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# Impact of Risk Management on the Successful Completion of Construction Projects in Public Primary Schools: A Case Study of Dodoma Urban District, Tanzania

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## ABSTRACT

**Purpose:** The purpose of the study was to assess the impact of risk management on the successful completion of construction projects in public primary schools in Dodoma Urban District, Tanzania.

**Methodology:** Explanatory research design were used. Structured questionnaires were used for data collection from 320 respondents who were selected using simple random sampling technique. The collected data were analysed using descriptive statistics and multiple linear regression analysis.

**Findings:** The study concluded that effective risk management through identification, analysis and regular monitoring is key to successful construction projects. These elements work together to address challenges, ensure timely completion, control costs, improve quality, and promote accountability and transparency in project management.

**Unique Contribution to Theory, Policy and Practice:** The study concluded that effective risk identification, risk analysis and regular risk monitoring enhance timely completion and improve the overall quality of construction projects. The findings contribute to theory by empirically strengthening Risk Management Theory and demonstrating its applicability in public primary school construction projects. They further inform policy by highlighting the need for institutionalized risk assessment guidelines, capacity-building and consistent monitoring frameworks within local government construction procedures. In practice, the study provides actionable insights for project managers and contractors to adopt structured, proactive risk management approaches that minimize delays, cost overruns and quality shortcomings.

**Keywords:** *Risk Management, Successful Completion, Construction Projects, Public Primary Schools, Tanzania*

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## 1.0 INTRODUCTION

The construction sector is globally recognized as a complex yet essential industry that supports economic growth, job creation, and the provision of social services (Global Construction, 2020; Namian, 2021; Atkinson, 2019). Effective quality management is therefore crucial to ensure that project objectives are achieved within time, cost, and resource limits while meeting customer expectations (Ershadi, 2019).

However, construction projects often encounter numerous risks that disrupt progress, increase costs, and compromise quality (Aikpokhio et al., 2024; Al-Mukahal, 2020). Common risks include poor cost and time management, lack of professionalism, and bureaucratic inefficiencies (Ajayi et al., 2022). Ineffective risk management results in schedule delays, cost overruns, and prolonged disputes (Bahamid et al., 2022; Crispim et al., 2019). Scholars generally classify these risks as internal or external, or into political, financial, market, social, and safety categories (Ajayi et al., 2022).

Globally, evidence shows persistent challenges in managing construction risks. In Yemen, 53% of projects were unfinished and 40% exceeded their budgets (Bahamid et al., 2020). Similarly, in Sri Lanka, over 60% of projects faced delays and cost overruns (Al-Mukahal, 2020), while in Jordan, challenges arose from owner interference, poor planning, and limited contractor experience (Madushanka & Tilakasiri, 2020). Other studies identified design errors and client liabilities in Portugal (Chamuwange & Ning, 2022), road closures in Palestine (Tayeh et al., 2020), and resource limitations in Afghanistan (Hameed et al., 2023).

In Sub-Saharan Africa, construction risks are compounded by corruption, political instability, and poor infrastructure. South Africa's public projects suffer from cost overruns and schedule changes (Aenet & Maniha, 2023), Nigeria's from bribery, inflation, and poor specifications (Osunsanmi et al., 2022), while Ethiopia and Kenya face leadership, teamwork, and legal challenges (Geletu, 2020; Ahmed et al., 2020; Ronoh, 2020).

In Tanzania, particularly in urban centers like Dodoma, similar issues persist. Studies reveal poor planning, weak supervision, and substandard work quality in public construction projects (Abeid, 2023; NAOT, 2021). In Mbeya, Stephen (2021) reported inadequate technical specifications in school projects, while Abeid & Lubua (2023) highlighted lack of leadership commitment and oversight as major contributors to poor quality management.

Despite these findings, limited research has examined how risk identification, risk analysis, and continuous monitoring influence project success in public primary schools. This study therefore addressed this gap by assessing the impact of risk management on the successful completion of construction projects in public primary schools within Dodoma Urban District, aiming to inform better management practices and policy decisions in Tanzania's public construction sector.

## 1.1 STATEMENT OF THE PROBLEM

The implementation of fee-free education policy in public primary schools increased by 10% between 2016 and 2018 with an enrolment over 1.9M in 2018 which led to a need for more learning space (URT, 2020). The current long-term construction projects show that, 6 000 primary classrooms were needed each year until 2025 (Wodon, 2019). Between 2019 and 2023, Dodoma Urban District was allocated with several construction projects including 513 classrooms and 106 toilets in public primary schools (URT, 2020).

