
Janvier Hakizimana & Dr. Njenga Gitahi Samson

ISSN: 2616-8464

Janvier Hakizimana & Dr. Njenga Gitahi Samson
1School of Business and Economics, Mount Kenya University
Kigali, Rwanda
2School of Business and Economics, Mount Kenya University
Kigali, Rwanda


Abstract

The general objective was to examine the effect of project risk management on performance of construction of rehabilitation house construction in Kigali, Rwanda. The specific objectives were; to determine effect of project risk assessment, project risk base decision and project contingency decision on performance of commercial rehabilitation in Kigali. Working on that topic would provide a better way to large-scale construction projects. Other scholars who would be interested to work in the same field. The study used relevant theories such as risk management and risk assessment theories. This research used a descriptive study variables, indicators and measurement. A correlation study design was used to establish the association between variables and regression effect size for each specific objectives. The study targeted 180 staffs of Horizon Construction. A sample of 125 respondents determined using Yamane formula participated in the study process. The sample size was chosen using simple random and purposive sampling techniques. The study collected data using questionnaire and interview guide. The researcher study data using a computer based software known statistical product and service solutions to 26.0 to generate descriptive and inferential statistics. Qualitative data was analyzed using content analysis through themes and subthemes. Findings show that 57.3% show a disagreement with the analysis of risk was the focus at rehabilitation houses construction. Estimating risk given to respondents where 68.3% a positive agreement with the statement. Review technique was agreed by 85.5%. The study discovered that after having an interview with the rehabilitation houses construction. The study results show that 59.3 at a mean of 3.63 and standard deviation of 1.135 demonstrated an agreement that Horizon Construction applied managing change orders, 66.7% evidence that Horizon Construction has poorly written contact. Moreover, 63.4% accepted that the statement that Horizon Construction felt that all customers were given a time of allocation of decision and 65.4 agreed that the Horizon Construction prepared how they are managing decision with a mean of 4.18 and standard deviation of 1.14. Findings reiterate that 56.8% accepted that program management, 57.8% indicated that

https://doi.org/10.53819/81018102t2153
Horizon Construction was the implementation a mean of 4.13 and standard deviation of 1.37, 74.0% confirmed the used of program improvement with a mean of 1.85 and standard deviation of 1.28. The study recommends that the need of careful project risk management or availing the supervisor of construction work to be sure with the completion of project on time with timely. Result will minimize the effect of challenges and seizure of change that appear. The study proposed the Horizon Ltd to avail supervisory activities toward construction project or being sure that managing risks should comprise the preventive techniques or meeting the due date and effective use of resources. Benefits of risk management in projects are huge.

**Keywords:** Project Risk Management Practice, Risk Base Decision, Contingency Decision, Performance of Construction, Construction of Rehabilitation Houses

### 1.0 Introduction

Projects with weak risk management practices lose time, experience cost overruns, get low profit margins, and are not cost effective which results in the increase of risk management as a critical issue to project performance (Shunmugam & Rwelamila, 2014). The study conducted on risk management method has shown that the most significant impediments to risk management are lack of talent and are people who are ready to change. The empirical literature has also shown that risk management helps project to succeed (Tummalra et al., 1997). Poor scope management and lack of risk management in the early stages of a project are the most significant obstacles to the risk management process as per the research conducted in Ghana on risk management process in construction sector (Makombo, 2012). The empirical researchers, audits and annual reports have shown that most of the projects in construction industry are plagued by delays, poor performance and cost overruns not only in Rwanda or in Africa but also across the globe (Hayford & Sarfraz, 2013). Therefore, for the case of Rwanda, there were delays and cost overruns at Bushenge Hospital (OAG, 2013). The national bank branches in the Districts of Huye, Rwamagana, Rusizi, and Musanze were beset by time delays and cost overruns (Gitau, 2015). In terms of time, 45.2 percent of the construction projects surveyed failed, while 35.7 percent failed in terms of finance (Gitau, 2015). Therefore, this study examine the effect of risk management practices performance of construction project in Rwanda with a case of Horizon Construction Project in the City of Kigali.

