

Innovations

Effects of Risk Management on Performance of Select Telecommunications Companies in Nigeria

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Abstract

This study investigates the impact of risk management practices on the cost performance of telecommunications companies in Nigeria, utilizing regression analysis on a sample size of 375 firms. The analysis examines the effects of Risk Identification (RI), Risk Assessment (RA), Risk Mitigation (RT), and Risk Monitoring (RM) on cost performance. Results indicate that RI, RA, and RT significantly positively influence cost performance, highlighting the crucial role of proactive risk management strategies in enhancing financial outcomes. However, RM does not exhibit a statistically significant effect on cost performance, suggesting potential areas for refinement in monitoring practices. The collective explanatory power of these risk management practices, as

indicated by a relatively high R-Square value, underscores their substantial contribution to understanding and optimizing cost performance dynamics within the telecommunications sector. Based on these findings, recommendations are made for telecommunications companies in Nigeria to prioritize the enhancement of risk identification, assessment, and mitigation processes while ensuring ongoing vigilance and compliance through effective risk monitoring. By integrating these recommendations into their operational strategies, telecommunications firms can fortify their resilience and optimize financial performance in the dynamic Nigerian market.

Key Words: *Risk Identification; Risk Assessment; Risk Mitigation; Risk Monitoring; Cost Performance*

1. Introduction

Nigeria's telecommunications sector has grown and changed quickly in recent years due to several factors, including rising competition, shifting customer tastes, and technical improvements. (Obi, Osuagwu, and Odubuasi, 2021). Effective risk management techniques are now essential for telecom enterprises to overcome uncertainty, reduce vulnerabilities, and seize chances to improve performance in this changing market (Abroon-Qazi, Daghfous & Sajid, 2021). Even while risk management in the telecom industry is well acknowledged, there is still a significant lack of information in the literature on how it specifically affects the performance of certain Nigerian telecom businesses.

In Nigeria, the telecommunications industry is vital to the country's economic expansion, innovation, and social progress. The foundation of contemporary communication networks, telecommunications is one of the fastest-growing sectors and allows people, organisations, and governmental bodies to interact and share information across great distances (NBS, 2022; Azu & Nwauko, 2021). Apart from delivering necessary services like data and voice transmission, the telecommunications industry also acts as a driving force behind digital transformation, enabling companies to use technology to increase productivity and penetrate new markets. Additionally, access to government, healthcare, and educational resources is made easier by telecommunications infrastructure, which raises living standards and promotes socioeconomic growth. The telecommunications industry is crucial to Nigeria's overall development trajectory and its goals for a digital future because of its vital role in facilitating connection, generating innovation, and encouraging equitable growth (Azu, Jelivov, Aras & Isik, 2020).

There is a lack of empirical research that systematically examines the impact of risk management practices on performance within the context of Nigerian telecommunications companies, despite the growing body of literature on risk management in a variety of industries, including construction and finance. Although a number of studies (Abu & Ibrahim, 2022; Aladdin, 2020) have examined risk management frameworks and techniques in a wider corporate environment, there is a dearth of thorough research that focuses only on the Nigerian telecoms industry. For stakeholders, this absence in the literature is a serious obstacle as it makes it more difficult to build evidence-based risk management plans that are specific to the demands and peculiarities of Nigeria's telecom sector. Additionally, a wide range of risks and uncertainties, such as market rivalry, technical upheavals, regulatory changes, and cybersecurity concerns, confront Nigeria's telecommunications industry. Proactive risk management strategies are crucial since these risks have the potential to seriously affect the performance and long-term viability of telecommunications firms (Odubuasi, Obi, & Osuagwu, 2021; Rwingo, & James, 2021; Malik, Zaman & Buckby, 2020; Gitahi & Tumuti, 2019). Nevertheless, despite risk management's crucial role in addressing these issues, there is a dearth of empirical data regarding the effects of particular risk management techniques, such as budget control, resource allocation, and litigation risk management, on the performance of particular Nigerian telecommunications companies.

Moreover, the lack of empirical studies regarding the impact of risk management practices on the performance of Nigeria's telecommunications industry makes it more difficult for stakeholders to adopt efficient risk management plans and make well-informed decisions (Abu & Ibrahim, 2022; Bukar & Ibrahim, 2021; Odubuasi, Obi & Osuagwu, 2021). Telecommunications firms may find it difficult to eliminate risks, allocate resources optimally, and preserve their competitive advantages in the market if they do not have a comprehensive grasp of the link between risk management methods and corporate performance. To advance knowledge in the area of telecommunications risk management and improve the effectiveness and resilience of telecommunications enterprises in Nigeria, it is imperative that this gap in the literature be filled.

More empirical study that focuses on the effect of risk management on the performance of Nigerian telecommunications businesses is needed, even though it is acknowledged as a crucial component of business operations in the industry. Thus, this study investigates the effect of risk identification, risk assessment, risk mitigation and risk monitoring on cost performance of the selected telecommunication companies. This research looks at how risk management affects performance in the Nigerian telecom industry, concentrating on two well-known businesses: MTN Nigeria Plc and Globalcom Ltd. The scope includes a detailed

analysis of the risk management strategies used by these businesses and how those strategies affect several performance measures, particularly cost performance. The research will use a combination of quantitative techniques to collect and analyse data. The research would help practitioners and policymakers create and execute efficient risk management plans that are specifically suited to the possibilities and particular problems faced by Nigeria's telecom sector by addressing this gap in the literature.

MTN Nigeria Plc and Globalcom Ltd were chosen for the study's scope based on their dominating positions as the country's top telecom providers in Nigeria. These businesses, who hold sizable market shares and have considerable industry impact, are important participants whose risk management strategies may provide insightful information to the industry at large. Furthermore, by concentrating on only two businesses, researchers can conduct a comparative study that will help them pinpoint best practices, obstacles, and opportunities for risk management development in the Nigerian telecom industry. This methodology guarantees an all-encompassing examination of the industry dynamics and expedites the production of practicable suggestions aimed at augmenting risk management methodologies and performance results. Overall, the study's selected scope offers a concentrated and insightful examination of the connection between performance and risk management in the Nigerian telecoms industry, advancing both scholarly research and business practices.

