ENTERPRISE RESOURCE PLANNING SYSTEM AND PERFORMANCE OF BUILDING PROJECTS IN KENYA

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ABSTRACT

The adoption of Enterprise Resource Planning (ERP) systems has become increasingly prevalent across diverse industries in Kenya, including the construction sector. Consequently, understanding the implications of ERP implementation on project performance has become essential. This study delves into this relationship, specifically focusing on building projects within Kenya's construction industry. With ERP systems being comprehensive platforms integrating various business processes, their influence on project planning, data management, risk identification, and change management is of particular interest. By honing in on these critical aspects, the research aims to shed light on how ERP systems affect the overall performance of building projects.To achieve its objectives, the study employs a descriptive survey design, collecting data from management and staff involved in building projects registered by the National Construction Authority in Kenya. Through this approach, the research endeavors to capture insights directly from those immersed in project execution and management. By analyzing the data collected, the study sought to ascertain the extent to which ERP systems impact data management efficiency and risk identification processes within the context of building projects. This comprehensive examination provided valuable insights into the nuanced ways ERP systems influence project dynamics in the construction industry. The study examined data management efficiency and risk identification in building projects in Kenya, based on data from project managers response rate. The study concluded that data management positively and significantly influence performance of building projects in Kenya. In addition, the study concluded that risk identificatio positively and significantly influence performance of building projects in Kenya. Based on the findings, the study recommnends that project managers should therefore ensure that when selecting team members, they have the skill set required for completing the task required. Also, when assigning tasks, it should be done based on the skills of the team members. In addition, the study recommends project managers to have collaborations and communications that are solid to make sure that all individuals involved in a project, work towards achievement of set goals and therefore ensure project success, within set timelines.

Key Words: Enterprise Resource Planning System, Data Management, Risk Identification, Performance of Building Projects

Background of the Study

The utilization of Information Communication and Technology (ICT) in business extends beyond the mere procurement of office computers and internet connectivity. Its efficacy is heightened when configured with integrated information systems supporting diverse functional areas within an organization. These areas encompass operations and the management of accounting, finances, manufacturing, production, transportation, sales and distribution, human resources, supply chain, customer relationship, and e-business. An illustrative example of such a comprehensive system is the Enterprise Resource Planning (ERP) Software (Torach, 2017).

Tadjer (2020) underscores the essence of ERP systems as a unified platform, constituting one database, one application, and a cohesive interface spanning the entire enterprise. The implementation of ERP systems imparts unique advantages to organizations by enhancing their decision-making processes through the timely provision of relevant information (Hunton et al., 2022). In the era of globalization, many companies find it imperative to standardize processes and assimilate best practices inherent in ERP systems. This standardization ensures quality and predictability in global business operations by reducing the cycle time from order placement to delivery (Ross, 2018). As ERP systems evolve, there is a growing interest in understanding their impact on organizational performance.

The evolution of ERP systems prompts an increased focus on comprehending their influence on organizational performance. The interest stems from the recognition that ERP systems play a pivotal role in enhancing decision-making processes through the timely provision of pertinent information (Hunton et al., 2017). Tadjer (2020) emphasizes the integrated nature of ERP systems, functioning as a singular database, application, and interface across the entire enterprise. In response to globalization, companies are compelled to adopt ERP systems to standardize processes and absorb best practices, ensuring quality and predictability in their global business endeavors (Ross, 2018). This investigation delves into the multifaceted impact of ERP systems on diverse facets of organizational functioning, acknowledging their pivotal role in the contemporary business landscape.

In the Americas, particularly in the United States, ERP systems have played a significant role in shaping organizational performance. Research conducted by Smith et al. (2022) highlights the impact of ERP implementation on the performance of American businesses, emphasizing improvements in cost reduction, inventory management, and customer satisfaction. With the evolving market dynamics and increasing competition, American companies are turning to advanced ERP solutions to drive innovation, agility, and responsiveness in their operations, underscoring the crucial role of ERP systems in enhancing performance on a global scale.