In order to improve the quality of public projects' building standards, the Tanzanian government, in collaboration with local authorities, initiated quality assurance programmes aimed at monitoring the construction processes of public primary schools (URT, 2020). These programmes involved regular inspections by qualified engineers and architects to ensure that, building standards were met. Workshops and training sessions were organised for contractors and builders. Their purpose was to educate them on national building codes and standards. This initiative aimed to enhance the skills of those involved in the construction process, thereby reducing instances of substandard work.

However, despite these initiatives, evidence indicates that, many classroom in Dodoma Urban District were constructed without adherence to approved designs, leading to structural weaknesses (URT, 2020). Additionally, monitoring and evaluation team discovered that, approximately 30% of newly constructed classrooms failed to meet the required space per student as outlined in national guidelines. Furthermore, nearly 25% of newly built toilets were found to be non-functional or lacking proper sanitation facilities due to budget constraints (World Bank Group, 2023; UNESCO, 2022).

A survey conducted by NGOs working in education reported that, over 40% of parents expressed concerns over inadequate classroom sizes and poor toilet conditions (Mhando & Mhando, 2021). This was caused by the substandard materials being used despite existing regulations (Mhando & Mhando, 2021). Furthermore, there was notable gaps in Dodoma Urban District. For example, a study by Mhando (2021) highlighted that, many construction projects in public primary schools in Dodoma faced several challenges. These were due to inadequate risk assessment frameworks, leading to delays and increased costs (Mhando, 2021).

Another study by Kihinga (2023) examined various construction projects across Dodoma. The study found that, those which employed structured risk assessment methodologies had higher success rates regarding timely completion (Kihinga, 2023). Those which did not prioritise such assessments failed (Kihinga, 2023). This indicates a pressing need for further researches into tailored risk management practices for educational infrastructure (Kihinga, 2023). In light of the above, this study assessed the impact of risk management on the successful completion of construction projects in public primary schools in Dodoma Urban District, Tanzania.

## 2.0 LITERATURE REVIEW

### 2.1 Theoretical Review

#### 2.1.1 The Risk Management Theory

This study was guided by the Risk Management Theory developed by Frank Knight (1921) and later expanded by Khamis et al. (2021). The theory provides a structured approach to identifying, assessing and mitigating risks that may hinder project success (Lee, 2023). It emphasizes key principles such as risk identification, assessment, management strategies and monitoring (Mishra, 2020). Its main strengths include proactive risk detection (Mwanza & Mhando, 2021), improved decision-making (Kibera & Ngoya, 2022), and enhanced communication among stakeholders (Mchopa & Kihinga, 2023). However, it faces challenges such as implementation complexity and overreliance on quantitative data (Kibera & Ngoya, 2022; Mchopa & Kihinga, 2023).

The theory has been applied in several studies. Mwanza and Mhando (2021) found that effective risk management improved project performance in Dodoma's public school construction, while Kibera and Ngoya (2022) reported that proper risk assessment reduced delays and cost overruns. Despite its limitations, this theory was relevant to the current study as it provided the key variables risk identification, risk analysis, and risk monitoring used to examine the impact of risk management on the successful completion of public primary school construction projects in Dodoma Urban District, Tanzania.

### 2.2 Empirical Literature Review

#### 2.2.1 Risk Identification and Project Completion

Schmidt (2021) investigated risk management in educational infrastructure projects in Germany using the Project Risk Management Theory and found that effective risk identification enhanced timely project completion, though contextual differences limit generalization to Dodoma. In Malaysia, Zain (2023) applied the Systems Theory and revealed that weak risk identification led to higher costs, delays, and poor quality. Similarly, Mokhothu (2022) in South Africa, using the Risk Management Framework, found that insufficient risk identification caused project delays and overruns. In Kenya, Nyarangi, Ogolla, and Kitheka (2021) employed the Project Management Institute's Theory and reported a significant positive link between risk identification and borehole project performance. Conversely, Mshuza, Yusuf, and Ngatia (2023) in Tanzania found no significant relationship between risk identification and public school project performance using the Prospect and Enterprise Risk Management theories. Based on these studies, this research was guided by the hypothesis: $H_1$: Risk identification positively affects the successful completion of construction projects in public primary schools in Dodoma Urban District.

### 2.2.2 Risk Analysis and Project Completion

Canesi and Gallo (2024) in Venezuela examined risk assessment in sustainable infrastructure projects using the Risk Management Theory and found that risk matrix analysis minimized cost overruns. However, their qualitative design limits generalization compared to the current quantitative approach. Similarly, Kowalski (2021) in Poland, using a cross-sectional design, found that effective risk analysis improved project completion by identifying delays early, supporting this study's premise. In Ethiopia, Tessema, Alene, and Wolelaw (2022) using the Stakeholder Theory, observed that inflation and delayed payments hindered performance. Nabudere (2022) in Uganda, through a mixed-methods approach, found that poor risk analysis caused major delays, while Sospeter and Chileshe (2021) in Tanzania confirmed that proper risk analysis enhanced completion in project-based organizations. Thus, the study hypothesized that $H_2$: Risk analysis positively affects the successful completion of construction projects in public primary schools in Dodoma Urban District.

