



RISK MANAGEMENT STRATEGIES AND PERFORMANCE OF CONSTRUCTION PROJECTS IN RWANDA: A case of BUT General Trading Ltd

ABSTRACT

This research aimed at establishing the relationship between risk management practices and performance of construction projects in Rwanda as a general objective of this research. It was anchored on four main specific objectives, namely: to examine the relationship between risk avoidance and performance of construction projects; to assess the relationship between risk reduction and performance of construction projects; to establish the relationship between risk transfer and performance of construction projects, and to establish the relationship between risk retention and performance of construction projects.

The study was of descriptive and correlation characters. It seeks to describe risk management strategies and performance of construction project at general trading in relation to the prescribed elements of conceptual framework. The population of the study comprised 64 respondents made of 15 supervision managers, and 49 technical staff. The study considered all population in the sample because they were less than hundred. Both primary and secondary data were sourced out for information of this research. Questionnaire and interview guide were the main research instruments used. SPSS was used to perform analysis of collected data. Correlation analysis was also used to analyse and quantify the relationship between variables. The study found that risk management speed up the project and prevent any unexpected delay and guide the implementation of prepared budget for making sound expenditure through following standard cash utilization process. Pearson correlation values of risk management strategies were greater than .5 shows high positive correlation with performance of construction projects.

The regression analysis was done per objectives: For the first objective, it was revealed that risk avoidance has significance positive relationship with the performance of construction project as indicated by $\beta_1 = .204$, $p = .017 < 0.05$. For the second objective, the findings indicated that risk reduction has significance positive relationship with the performance of construction project as with $\beta_2 = .163$, $p = .040 < 0.05$. For the third objective, the findings showed that risk transfer have significance positive impact on performance of construction project as indicated by $\beta_3 = .288$, $p = .002 < 0.05$. For the fourth objective, the findings proved that risk acceptance has significance positive with the performance of construction project as indicated by $\beta_4 = .296$, $p = 0.003 < 0.05$.

The study recommends the increase of workshop sessions in order to develop young engineer's capacity to identify and face the risk at construction site through organized seminars with construction professionals to exercise with project staff about risk cycles so that all staff take responsibility of managing risk for undertaken project because transferring a risk sometimes incur some costs.

1. Introduction

Risk management as a business tool is part of good management and planning processes to prevent organization from financial loss, and diverse range of risks including project failure. This exposure includes professional risks, commercial risks, political risks, risks to beneficiaries, community services and risks associated with competition. The organization's main risk mitigation strategies to date have included administrative, contractual, technical, safety and management controls as a part of business and program activities. As the consequences of an adverse event may include an inability to meet beneficiary and customer requirements, prevent financial loss, organizational or political embarrassment, operational disruption, legal problems, and so forth, it is important that management policies, procedures and practices are in place to minimize the organization's exposure to risk. Risk management involves adopting and applying a systematic process to identify, analyze, assess, control and monitor risk so that it is reduced and maintained within an acceptable level, (Hillson, 1997).

Henceforth, Project risk management has a prominent position in the framework of project management theory and methodology, the reason is that unexpected events suddenly happen during a project. Given the importance of risk management in project management functioning, the efficiency of risk management is expected to significantly influence project performance; Studies on the impact of risk management strategies on project performance has indicated that effective risk management strategies improve project performance in terms of productivity, With today's dynamic change and increase in competition, it is not enough for organizations to have a good project plan or have a good monitoring and control systems in achieving project success but they should focus on risk avoidance, risk reduction, risk transfer and risk retention strategy that constitute effective project risk management strategies to achieve the success of the project (Passenheim, O., 2011), (Nehariatal, 2014), and (Kamanda, 2016).