West Africa, countries such as Nigeria have been progressively integrating Enterprise Resource Planning (ERP) systems into their business operations to enhance performance. A study by Adeyemi and Adewumi (2023) showcases the adoption of ERP solutions by Nigerian firms to streamline processes, improve decision-making, and boost productivity. The implementation of ERP systems has enabled businesses in Nigeria to achieve better resource allocation, optimize supply chain management, and enhance customer relationship management. This integration underscores the importance of ERP systems in driving performance improvements and fostering economic growth within the West African region.

In Kenya, the adoption of Enterprise Resource Planning (ERP) systems has been steadily increasing as businesses seek to enhance their performance and competitiveness in the global market. According to a recent study by Mwangi and Gitau (2023), Kenyan firms have recognized the importance of ERP systems in streamlining operations, improving efficiency, and driving growth. By integrating ERP solutions, businesses in Kenya can effectively manage various aspects of their operations, including finance, human resources, procurement, and inventory management. This strategic utilization of ERP technology enables Kenyan companies to achieve better coordination, reduce operational costs, and make informed decisions, ultimately contributing to improved performance and sustainable business growth.

Statement of the Problem

It is essential to recognize that even highly successful ERP implementations encounter a considerable number of challenges. Prevailing focus often emphasizes the success of the "project management" process rather than the success of the product itself. Notably, studies by Baccarini (2019) and Pinkerton (2018) underscore the necessity of distinguishing between product success and project management success. Similarly, there is a critical need to differentiate between ERP implementation success and the overall success of the ERP system. Shenhar, Dvir, and Levy (2021) stress the relative importance of efficiency, impact on customers, business success, and future preparedness when evaluating success dimensions.

The authors assert that projects with lower uncertainty may prioritize efficiency based on time and budget goals, while technological projects like ERP systems, characterized by higher uncertainty, should be evaluated on long-term business effects rather than short-term concerns.Nelson (2017) further expands the criteria for assessing ERP system success, beyond meeting budget, time, and scope criteria, to include outcome indicators such as product value, product use, and business value. Notably, in this study, product use and business value take precedence over success measured solely in financial terms. These indicators in the context of ERP systems encompass dimensions of system quality, use, and net benefits, all integral to the adoption of ERP systems.

Umble and Umble's (2022) research sheds light on the challenges ERP systems pose to organizations, directly linked to three dimensions. Firstly, the lack of experienced professionals and inadequate employee training directly affects the eventual use of the ERP system. Secondly, mismatches between organizational expectations and system efficiency, coupled with uncertainty about data accuracy, negatively impact the "quality" of the ERP system. Additionally, organizational failure to clearly define strategic goals, in conjunction with the aforementioned factors, influences the benefits organizations derive from ERP systems. In alignment with the literature discussed, this study investigates the impact of enterprise resource planning systems on project performance, focusing on the building projects in Kenya.

Objectives of the Study

General Objective

The purpose of this study is to examine the relationship between enterprise resource planning systems and project performance, focusing on the building projects in Kenya.

Specific Objectives

The study was guided by the following specific objectives:

   i. To find out the effect of data management on the performance of building projects in Kenya
   ii. To determine the effect of risk identification on performance of building projects in Kenya

Theoretical Framework

Lewin's Change Management Model

The Lewis change management model, developed by Kurt Lewin in the 1940s, remains relevant today (Burnes, 1996). This model conceptualizes organizational change in three distinct phases: unfreezing, moving, and refreezing. The primary objective of these phases is to eliminate unproductive behaviors and introduce new, more productive activities within the organization (Burnes, 1996). Lewin's study in 1947 supports Burnes' assertion regarding the organizational change phases. In his research, Lewin explained that the initial phase aims to destabilize the existing culture, creating space for the introduction of a new cultural framework. The author further emphasized the necessity of disrupting the status quo to establish the desired new behavior (Lewin, 1947).