### 1.1 Research Objectives

i. To determine effect of project risk assessment on performance of Horizon Construction project in Kigali, Rwanda.

ii. To identify effect of project risk decision making process on performance of Horizon Construction project in Kigali, Rwanda.

iii. To assess effect of project risk contingency identification on performance of Horizon Construction project in Kigali, Rwanda.

[https://doi.org/10.53819/8101810262153](https://doi.org/10.53819/8101810262153)
2.0 Literature review

2.1 Review of Empirical Studies

A study done by Goh and Rahman (2012) several strategies to identify and manage potential risks in Malaysia. The study aimed to establish potential risks affecting construction project and assess effective strategies applied by project stakeholders to overcome the identified risks. This implies base on this study and considering the development of larger construction projects in Malaysia especially in its capital Kuala Rampur; we can draw a conclusion that identification and assessment of the risks are more important before to implement a construction project because it facilitates monitoring and evaluation the measures that it had been implemented by the stakeholders. Therefore, the presence of stakeholders who must be questioned, for collecting the findings into respondents; Goh and Rahman have used questionnaire and interview guide. Responses from the findings evidenced that financial and time risks have been potential risks encountered in term of quantity of appearance and effect on project performance. Therefore, next project they will set the budget for recovering when contingency decision come intervene for accomplishing well the projects. According to Nguyen and Li (2012), the role of instituting risk management in construction projects was to enhance value added along the building value chain, making sure of compliance with suitable practice models, therefore, reducing waste and inadequacies. The construction is the project engaged for making high and long-term interest; if the project is very high needs more shareholders for increasing the value. Therefore, who is in responsibilities for building has the task of reducing a destruction of raw materials because it is to reduce a waste also. To minimize waste and inefficiencies into the workers they create rapidity and quality product end up timely (Olamiwale, 2014). The results showed that however risk management of construction projects is augmenting the value of shares and profit of shareholders and this result attracted the other investors to invest in sector of large construction projects. They additionally watch that effective risk management increases value through adherence to budget, adherence to schedule and conformance to quality expectations, among other measures. This is source of increasing of profitability because risk management help to accomplish well construction no added budget to the designed at the beginning (Paul, 2018).

Parojarvi et al., (2010), the general research objective was to investigate the recent development of risk management in construction sector. The research employed a target population with a stratified sampling technique from public institutions, businesses and project managers. A sample size of 116 were sampled to participate in the management of risks, where 42% of respondents were involved in construction project. For 116 institutions, a research conducted on 49 construction institutions this means that the level that needed to preserve risk in construction projects. Whole in research schedule, the researchers based sub-dimensions such as universal position. Alongside, also practical measurement of applying division into three sub-groups that were easy, integrated and experience enough, especially that customary risk management is easy and practical. Today the world is in the war of conserving environment issues; and the majority of new technology is the major enemy of environment, do not forget that we need it much for performing our construction projects. Ones of the companies choose traditional technique where to bind new and ancient is a big issue (Rostami,2016). A study carried out by Segismundo and Miguel (2015) taking on damaged managing deposits which were crucial may be attained in commercial building sites. In this regards, all project team members and stakeholders must take into consideration, the effective risk management practices or attaining the highest level of

https://doi.org/10.53819/81018102t2153

80
success and infrastructural development. Therefore, company prepare the ways of risk management process step by step from what are dangerous than others.

Shpak (2019) revised impacts of project stakeholders on contingency proposing that cost decision making process and management styles were relied on individual perception. The stakeholders sometime they intervene in projects run and the owners lack the capital for continuing what they started; it means that all following activities depends on the influence of the stakeholders in order of maintaining of their interests. Sometime the stakeholders doubt or opposite with the conclusion drawn outside on their personal interest. The risk management must be worked well even the stakeholders come; they come as investors. High quality numeral managers does not exactly coordinate project contingency emanating from collapse of cost contingency funds before project prior project termination necessitating more financial resource to overcome those risks (Pablo et al., 2017). It the best idea to work and then there is an evaluation where they look that it needs some funds before to close the project they supply it after running activities. Especially that it is very less persons who have the ability on decision making while the influencers are a large number. All decision make base on risk perception it is why suggesting to consider amalgamation of risk perception in decision making process (Young & Hall, 2015).