### 2.2.3 Regular Risk Monitoring and Project Completion

Tanaka (2022) in Japan, applying the Systems Theory, established that continuous monitoring reduced delays and cost overruns in school projects. Similarly, Hansen (2021) in Norway found that consistent monitoring improved completion rates through early detection of risks. In Kenya, Ibrahim (2023) also reported a strong positive relationship between regular monitoring and sustainability of school projects using the Systems Theory, while Gasana and Irechukwu (2023) in Rwanda, applying the Results-Based Management model, found that participatory monitoring improved timelines and quality. In Tanzania, Ndomba (2022) using the Theory of Change, revealed that effective monitoring enhanced project quality. Based on these findings, the study proposed: $H_3$: Regular risk monitoring positively affects the successful completion of construction projects in public primary schools in Dodoma Urban District.

### 2.3 Conceptual Framework

In this study, conceptual framework means for a detailed summary of the relationship among independent and dependent variables.

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**Independent Variables** **Dependent Variable**

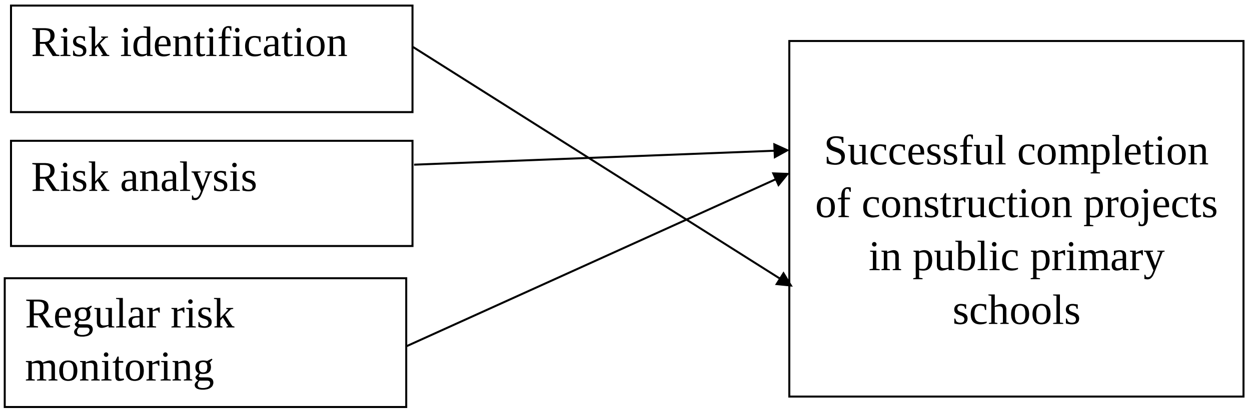


Figure 1: Conceptual Framework

**Source:** The Knight's Risk Management Theory (1921)

### 2.4 Research Gap

Most reviewed studies were conducted internationally or regionally (e.g., Gasana & Irechukwu, 2023; Ibrahim, 2023; Nyarangi et al., 2021; Tembo et al., 2023; Zain, 2023), with few focusing on Tanzania. Some were carried out in public secondary schools (Ibrahim, 2023; Zain, 2023) or in other public sector construction projects such as boreholes and infrastructure works (Gasana & Irechukwu, 2023; Nyarangi et al., 2021; Tembo et al., 2023), rather than in public primary schools. For instance, Mshuza et al. (2023) studied secondary schools in Mara Region, while Salim and Macha (2023) and Ndomba (2022) focused on projects in Zanzibar and Mbinga District Council, respectively. However, none directly examined the influence of risk identification, analysis and regular monitoring on the completion of construction projects in public primary schools in Dodoma Urban District. Thus, the current study addresses both geographical and knowledge gaps.

A methodological gap also exists since most prior studies applied descriptive or case study designs (e.g., Gasana & Irechukwu, 2023; Ibrahim, 2023; Ndomba, 2022; Sospeter & Chileshe, 2021; Tessema et al., 2022; Canesi & Gallo, 2024), while the current study employs an explanatory design to establish causal relationships. Additionally, a theoretical gap is evident because previous studies used diverse theories such as the Systems Theory, Project Management Institute's theory, Prospect and Enterprise Risk Management theories, Stakeholder Theory, Results-Based Management model and Theory of Change unlike the present study, which adopts the Risk Management Theory. This theory is more comprehensive, integrating risk perception, decision making and socio-economic factors, making it particularly suitable for assessing how risk identification, analysis and monitoring influence project success in Dodoma Urban District.