Lewin's Change Management Model provides valuable insights into the effect of data management on the performance of building projects in Kenya within the context of the relationship between enterprise resource planning (ERP) systems and project performance. According to Lewin's model, change involves three stages: unfreezing, changing, and refreezing. In the context of data management, this model suggests that effective data management practices are essential for facilitating change and improving project performance (Lewin, 1951).

Data management facilitated by ERP systems plays a crucial role in driving project performance. ERP systems provide a centralized platform for managing project data, including documentation, drawings, specifications, and other relevant information. By maintaining accurate and up-to-date data, ERP systems enable project managers and stakeholders to access critical information, track progress, and make informed decisions throughout the project lifecycle (Kumar, 2019).

Effective data management, supported by ERP systems, ensures the availability and reliability of project-related information, which is essential for driving change and achieving project objectives. Lewin's model suggests that the "changing" stage of the change process requires clear communication, shared vision, and access to relevant information (Lewin, 1951). By effectively managing project data, ERP systems facilitate communication and collaboration among project teams, subcontractors, and other stakeholders involved in building projects in Kenya.

Moreover, Lewin's model highlights the importance of reinforcing change to ensure its sustainability. In the context of data management, ERP systems enable organizations to establish data management protocols, procedures, and best practices that support ongoing improvement and innovation (Cameron & Green, 2015). By embedding effective data management practices into organizational culture, ERP systems contribute to the long-term success and performance of building projects in Kenya.

Lewin's Change Management Model provides a theoretical framework for understanding how data management, facilitated by ERP systems, influences the performance of building projects in Kenya. By aligning data management practices with the stages of change outlined in Lewin's model, organizations can leverage ERP systems to drive change, improve project performance, and achieve sustainable success in the construction industry.

Resourced- Based View Theory

This theory is rooted in the work of Werner Felt (1984) and posits that an organization's competitive ability is positively influenced by the innovative services it provides to customers. Borg and Gall (2009) assert that a firm can maintain its market leadership by efficiently utilizing resources in the pursuit of strategic goals. The Resource-Based Theory categorizes resources into organizational, human, and physical capital, contending that these resources play a crucial role in the production of goods and services. A study by Currie (2009) highlights that variations in company performance are attributable to differences in resource utilization. Consequently, the Resource-Based View theory is employed to elucidate how business firms achieve competitiveness by innovatively delivering superior services to customers, emphasizing strategic identification and the effective use of resources to establish a sustained competitive advantage.

The Resource-Based View (RBV) theory offers pertinent insights into the effect of risk identification on the performance of building projects in Kenya within the context of the relationship between enterprise resource planning (ERP) systems and project performance. According to RBV, organizations can gain a competitive advantage by effectively leveraging their unique resources and capabilities (Barney, 1991).

Efficient risk identification facilitated by ERP systems significantly influences project performance. ERP systems serve as comprehensive platforms for managing project data,

