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INFLUENCE OF PROJECT PLANNING ON IMPLEMENTATION OF CONSTRUCTION PROJECT

A CASE OF UPGRADING AMAHORO NATIONAL STADIUM PROJECT IN GASABO DISTRICT, RWANDA

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ABSTRACT

The study entitled" Influence of project planning on implementation of construction project in Rwanda, a case of Upgrading Amahoro National Stadium Project (UANS project)" The general objective is to investigate the influence of project planning on implementation of construction project in Rwanda mainly UANS project. The study is guided by four specific objectives: To assess the influence of stakeholder mapping and analysis on implementation of UANS project; to find out the influence of project budgeting plan on implementation of UANS project; to determine the influence of project scheduling plan on implementation of UANS project and to examine the influence of Project risk plan on implementation of UANS project. The population of this study was 148 employees of UANS project while the sample size was 108 employees of UANS project. The study used descriptive research design where questionnaire, interview and documentary review were used as to collect data techniques and descriptive statistics and inferential statistics such as correlation and multiple linear regressions were used to analysis data. The findings revealed that all component of project planning practices such as stakeholder mapping and analysis; project budget planning; project scheduling and Project risk planning have significance positive effect on implementation of UANS project as indicated by β_1= 0.369, p-value=0.000<0.05); β_2= 0.201, p-value=0.008<0.05); (β_3=0.187, p-value=0.015<0.05) and (β_4 = 0.30, p-value = 0.000 <0.05) which implies that an increase of one unit in stakeholder mapping and analysis; project budget planning; project scheduling and Project risk planning would lead to an increase of 0.369; 0.201; 0.187 and 0.308 units in implementation of UANS project respectively. Based on the findings the study made the following conclusion. The findings concluded that combination of stakeholder mapping and analysis, project scheduling; project budget planning and project risk planning jointly accounted for 60.84% of the implementation of UANS project as represented by the R^2 at 95% of confidence interval. The study recommended that project managers should be aware that participation of community in project planning teaches communities how to resolve conflict and allows for different perspectives to be heard.

The study recommends that since project budget is very important and influences all areas in both planning and execution of a project.

Key words: Project planning; implementation of construction project; Upgrading Amahoro National Stadium Project, Rwanda

1. INTRODUCTION

The government is the single largest implementer of public infrastructure projects thus there is need to ensure that these projects are fully implemented and the factors that have the greatest influence identified to ensure their influence is taken into consideration during the project life cycle is the project plan (Afshin & Gholamreza, 2012).

A properly planned project typically has control mechanism that are inbuilt to make sure that all necessary procedures are followed to enhance the success of the project based on the set plan. Identification of the key problem areas during the planning process and taking corrective action

Globally in developed countries like in USA, before commencement of any project, the first thing that project managers need to do is project planning. Any reasonable project manager certainly understands importance of planning a project well. Carefully planned project takes into account necessary aspects of a project and provide a plan which project team can refer during execution (Larsen *et al*., 2015).

In the United States (US), Zimulinda and Ndabaga(2015), remarked that performance problems arise in large construction projects due to many reasons such as: incompetent designers/contractors, poor estimation and change management, social and technological issues, site related issues and improper techniques and tools. They determined that the most influential factor for time overrun was unsettled or lack of project funding. For cost overrun the influential factor was errors or omissions in consultant material while for poor quality the influential factor was errors or omissions in construction work.

In Malaysia, project time resources are invariably dynamic and uncertain. Unfortunately, most discussions of scheduling in the project management arena focus largely on training issues without considering the link between resources availability and capability and the project schedule. Since the duration of each activity is dependent on the availability of resource, the problems arise when work proceeds without considering that how limited amount of labor, equipment and materials will affect the scheduling. When project schedules are developed

without considering available, the resulting schedule may be misleading or impossible to achieve the project objectives (Idoro, 2012).

In South Africa, Hassan, and Adeleke (2019) who found that the main factors affecting project success in public institutions were: terms of delivery time, contractual claims extension of time, lack of cost planning, additional works, quality change in scope of work on site and incomplete design at the time of tender.

In eastern African countries like Kenya, there is a general perception and belief that the project planning process improves performance of project in NGOs in Kenya; Steiner (2017), points out that poor project planning process may not translate into poor project performance. He urges that for a project to be successful all the relevant stages of the project from initiation to evaluation should be given emphasis so that a project is successful in terms of its performance. He however notes that the stage of project planning process is key in the success and overall performance of the project since it tackles almost the entire issues that need to be addressed in the project after its initiation.

In Rwanda, the upgrade the Amahoro national stadium reportedly cost of Rwf160 billion to successfully complete the upgrade works and the stadium's capacity increase to 45,000 from the current 25,000. The upgrade is part of the government's broader project to develop a sports hub in Remera, Gasabo District. Rwanda Housing Authority (RHA) reported that works to revamp. Hence, this study intended to assess how project planning affecting implementation of upgrade the Amahoro national stadium project in Rwanda.

