamental part of the organisation's operational and management framework. However, the absence of responses in the "Disagree" and "Strongly Disagree" categories indicates a possible ceiling effect. This implies that respondents may have over-reported the extent of risk identification practices, potentially due to social desirability bias or organizational self-reporting tendencies. It may also suggest that the sampled firms represent relatively well-structured organizations with established risk management practices.

Table 3:
Risk Quantification Techniques

Variables	SCALE LEVEL					MEAN	STD
	SD	D	U	A	SA		
	1	2	3	4	5		
My organisation drive for construction work is on the basis on the of the probability of risk event (risk probability)	0	0	31	67	79	4.2712	.74232
My organisation drive for construction work is on the basis on the of the probability of risk event (risk severity)	0	0	8	135	34	4.1469	.46576
My organisation uses scenario analysis to evaluate different possible outcomes of project risks. (Scenario Analysis)	0	0	0	146	31	4.1751	.38117
My organisation conducts schedule risk analysis to understand how uncertainties may affect project timelines (Schedule Risk Analysis)	0	0	4	145	28	4.1356	.40414
My organisation applies sensitivity analysis to determine how changes in key variables influence project outcomes. (Sensitivity Analysis)	0	0	4	149	24	4.1130	.38243

Source: Researchers' Computations, 2026.

Table 3 shows that the organisation actively applies several risk quantification techniques in its construction activities. All mean scores range from 4.1130 to 4.2712, well above the benchmark of 3.0, indicating strong agreement among respondents. As in the previous findings, no respondent selected Strongly Disagree or Disagree for any item, indicating a generally positive perception of the organisation's quantitative risk assessment practices. The standard deviation values, ranging from 0.38117 to 0.74232, indicate moderate but acceptable consistency in responses. Risk probability recorded the highest mean score (4.2712), suggesting that the likelihood of risk occurrence significantly influences construction decisions, although the relatively higher standard deviation shows slight variation in opinion. Risk severity was also recorded at a high mean (4.1469), confirming that the organisation considers the potential impact of risks alongside their probability. Scenario analysis (4.1751), schedule risk analysis (4.1356), and sensitivity analysis (4.1130) all recorded strong mean scores, indicating that the organisation uses structured analytical tools to evaluate possible outcomes, timeline uncertainties, and the effect of changes in key variables on project performance. The results indicate that risk quantification is systematically integrated into the organization's project planning and decision-making processes, with probability and impact assessments forming the foundation for construction-related decisions. Despite this, the lack of variability in responses raises concerns regarding restricted range bias, which may limit the ability of statistical models to accurately capture relationships between variables. The uniformly high ratings may not fully reflect the realities of the broader construction sector in Lagos, where adoption of advanced quantitative techniques is often constrained by technical and financial limitations.

Table 4:
Project Abandonment

Variables	SCALE LEVEL					MEAN	STD
	SD	D	U	A	SA		
	1	2	3	4	5		
Lack of proper feasibility studies often leads to project failures and subsequent abandonment *(Inadequate planning)*	0	0	0	41	136	4.7684	.42308
*I*nsufficient funding is a major cause of project abandonment in public and private sector projects *(Inadequate finance)*	0	0	0	14	163	4.9209	.27065
Projects are often abandoned when contractors face bankruptcy or financial distress *(Bankruptcy of contractor)*	0	0	0	141	36	4.2034	.40366
Frequent variation orders disrupt project progress and increase the risk of abandonment *(Project scope variation)*	0	0	0	165	12	4.0678	.25211
Change in government or administration often results in discontinuation of ongoing projects *(political instability)*	0	0	16	105	56	4.2260	.59811
Lack of competence of the project manager contributes to poor project coordination and abandonment. *(Incompetent Project Manager)*	0	0	0	150	27	4.1525	.36057

Design errors often cause rework, cost escalation, and abandonment of projects *(Faulty Design)*	0	0	0	169	8	4.0452	.20833

Source: Researchers' Computations, 2026.