including risk registers, project plans, and stakeholder communications. By centralizing risk-related information, ERP systems enable project managers and stakeholders to identify, assess, and mitigate risks more effectively throughout the project lifecycle (Huang, 2020).RBV posits that the identification and management of risks can be considered valuable resources for organizations, contributing to their competitive advantage (Barney, 1991).
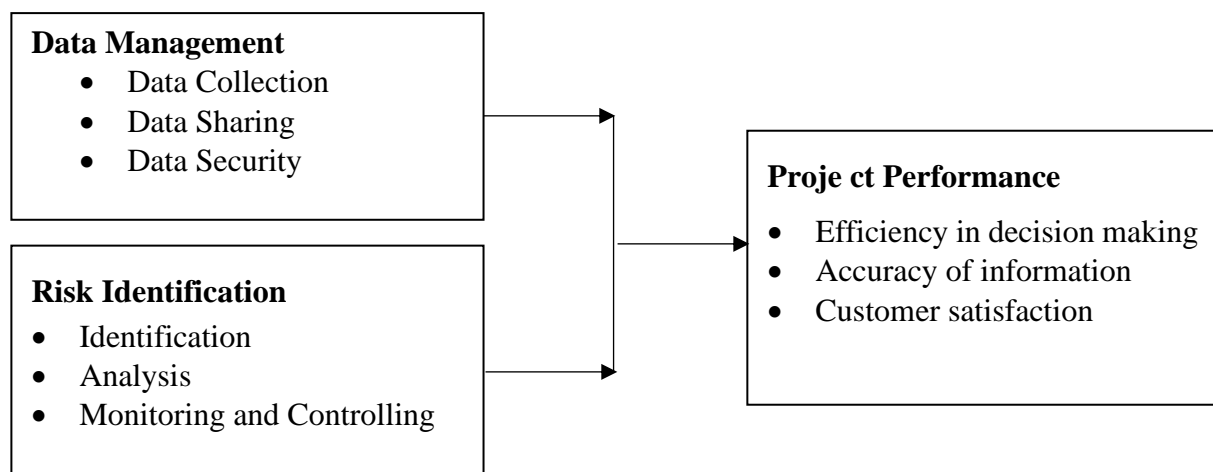
Effective risk identification allows organizations to anticipate potential threats, allocate resources strategically, and implement proactive Change management strategies. By utilizing ERP systems to identify and evaluate risks, organizations can minimize the likelihood and impact of adverse events, thereby enhancing project performance and competitiveness in the construction industry.Moreover, RBV underscores the significance of aligning resources with organizational objectives to achieve superior performance (Barney, 1991). Concerning risk identification, ERP systems enable organizations to allocate resources efficiently to address identified risks. By prioritizing and allocating resources based on risk assessments, organizations can optimize their Change management efforts and mitigate potential negative impacts on project performance.

Conceptual Framework

A conceptual frame work is defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation (Kombo and Tromp, 2009). The conceptual framework is founded from the literature review, which depicts a linkage between enterprise resource planning systems and project performance.

Independent Variable   **Dependent Variable**

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┌─────────────────────────────┐
│ Data Management             │
│   • Data Collection         │
│   • Data Sharing            │          ┌──────────────────────────────┐
│   • Data Security           │─────┐    │ Proje ct Performance         │
└─────────────────────────────┘     │    │                              │
                                     ├───▶│   • Efficiency in decision   │
┌─────────────────────────────┐     │    │     making                   │
│ Risk Identification         │     │    │   • Accuracy of information   │
│   • Identification          │     │    │   • Customer satisfaction    │
│   • Analysis                │─────┘    └──────────────────────────────┘
│   • Monitoring and          │
│     Controlling             │
└─────────────────────────────┘
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Figure 2. 1: Conceptual Framework

Data Management

Data collection is crucial for acquiring relevant information to inform decision-making and project planning processes. According to Doloi et al. (2019), comprehensive data collection ensures that project managers have access to accurate and up-to-date information about project requirements, progress, and resource utilization. ERP systems can facilitate data collection by integrating various sources of project data, including financial records, procurement information, and progress reports. In the context of building projects in Kenya, ERP systems can automate data collection processes, streamline data entry, and ensure data accuracy, thereby enabling project managers to make informed decisions and optimize project performance.

Secondly, data sharing promotes collaboration and communication among project stakeholders, facilitating timely decision-making and problem-solving. Gupta and Kohli (2019) emphasize the importance of data sharing in project management, highlighting its role in improving coordination and transparency. ERP systems provide centralized platforms for

storing and sharing project data, enabling real-time access to information across departments and teams. In the context of building projects in Kenya, ERP systems can facilitate data sharing among architects, engineers, contractors, and subcontractors, fostering collaboration and ensuring alignment with project objectives. By promoting data sharing, ERP systems enhance project visibility and enable stakeholders to work together more effectively, ultimately improving project performance.