Laryea and Hughes, (2010) conducted exceptional learning pointed on how construction firms presently coordinate several problems. Results demonstrated that conclusion did not employ formal approaches to coordinate all of those problems that may affect construction projects and but however construction projects must to perform with contingencies risk experienced; it means that there was other way for practicing risk contingencies management in order to achieve projects performance. Obviously explained procedures for supervising it were not revealed, project management tools were not to manage contingencies, their practices were not reviewed, decision makers used to hide those potential contingencies to overcome them to be applied by other project practitioners (Young & Hall, 2015).

2.2 Theoretical Framework

In conducting this paper, the research used relevant theories. These theories are: risk management theory, and risk assessment theory. The precursor of this approach was Markowitz who advanced it in 1952 in the struggle of maximizing profit and reducing potential risks for investors (Aziz, et al., 2015). The researcher used the present theory since various types of resources usually frustrate in their value in discrepancy ways because drop of stock market create increasing of bond market where the companies of larger capital put the bonds on the market for recovering the loss from the stocks fall. However, the bonds are required to the investors for identifying the possible risks associated with their investment and to prevent them it facile. Here each investor in construction projects adopted MPT for preventing the risk adequately and achieving performance completely. Further, implies that when all risks are identified helping construction company to be able for studying their actions and put where its resources are exposed to risks and to manage them are easy.

The processor of this model was Fred Edward Fiedler who advanced this theory in 1964 relying on importance of contingency model of leadership effectiveness (Chandra, 2015). So, contingency theory showing the acts that reduced the negativity of impact of risk event; concerning on his landmark, however the risks are neighbors of actions; which means that the possible is to reduce
level of negative impact of risks to the performance of the projects even we need contingencies decision. Every construct stories has been not similar with another in term of management and potentials risks (Chihuri & Pretorious, 2015). This implies that risk assessment and analyzing is major importance because it specifies the characteristics of each risk and where it is positioned. This facilitated managers to put the backup where it is needed most according to uniqueness of each risk. This theory is very important according to the theory says that there no best way than other for responding a problem and it is rejecting this mindless. It identifies the existence of many indicators and measurement affecting the attainment of construction project goals and expected targets. For instance, externalities, ICT, institutional management, size, expenditure, cultural practices and participatory approach of beneficiaries (Rostami, 2016). The above theory enabled the researcher to establish the conceptual framework as follows:

**Independent variables**

**Risk assessment**
- Assessing potential risk
- Analysis of risk
- Estimating risk
- Review technique

**Risk based decision**
- Managing change orders
- Poorly written contact
- Allocation of Decision
- Managing Decision

**Contingency decision**
- Program management
- Implementation
- Program improvement

**Dependent variables**

**Performance of Horizon Construction project**
- Completion Time
- Increased Cost Efficiency
- Improved Quality

**Figure 1: Conceptual Framework**

*Source: Researcher (2023).*

Information presented in Figure 1 demonstrates links between both variables (independent and dependent). The independent variable which is project risk management practices composed by the different concepts such as risk management practice, risk assessment, risk based decision and contingency decision contain considerable impact on performance of construction projects with intervening variables as well as construction software development and up to date on new construction techniques.

[https://doi.org/10.53819/81018102t2153](https://doi.org/10.53819/81018102t2153)
3.0 Materials and Methods

This research adopted descriptive research design for the study variables, indicators and measurement. Moreover, the researcher used correlational research design for establishing the association between variables and regression analysis effect size for each specific objectives. Target population referred on the entire that scholars were interested in drawing conclusion. Therefore, the target population was 180 staffs of Horizon Construction who are working on the field.

4.0 Results and discussion

Results are presented, interpreted and discussed in accordance with research objectives and the study variables. The research objectives were concerned with effect of project risk assessment, project risk base decision, and project contingency decision on performance of commercial rehabilitation in Kigali. Five point Likert scale was utilized as it is very simple and clearer than other scales.