Table 4 presents respondents' views on the factors contributing to project abandonment. Responses were measured on a 5-point Likert scale, and 177 respondents participated. As in the previous tables, there were no responses in the Strongly Disagree or Disagree categories for any of the variables, indicating strong consensus that the listed factors significantly contribute to project abandonment. The mean scores range from 4.0452 to 4.9209, all well above the benchmark of 3.0, showing a high level of agreement. The standard deviation values range from 0.20833 to 0.59811, suggesting relatively low variability and consistent opinions among respondents. Insufficient funding recorded the highest mean score (4.9209) and the lowest standard deviation (0.27065), indicating that respondents overwhelmingly agree that inadequate finance is the most critical cause of project abandonment in both public and private sector projects. Lack of proper feasibility studies (inadequate planning) also recorded a very high mean (4.7684), confirming that poor initial planning strongly contributes to project failure and abandonment.

Other notable factors include political instability (4.2260), contractor bankruptcy (4.2034), and incompetent project management (4.1525), all of which show strong agreement as significant contributors to abandonment. Project scope variation (4.0678) and faulty design (4.0452) also recorded high mean scores, indicating that frequent changes and design errors can disrupt project progress, increase costs, and ultimately lead to discontinuation. The findings demonstrate that financial constraints, poor planning, managerial inefficiency, political factors, contractor instability, scope changes, and design errors are widely perceived as major drivers of project abandonment. The consistently high mean values and low standard deviations indicate strong consensus that these factors play a significant role in determining whether projects are successfully completed or abandoned.

Hypothesis Testing

$H0_1$: There is no significant effect of strategic risk identification techniques on project abandonment among construction firms in Lagos, Nigeria.

To test this hypothesis, a simple linear regression analysis was conducted, with strategic risk identification techniques as the independent variable and project abandonment as the dependent variable. The results are displayed in Table 5.

Model Summary

Table 5:

Result of Hypothesis One

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.441[a]	.194	.190	.14041

a. Predictors: (Constant), Risk Quantification Techniques

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.833	1	.833	42.243	.000[b]
	Residual	3.450	175	.020		
	Total	4.283	176			

a. Dependent Variable: Project Abandonment

b. Predictors: (Constant), Risk Identification Techniques

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.479	.287		8.652	.000
	Risk Identification Techniques	.442	.068	.441	6.499	.000

Source: Researchers' Computations, 2026. a. Dependent Variable: Project Abandonment

The model summary indicates a correlation coefficient (R) of 0.441, which shows a moderate positive relationship between risk identification techniques and project abandonment. The R Square value of 0.194 implies that approximately 19.4% of the variation in project abandonment can be explained by strategic risk identification techniques. The adjusted R Square of 0.190 further confirms that, after accounting for potential estimation bias, about 19.0% of the variation in project abandonment is attributable to differences in risk identification practices. The standard error of the estimate (0.14041) indicates a relatively low prediction error, suggesting the model has reasonable explanatory power. The ANOVA results show that the regression model is statistically significant. The F-statistic of 42.243, with a p-value of 0.000 ($p < 0.05$), indicates that the model as a whole provides a good fit to the data. This means that strategic risk identification techniques are highly predictive of project abandonment. Since the p-value is less than the 0.05 level of significance, the null hypothesis is rejected.

The coefficients table further provides insight into the nature of the relationship. The unstandardized coefficient (B) for risk identification techniques is 0.442, indicating that a one-unit increase in the effectiveness or application of risk identification techniques is associated with a 0.442-unit change in project abandonment. The standardized beta coefficient ($\beta = 0.441$) confirms a moderate positive effect. The t-value of 6.499, with a significance level of 0.000, indicates that risk identification techniques make a statistically significant contribution to the model. The regression analysis demonstrates that strategic risk identification techniques have a statistically significant effect on project abandonment among construction firms in Lagos, Nigeria. The null hypothesis is therefore rejected, and it is concluded that improvements or variations in risk identification practices significantly influence the level of project abandonment. Although the model's explanatory power is moderate (19.4%), the effect is statistically significant, indicating that risk identification plays an important role in determining project outcomes.