Data security is critical for protecting sensitive project information and maintaining the integrity of project data. Mbachu et al. (2016) emphasize the need for robust data security measures to prevent unauthorized access, data breaches, and data loss. ERP systems incorporate advanced security features such as access controls, encryption, and audit trails to safeguard project data against security threats. In the context of building projects in Kenya, ERP systems can enforce data security policies to protect confidential project information, ensuring compliance with regulatory requirements and mitigating risks. By prioritizing data security, ERP systems enhance stakeholder trust and confidence in project data, thereby contributing to improved project performance.

Enterprise resource planning (ERP) systems play a significant role in supporting these indicators by providing tools and functionalities to streamline data management processes, facilitate collaboration, and ensure data security. By leveraging ERP systems effectively, organizations can enhance project visibility, communication, and decision-making, ultimately improving project performance in the construction industry.

Risk Identification

Risk identification is a fundamental aspect of data management in project planning and execution. Identifying potential risks allows project managers and stakeholders to anticipate challenges and implement proactive measures to mitigate their impact. According to Doloi et al. (2019), comprehensive risk identification involves identifying both internal and external risks that may affect project objectives, timelines, and budgets. ERP systems can facilitate risk identification by providing tools and functionalities to capture and categorize risks based on their likelihood and potential impact. In the context of building projects in Kenya, ERP systems can automate risk identification processes, ensuring that project teams have visibility into potential risks and can take appropriate actions to address them.

Risk analysis involves assessing the likelihood and potential impact of identified risks on project objectives. Gupta and Kohli (2018) emphasize the importance of conducting thorough risk analysis to prioritize risks and allocate resources effectively. ERP systems can support risk analysis by providing tools for quantitative and qualitative risk assessment, scenario analysis, and sensitivity analysis. In the context of building projects in Kenya, ERP systems can facilitate risk analysis by aggregating project data, generating risk reports, and performing risk simulations. By integrating risk analysis capabilities, ERP systems enable project teams to make informed decisions and prioritize risk mitigation efforts, thereby enhancing project performance.

Monitoring and controlling risks is essential for managing project uncertainties and ensuring that risk mitigation measures are effective. Mbachu et al. (2016) highlight the need for ongoing monitoring and control of risks throughout the project lifecycle to minimize their impact on project performance. ERP systems can support monitoring and controlling by providing real-time visibility into project risks, tracking risk mitigation actions, and generating alerts for potential deviations from the Change management plan. In the context of building projects in Kenya, ERP systems can automate risk monitoring processes, enabling project teams to proactively identify emerging risks and implement timely interventions. By integrating monitoring and controlling capabilities, ERP systems enhance project resilience and enable project teams to respond effectively to changing risk dynamics, ultimately improving project performance.

RESEARCH METHODOLOGY

Research Design

It adopted a descriptive research design, as described by Creswell and Clark (2017), which entails gathering precise information about the phenomena under study to draw valid conclusions. Additionally, the study incorporated correlational research design, defined by Creswell (2017), to establish relationships between variables using inferential statistics. Correlational research, as explained by Kothari (2009), allows for exploring causal relationships between variables and predicting scores on one variable from scores on other variables.

Target Population

The target population consisted of 16200 building construction projects registered by the National Construction Authority in 2023 (NCA, 2023). This is the population that the study made inferences to. The respondents of the current study was the management and staff in different departments in the building construction projects in Kenya.