Ultimately, Risk management is one way of business planning and implementation process, but, the fact of having a Risk Management Plan (RMP) is not enough, it must be operational and all company's employees must be aware of it and get trainings on how it is implemented. These trainings are mandatory because these ones must know how to prevent some risks and how they behave in front of a materialized risk (issue) because they may be themselves either, source of risk

or be at risk if not well protected. Risks are everywhere in this world; it is almost impossible for all of them to be prevented or controlled before they appear. Some risks are harder to identify and prevent their occurrences but, some of them are manageable and preventable but do occur and cause serious negative consequences in life simply because of ignorance, negligence or lack of planning (Nehariatal, 2014).

Therefore, for the case of Rwanda, there is delays and cost overruns in construction projects especially for bigger projects of heavy buildings, for instance building National bank branches in all provinces delayed time and ran over costs (OAG, 2013) and (Gitau, 2015). In the construction project survey, 45.2% in terms of time failed, while 35.7% failed in terms of finance (Gitau, 2015). Thus, it is in this regard the researcher undertaken this survey to evaluate the impact of risk management strategies and performance of construction projects in Rwanda with reference to BUT General trading projects.

2. Statement of Problem

The Statement of Problem is based on both internal and external factors arise with construction projects and lower the performance standard of their respective organizations. That is, the reason this study is of golden idea of addressing the mentioned research problem by assessing the ability of construction companies to sort out project risks with necessary strategies to make all project targets achieved on desired standard in the selected case study.

3. General Purpose of the study

The primary purpose of this study was to establish the relationship between risk management strategies and performance of construction projects in Rwanda with reference to BUT General trading ltd.

4. Specific objectives of the study

This study mainly aimed at focusing on the following specific and critical objectives:

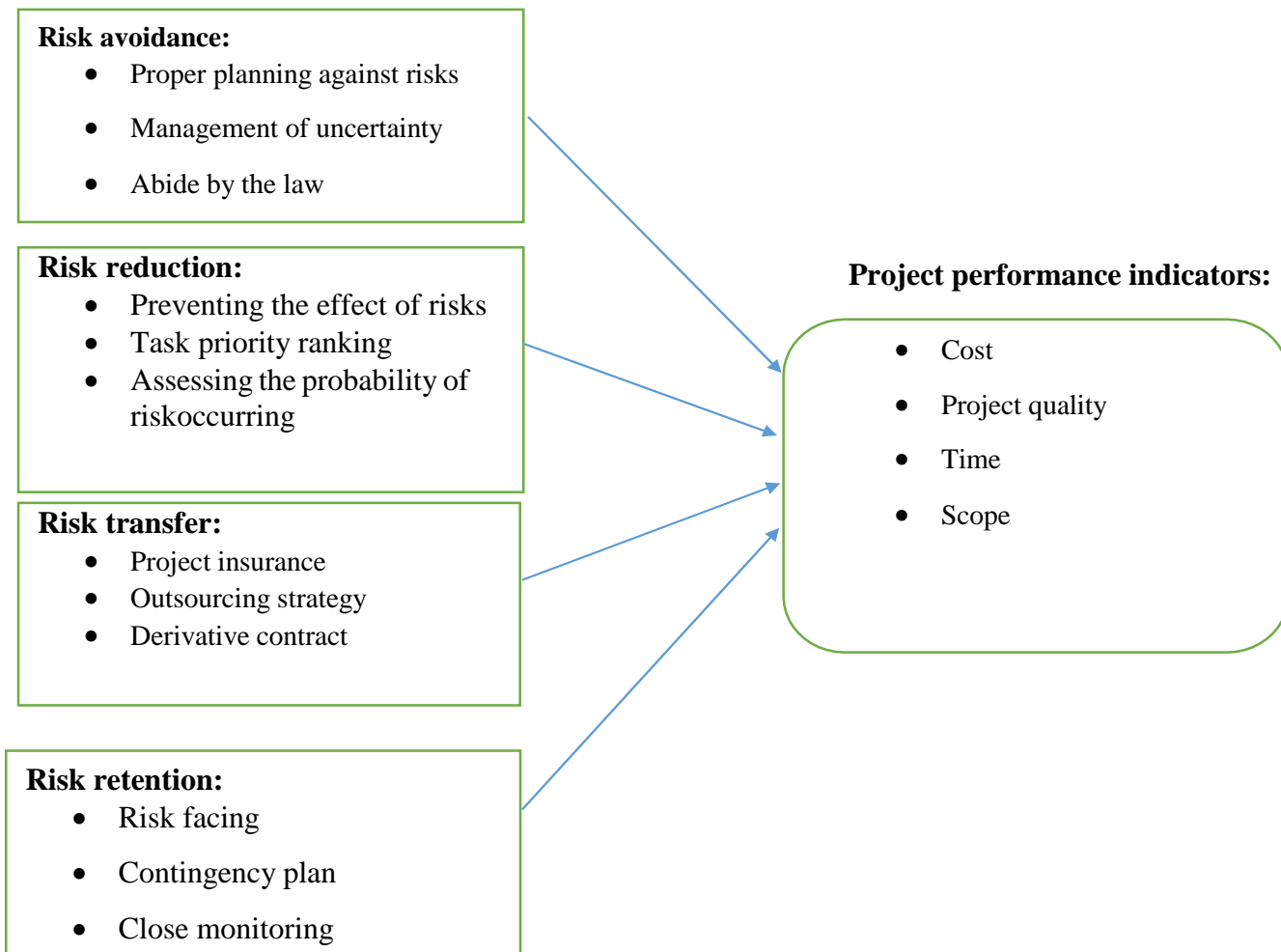
- 1) To determine the relationship between risk avoidance and performance of construction projects at BUT General trading ltd in Rwanda
- 2) To assess the relationship between risk reduction and performance of construction projects at BUT General trading ltd in Rwanda
- 3) To determine the relationship between risk transfer and performance of construction projects at BUT General trading ltd in Rwanda
- 4) To determine the relationship between risk retention and performance of construction projects at BUT General trading ltd in Rwanda.