$H0_2$: Risk Quantification Techniques do not significantly influence Project Abandonment among construction firms in Lagos State, Nigeria.

To test this hypothesis, a simple linear regression analysis was conducted, with Risk Quantification Techniques as the independent variable and Project Abandonment. The results are displayed in Table 6 below

Table 6:
Result of Hypothesis Two

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.445[a]	.198	.193	.14011

a. Predictors: (Constant), Risk Quantification Techniques

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.848	1	.848	43.175	.000[b]
	Residual	3.436	175	.020		
	Total	4.283	176			

a. Dependent Variable: Project Abandonment

b. Predictors: (Constant), Risk Quantification Techniques

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.299	.159		20.774	.000
	Risk Quantification Techniques	.250	.038	.445	6.571	.000

a. Dependent Variable: Project Abandonment

Source: Researchers' Computations, 2026.

The model summary shows a correlation coefficient (R) of 0.445, indicating a moderate positive relationship between risk quantification techniques and project abandonment. The R Square value of 0.198 implies that approximately 19.8% of the variation in project abandonment can be explained by risk quantification techniques. The adjusted R Square of 0.193 confirms that, after accounting for sampling error, about 19.3% of the variation in project abandonment is attributable to differences in risk quantification practices. The standard error of the estimate (0.14011) is relatively low, suggesting that the model has reasonable predictive accuracy. The ANOVA results

reveal that the regression model is statistically significant. The F-statistic of 43.175, with a p-value of 0.000 ($p < 0.05$), indicates that the overall model provides a good fit to the data. This means that risk quantification techniques are highly predictive of project abandonment. Since the p-value is less than the 0.05 level of significance, the null hypothesis is rejected. The coefficients table further explains the relationship. The unstandardized coefficient (B) for risk quantification techniques is 0.250, indicating that a one-unit increase in the use of risk quantification techniques is associated with a 0.250-unit change in project abandonment. The standardized beta coefficient ($\beta = 0.445$) shows a moderate positive effect and confirms the strength of the relationship. The t-value of 6.571 with a significance level of 0.000 indicates that risk quantification techniques make a statistically significant contribution to predicting project abandonment.

Discussion of Findings

The findings of this study reveal that risk management practices, particularly risk identification and risk quantification techniques, significantly influence project abandonment among construction firms in Lagos, Nigeria. The regression analyses for the two hypotheses show that strategic risk identification techniques and risk quantification techniques have significant positive effects on project abandonment, with R-square values of 0.194 and 0.198, respectively. This indicates that although risk management practices explain a moderate proportion of the variation in project abandonment, they play a meaningful role in determining project outcomes. The significant F-statistics and p-values of 0.000 for both models further confirm that the relationships observed are statistically significant. The findings of this study are consistent with the argument that effective risk management enhances project performance and reduces the likelihood of project failure. The result that risk identification techniques significantly influence project abandonment aligns with the view that early detection of potential risks allows organizations to implement preventive measures before risks escalate into project failure.

Similarly, the significant effect of risk quantification techniques suggests that assessing probability, severity, and impact of risks supports informed decision-making during project planning and execution. The findings suggest that construction project abandonment is largely influenced by both risk management practices and external project execution challenges. The study therefore underscores the need for construction firms and project stakeholders to strengthen risk assessment mechanisms, improve financial planning, and ensure effective project management strategies to minimize the incidence of project abandonment.

The findings of this study reveal that strategic risk identification and risk quantification techniques are statistically significant predictors of project abandonment among construction firms in Lagos State. However, the direction of the relationships observed is contrary to conventional expectations, as both variables exhibit positive coefficients. One possible explanation for this paradoxical finding is endogeneity. Firms that experience higher levels of project abandonment may subsequently adopt more structured risk management practices as a corrective measure. In this case, risk identification and quantification are reactive rather than preventive, leading to a positive association. Another explanation lies in same-source bias, as both independent and dependent variables were measured using self-reported data from the same respondents. This may inflate correlations and produce misleading relationships between variables.