2. Literature Review

The methodical process of detecting, evaluating, and reducing risks in order to lessen their possible influence on project goals is known as risk management. Throughout the project lifetime, it entails understanding uncertainties, creating plans to deal with them, and regularly assessing and evaluating the success of risk solutions (Aladdin, 2020; Adeleke, Bahaudin, Kamaruddein, Bamgbade, Salimon, & Ali Khan, 2017). The process of methodically locating, recording, and evaluating any hazards that might have an influence on a project's, organization's, or system's goals is known as risk identification. In order to inform risk management plans, it entails identifying internal and external elements that may provide risks, uncertainties, or opportunities and recording them in an organised way (Abu & Ibrahim, 2022). Risk analysis is the process of methodically analysing and assessing hazards that have been discovered in order to ascertain their possible consequences and probability of occurring. It includes both quantitative and qualitative methods to assess risks' extent, rank them according to their seriousness, and provide information for developing risk management plans (Bukar & Ibrahim, 2021).

The use of tactics and activities targeted at lessening the possibility or effect of recognised hazards is referred to as risk mitigation, often called risk response. These reactions might include moving the risk to a different party, accepting it with backup plans in place, avoiding it completely, or reducing its impacts via preventative measures (Odubuasi, Obi & Osuagwu, 2021). Throughout the project lifetime, risks are identified and continuously observed and assessed to make sure they are handled appropriately and stay relevant. This process is known as risk monitoring and review. In order to preserve project goals and minimise possible repercussions, this process include monitoring changes in risk variables, assessing the efficacy of established risk solutions, and modifying risk management methods as necessary (Abu & Ibrahim, 2022; Mwangi & Ngugi, 2018). The word "cost performance" describes how well a project manages and controls its financial resources to accomplish stated goals within budgetary restrictions. It entails comparing the project's actual expenditures to the budgeted amount to see if it is on track financially and providing value for the resources used (Abroon-Qazi, Daghfous & Sajid, 2021; Aladdin, 2020).

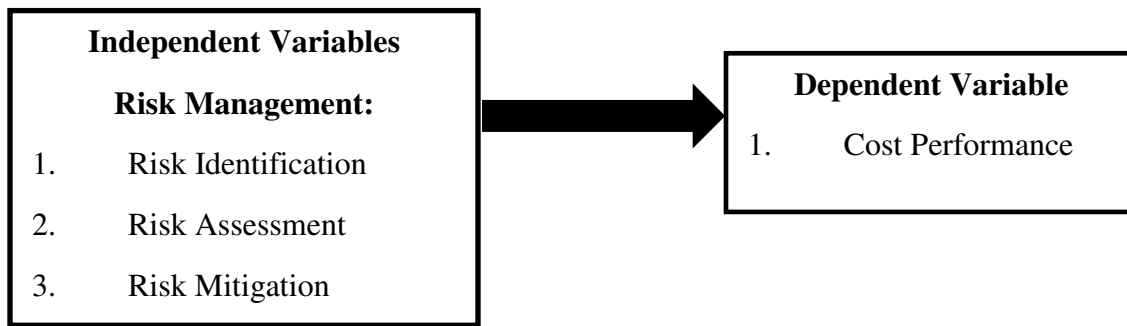


Figure 1: Conceptual Framework, (2024)

Source: Authors' Compilation, (2024)

2.1 Theoretical Review

Numerous hypotheses are pertinent to this investigation. The link between principals, or shareholders, and agents, or managers, and how risk management techniques affect their conduct, is examined under the Agency Theory. It may be used to examine how managers' and shareholders' interests are aligned via effective risk management, and how this affects the success of the business (Adeleke, Windapo, Ali Khan, Bamgbade, Salimon&Nawanir, 2018). The resource-based view, or RBV, emphasises a company's internal assets and competencies as sources of competitive advantage. Effective risk management in this situation may be seen as a useful tool that supports enhanced performance and a long-term competitive advantage (AbroonQazi, Daghfous&Sajid, 2021). According to the Stakeholder

Theory, businesses should take into account the interests of all parties involved, including suppliers, consumers, workers, and the community. Improved performance results may result from effective risk management techniques that increase stakeholder satisfaction and trust (Busru, Shanmugasundaram & Bhat, 2020; Mwangi & Ngugi, 2018).

Contingency Theory, which holds that the unique conditions or contingencies that an organisation faces determine how successful its management techniques are. It may be used to comprehend how certain risk management techniques could be more successful in particular organisational settings or market circumstances within the Nigerian telecom sector (Olson & Wu, 2020; Rechaeck & Bazsova, 2018). The study of institutional theory looks at how organisations adapt to the norms and demands of their surroundings. Regulations and industry norms may both promote effective risk management strategies, which can impact business performance via impacts on legitimacy and reputation (Busru, Shanmugasundaram & Bhat, 2020).

2.2 Theoretical Framework

Understanding the impact of risk management on the performance of certain Nigerian telecommunications businesses is made possible by the use of stakeholder theory. Stakeholders in this case include not only stockholders but also clients, staff members, vendors, authorities, and the general public. By addressing their worries and expectations about service reliability, data security, regulatory compliance, and environmental sustainability, effective risk management techniques can assist Nigerian telecommunications companies in maintaining positive relationships with these varied stakeholders (Abroon-Qazi, Daghfous & Sajid, 2021). Companies can improve trust, loyalty, and reputation by putting stakeholder interests first and communicating openly about risk management tactics. This will eventually improve performance outcomes like employee satisfaction, customer retention, and regulatory compliance (Omeno & Sang, 2018).

Regarding risk management, agency theory also provides insightful information on the relationships between managers and shareholders in Nigerian telecoms businesses. Managers are tasked with making choices that impact the company's exposure to a variety of hazards, including operational, financial, and strategic risks, according to Busru, Shanmugasundaram, and Bhat (2020). By lowering agency costs related to conflicts of interest, moral hazard, and adverse selection, effective risk management techniques may aid in balancing the interests of managers and shareholders (Bukar & Ibrahim, 2021; Bowers & Khorakian, 2014). Strong risk management procedures, for instance, can encourage managers to make decisions that optimise shareholder wealth while lowering the possibility of monetary losses or reputational harm. They can also encourage managers to give priority to long-

term value creation over short-term gains (Girangwa, Rono&Mose, 2020; Zehir, Findikli&Celtekliligil, 2018). Agency theory offers a framework for comprehending how risk management techniques affect managerial behaviour and organisational results in Nigeria's telecoms industry by promoting accountability, transparency, and performance incentives.