5. Conceptual framework

This is a well-designed research model to represent the study variables. According to the theoretical framework of this study, dependent variable (project performance) is affected by independent variable (risk management strategies) under which dependent variable works as the function of the independent variable. In respect of the prescribed dimensions and seen in figure 1.1, the left side of the model represents independent variables with four main strategies investigated including risk avoidance, risk reduction, risk transfer, and risk retention whereas dependent variables are represented on the right side of the model with two responding (dependent) comprised financial and non-financial performance indicators.

Independent variable:

Dependent variable:



6. RESEARCH METHODOLOGY

Research design

This study employed the descriptive research design that combining both quantitative and qualitative approach as risk management strategies and performance of construction projects are wide-ranging disciplines with varying interpretations so descriptive research would ensure a thorough understanding of the subject matter. With this descriptive research, a case study is useful to allow the deep explanation of the field situation at hand, which means the risk management strategies and performance of construction project in the context of BUT-General trading. Moreover, the correlation analysis will be made to quantify the extent to which dependent variable is attributed to independent variable as stressed by (Bryman, 2004) and (Kumar, R., 2018) that the relationship between variables must be established in correlational studies.

Data analysis method

The researcher employed descriptive statistics and correctional analysis to explain the findings in relation to the research context pertaining the variables of the study. The nature of information targeted and collected by this study support the choice of the method since all data are translated into mathematical language spoken in digits, counting and calculations to quantify the degree of correspondence between variables under investigation.

Descriptive statistics analysis: This is the most appropriate method used in descriptive survey due to its distinguished ability to compare the results of two or more variables. It involves mean, standard deviation, percentages and frequency to describe the characteristics of variables being studied on and its implication to the whole study. In this study, both frequency and percentages were used to discuss on the findings by rating and ranking responses as per study variable and measured effects.

Inferential statistics measures were used to test statistical hypothesis (specific objectives). This study used confidence level of 95%, which means a .05 p-value. That is, statistically significant correlations between variables are only those with p-value below 5%. Pearson's correlation coefficient has been used to measure the strength of the association between dependent and independent variables.