2 Statement of the Problem

In Rwanda, the construction industry has experienced enormous challenges with rampant cases of substandard constructions, incomplete buildings, overruns in cost, schedule, and quality. The impact of incomplete projects is loss of revenue, lack of facility utilization, poor resource utilization and inefficient management of resources (MINENFRA, 2020). According to MINENFRA, (2020), about 48% of the construction projects in Rwanda show poor performance in terms of completion time, cost overruns and client satisfaction. IPAR (2017) research notes that only 45.8% of projects had been completed and that 100% of the projects were not completed on schedule for the duration 2014 and 2018. Project failures are estimated to cost hundreds of billions of euros yearly. For instance, report of MININFRA (2018), indicate that project delay has been an ongoing issue where proposed and ongoing projects are either delayed

or postponed (MININFRA et al., 20218). A successful solution to the problem of incomplete projects would be the use of effective project planning that provide more predictable project success. From the foregoing, limited research has been done on the influence of project planning on implementation of construction project in Rwanda mainly Upgrading Amahoro National stadium project

3. Objectives of the study

The study was guided by general and specific objectives

3.1. Gneral objective

The general objective is to investigate the influence of project planning on implementation of construction project mainly Upgrading Amahoro National stadium project

3.2. Specific objectives of the Study

The following objectives provided general guidance to the study:

1) To assess the influence of stakeholder mapping and analysis on implementation of upgrading Amahoro National stadium project
2) To find out the influence of project budgeting plan on implementation of upgrading Amahoro National stadium project
3) To assess the influence of project scheduling plan on implementation of upgrading Amahoro National stadium project
4) To examine the influence of project risk plan on implementation of upgrading Amahoro National stadium project

4. LITERATURE REVIEW

This study was guided by three main theories namely; Theory of Triple Constraint; Theory of Change and Stakeholder Theory

Theory of Triple Constraint

The theory of constraints is a set of management tools created by Eliyahu Goldratt in 1984. The theory is applicable in many areas including project management and performance measurement among many others (Blackstone, 2010). It encompasses the three most critical constraint of project execution, monitoring and management. The agreed triple constraints variables are cost, scope and time. This theory provides the criterion that has been used for a long time to measure the implementation, performance and success of projects by assessing whether a project has been executed and delivered within the desired budget, agreed time and scope (Pinto, 2010).

The theory is based on five steps which include: identifying the system's constraints that limit progress toward the goal, exploiting the most important constraint, subordinating everything else to the decision made by managing the system's policies, processes and resources to support the decision, elevating the constraint by adding capacity or changing the status of the original resources to increase the overall output of the constraining task or activity, and identify the next most important constraint (Steyn, 2012). Hence, this theory help the manager for proper project scope and project cost as critical elements to ensure the activities of project are running smoothly in order to achieve successful implementation of upgrading Amahoro National stadium project

Theory of Change

This study was guide by theory of change developed by Kusters in 2000. The theory of change assist managers to have clarity outcome chain(s) and explains which strategies have been selected, why this set of strategies and no other strategies, and how they are expected to develop order to achieve the intended goal. This theory gives a definition of all phases involved to result in a given long-term goal (Harris 2005). As the theory of change process enhances the understanding of stakes and stakeholders, this will assist in thinking through the utilization of planning activities and lessons and increase the consequence awareness. Theory of change help to design and focus the planning framework in an early stage of the design process and not in the early implementation phase as is often the case. The main actors, critical assumptions, intended outcomes and some key indicators are available as a basis for the planning framework.

Stakeholder Theory

The stakeholder theory is credited to the works of Edward Freeman. According to Dagli (2018) all the stakeholders, internal and external, should be in same line of agreement on the project implementation process to enhance prospects of project's success. According to Uribe et al. (2018) stakeholder theory proposes for comprehensive stakeholder involvement throughout the project lifecycle.

The theory submits a framework for stakeholder management with the role of stakeholder given the highest priority (Uribe, Ortiz-Marcos & Uruburu, 2018). This enables the determination of stakeholder roles and its overall effect in the delivery of the project. According to Kathongo (2018) the stakeholder theory pays attention to the utilization of ethical guidance in administration of stakeholder roles in the course of project implementation. The stakeholder theory supports the participatory factor in project implementation from the conceptualization stage to its full implementation.

4.2. Empirical review

Rungtusanatham (2011) carried out a study on developing an Integrated Planning for sustainable investment Projects in Italian. The objective of the study was to develop a general integrated flow, encompassing both a project planning for the investment projects to assess its access, as well as cross-cutting social and environmental targets. The whole approach was being presented as a flowchart, which highlights the intimate relationship between the project planning and provides a formal framework for performing a logical monitoring and project success, considering simultaneously the economic, social, and environmental perspectives. The study used critical analysis and found that both the estimated advantages and the disadvantages of such a project planning tool, opening new perspectives for developing further improved models and systems.