4.1 Effect of Project Risk Assessment on Performance of Horizon Construction project in Kigali, Rwanda.

Table 1 summarizes the results of Project Risk Assessment

<table>
<thead>
<tr>
<th>Project Risk Assessment</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing potential risk</td>
<td>10.6</td>
<td>6.5</td>
<td>4.7</td>
<td>14.6</td>
<td>63.4</td>
<td>4.13</td>
<td>1.37</td>
</tr>
<tr>
<td>Analysis of risk</td>
<td>14.6</td>
<td>42.7</td>
<td>19.5</td>
<td>19.5</td>
<td>13.8</td>
<td>2.85</td>
<td>1.28</td>
</tr>
<tr>
<td>Estimating risk</td>
<td>7.3</td>
<td>17.1</td>
<td>7.3</td>
<td>21.1</td>
<td>47.2</td>
<td>3.83</td>
<td>1.36</td>
</tr>
<tr>
<td>Review technique</td>
<td>6.5</td>
<td>22.0</td>
<td>13.0</td>
<td>39.8</td>
<td>18.7</td>
<td>3.42</td>
<td>1.20</td>
</tr>
</tbody>
</table>

Source: Primary Data (2023)

Information given in Table 1 evidenced that 78.1% of participants accepted that assessing potential risk was among project risk assessment practices adopted by rehabilitation houses construction in Kigali, Rwanda with a mean of 4.13 and standard deviation of 1.37.

Moreover, 57.3% of respondents show a disagreement with the analysis of risk was the main focus at rehabilitation houses construction in Kigali, Rwanda with a mean of 1.85 and standard deviation of 1.28. However, estimating risk given to respondents where 68.3% respondents a positive agreement with the statement at a mean of 3.83 and standard deviation of 1.36. Finally, review technique was agreed by 85.5% with a mean of 3.45 and standard deviation of 1.20. The study discovered that after having an interview with the rehabilitation houses construction in Kigali, Rwanda staff members for understanding what activities associated with credit management practices at rehabilitation houses construction in Kigali, Rwanda.
Tale 2: Correlation Analysis between of project risk assessment on performance of Horizon Construction project in Kigali, Rwanda.

<table>
<thead>
<tr>
<th></th>
<th>Assessing Potential Risks</th>
<th>Analysis of Risks</th>
<th>Estimating Risks</th>
<th>Review Technique</th>
<th>Completion Time</th>
<th>Increase Cost Efficiency</th>
<th>Improved quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing Risks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysis of Risks</td>
<td>123</td>
<td></td>
<td>123</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.494**</td>
<td>.000</td>
<td>123</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimating Risks</td>
<td>.913**</td>
<td>.415**</td>
<td>1</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review Technique</td>
<td>.853**</td>
<td>.399**</td>
<td>.929**</td>
<td>1</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion Time</td>
<td>.910**</td>
<td>.507**</td>
<td>.943**</td>
<td>.925**</td>
<td>1</td>
<td>.943**</td>
<td>.943**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase Cost Efficiency</td>
<td>.939**</td>
<td>.513**</td>
<td>.896**</td>
<td>.853**</td>
<td>.875**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved quality</td>
<td>.598**</td>
<td>.367**</td>
<td>.721**</td>
<td>.835**</td>
<td>.777**</td>
<td>.612**</td>
<td>.612**</td>
</tr>
</tbody>
</table>

Source: Primary Data (2023)

Results indicate the association between project risk assessment and success of construction project. For the assessment of special risks, results indicate a positive correlation between the assessment of special risks and the completion on time (r=910*, p-value=0.000), the increase of cost (r=.939, p-value=0.0000 and with improved quality (r=.598*, p-value=0.000). Correlation results between the analysis of risks and performance of construction project demonstrated statistically significant association between those variables. In this regards, risk analysis is correlated with completion of project on time (r=507, p-value=0.000), risks analysis is correlated with increase of efficiency cost(r=.513, p-value=0.000) and risks analysis is positively associated with project quality (.367, p-value=0.000). On project risks, correlational results demonstrated that risk estimation is statistically correlated with competition of project on time (r=.943**, p-value=0.000), with increase of cost efficiency (r=.896, p-value=0.000) and with project quality (r=.521, p-value=0.000). Finally, correlation analysis on the association between review technique and the success of construction project indicated that review technique is correlated with completion of project on time (r=.925,p-value=0.000), with cost efficiency (r=.853, p-
value=0.000), and review technique is statistically associated with project quality (r=.835, p-value=0.000).