Additionally, the observed relationship may reflect post-project risk documentation, where abandoned or problematic projects undergo more rigorous risk assessment and reporting, thereby creating the impression that higher risk management practices are associated with higher abandonment. From a behavioral perspective, this finding aligns with insights from Prospect Theory, where decision-makers may exhibit biases in evaluating risks, potentially leading to suboptimal project decisions despite the presence of risk assessment tools. Furthermore, the presence of ceiling effects and limited variability in the data suggests that respondents uniformly reported high adoption of risk management practices. This restricted range may weaken the explanatory power of regression models and contribute to unexpected statistical outcomes.

When compared with prior studies such as Olateju et al. (2024) and Boateng et al. (2020), which reported moderate explanatory power of risk management practices (R^2 values typically below 0.30), the findings of this study are consistent in terms of strength but differ in direction. This suggests that while risk management practices are important, their effectiveness may depend on contextual, behavioral, and implementation factors. Overall, the findings indicate that the mere presence of risk identification and quantification techniques does not guarantee reduced project abandonment. Rather, the effectiveness of these techniques depends on their timing, quality of implementation, and integration into strategic decision-making processes.

Conclusions, Recommendations and Contributions to Knowledge

This study examined the effect of strategic risk management techniques on project abandonment among construction firms in Lagos, Nigeria. The findings revealed that both risk identification and risk quantification techniques significantly influence project abandonment, although they explain a moderate proportion of the variation in project outcomes. The regression results confirmed that improvements in risk management practices are associated with better project control and reduced likelihood of project failure. Strengthening risk identification and quantification processes, ensuring adequate project funding, and improving planning mechanisms are necessary steps toward enhancing project completion rates. The study therefore emphasizes the importance of integrating systematic risk management strategies into construction project management practices to promote sustainable project execution and reduce abandonment rates in Lagos State, Nigeria.

However, contrary to theoretical expectations, the results indicated positive relationships between risk management practices and project abandonment. This suggests that higher reported adoption of risk identification and quantification techniques is associated with increased levels of project abandonment. This counterintuitive finding may be attributed to factors such as endogeneity, post-project risk documentation, and same-source bias inherent in cross-sectional survey designs. The study therefore concludes that while risk management practices are important predictors of project outcomes, their effectiveness in reducing project abandonment depends on the timing, depth, and strategic integration of these practices. The findings highlight that the mere adoption of risk identification and quantification techniques is insufficient; rather, their proactive and context-specific application is critical for achieving sustainable project delivery.

Based on the findings of this study, the following recommendations are made: Construction firms and project stakeholders should strengthen their risk management frameworks by institutionalizing systematic risk identification and quantification processes during project planning and execution to enable early detection and mitigation of potential project risks. Construction project managers

should also enhance professional competence through continuous training in modern risk management techniques, while government and regulatory authorities should promote stable policy environments that support uninterrupted project execution. Furthermore, project designs and scope specifications should be carefully reviewed before implementation to minimize variations, rework, and cost escalation, which often lead to project discontinuation.

This study contributes to existing knowledge by providing empirical evidence on the relationship between strategic risk management techniques and project abandonment in the construction sector, particularly within the Nigerian context. The study expands the literature by demonstrating that risk identification and risk quantification techniques play significant roles in influencing project outcomes, thereby reinforcing the importance of integrating structured risk management practices into construction project delivery. It also adds to the body of knowledge by identifying financial inadequacy and poor planning as the most critical determinants of project abandonment, offering a ranking-based understanding of abandonment factors using the Friedman test. Furthermore, the study provides practical insights for construction stakeholders by highlighting the need for proactive risk assessment and financial feasibility evaluation as key strategies to improve project completion rates in Lagos State, Nigeria.

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