2.3 Empirical Review

Abu and Ibrahim (2022) noted that with globalisation, corporate risk management has become increasingly important to corporations and a subject of academic study. The majority of these research come from various backgrounds. This research examines enterprise risk management (ERM) structure and financial performance of Nigerian listed Services Sector organisations from 2010 to 2019. Risk governance framework affects corporate financial performance, says the research. All data for the study was acquired from chosen businesses' annual reports and accounts using the ex post facto research approach. A sample of 21 Services Sector enterprises was selected from 25 firms. Data analysis used descriptive and inferential regression statistics stacked as panel data. The research found that risk management committee negatively correlated with ROA but significantly with Tobin-Q. The audit committee size had a positive and negligible association with ROA but a substantial link with Tobin-Q. The research found a negligible negative link between board finance specialists and all financial performance (ROA & Tobin-Q). However, chief risk officer positively and significantly affected business performance (ROA & Tobin-Q). Rwingo and James (2021) looked at the risk governance and performance of building projects in Makueni County, Kenya. In Makueni County, Kenya, this study looked at risk governance and construction project performance. In Makueni County, Kenya, the study looked at how resource management, budget control, and litigation risk management impact construction project performance. Building projects in Makueni County feature effective resource risk management. One of the biggest challenges in project activities is funding limits. Risk management for budget control and litigation were robust. The performance of the Makueni County construction project was enhanced by resource, financial, and legal risk management. The study discovered that although resource and litigation risk management had no impact on Makueni County construction project performance, budget control risk management does.

The impact of risk attitude on construction project risk, opportunity, and performance was studied by AbroonQazi, Daghfous, and Sajid (2021). The study looked at how project uncertainties, such as risk, opportunity, and performance, are impacted by risk attitude. The findings demonstrate that risk attitude has varying effects on project performance and uncertainty along many dimensions. The authors

assert that although covering a number of project uncertainty and performance components, risk attitude, project uncertainty, and projected performance assessments have never been studied before.

Bukar and Ibrahim (2021) stressed that with the COVID-19 epidemic spreading, the building sector is unsafe and unpredictable. Evidence shows that the influence increases project abandonment, financial inflow, and employment losses. The study examines how risk management affects Nigerian building project performance. A quantitative research approach and descriptive study were utilised to examine industrial hazards and risk management. Surveys utilised to acquire data from 84 respondents. The data was examined using basic linear regression. The findings showed that internal and external hazards and risk management greatly affected project performance. Thus, the research paper offers the findings of a study of important players (contractors, consultants, and clients) in Abuja, Lagos, and Port Harcourt, Nigeria. The study also showed that the construction industry's biggest risk is a lack of a regulatory framework for corporations and enterprises to follow.

The impact of risk management on organisational performance was examined by Aladdin (2020). A field study on an insurance firm in Jordan was featured. According to the research, risk management implementation had the least influence on organisational performance, whereas risk identification, assessment, and control had the most. The performance of organisations is enhanced by all risk management techniques. The results indicated that insurance companies use economical techniques to promptly identify and handle risks.

Amer (2020) also looked on risk management for building projects. The study looked at risk, risk management, and building projects. In order to ascertain the performance of construction firms, he proposes that a qualified committee look at their foundation and needs. Using qualitative analytical techniques (questionnaires, checklist analyses, Delphi, personal interviews) to identify, evaluate, and classify risks is known as risk management. Using interviews, sensitivity analysis, Monte Carlo simulation, events trees, and fault tree events, quantitative description analysis [monetary, other value] from hazards is conducted. Enrol construction project teams in major-specific risk management courses, provide risk management training, and incorporate risk management into higher education. Analyse contracts and contract language to identify the parties that bear risk for building projects and transfer those risks to the party most qualified to handle them.

Risk management in South African construction projects was investigated by Vukosi (2019). The research looked at how building projects handle risks. It also

investigated the effects of risk management on project performance and success. This research discovered that risk occurrences have an impact on the budget, schedule, and quality of building projects. Furthermore, construction project personnel disregarded dangerous incidents. Therefore, poor risk management will result in the failure of construction projects. Risk management and critical performance criteria for building projects are intertwined. She thought that ineffective risk management causes construction projects to perform poorly and fail. Her research demonstrates that identifying, evaluating, and tracking risks are critical to the success of construction projects at every stage of their life cycle. We discovered that risk event possibilities and unpredictability are not well understood by construction project teams. Plans for risk management were proven to enhance project performance and success. Construction risk management is ineffectual, according to this research. Project performance is harmed by inadequate risk management.

Gharaibeh (2019) looked at the benefits and challenges of risk management in Jordanian building projects. The purpose of this study was to ascertain the extent of risk management used in Jordanian construction projects as well as possible roadblocks. The benefits of risk management and how construction companies may improve their workflow by adhering to best practices were also highlighted in the research. Among the many benefits of risk management in Jordanian construction projects is the enhancement of stakeholder communication, which increases project success. Risk management may prevent early project development delays and cost overruns. We may develop a mitigation plan to stop or lessen project consequences when risk is properly managed. Risk management is crucial in the construction industry because of the complexity of projects and the technological challenges that might result in schedule delays, cost overruns, and issues with quality and performance. In order to save money and time, risk management assists in identifying these problems early in the project and developing a mitigation plan.

Mwangi and Ngugi (2018) examined the performance and risk management of building projects overseen by the Nairobi County Government. The study looked at the effects of contract risk management, legal, construction, and design risk management techniques on project performance. According to the research, the Nairobi City County administration used costing, planning, and resolving land and construction disputes as their primary risk management techniques while working on building projects. Construction project performance was negatively impacted by legal, construction, and contract risk management, but favourably by design risk management.