Sample Size and Sampling Technique

Sampling refers to picking out a particular number of participants from a whole populace as an illustration of the group. Orodho (2009) claims that any conclusions made about the small group should be accurate about the whole group. The sample size was determined using Bell, Brymann and Harley (2018) sampling frame for large population number that is more than 1000 objects. Based on the theoretical assumption that the distribution is assumed to be normally distributed with a sample size of a above 30 objects, the sample size was determined using Bell, Brymann and Harley (2018) sampling frame for large population number, that is more than 1000 objects, it is recommended that the Sample Size (n) = z^2pq/e^2

$= (1.96)^2(0.5)(0.5)/(0.05)^2 = 384$

Where z= 1.96, p = 0.5, q = 0.5 and e = 0.05

Data Collection Instrument

Mertens (2014) define research instruments as tools for collecting data. In a study, there are a number of research tools that can be used depending on the nature of the study, the kind of data to be collected and the kind of population targeted. The study collected both secondary and primary data. The secondary data was collected from the journals, books and published academic references.

Questionnaires was used to collect primary data. Questionnaires provide written answers to written questions. A questionnaire is an instrument that is used to gather data and allows measurement for or against a particular viewpoint. It is meant to provide a standardized tool for data collection and attain objectivity in a survey (Gray, 2019). Structured and open-ended questions was used to collect primary data from the field. The questionnaires was used to collect data from different cadres of respondents. The questionnaires item was classsified into three(3) sub sections. The questionnaires was pilot tested to ascertain the extent to which the instrument collected the intended data, eliminate ambiguous questions, improve on validity and reliability.

Pilot Testing

Before a survey is carried out all aspects of the questionnaire as a survey instrument should undergo a pilot test (Yin, 2017). Pre-testing enables the researcher to modify and remove ambiguous items on instruments (Lune & Berg, 2016). A pilot test is conducted to detect weaknesses in design, instrumentation and to provide proxy data for selection of probability sample. Pilot test enables one to identify and eliminate any problems that may exist in a questionnaire (Best & Kahn, 2016) and examine the reliability and validity for measures used in the questionnaire (Yin, 2017). A pilot study is conducted with 4% - 10% of the sample

population (Creswell & Clark, 2017). Thus, the pilot study comprised of 38 respondents that is 10% of the sample size.

Data Analysis and Presentation

Data analysis is a process of inspecting, cleaning, transforming, and modeling data with the goal of highlighting useful information, suggesting conclusions, and supporting decision-making (Creswell & Poth, 2017). All the data collected through the questionnaires was edited for completeness and consistency to validate the initial field findings. Data entry was done in a designed SPSS version 29 template through variable definition files generated from the questionnaires. Qualitative and quantitative data was analyzed using descriptive and inferential statistics. Qualitative data was analyzed by the use of content analysis. Content analysis involves grouping topics into meaningful segments, coding and analyzing them into categories. Qualitative data is summarized by editing, paraphrasing and summarizing so as to get meaning from it. Using content analysis technique, qualitative data is coded and then the data is categorized and analyzed depending on their categories.

This study used both descriptive and inferential statistics to analyses the quantitative data. Descriptive statistics describe and summarize the data in a meaningful way using charts, tables and bars while inferential statistics draw conclusions on the analyzed data thus helping in generalization.

The study used two types of linear regression analyses; linear multiple regression and hierarchical linear regression. Linear regression was used to test relationship between variables due to linear relationship between the variables.

RESEARCH FINDINGS AND DISCUSSIONS

Descriptive Statistics

In this section the study presents the findings of various questions that aimed to establish the relationship between enterprise resource planning systems and Performance of building projects in Kenya. The respondents were asked to indicate their level of agreement or disagreement on the statements using a 5-point Likert scale where: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree.

Data management

Respondents gave the extent to which they agreed with statements about the influence of Data management on Performance of building projects in Kenya. Table 4.1 presents the findings obtained.