## 3.0 MATERIALS AND METHODS

This study employed a deductive research approach. The study was conducted in Dodoma Urban District, Tanzania, targeting the assessment of how risk identification, risk analysis and regular risk monitoring influence the successful completion of construction projects in public primary schools. A purposive sampling technique was applied to select 320 respondents and data were collected using questionnaires. Inferential analysis was then conducted to identify key patterns and relationships within the data.

## 4.0 FINDINGS

### 4.1 Response Rate

This study intended to use a sample size of 320 respondents. However, only 315 respondents filled in and returned the questionnaires. In this case, the response rate was 98.4% capable for statistical analysis. According to Akram et al., (2023), the response rate above 70% is regarded as excellent. Therefore, the response rate of 98.4% was excellent for the analysis and development of conclusions.

### 4.2 Risk Identification on Successful Completion of Construction Projects

The first specific objective of the study examined the effect of risk identification on successful completion of construction projects in public primary schools in Dodoma Urban District. Table 4.7 presents the output results. The results indicate that, respondents agreed that, risk identification is essential for meeting deadlines in construction projects (M=3.75, SD=1.355) and its effectiveness contributes positively to achieving project goals within time constraints (M=3.71, SD=1.300). Furthermore, effective risk identification reduces the likelihood of budget overruns in construction projects (M=3.53, SD=1.346) and disruptions during the construction phase (M=3.51, SD=1.411).

**Table 1: Results for Risk Identification on Successful Completion of Construction Projects**

| Responses | N | Mean | Std. Dev |
|---|---|---|---|
| Risk identification is essential for meeting deadlines in construction projects | 315 | 3.75 | 1.355 |
| Effective risk identification contributes positively to achieving project goals within time constraints | 315 | 3.71 | 1.300 |
| Effective risk identification reduces the likelihood of budget overruns in construction projects | 315 | 3.53 | 1.346 |
| Identifying risks early in the project lifecycle minimizes disruptions during the construction phase | 315 | 3.51 | 1.411 |

**Source:** Field Data (2025)

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### 4.3 Risk Analysis on Successful Completion of Construction Projects

The second specific objective of the study examined the effect of risk analysis on successful completion of construction projects in public primary schools in Dodoma Urban District. Table 4.8 presents the output results. The results establish that, respondents agreed that, risk analysis reduces delays in construction projects (M=3.74, SD=1.336), helps mitigate unforeseen challenges that may arise during the construction process (M=3.68, SD=1.465) and contributes to better resource allocation during the construction projects (M=3.66, SD=1.348). Additionally, risk analysis improves the overall quality of construction projects (M=3.60, SD=1.497), aids in compliance with local regulations and standards for school construction projects (M=3.45, SD=1.428) and helps in identifying potential financial risks associated with construction projects (M=3.40, SD=1.450).

**Table 2: Results for Risk Analysis on Successful Completion of Construction Projects**

| Responses | N | Mean | Std. Deviation |
|---|---|---|---|
| Risk analysis reduces delays in construction projects | 315 | 3.74 | 1.336 |
| Risk analysis helps mitigate unforeseen challenges that may arise during the construction process | 315 | 3.68 | 1.465 |
| Risk analysis contributes to better resource allocation during the construction projects | 315 | 3.66 | 1.348 |
| Risk analysis improves the overall quality of construction projects | 315 | 3.60 | 1.497 |
| Risk analysis aids in compliance with local regulations and standards for school construction projects | 315 | 3.45 | 1.428 |
| Risk analysis helps identify potential financial risks associated with construction projects | 315 | 3.40 | 1.450 |
| Valid N (listwise) | 315 | | |

**Source:** Field Data (2025)

### 4.4 Regular Risk Monitoring on Successful Completion of Construction Projects

The third specific objective of the study examined the effect of regular risk monitoring on the successful completion of construction projects in public primary schools in Dodoma Urban District. Table 4.9 presents the output results. The results show that, respondents agreed that, regular risk monitoring enhances the quality of construction work (M=3.68, SD=1.534), fosters accountability among contractors and workers working on public primary school projects (M=3.54, SD=1.362) and help to identify potential risks early in the construction process (M=3.53, SD=1.408). Additionally, regular risk monitoring improves timely completion of construction

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projects (M=3.49, SD=1.634) and fosters a culture of transparency within the project management team (M=3.49, SD=1.517).