4.2 Effect of Project Risk Based Decision on Horizon Construction project in Kigali, Rwanda

Table 3 includes the discussions of Project Risk Based Decision

<table>
<thead>
<tr>
<th>Risk Based Decision</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing change orders</td>
<td>11.4</td>
<td>17.1</td>
<td>12.2</td>
<td>19.5</td>
<td>39.8</td>
<td>3.59</td>
<td>1.44</td>
</tr>
<tr>
<td>Poorly written contact</td>
<td>13.0</td>
<td>13.0</td>
<td>7.3</td>
<td>22.8</td>
<td>43.9</td>
<td>3.71</td>
<td>1.46</td>
</tr>
<tr>
<td>Allocation of Decision</td>
<td>9.8</td>
<td>17.1</td>
<td>9.8</td>
<td>23.6</td>
<td>39.8</td>
<td>3.66</td>
<td>1.40</td>
</tr>
<tr>
<td>Managing Decision</td>
<td>12.2</td>
<td>10.6</td>
<td>13.8</td>
<td>36.6</td>
<td>26.8</td>
<td>3.55</td>
<td>1.31</td>
</tr>
</tbody>
</table>

Source: Primary Data (2023)

As shown evidences on risk decision making orders and practice applied and followed by the rehabilitation and construction project in the City of Kigali. Accordingly, 59.3 demonstrated an agreement that Horizon Construction applied managing change orders with a mean of 3.59 and standard deviation of 1.44. Furthermore, 66.7% of respondents evidence that Horizon Construction has poorly written contact with a mean of 3.71 and standard deviation of 1.46. Moreover, 63.4% accepted that Horizon Construction evidenced that all customers were shown a time of allocation of decision with a mean of 3.66 and standard deviation of 1.40. Therefore, 65.4 of respondents accepted that Horizon Construction prepared how they are managing decision with the mean of 3.55 and standard deviation of 1.31.
Table 4. Correlation Analysis between Risk Based Decision and Horizon Construction project in Kigali, Rwanda

<table>
<thead>
<tr>
<th></th>
<th>Managing change orders</th>
<th>Poorly written contact</th>
<th>Allocation of Decision</th>
<th>Managing Decision</th>
<th>Completion Time</th>
<th>Increase Cost Efficiency</th>
<th>Improved quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing change orders</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poorly written contact</td>
<td>.967**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocation of Decision</td>
<td>123</td>
<td>.974**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing Decision</td>
<td>123</td>
<td>123</td>
<td>.952**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion Time</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Increase Cost Efficiency</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Improved quality</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary Data (2023)

Results indicate the link between risks based decision and the success of construction project. For the managing change orders, results indicate a positive correlation between the managing change orders and the completion on time (r=942*, p-value=0.000), the increase of cost (r=883, p-value=0.000) and with improved quality (r=.788*, p-value=0.000). Correlation results between the poorly written contact and performance of construction project demonstrated statistically significant association between those variables. In this regards, poorly written contact is correlated with completion of project on time (r=955, p-value=0.000), with increase of efficiency cost(r=.901, p-value=0.000) and poorly written contact is positively associated with project quality (.738, p-value=0.000). For allocation of decision, correlational results demonstrated that allocation of decision is statistically correlated with competition of project on time (r=.949**, p-value=0.000), with increase of cost efficiency (r=.880, p-value=0.000) and with project quality (r=.783, p-value=0.000).

Finally, correlation analysis on association between managing decision and project success indicated that managing decision is correlated with completion of project on time (r=.961,p-value=0.000), with cost efficiency (r=.895, p-value=0.000), and managing decision is statistically associated with project quality (r=.817, p-value=0.000).

https://doi.org/10.53819/81018102r2153
4.3 Effect of Project Contingency Decision Practices on Horizon Construction project in Kigali, Rwanda.