Table 4.1: Descriptive Statistics for Data management

Statements	Mean	Std. Dev.
The effectiveness of data collection methods influence the quality and reliability of data management in building projects	3.994	1.476
Data security measures influence the confidentiality and integrity of project data in building projects	3.961	1.476
The frequency and timeliness of data sharing affect project progress and decision-making in building projects	3.955	1.546
Data collection methods vary across different stages of building projects, and what implications does this have for data management	3.915	1.343
Data security concerns impact the adoption and utilization of digital data management systems in building projects	3.856	1.525
There are strategies implemented to mitigate risks related to data collection, sharing, and security in building projects	3.836	1.22
Data sharing practices have an impact on collaboration and decision-making processes in building projects	3.836	1.426

Based on the findings presented in Table 4.1, the respondents agreed that The effectiveness of data collection methods influence the quality and reliability of data management in building projects (M=3.994, SD=1.476); Data security measures influence the confidentiality and integrity of project data in building projects (M=3.961, SD=1.476); and The frequency and timeliness of data sharing affect project progress and decision-making in building projects (M=3.955, SD=1.546). Respondents also agreed that Data management   ensures project members are organized in teams which aims to achieve specific goals according to a given project (M=3.915, SD=1.343); Data security concerns impact the adoption and utilization of digital data management systems in building projects (M=3.856, SD=1.525); There are strategies implemented to mitigate risks related to data collection, sharing, and security in building projects (M=3.836, SD=1.220); and that Data sharing practices have an impact on collaboration and decision-making processes in building projects (M=3.836, SD=1.426). Respondents also gave other ways in which Data management relate with performance of building projects in Kenya. They explained that team members possess different skill sets and therefore, they are assigned different roles and responsibilities and thus ensuring project completion.

Risk identification

Respondents were asked to indicate the extent to which they agree with statements about the relationship between Risk identification   practice and Performance of building projects in Kenya. The findings obtained were as presented in Table 4.2.

Table 4.2: Descriptive Statistics for Risk identification

Statements	Mean	Std. Dev.
There are key performance indicators used for evaluating the effectiveness of risk management practices in building projects	4.007	1.251
Risk mitigation plans play a role in minimizing the impact of identified risks on building projects	3.994	1.343
Key performance indicators used for evaluating the effectiveness of risk management practices in building projects	3.988	1.475
Project teams assess the severity and probability of identified risks during the analysis phase	3.961	1.674
Strategies are employed for monitoring and controlling risks throughout the lifecycle of building projects	3.83	1.441
Project stakeholders prioritize identifying risks based on their potential impact and likelihood	3.817	1.142

Based on the findings presented in Table 4.2, the respondents were in agreement that There are key performance indicators used for evaluating the effectiveness of risk management practices in building projects (M=4.007, SD=1.251); Risk mitigation plans play a role in minimizing the impact of identified risks on building projects (M=3.994, SD=1.343); and that Key performance indicators used for evaluating the effectiveness of risk management practices in building projects (M=3.988, SD=1.475). Respondents also agreed that Project teams assess the severity and probability of identified risks during the analysis phase (M=3.961, SD=1.674); Strategies are employed for monitoring and controlling risks throughout the lifecycle of building projects   (M=3.830, SD=1.441); and that project managers are able to balance competing priorities in Risk identification (M=3.817, SD=1.142).

Respondents also gave additional ways through which Risk identification influence Performance of building projects in Kenya. They explained that at the start of the project, plans have to be communicated to all stakeholders involved in the project.

Correlation Analysis

The study conducted Pearson moment correlation analysis. Using the correlation coefficient, the study tested whether interdependency existed between the independent variables and also

whether there was any relationship between the dependent variable and independent variables and the direction of their relationship. The association was considered to be: small if $\pm 0.1 < r < \pm 0.29$; medium if $\pm 0.3 < r < \pm 0.49$; and strong if $r > \pm 0.5$. The correlation findings were as presented in Table 4.3.

Table 4.3: Correlation Analyses

		Performance	Data management	Risk identification
Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	357		
Data management	Pearson Correlation	.833[**]	1	
	Sig. (2-tailed)	.023		
	N	357	357	
Risk identification	Pearson Correlation	.730[**]	.264	1
	Sig. (2-tailed)	.001	.078	
	N	357	357	357

The findings show that data management has a strong relationship with performance of building projects in Kenya (r=0.833). Also, the p-value (0.000) was less than the selected level of significant (0.05) an indication that the relationship between the two variables was significant.