**Table 3: Results for Regular Risk Monitoring on Successful Completion of Construction Projects**

| Responses | N | Mean | Std. Deviation |
|---|---|---|---|
| Regular risk monitoring enhances the quality of construction work | 315 | 3.68 | 1.534 |
| Regular risk monitoring fosters accountability among contractors and workers working on public primary school projects | 315 | 3.54 | 1.362 |
| Risk monitoring activities help identify potential risks early in the construction process | 315 | 3.53 | 1.408 |
| Regular risk monitoring improves timely completion of construction projects | 315 | 3.49 | 1.634 |
| Regular risk monitoring fosters a culture of transparency within the project management team | 315 | 3.49 | 1.517 |
| Valid N (list wise) | 315 | | |

**Source:** Field Data (2025)

### 4.5 Inferential Statistics

Multiple linear regression was used to test the hypothesised relationships. Before running the multiple linear regression model, sensitive and fundamental assumptions pertaining to the model were first tested.

#### 4.5.1 Linearity Assumption

Errors for linearity were checked by using the scatter plot diagram. The results in Figure 2 show that, the scatter diagram is linear (upward sloping from left to right). This implies that, errors show a normal distribution, and thus, the results are correct, and therefore, coefficient significances have been appropriately determined (Pallant, 2020). Furthermore, the mean error of the regression model is zero signifying that, the line obtained is unbiased (United States Pharmacopeia, 2023a); the variance of errors is positive and constant implying that, the variables have a positive correlation (Saunders et al., 2023). From the scatter diagram, the findings supported the model since the errors were normally distributed.

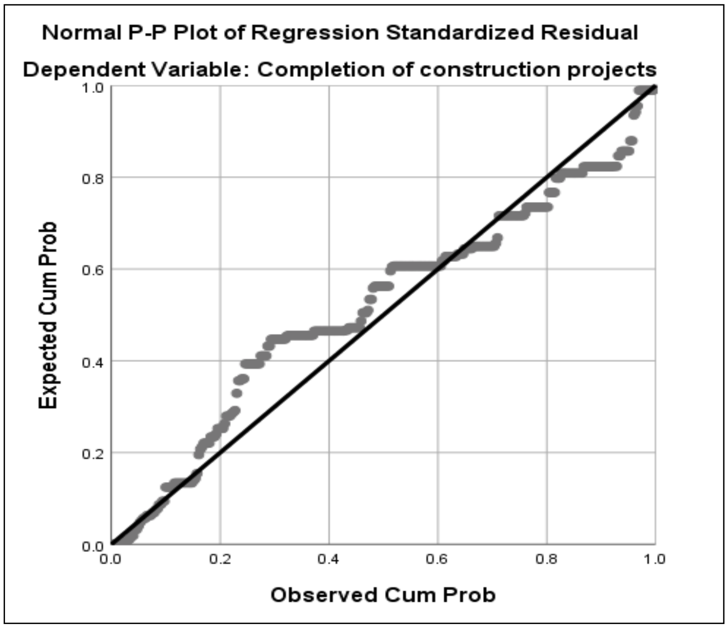


**Figure 2: Scatter plot for linearity checking and testing**

**Source:** Data Analysis (2025)

### 4.5.2 Multicollinearity Assumption

This study performed the multicollinearity test aiming at testing the level of the Tolerance of predictors. According to Jarantow *et al.*, (2023), multicollinearity is tested by using the Variance Inflation Factor (VIF) and Tolerance values. The assumption is that, the predictors should be dependent from each other in order multicollinearity assumption to be met and if not the findings might be incorrect (Jarantow *et al.*, 2023). The acceptable range of the VIF must be equal or less than 10 (= or <10) while for Tolerance measure, the values must be greater than 0.1 (>0.1) but less than 10 (Jarantow *et al.*, 2023).

The output results in Table 4.11 depict it clearly that, risk identification has the Tolerance value of 0.203 and the VIF of 4.925; risk analysis has the Tolerance value of 0.106 with the VIF of 9.537 while regular risk monitoring has the Tolerance value of 0.175 and the VIF of 5.715. In all the three predictors, the output results indicated that, the Tolerance values are all above 0.1 (>0.1) and the VIF values are less than 10 (<10). This means that, there is no multicollinearity problem among the variables and, therefore, the assumptions for multicollinearity in this study was also met and the findings are correct to predict the model.