Table 5 includes the results of Project Contingency Decision Practices

### Table 2: Project Contingency Decision Practices

<table>
<thead>
<tr>
<th>Contingency Practices</th>
<th>Strongly Disagree %</th>
<th>Disagree %</th>
<th>Not Sure %</th>
<th>Agree %</th>
<th>Strongly Agree %</th>
<th>Mean</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program management</td>
<td>19.5</td>
<td>12.2</td>
<td>6.5</td>
<td>32.4</td>
<td>24.4</td>
<td>3.34</td>
<td>1.46</td>
</tr>
<tr>
<td>Implementation</td>
<td>10.6</td>
<td>18.7</td>
<td>13.0</td>
<td>28.5</td>
<td>29.3</td>
<td>3.47</td>
<td>1.36</td>
</tr>
<tr>
<td>Program improvement</td>
<td>13.8</td>
<td>5.7</td>
<td>6.5</td>
<td>17.9</td>
<td>56.1</td>
<td>3.96</td>
<td>1.45</td>
</tr>
</tbody>
</table>

Source: Primary Data (2023)

Information felt that 56.8% of respondents with a mean of 3.34 and standard deviation of 1.46 accepted that program management. In addition, 57.8% of respondents with a mean of 3.47 and standard deviation of 1.36 indicated that Horizon Construction was the implementation, 74.0% of respondents with a mean of 3.96 and standard deviation of 1.45 confirmed the used of program improvement. “In our accepted that program management, the implementation, and the used of program improvement”.

### Table 6 Correlations between Contingency Decision Practices on Horizon Construction project in Kigali, Rwanda

<table>
<thead>
<tr>
<th></th>
<th>Program management</th>
<th>Implementation</th>
<th>Program improvement</th>
<th>Completion Time</th>
<th>Increase Cost Efficiency</th>
<th>Improved quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program management</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation</td>
<td>.955**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program improvement</td>
<td>.917**</td>
<td>.905**</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion Time</td>
<td>.939**</td>
<td>.958**</td>
<td>.933**</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase Cost Efficiency</td>
<td>.848**</td>
<td>.871**</td>
<td>.942**</td>
<td>.875**</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Improved quality</td>
<td>.835**</td>
<td>.843**</td>
<td>.640**</td>
<td>.777**</td>
<td>.612**</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Source: Primary Data (2023)

Results indicate the association between contingency decision practices on performance of construction project. For the program management, results indicate a positive association between

https://doi.org/10.53819/81018102t2153
program management and completion on time \( r=939^*, p\text{-value}=0.000 \), the increase of cost \( r=848, p\text{-value}=0.000 \) and with improved quality \( r=835^*, p\text{-value}=0.000 \). Correlation results between implementation and performance of construction project demonstrated statistically significant association between those variables. In this regards, implementation is correlated with completion of project on time \( r=958, p\text{-value}=0.000 \), implementation is correlated with increase of efficiency cost \( r=.871, p\text{-value}=0.000 \) and implementation is positively associated with project quality \( .843, p\text{-value}=0.000 \). For program improvement, correlational results demonstrated that program improvement is statistically correlated with competition of project on time \( r=.933^{**}, p\text{-value}=0.000 \), with increase of cost efficiency \( r=.942, p\text{-value}=0.000 \) and with project quality \( r=.640, p\text{-value}=0.000 \).

### 4.4 Discussion of the Results

This study did not contradict with the results of a study done by Nguyen and Li (2012) so, to follow this innovation plus the recent techniques which are strong, they facilitated the engineers to perform well as well as the project success. In addition, innovative is not at the end; it means that the development of new techniques in construction is continuous work because it is also better way for avoiding the risk and sustaining performance for long term.

A study done by Goh and Rahman (2012) several strategies to identify and manage potential risks in Malaysia. The study aimed to establish paternal risks affecting construction project and assess effective strategies applied by project stakeholders to overcome the identified risks. This implies base on this study and considering the development of larger construction projects in Malaysia especially in its capital Kuala Rampur; we can draw a conclusion that identification and assessment of the risks are more important before to implement a construction project because it facilitates monitoring and evaluation the measures that it had been implemented by the stakeholders.

Data from this research did not contradict with the results of Parojarvi et al., (2010), the general objective was to assess recent development of risk management in construction sector. The scholar employed the target population with a stratified sampling technique from public institutions, businesses and project managers. A sample size of 116 were sampled to participate in the management of risks, where 42% of respondents were involved in construction project. A study carried out by Segismundo and Miguel (2015) taking on damaged managing deposits which were crucial may be attained in commercial building sites. In this regards, all project team members and stakeholders must take into consideration, the effective risk management practices for attaining highest level of success and infrastructural development. Therefore, company prepare the ways of risk management process step by step from what are dangerous than others. These staffs assists the firms to handle all risks faced or to prevent them before that they visage. The company who is completing them all, it will be positioned well for market success.