Adeleke et al. (2018) investigated the effects of active leadership, team competence, and effective communication on construction risk management in Nigeria. They observed that concentrating risk management inside construction companies lowers project risk and increases profitability, timeliness, and budgetary control. The study examined the impact of internal organisational components on risk management in Nigerian construction enterprises. The four internal organisation factors—effective communication, active leadership, team competency, and construction risk management skills—were confirmed to have valid and acceptable metrics by the study. These findings show that a systematic methodology, as well as a great deal of experience, knowledge, and communication skills from the project manager, are necessary for efficient and successful risk management. The construction industry in Nigeria will be able to control risks thanks to this knowledge, which will enhance project performance.

Project management, according to Ogunade, Akuete, Joshua, Bamidele, and Amusan (2017), might improve construction projects in Ogun State, Nigeria. Their findings show that active engagement in project management guarantees that project criteria are fulfilled throughout the planning and building stages. They discovered that project managers are required for higher project quality and efficiency.

Building risk management in underdeveloped countries was studied by Bahamid and Doh (2017). The goal of the study was to establish standard techniques for risk assessments and identification. It also aimed to provide future study subjects on construction project risks and to clarify risk source classifications in developing nation literature. The investigation revealed that a lack of awareness and understanding is the reason risk management is seldom applied. The inadequate risk management track record has an impact on project goals as well. Hazards may be better understood by management by being categorised. Every strategy that has been looked at may help with decision-making and all suggest weighing different risks. While some methods are better than others at estimating risk, all need a moderate to high level of experience, patience, and comprehensive data. The evaluation of construction risks mostly depends on professional opinion and real-world experience. Regretfully, there are big gaps between theory and practice. Nonetheless, the body of existing knowledge offers a strong starting point for investigating novel approaches to bridging theory and practice. It is impossible to represent risk categories, dependencies, the complex project environment, and management team improvement proposal experience. The literature on project management has extensively discussed risk management; however, few studies have looked at risk assessment and practitioners' opinions on tools. The study discovered that there is a lack of a thorough risk assessment methodology in the

literature that takes into account the various risks' effects on project objectives. This kind of approach is necessary for precise risk assessments, which are the first stage in identifying the risk of a project. Risk management in many businesses is reactive and informal since current methods to risk management in the construction industry in developing countries attempt to minimise or transfer these risks.

Project performance is impacted by risk management, as studied by Prabu and Krishna (2017). The aim of the research was to examine how construction project performance is affected by risk avoidance or prevention, risk control (loss control), risk retention, and risk transfer. He discovered that risk management strategies impact the cost, schedule, and quality of projects. The majority of risk management strategies should be implemented gradually, and contractors are by far the most involved and powerful group. Consequently, providing a framework for allocating resources enables management to objectively lower risk to a certain degree.

Oke, Ogungbile, Oyewobi, and Tengan (2016) investigated the performance of building projects, their effects, and the ensuing ramifications for the development of the national economy. The study emphasised factors that affect a project's performance. According to their study, the most significant elements influencing project performance were project design cost, complexity, lack of resources, equipment and raw material quality, on-time completion, client satisfaction, and productivity.

Onengiyeofori's (2016) study aims to investigate the potential role that risk management may play in building construction projects in developing countries such as Nigeria. In order to satisfy client expectations and improve the time, cost, and quality of building construction projects in developing countries, the study created a comprehensive risk management model. The results showed how cost, time, and quality overruns were impacted by the 27 risk factors. Variations in material prices, issues with health and safety, bribery and corruption, material waste, poor site management and oversight, and schedule overruns were the top risks influencing building construction costs. Quality was directly impacted by the use of subpar materials, working in difficult conditions, improper construction techniques, a lack of safety gear, insufficient time management, inadequate stakeholder communication, and an inappropriate leadership style. Building construction project delays were caused by poor quality, low productivity, improper construction procedures, poor communication, delayed contract payments, and insufficient site management and monitoring. He discovered that using a risk management strategy will increase the profitability and completion of building construction projects.

2.4 Gaps in Literature

The literature study shows many gaps in studies on risk management and performance in Nigerian telecoms. First, there are few empirical research on risk management techniques and performance results in Nigerian telecommunications firms. Abu & Ibrahim (2022; Aladdin 2020). Risk management literature is abundant in banking and construction, but Nigeria's telecommunications industry is understudied (Abu & Ibrahim, 2022; Bukar& Ibrahim, 2021; Odubuasi et al., 2021). Existing research generally neglect cost performance measures. Lack of research on risk management strategies' efficacy and applicability to the Nigerian telecommunications context hinders the development of evidence-based guidelines and best practices. Understanding and improving risk management in the Nigerian telecoms business requires addressing these literature gaps.

3 Methodology

An experimental quantitative research design (Pangarso&Setyorini 2023) and a survey approach were utilised in this research. The paper utilised the staff of MTN Nigeria Plc (2847) and Globalcom Ltd (3302) with a combined population of six thousand one hundred and forty-nine (6149). Thus, a simple random sampling technique could be beneficial. Primary data is gathered and generated for the purpose of this study. The study used a questionnaire that was administered to each member of the sample population. A structured closes ended questionnaire was used. The research adopted a five-point Likert questionnaire. To ensure high return, the questionnaire was administered through survey planet. A 5-point Likert scale, with 1 point for "strongly disagree" and 5 for "strongly agree," measured the data. A Likert scale measures respondents' beliefs, perceptions, attitudes, and actions. Participants may agree or disagree with a claim (Shamaki, Ibrahim & Philemon, 2022; Yusuf, Rabi, Taryam&Azu, 2023). The data will be clean-up which involves involved editing, coding, and tabulation in order to detect any anomalies in the responses and assign specific numerical values to the responses for further analysis. The data will be quantitatively analysed using descriptive and inferential statistics with the aid of SPSS software.

Sample size is the part of the population that was selected for the study. The Taro Yamane 1967 sample size determination as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where, n = sample size

N = population (6149)

1 = Unity (a constant)

(e)² = level of significance ((e) = 0.05)

$$n = \frac{6149}{1 + 6149(0.05)^2}$$

$$n = \frac{6149}{1 + 6149 * 0.0025} = \frac{6149}{1 + 15.3725} = \frac{6149}{16.3725} = 375$$

The sample size for the study is 375 which are distributed prorata based on the size of the organisation. The sample distribution is presented in Table 1.