**Table 4: Multicollinearity**

| Model | | Collinearity Statistics | |
|---|---|---|---|
| | | Tolerance | VIF |
| 1 | Risk identification | .203 | 4.925 |
| | Risk analysis | .106 | 9.735 |
| | Regular risk monitoring | .175 | 5.715 |

a. Dependent Variable: Successful completion of construction projects

**Source:** Data analysis (2025)

### 4.5.3 Normality Assumption

In this study, normality of residuals was tested by using the histogram. With a histogram, the distribution of the residuals is shown by the bell-shaped curve on the histogram (Saunders *et al.*, 2023). A normal distribution is shown by the residuals' proximity to zero in both mean and standard deviation (Saunders *et al.*, 2023). The histogram which indicates that, all residual values fall within the three boundaries, demonstrates that, there are no outliers. According to Pallant (2020), a result outside of the 3 criterion is anomalous. In this study, the histogram shows the bell-shaped curve indicating that, there is a normal distribution of the residuals demonstrating that, there are no outliers in the results.

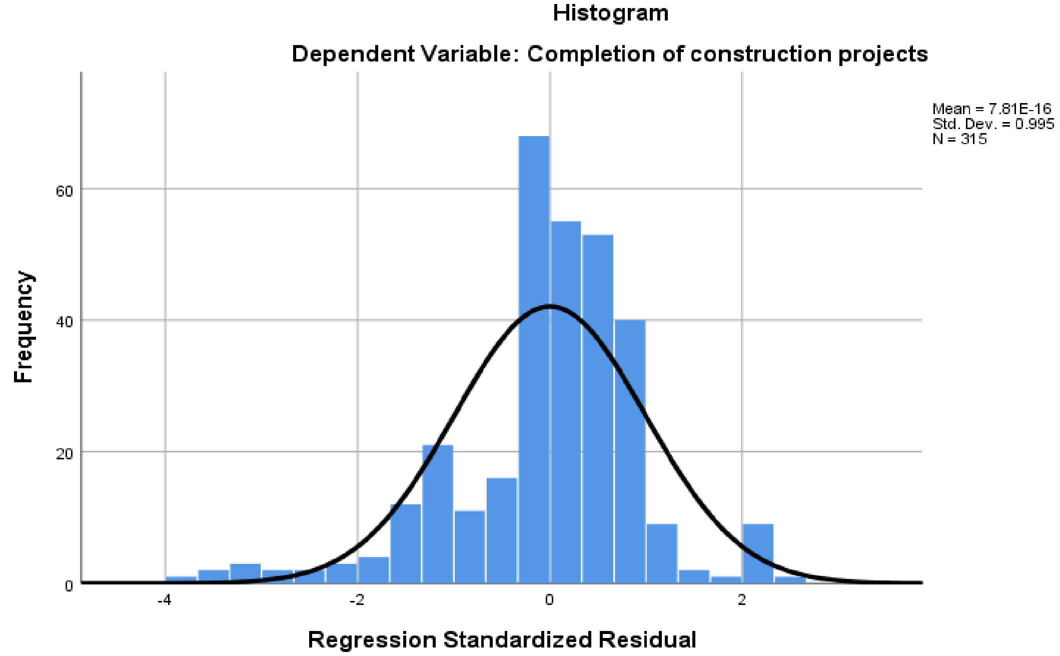


**Figure 3: Histogram showing distribution of residuals**

**Source:** Data Analysis (2025)

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### 4.6 Multiple Regression Analysis

Additionally, multiple linear regression analysis was conducted to establish a statistically significant level between independent variables. The p-value$\leq$0.05 was used to measure the significance level of the association between independent variables and dependent variable. The multiple linear regression was specified as follows: $Y = \beta o + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$, where Y = dependent variable (successful completion of construction projects), XS = independent variables, $\beta o$ = Y intercept, where the regression line crosses the Y axis, $\beta 1$ = the partial slope for X1 on Y, X1 = risk identification, X2= risk analysis, X3 = regular risk monitoring and $\varepsilon$ =error term. The analysis is meant to show a physical way in which predictor X affects variable Y.

### 4.6.1 Model Summary of the Variables

Table 5 presents the model summary showing the statistical relationship between the predictors and the dependent variable. The output findings indicated that, the R value is 0.907 equivalent to 90.7%. This implies that, there exists a strong statistical relationship between the studied variables. Additionally, the output shows that, the $R^2$= 0.822 explaining that, the predictors explain a high 82.2% of the variation in successful completion of construction projects in in public primary schools in Dodoma Urban District. The unexplained 17.8% variance is a result of other variables not in the model. The adjusted $R^2$= 0.820 equivalent to 82.0%. This implies that, the change in successful completion of construction projects in public primary schools in Dodoma Urban District is affected by the change in risk identification, risk analysis and regular risk monitoring.