A study carried out by Segismundo and Miguel (2015) taking on damaged managing deposits which were crucial may be attained in commercial building sites. In this regards, all project team members and stakeholders must take into consideration, the suitable risk management practices for attain highest level of success and infrastructural development. Therefore, company prepare the ways of risk management process step by step from what are dangerous than others. The companies want to compete must contain the staffs who have specialized and qualified in the different fields related to risk management and project success. These staffs stimulate firms to handle all risks faced or to prevent them before that they visage. The company who is completing them all, it will be positioned well for market success.

[https://doi.org/10.53819/81018102t2153](https://doi.org/10.53819/81018102t2153)
Shpak (2019) revised impacts of project stakeholders on contingency proposing that cost decision making process and management styles were relied on individual perception. The stakeholders sometime they intervene in projects run and the owners lack the capital for continuing what they started; it means that all following activities depends on the influence of the stakeholders in order of maintaining of their interests. Sometime the stakeholders doubt or opposite with the conclusion drawn outside on their personal interest.

Shpak (2019) revised impacts of project stakeholders on contingency proposing that cost decision making process and management styles were relied on individual perception. The stakeholders sometime they intervene in projects run and the owners lack the capital for continuing what they started; it means that all following activities depends on the influence of the stakeholders in order of maintaining of their interests. The risk management must be worked well even the stakeholders come; they come as investors. High quality numeral managers does not exactly coordinate project contingency emanating from collapse of cost contingency funds before project prior project termination necessitating more financial resource to overcome those risks (Pablo et al., 2017).

Obviously explained procedures for supervising it were not revealed, project management tools were not to manage contingencies, their practices were not reviewed, decision makers used to hide those potential contingencies to overcome them to be applied by other project practitioners (Young & Hall, 2015). Moreover, contingency management was clearly successful in the thoughts of managers who adopt decisions relying on their managers, who made decision in accordance with their expertise and perception and respondents evidenced that they voluntarily preserve contingency management hidden to maintain follow up of contingency financial resources. The study did not consider logical that there a possibility of higher damage when the managers waiting to address on risks later on the projects. According to the study of Ali et al., (2010), where he has inspected excellence achievement of construction partnering projects in Malaysia and he has not shown if he used an interview guide while is considerable for top managers.

5.0 Conclusion

Firstly, the study concludes that risk assessment practices was conducted through assessing potential risk, analysis of risk, estimating risk and review technique. This study accepted the significance difference between risk assessment practices and performance of Horizon Construction project. To the second research question, results on risk based decision practices show that managing change orders, poorly written contact, allocation of decision, and managing decision were used. The study confirms that there is significance association between risks based decision practice and construction project success. Thirdly, research question, the researcher concludes that risk contingency that are in program management, implementation and program improvement used at Horizon Construction. The study accepted and concluded the existence of effect of risk contingency. In conclusion, the researcher was able to fill the gap by stabling the association between research variables. From the aforementioned information, the researcher investigated effect of risk management practices on the success of construction projects in Rwanda using a case of Construction of Rehabilitation House in Kigali.

https://doi.org/10.53819/81018102t2153
6.0 Recommendations

The researcher recommends the government to effectively avail supervisory activities toward construction project that managing risks should comprise the preventive techniques or meeting the due date and effective use of resources. This allows project team to deliver project on time, on budget and with the quality results project sponsor demands. Team members will be much happier if they do not enter a firefighting mode needed to repair. Future researchers should be undertaken in order to seek how to prevent and alleviate default and non-repayment loan for financial institutions of Rwanda Construction Company. It is suggested to carry out the related researches like assessment of credit management process on loan performance and address other factors that can affect loan performance in Construction Company of Rwanda for solving persistent issues and enhance construction companying capacity to meet its vision to the competitiveness level.

Acknowledgments

I wish to acknowledge Dr Njenga Gitahi Samson for her contribution to this work. I wish to extend my acknowledgement to Mount Kenya University, and the Airtel Rwanda Plc.
References


https://doi.org/10.53819/81018102153