Table 1 Sample Distribution			
S/N	Financial Institution	Population	Sample
1	MTN Nigeria Plc	2847	$\frac{2847}{6149} * 375 = 174$
2	Globalcom Ltd	3302	$\frac{3302}{6149} * 375 = 201$
	Total	6149	375

Authors’s Computation, (2024)

3.1 Model Specification

This research follows the model of Mwangi & Ngugi (2018) which examined the impact of risk management practices on the performance of construction projects. The following algebraic expression of the analytical model will be applied:

$$Perf = f(RI, RA, RT, RM) \tag{1}$$

Where Perf represents organisational performance, RI is Risk identification, RA stands for Risk assessment, RT represents Risk mitigation and RM means Risk monitoring. Augmenting the equation and presenting it in econometric form would have:

$$Pcost = \theta_1 + \beta_1 RI_i + \beta_2 RA_i + \beta_3 RT_i + \beta_4 RM_i + \varepsilon_i \tag{2}$$

PCost represents Cost performance; θ is the constant, β_1 to β_4 are parameters to be estimated while ε = Error term which assumed to be normally distributed.

3.2 Method of Data Analysis

Descriptive statistics such as frequency distribution and figures will be used to analyse participants' demographic characteristics such as number of employees, years of work experience while Multiple Regression analysis will be adopted to test the hypotheses with the aid of the IBM statistical package for social sciences (SPSS 27).

3.3 Validity and Reliability of Research Instrument

The designed questionnaire was first vetted and pre-tested by experts, who made no further recommendations. The questionnaire was subjected to a reliability and validity test. Cronbach Alpha will be used to determine the reliability of the research instrument. The estimated Cronbach's Alpha for pilot testing is reported in Table 2. The reported Cronbach's Alpha is the average of each variable which includes Cost Performance (0.866), Risk Identification (0.874), Risk Assessment (0.854), Risk Mitigation (0.817) and Risk Monitoring (0.892). Each of the reported Cronbach's Alpha is within the acceptable level and therefore should be used for the estimation.

Table 2 Pilot Reliability Statistics			
Variables	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Cost Performance (PCost),	0.866	0.814	20
Risk Identification	0.874	0.821	20
Risk Assessment	0.854	0.829	20
Risk Mitigation	0.817	0.751	20
Risk Monitoring	0.892	0.842	20
Sources: Author's Computation using SPSS 27, 2024			

4 Data Presentation, Analysis, and Interpretation

4.1 Overview of Data Collection

The analysis of the questionnaire return rate reveals that out of 379 questionnaires administered, 344 were returned, resulting in a high overall return rate of 90.76%. Specifically, 207 questionnaires were given to male respondents, with 188 returned, yielding a return rate of 54.65%. Meanwhile, 172 questionnaires were administered to female respondents, with 156 returned, resulting in a return rate of 45.35% (See Table 3). This data indicates a slightly higher engagement from male respondents

compared to female respondents. The relatively high overall return rate suggests effective respondent engagement, though the minor difference in return rates between genders may warrant further exploration into response behaviours or accessibility factors.

Table 3 Analysis of Questionnaire Return Rate				
Response s	Administere d	Not Returned	Returned	Percentage (%)
Male	164	21	143	41.82 %
Female	211	13	198	57.89 %
Total	375	33	342	100 %

Source: Field Survey, (2024)

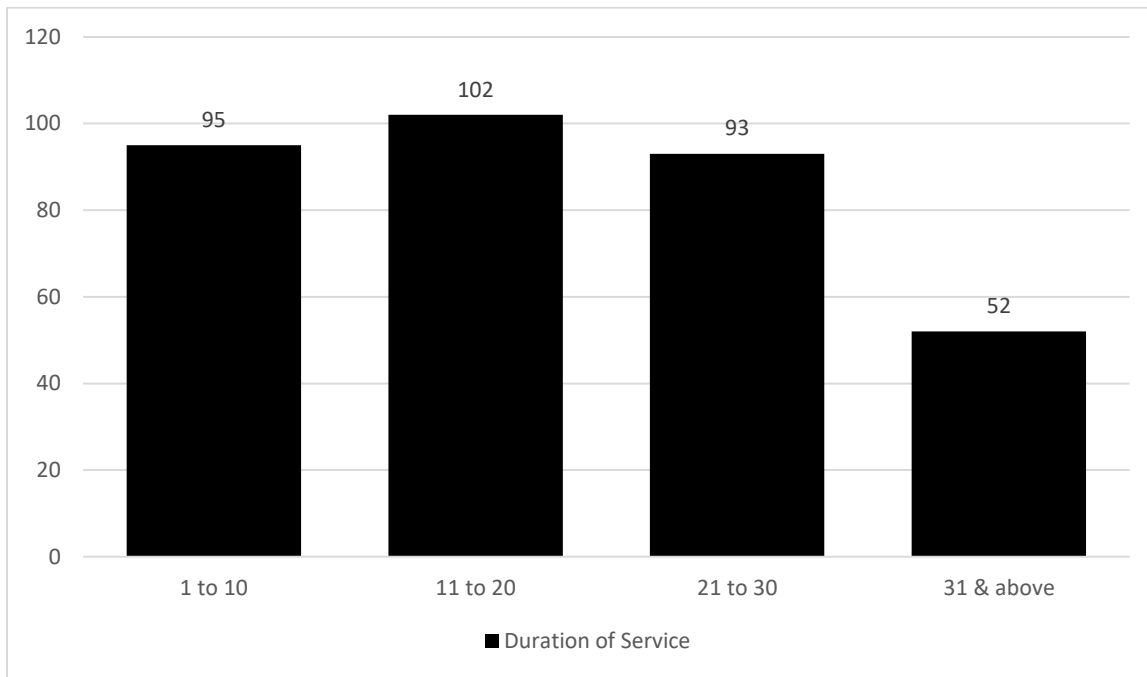


Figure 2: Respondents Duration of Service

The Figure 2 presents a detailed distribution of individuals based on their duration of service, offering insights into workforce tenure across four distinct categories. The categories are defined as follows: 1 to 10 years, 11 to 20 years, 21 to 30 years, and 31 years and above. Among these, the group with 1 to 10 years of service comprises 95 individuals, which accounts for approximately 25.3% of the total number of individuals. This indicates a substantial portion of the workforce is relatively new or in the early stages of their career. The group with 11 to 20 years of service is the largest, encompassing 102 individuals or about 27.1% of the total. This suggests that

a significant portion of the workforce has reached a mid-career stage, which could imply stability and accumulated experience within the organization. In the 21 to 30 years of service category, there are 93 individuals, making up around 24.7% of the workforce. This indicates a considerable number of employees have long-term tenure, contributing seasoned expertise to the organization.