The findings further showed that Risk identification and performance of building projects in Kenya are strongly related (r=0.730). The relationship was also considered to be significant since the p-value (0.000) was less than the selected level of significance.

Regression Analysis

Multiple regressions were done to assess the relationship of project management practises and Performance of building projects in Kenya. The findings of regression analysis were presented in three tables presented and discussed in subsections below.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.950[a]	.902	.899	.05856

a. Predictors: (Constant), data management and risk identification

From the findings presented in Table 4.4, the value of adjusted R^2 was found to be 0.902 which implies that 90.2% variation in Performance of building projects in Kenya can be attributed to changes in data management and risk identification. The remaining 9.8% suggests that there are other factors that affect performance of building projects in Kenya that were not included in the model. The relationship between the variables under investigation is shown by correlation coefficient which is denoted by R. From the results presented in Table 4.4, the variables were strongly and positively related as indicated by correlation coefficient value of 0.950.

Table 4.5: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	3.236	2	1.618	1618	.000[b]
Residual	0.306	354	0.001		
Total	3.542	356			

a. Dependent Variable: Performance of building projects in Kenya

b. Predictors: (Constant), data management and risk identification

The study found a significance value of 0.000 which was less than 0.05 at 95% confidence interval; which is an indication that the data is ideal for making conclusion. The F-critical value, obtained from the F-distribution tables, was less than F-calculated (3.021 <1618). This shows that data management and risk identification significantly influence Performance of building projects in Kenya.

Table 4.6: Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.547	0.079		6.924	0.001
Data management	0.358	0.073	0.149	3.507	0.003
Risk identification	0.301	0.077	0.303	4.377	0.02

In view of the results in Table 4.6 above, regression equation extracted was as presented below.
$Y = 0.547 + 0.358 X_1 + 0.301 X_2 + \varepsilon$
The equation above reveals that holding the variables, data management and risk identification constant, performance of building projects in Kenya was at a constant value of 0.547.

The findings show that data management is seen to be statistically significant in explaining Performance of building projects in Kenya as shown by ($\beta = 0.358$, P = 0.003). The influence is significant since the p-value (0.003) is less than the selected level of significance (0.05). This indicates that Data management positively and significantly influence performance of building projects in Kenya. Therefore, increasing Data management will lead to an increase in performance of building projects in Kenya by 0.358 units.
Risk identification is also seen to be statistically significant in explaining Performance of building projects in Kenya as shown by ($\beta = 0.301$, P = 0.020). The influence is significant since the p-value (0.020) is less than the selected level of significance (0.05). This indicates that Risk identification positively and significantly influence performance of building projects in Kenya. Therefore, improving Risk identification will lead to an increase in Performance of building projects in Kenya by 0.301 units.

Conclusions

The study established that data management is seen to be statistically significant in explaining performance of building projects in Kenya. This implied that data management positively and significantly influence performance of building projects in Kenya. From the findings, the study concludes that effective data management will lead to an increase in performance of building projects in Kenya.
Risk identification was found to be statistically significant in explaining performance of building projects in Kenya. The study also found that the influence was significant. This implied that risk identificatio positively and significantly influence performance of building projects in Kenya. Based on the findings, the study concluded that systematic Risk identification will lead to an increase in performance of building projects in Kenya.

Recommendations

Data management had positive influence on project completion. Project managers should therefore ensure that when selecting team members, they have the skill set required for completing the task required. Also, when assigning tasks, it should be done based on the skills of the team members.

Risk identification positively influences project completion. The study thus recommends the adoption of effective communication channels when dispersing information. The study also recommends project managers to have collaborations and communications that are solid to make sure that all individuals involved in a project, work towards achievement of set goals and therefore ensure project success, within set timelines.

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