**Table 5: Model Summary of the Variables**

| | | | | | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** | **R Square Change** | **F Change** | **df1** | **df2** | **Sig. F Change** |
| 1 | .907[a] | .822 | .820 | .504 | .822 | 478.967 | 3 | 311 | 0.000 |

a. Predictors: (Constant), Regular risk monitoring, Risk identification, Risk analysis

b. Dependent Variable: Successful completion of construction projects

**Source:** Data Analysis (2025)

### 4.6.2 Analysis of Variance

The findings of the output in Table 4.13 indicate that, the model has less than 5% level of significance ($p<0.05$), the numerator df= 3 and the denominator df= 311 while the computed F value is 478.967 greater than the greater than F-critical (2.4904). Since $p<0.05$, the regression model statistically and significantly predicts how risk identification, risk analysis and regular risk monitoring affect successful completion of construction projects in public primary schools in Dodoma Urban District.

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**Table 6: Analysis of Variance**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 365.549 | 3 | 121.850 | 478.967 | .000[b] |
| | Residual | 79.119 | 311 | .254 | | |
| | Total | 444.668 | 314 | | | |

a. Dependent Variable: Successful completion of construction projects

b. Predictors: (Constant), Regular risk monitoring, Risk identification, Risk analysis

**Source:** Data analysis (2025)

### 4.6.3 Regression Coefficients

The study aimed at comparing the effect of each predictor over the dependent variable. In determining how the predictors affected the dependent variable, the model followed this formula: $Y = \beta o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$.

This means that, $Y = -0.507 + 0.599X_1 + 0.121X_2 + 0.225X_3$. The results from the output in Table 4.14 establish that, risk identification has the Beta of positive 0.599 and p=0.000. This implies that, risk identification positively and significantly affects successful completion of construction projects in public primary schools in Dodoma Urban District ($X_1$= 0.599, p=0.000<0.05). It further signifies that, as risk identification increases by one unit and the other predictors remain constant, successful completion of construction projects in public primary schools in Dodoma Urban District also increases by 0.599 units.

Risk analysis has the Beta value of positive 0.121 with p=0.003. This implies that, risk analysis positively and significantly affects successful completion of construction projects in public primary schools in Dodoma Urban District ($X_2$=0.121, p=0.003<0.05). It further signifies that, as risk analysis increases by one unit and the other predictors remain constant, successful completion of construction projects in public primary schools in Dodoma Urban District also increases by 0.121 units.

Furthermore, the findings on regular risk monitoring shows the Beta value of positive 0.225 and p=0.000. This implies that, regular risk monitoring is positive and significant to the successful completion of construction projects in public primary schools in Dodoma Urban District ($X_3$ = 0.22, p=0.000<0.05). It further signifies that, as regular risk monitoring increases by one unit and the other predictors remain constant, successful completion of construction projects in public primary schools in Dodoma Urban District also increases by 0.22 units.

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**Table 7: Regression Coefficients' Results**

| Model | | Unstandardised Coefficients | | Standardised Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -.507 | .109 | | -4.652 | .000 |
| | Risk identification | .723 | .064 | .599 | 11.277 | .000 |
| | Risk analysis | .137 | .083 | .121 | 1.650 | .003 |
| | Regular risk monitoring | .242 | .061 | .225 | 3.933 | .000 |

a. Dependent Variable: Successful completion of construction projects

**Source:** Data analysis (2025)

### 4.6 Summary of Hypotheses Testing

In order to achieve the general objective of the study, three research hypotheses were formulated which either could be accepted or rejected. Additionally, the statistical tests were determined to assess the validity of the specific objectives. The results in Table 4.15 indicate that, all three hypotheses were accepted. The regression model shows that, risk identification ($X_1$= 0.599, p=0.000<0.05), risk analysis ($X_2$= 0.121, p=0.003<0.05) as well as regular risk monitoring ($X_3$= 0.225, p=0.000<0.05) positively and significantly affect successful completion of construction projects in public primary schools in Dodoma Urban District.

**Table 8: Summary of Hypotheses Testing**

| Hypothesis | Model | Coefficient P-value | Conclusion |
|---|---|---|---|
| 1. **$H_1$:** Risk identification positively affects the successful completion of construction projects in public primary schools in Dodoma Urban District. | Multiple linear regression model | p=0.000<0.05 | Accepted $H_1$ |
| 2. **$H_2$:** Risk analysis positively affects the successful completion of construction projects in public primary schools in Dodoma Urban District. | Multiple linear regression model | p=0.003<0.05 | Accepted $H_2$ |
| 3. **$H_3$:** Regular risk monitoring positively affects the successful completion of construction projects in public primary schools in Dodoma Urban District. | Multiple linear regression model | p=0.000<0.05 | Accepted $H_3$ |

**Source:** Data analysis (2025)

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### 4.7 Discussions of the Findings

The discussion in this study bases on the findings as they were generated from the analysed data. They are compared and/or contrasted with the generated findings together with the previous literature. Any contribution of each finding is highlighted. This helps to clear an in-depth understanding the extent risk management impacts successful completion of construction projects in public primary schools in Dodoma Urban District, Tanzania.