In contrast, the number of individuals significantly decreases for those with over 31 years of service, with only 52 individuals in this group, representing about 13.8% of the total. This relatively small percentage could be due to various factors such as retirements, career changes, or organizational policies favouring shorter tenures. The overall distribution highlights a trend where the workforce is heavily populated by those in their mid-career stages, with fewer individuals remaining in the organization beyond 30 years of service. This trend could be indicative of a younger overall workforce or a natural attrition rate as employees advance towards retirement. Understanding these demographics can help organizations in planning for succession, training, and development programs tailored to different career stages.

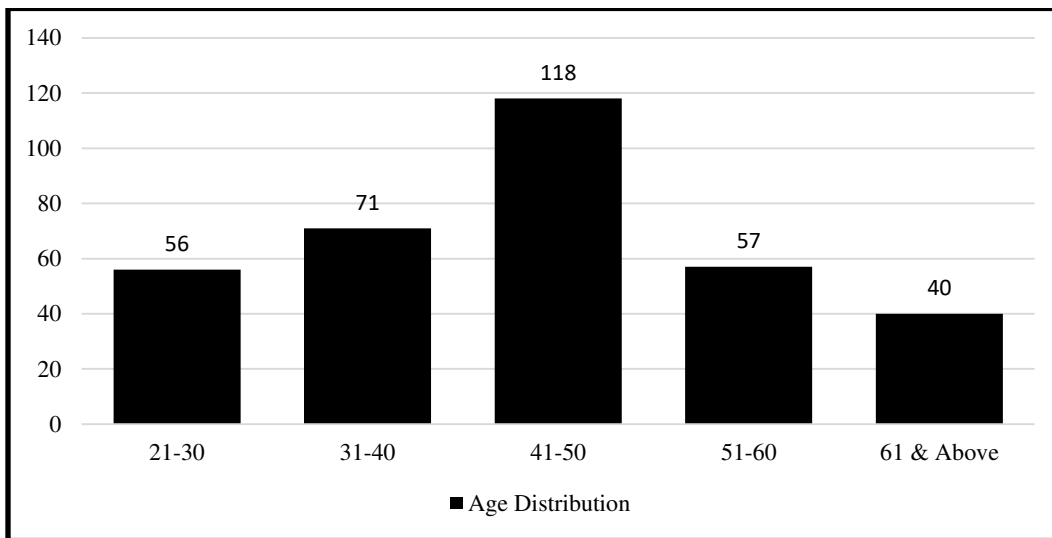


Figure 3: Age Distribution of the Respondents

The Figure 3 The table illustrates the distribution of individuals based on their duration of service, categorized into four groups: 1 to 10 years, 11 to 20 years, 21 to 30 years, and 31 years and above. For individuals with 1 to 10 years of service, there are 95 people, making up approximately 27.8% of the total population. This suggests a substantial portion of the workforce is relatively new or in the early stages of their careers. The largest group is those with 11 to 20 years of service, comprising 102 individuals, which represents about 29.8% of the total. This indicates that a significant segment of the workforce is in their mid-career stage, likely contributing a balance of experience and vitality to the organization. In the 21 to 30 years of

service category, there are 93 individuals, accounting for 27.2% of the total. This shows a considerable number of employees have long-term tenure, offering seasoned expertise and stability within the organization. However, the number of individuals significantly decreases for those with over 31 years of service, with only 52 individuals, which is about 15.2% of the total. This lower percentage could be due to retirements, career changes, or organizational policies that lead to shorter tenures. The distribution reveals that the majority of the workforce falls within the 1 to 30 years of service range, with fewer individuals remaining in the organization beyond 30 years. This trend may indicate a younger overall workforce or a higher attrition rate as employees approach retirement. Understanding these demographics is crucial for organizational planning, including succession management, training, and development programs tailored to different career stages.

4.2 Pre-estimation Analysis

Table 4 presents detailed descriptive statistics for five key variables in organizational performance and risk management: Cost Performance (PCost), Risk Identification (RI), Risk Assessment (RA), Risk Mitigation (RT), and Risk Monitoring (RM). Each variable is evaluated using several statistical measures: minimum value, maximum value, mean, standard deviation, and sample size (N), with a consistent sample size of 342 across all variables. This consistency ensures that the comparisons are reliable, and the insights drawn are based on the same group of respondents.

The mean values for these variables are all above 3.9 on a 5-point scale, indicating generally favourable perceptions among the respondents. Cost Performance (PCost) has a mean of 4.1174, suggesting that respondents view the organization's cost management positively. Risk Identification (RI) has a mean of 4.0912, indicating that the process of identifying risks is also well-regarded. Risk Assessment (RA), with the highest mean value of 4.1522, suggests that assessing risks is perceived as the most effective among the variables. On the other hand, Risk Mitigation (RT) has the lowest mean value at 3.9817, though still indicating a positive perception, it is seen as the least effective compared to the other variables. Risk Monitoring (RM) has a mean of 4.1042, showing a solid performance in keeping track of identified risks.

Variables	Min	Max	Mean	Std. Deviation	N
PCost	1	5	4.1174	0.5436	342
RI	1	5	4.0912	0.5736	342
RA	1	5	4.1522	0.5437	342
RT	1	5	3.9817	0.5596	342
RM	1	5	4.1042	0.5512	342

Note: Cost performance (PCost); Risk Identification (RI), Risk Assessment (RA), Risk mitigation (RT) and Risk monitoring (RM)

The standard deviations for these variables, which range from 0.5436 to 0.5736, reflect a moderate level of variability in the responses. Cost Performance (PCost) and Risk Assessment (RA) have the lowest standard deviations at 0.5436 and 0.5437, respectively, indicating that the respondents' views on these aspects are relatively consistent. Risk Identification (RI) and Risk Mitigation (RT) have slightly higher standard deviations of 0.5736 and 0.5596, respectively, suggesting a bit more variability in opinions. Risk Monitoring (RM) has a standard deviation of 0.5512, indicating moderate consistency in responses. These standard deviations suggest that while the overall perceptions are positive, there is some degree of difference in how respondents rate these aspects.