The regression models were run to test whether the model is significant or not. The statistical significance was verified by the Coefficient (β), t-statistic and Prob. In additional, statistically significant relationship between the dependent variable which is performance of construction

projects and independent variable which are risk avoidance, risk reduction, risk transfer and risk retention from the model will be accepted at 5% significance level. This study adopted the following model:

7. FINDINGS

Model Summary

	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824 ^a	.680	.657	.251

a. Predictors: (Constant), Risk retention, Risk reduction, Risk avoidance, Risk transfer

The table 4.8 indicated that the value of adjusted r squared was 68% which meant there was a variation of 68% on performance of construction projects was explained collectively by Risk management strategies (risk avoidance, risk reduction, risk transfer and risk).

ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	7.469	4	1.867	29.689	.000 ^b
1	Residual	3.522	56	.063		
	Total	10.991	60			

a. Dependent Variable: Performance of projects

b. Predictors: (Constant), Risk retention, Risk reduction, Risk avoidance, Risk transfer

Regression coefficients

Model	Unstandardized Coefficients		Standardized	t	Sig.	
	B	Std. Error	Coefficients			
	(Constant)	.032	.369	.086	.932	
	Risk avoidance	.204	.083	.216	2.455	.017
1	Risk reduction	.163	.077	.186	2.100	.040
	Risk transfer	.288	.087	.339	3.304	.002
	Risk retention	.296	.095	.307	3.108	.003

a. Dependent Variable:

b. Performance of projects

For the first research objective, the findings indicated that risk avoidance had positive and significant effect on performance of construction projects at General Trading Ltd ($\beta_1=.204$, $p=.040<.05$) which means that a unit increase in risk avoidance would result into change in

performance of construction projects by .204units.

For the second research objective, the findings showed that risk reduction presented a positive and insignificant effect on performance of construction ($\beta_2 = .163$, $p = .017 < .05$) which implied that a unit increase in risk reduction would lead to increase in performance of construction projects by .163 units.

In relation to the third research objective, the findings revealed that risk transfer had significance positive effect on performance of construction projects as indicated by $\beta_3 = .288$, $p = .002 < .05$). This means that a change in one unit of risk transfer would cause a variation in performance of construction projects by .288units

In relation to the fourth research objective, the findings highlighted that risk retention had significance positive impact on performance of construction projects at general trading ltd as shown by $\beta_3 = .296$, $p = .003 < .05$). This means that a variation of one unit of risk transfer would reflect a change in performance of construction projects by .296units

8. CONCLUSION AND RECOMMENDATIONS

Conclusion

This study established the relationship between risk management strategies and performance of construction projects. It was guided by four sub-objectives that used to achieve the general purpose of the study. As seen in different sections, general trading is benefiting from adopting risk management strategies in their projects. More importantly, every single strategy is unique in terms of role to the project performance. The study found that risk management speed up the project and prevent any unexpected delay and guide the implementation of prepared budget for making sound expenditure through following standard cash utilization process. The study also quantified the relationship between variables and Pearson correlation showed a strong positive correlation between risk management strategies and performance of construction projects. Therefore, since risk management is a continuous process there should be a consistent plan of keeping project staff aware of risk and how they can be managed throughout the life cycle of the project.

Recommendations

Based on the findings of this study, the following are advices for a change or improvement in risk management of construction projects to lead the performance to a higher level:

The study recommends the increase of workshop sessions in order to develop young engineer's capacity to identify and manage risks at construction sites. There should be seminars with construction professionals to exercise with employees about risk cycle so that all staff take responsibility of managing risk for undertaken project. This is because the study found out that some transferred risks could have been internally managed by the project team refer to table 4.3

The study also recommends to separate risk management plan from other project plans to exhaust the benefits of risk management plan in construction works. This emphasizes how managers need to understand well the effects of not planning or poor planning because risk is inherent it comes in different ways and affect the projects. This will help to increase the number of risks broken down under Hierarchical Risk Breakdown Structure with their risk response plans

9. REFERENCES

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