#### 4.7.1 Risk Identification on Completion of Construction Projects

The multiple linear regression results revealed that risk identification significantly and positively influenced the successful completion of construction projects in public primary schools in Dodoma Urban District. This aligns with findings by Ibrahim (2023), Nyarangi et al. (2021), and Schmidt (2021), who reported that effective risk identification is strongly correlated with timely project completion. The study further found that risk identification is crucial for meeting deadlines, achieving project goals within time constraints, and minimizing budget overruns and construction disruptions. These results are consistent with Zain (2023), who noted that poor risk identification led to higher costs, delayed completion, and reduced construction quality, and with Mokhothu (2022), who reported that inadequate risk identification caused delays and budget overruns in school construction projects.

Additionally, systematic and regular risk monitoring was found to reduce delays, control costs, and improve stakeholder satisfaction, as supported by Tanaka (2022) and Hansen (2021). Gasana and Irechukwu (2023) also reported that participatory monitoring positively affected project performance, timelines, and quality. These findings support the Risk Management Theory, emphasizing proactive risk identification, enhanced decision-making, and improved communication among stakeholders (Mwanza & Mhando, 2021; Kibera & Ngoya, 2022; Mchopa & Kihinga, 2023). However, the results contrast with Mshuza et al. (2023), who found no significant effect of risk identification on project performance, a disparity possibly due to poorly constructed questionnaire items that hindered participants' understanding.

#### 4.7.2 Risk Analysis on Completion of Construction Projects

The multiple linear regression results indicated that risk analysis significantly and positively influenced the successful completion of construction projects in public primary schools in Dodoma Urban District. This aligns with Sospeter and Chileshe (2021), who reported that risk analysis was crucial for project completion in construction-based organisations.

The study further found that risk analysis helps reduce delays, mitigates unforeseen challenges, and improves resource allocation during construction. These findings are supported by Kowalski (2021), who noted that effective risk analysis enabled timely project completion by identifying potential delays early, and by Tessema et al. (2022), who reported that factors such as inflation, delayed site access, and late contractor payments negatively impacted project risks. Additionally, risk analysis enhances overall project quality, ensures compliance with regulations and standards, and identifies potential financial risks. These observations align with Canesi and Gallo (2024), who found that risk analysis managed uncertainties and minimized cost overruns, and with Nabudere (2022), who highlighted that inadequate risk analysis led to delays and budget overruns in school construction projects.

### 4.7.3 Regular Risk Monitoring on Completion of Construction Projects

The multiple linear regression results indicated that regular risk monitoring significantly and positively influenced the successful completion of construction projects in public primary schools in Dodoma Urban District. This supports Ibrahim (2023), who found a strong positive relationship between regular monitoring practices and the sustainability of school construction projects.

The study further revealed that regular risk monitoring enhances construction quality, promotes accountability among contractors and workers and facilitates early identification of potential risks. These findings align with Tanaka (2022), who reported that systematic monitoring reduced delays and cost overruns while improving stakeholder satisfaction. Additionally, regular risk monitoring supports timely project completion and fosters transparency within project management teams, corroborating Hansen (2021), who noted that monitoring enabled early detection of delays and timely interventions, thereby improving project completion rates.

## 5.0 CONCLUSION AND RECOMMENDATIONS

### 5.1 Conclusion

Based on the findings, this study concludes that effective risk management is essential for successful construction projects. Risk identification ensures timely completion, budget adherence, and minimal disruptions. Risk analysis helps prevent delays, address unforeseen challenges, optimize resources, improve quality, maintain compliance, and manage financial risks. Regular risk monitoring further enhances project outcomes by improving quality, promoting accountability, enabling early detection of risks, ensuring timely completion, and fostering transparency among project teams.

### 5.2 Recommendations

To ensure successful completion of construction projects, the study recommends strengthening risk management. For risk identification, a systematic framework, proactive stakeholder engagement, use of historical data and advanced tools like AI should be applied, alongside continuous team training. For risk analysis, a standardized approach with modern analytical tools, open communication, and financial risk consideration is essential. For risk monitoring, technology-driven systems, clear roles, accountability, and regular reviews should be implemented to ensure timely, high-quality, and transparent project completion.

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