The data indicates that all five variables are rated highly, suggesting overall positive evaluations of cost performance and risk management processes. The highest mean rating for Risk Assessment highlights its perceived effectiveness, while the slightly lower rating for Risk Mitigation points to potential areas for improvement. The moderate variability in responses, as shown by the standard deviations, indicates that while there is general agreement on the positive performance of these areas, individual perceptions do vary. These insights can help organizations identify strengths and areas needing attention within their risk management and cost performance strategies.

Variables	PCost	RI	RA	RT	RM
PCost	1.000	0.550	0.468	0.547	0.473
RI	0.550	1.000	0.407	0.547	0.591
RA	0.468	0.407	1.000	0.458	0.360
RT	0.547	0.547	0.458	1.000	0.672
RM	0.473	0.591	0.360	0.672	1.000

Note: Cost performance (PCost); Risk Identification (RI), Risk Assessment (RA), Risk mitigation (RT) and Risk monitoring (RM)

The table presents a correlation matrix for five key variables: Cost Performance (PCost), Risk Identification (RI), Risk Assessment (RA), Risk Mitigation (RT), and Risk Monitoring (RM). Each cell in the matrix shows the correlation coefficient between pairs of variables, ranging from -1 to 1. A value of 1 signifies a perfect positive correlation, 0 indicates no correlation, and -1 represents a perfect negative correlation. Understanding these correlations helps in identifying how improvements in one area may influence others.

Cost Performance (PCost) exhibits positive correlations with all other variables, indicating that as performance in these areas improves, so does cost performance. The strongest correlation is with Risk Identification (RI) at 0.550, suggesting a robust relationship between effective risk identification and cost performance. Similarly, there is a strong correlation with Risk Mitigation (RT) at 0.547, highlighting the impact of risk mitigation efforts on cost performance. The correlation with Risk Monitoring (RM) is also significant at 0.473, while the weakest correlation is with Risk Assessment (RA) at 0.468, although this is still moderate and positive. Risk Identification (RI) shows strong positive correlations with all other variables, indicating that effective risk identification is integral to various aspects of risk management and performance. The highest correlation is with Risk Monitoring (RM) at 0.591, suggesting that thorough risk identification processes are crucial for effective risk monitoring. RI also has strong correlations with both Cost Performance (PCost) and Risk Mitigation (RT) at 0.550 and 0.547, respectively. These relationships underscore the importance of risk identification in enhancing cost performance and mitigation efforts. The weakest correlation is with Risk Assessment (RA) at 0.407, which is still a moderate positive relationship.

Risk Assessment (RA), while positively correlated with all other variables, generally shows weaker correlations compared to RI and RT. Its strongest correlation is with Risk Mitigation (RT) at 0.458, indicating that thorough risk assessment contributes to better risk mitigation. The correlations with Cost Performance (PCost) and Risk Identification (RI) are 0.468 and 0.407, respectively, showing moderate relationships. The weakest correlation is with Risk Monitoring (RM) at 0.360, suggesting that while there is a positive relationship, it is not as strong as with other variables.

Risk Mitigation (RT) displays strong positive correlations with several variables, notably with Risk Monitoring (RM) at 0.672. This high correlation indicates that effective risk mitigation practices are closely linked with effective risk monitoring. RT also shows strong correlations with Cost Performance (PCost) and Risk Identification (RI) at 0.547 each, suggesting that risk mitigation efforts significantly

contribute to both cost performance and the identification of risks. The correlation with Risk Assessment (RA) is moderate at 0.458, highlighting a positive yet less pronounced relationship.

Risk Monitoring (RM) is highly correlated with Risk Mitigation (RT) at 0.672 and Risk Identification (RI) at 0.591, indicating that effective risk monitoring is strongly associated with both risk mitigation and identification. This underscores the interconnected nature of these risk management practices. RM's correlation with Cost Performance (PCost) is 0.473, which is a moderate positive relationship, suggesting that better risk monitoring can enhance cost performance. The weakest correlation is with Risk Assessment (RA) at 0.360, but it remains a positive relationship, highlighting that all these variables are positively linked.

The correlation matrix reveals strong interconnections among the five variables, with all correlations being positive. Risk Identification (RI) and Risk Mitigation (RT) particularly stand out due to their strong correlations with most other variables, highlighting their pivotal role in effective risk management and cost performance. The data suggests a synergistic relationship where improvements in one area, such as risk identification or mitigation, are likely to positively influence other areas, such as cost performance and risk monitoring. This interconnectedness highlights the importance of a comprehensive approach to risk management in achieving optimal organizational performance. It was indicated by Azu, Jelivov, Aras, and Isik (2020) and Azu and Nwauko (2021) that when the independent variables are highly correlated, independent regression is suggested for each of the correlated variables.

4.3 Results and Discussion

The regression analysis presented in Table 6 aims to understand the impact of different risk management practices on the cost performance of selected telecommunications companies in Nigeria. The study uses cost performance (PCost) as the dependent variable, with independent variables comprising Risk Identification (RI), Risk Assessment (RA), Risk Mitigation (RT), and Risk Monitoring (RM). Each of these risk management practices is analysed to determine its influence on the companies' cost performance. This analysis is crucial as the telecommunications industry in Nigeria faces various risks, including market volatility, regulatory changes, and technological advancements. Effective risk management can help these companies navigate such challenges, ensuring better cost control and operational efficiency.

The constant term in the regression equation is 0.907, with a standard error of 0.307, a t-statistic of 2.950, and a p-value of 0.004. This constant term represents the

baseline level of cost performance when all the risk management practices are held at zero. The significant p-value of 0.004 (less than 0.05) indicates that this baseline level is statistically meaningful. In practical terms, it suggests that even in the absence of risk management practices, there is a baseline performance level due to other factors not included in the model. This could include inherent efficiencies, market position, or other operational strengths that the companies possess. Understanding this baseline helps in appreciating the additional value brought by each risk management practice.

Risk Identification (RI) is found to have a significant positive effect on cost performance. The unstandardized coefficient for RI is 0.278, with a standard error of 0.074, a standardized coefficient (Beta) of 0.293, a t-statistic of 3.732, and a p-value of 0.000. This indicates that for every unit increase in risk identification, cost performance improves by 0.278 units. The standardized coefficient shows that RI is an important predictor of cost performance, and the very low p-value confirms that this relationship is statistically significant. This result emphasizes the importance of identifying risks early and accurately in the risk management process. Effective risk identification allows companies to anticipate potential issues and prepare appropriate responses, which can prevent costly disruptions and enhance overall performance.

Table 6 Regression on the Effects of Risk Management on Performance of Select Telecommunications Companies in Nigeria

Variables	Unstandardized Coefficients		Standardized Coefficients	t-statistic	P-Value
	B	Std. Error	Beta		
(Constant)	0.907	0.307		2.950	0.004
RI	0.278	0.074	0.293	3.732	0.000
RA	0.214	0.069	0.214	3.088	0.002
RT	0.247	0.085	0.254	2.919	0.004
RM	0.051	0.085	0.052	0.592	0.555
R Square	0.530	Adjusted R Square	0.510	Durbin-Watson	2.237

- a. Dependent Variable: Cost performance (PCost)
- b. Independent Variable: Risk Identification (RI), Risk Assessment (RA), Risk mitigation (RT) and Risk monitoring (RM)

Similarly, Risk Assessment (RA) also positively affects cost performance. The unstandardized coefficient for RA is 0.214, with a standard error of 0.069, a standardized coefficient (Beta) of 0.214, a t-statistic of 3.088, and a p-value of 0.002. This suggests that effective risk assessment practices can lead to a 0.214-unit improvement in cost performance for every unit increase in RA. The statistically significant p-value highlights that this effect is not due to random chance, further underscoring the importance of thorough risk assessment in achieving better cost performance. Risk assessment involves evaluating the identified risks to determine their potential impact and likelihood, allowing companies to prioritize their risk management efforts and allocate resources more effectively.

Risk Mitigation (RT) also shows a significant positive impact on cost performance. The unstandardized coefficient for RT is 0.247, with a standard error of 0.085, a standardized coefficient (Beta) of 0.254, a t-statistic of 2.919, and a p-value of 0.004. This result indicates that enhancing risk mitigation practices by one unit can improve cost performance by 0.247 units. The significant p-value demonstrates that this positive relationship is statistically robust. Risk mitigation involves taking actions to reduce the severity or likelihood of potential risks, which appears to contribute meaningfully to better cost management and overall performance. Implementing effective risk mitigation strategies can help telecommunications companies avoid or lessen the impact of adverse events, thereby protecting their financial stability and operational continuity.

In contrast, Risk Monitoring (RM) does not have a statistically significant effect on cost performance. The unstandardized coefficient for RM is 0.051, with a standard error of 0.085, a standardized coefficient (Beta) of 0.052, a t-statistic of 0.592, and a p-value of 0.555. This high p-value indicates that there is no significant relationship between risk monitoring and cost performance in this context. Despite the potential importance of monitoring risks continuously, this result suggests that the specific practices or the way risk monitoring is implemented in these companies do not significantly influence cost performance. It is possible that these companies either already have sufficient monitoring mechanisms in place, or that improvements in risk monitoring do not translate directly into measurable cost performance benefits in the short term.

The overall model explains a substantial portion of the variance in cost performance, as indicated by an R Square of 0.530 and an Adjusted R Square of 0.510. This means that 53.0% of the variability in cost performance can be explained by the independent variables (RI, RA, RT, and RM). The Adjusted R Square, which accounts for the number of predictors, shows that 51.0% of the variance is explained when

adjusting for the number of variables in the model. Additionally, the Durbin-Watson statistic of 2.237 suggests that there is no significant autocorrelation in the residuals, indicating that the model's assumptions are met and the results are reliable. The high R Square value demonstrates the strong explanatory power of the model, highlighting the importance of comprehensive risk management practices in driving cost performance improvements in the telecommunications sector.

The regression analysis highlights the critical role of effective risk management practices—particularly risk identification, risk assessment, and risk mitigation—in enhancing the cost performance of telecommunications companies in Nigeria. While risk monitoring did not show a significant effect, the overall findings emphasize the importance of integrating comprehensive risk management strategies to achieve better financial and operational outcomes in the telecommunications sector. These insights can guide telecommunications companies in prioritizing their risk management efforts, focusing on the areas that provide the most significant impact on cost performance, and continuously improving their practices to maintain a competitive edge in a dynamic and challenging industry.

5 Conclusion and Recommendations

In conclusion, the regression analysis highlights the significant impact of certain risk management practices on the cost performance of telecommunications companies in Nigeria. Risk Identification (RI), Risk Assessment (RA), and Risk Mitigation (RT) emerge as pivotal factors positively influencing cost performance, underscoring the importance of proactive risk management strategies in enhancing financial outcomes. However, the analysis also reveals that Risk Monitoring (RM) does not exhibit a statistically significant effect on cost performance, suggesting a need for re-evaluation or refinement of monitoring practices to align more closely with organizational objectives. Nonetheless, the collective explanatory power of these risk management practices, as evidenced by the relatively high R-Square value, underscores their substantial contribution to understanding and optimizing cost performance dynamics within the telecommunications sector.

Based on these findings, it is recommended that telecommunications companies in Nigeria prioritize the enhancement of risk identification, assessment, and mitigation processes to bolster cost performance. This may entail investing in robust risk management frameworks, leveraging advanced analytical tools for risk assessment, and implementing proactive strategies to mitigate identified risks effectively. Additionally, while Risk Monitoring may not directly impact cost performance, companies should not overlook its importance in ensuring ongoing vigilance and compliance with regulatory requirements. By integrating these recommendations

into their operational strategies, telecommunications firms can fortify their resilience in the face of uncertainty and optimize their financial performance in the dynamic Nigerian market.

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