Telsang& Raymond (2014) studied the effects of project plans on project performance in India. The purpose of the study was to investigate the effects of project plans on project performance in India. Descriptive research design was used. The respondents of the study were the owners of the selected construction companies in New Delhi, India. The study found that alternative components of project plans on time, and mitigation or preventing their negative effects prior to their occurrence in implementation stage of a project can be an improvement on the mechanism of control system. The study as well found that monitoring is very important in a project therefore the chief aim of monitoring is to make sure that various targets of time as well as cost are convened, and the network and its plans of operation formulated for projects implementation are followed. It might be too late to evade overruns of cost and time related to corrective action.
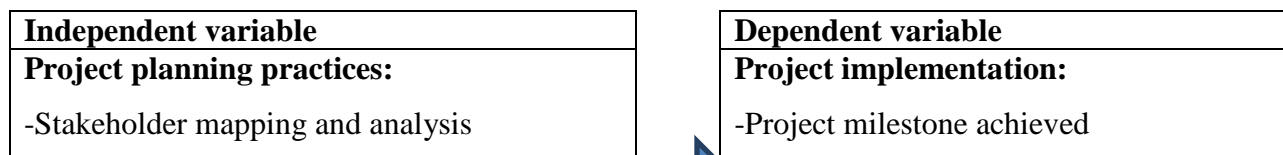
Ondiek and Nambuswa (2018), investigated the influence of project planning on road construction projects performance in UasinGishu County, Kenya. The purpose of this study was to investigate influence of project planning on success of road construction projects within UasinGishu County. This study adopted descriptive research design. The target population of this study was 51 employees in 15 government road construction projects which are in construction within UasinGishu County. Census was adopted in this study where project managers in each road project were involved in the study totaling to 51 respondents. The study relied on primary data which was collected through use of a questionnaire. The study established how project planning affects the performance of construction projects and the greatest roles of the top project team thus informing decision making for future road construction projects. The study found that

there was a positive correlation between success of road construction project and project time planning, project scope planning, project cost planning and project risk planning.

Nteziryayo (2015), studied on the relationship between Project planning and project success in Rwanda: a case study of Children education and community development Project. The general objective of this research was to assess the contribution of the project planning on project success in Rwanda. The study revealed that project scope has a positive and non-significant effect on project input (β=0.060, p< 0.755) and negative and non-significant effect on project results(β=-0.105,p<0.496) In relation to the second research objective, the budget plan had a positive and non-significant effect on project input (β=0.167,p< 0.755) and positive and significant effect on project results (β= 0.319, p<0.035). In relation to the third research objective, the communication plan has a positive and non-significant effect on project input (β=0.214, p< 0.169) and positive and significant effect on project results (β=-0.331, p<0.026). In relation to the fourth and last objective, the risk management plan has a negative and non-significant effect on project input (β=-0.073, p< 0.605) and on project results (β=-0.115, p<0.026). In relation to the fourth and last objective, the risk management plan has a negative and non-significant effect on project input (β=-0.073, p< 0.605) and on project results (β=-0.115, p<0.092). The study recommended that educational projects, to attain sustainable project success should focuses on intellectual competency, managerial competency, and emotional competency toward controlling risk management of educational projects.

4.3. The conceptual framework

According to Chepkwei (2019) when conducting a study, a conceptual framework should be developed to show the relationship between the independent variables (project designing, scheduling, project resource planning and project participatory planning process) and dependent variable (implementation of infrastructure project in public hospitals). Out of the literature reviewed various variable are suggested, but in this study the variables are Stakeholder mapping and analysis; project scheduling: project budget planning, project risk planning. The implementation of construction projects in Rwanda (completion within time, budget and quality). This is illustrated in Figure 2.1

Independent variable	Dependent variable
Project planning practices:	**Project implementation:**
-Stakeholder mapping and analysis	-Project milestone achieved

-Project scheduling: -Project budget planning -Project risk planning	- Project implementation within timeline - Project implementation within budget - Project implementation within scope - Project implementation within quality

Source: Researcher, 2022
Figure 2.1: Conceptual framework
4.5 Research gap

This study identified the following gap in the past studies:

There is conceptual gap and contextual gap in the study done by Mohamed &Moronge (2019) where his study ignored to link to show statistics showing the relationship between project planning and sustainability of project. The current study will expand the concept and study on performance of Upgrading Amahoro National stadium project. Therefore, there is need to replicate the study locally to indicated on how project planning affecting performance of project in Rwanda specifically by Upgrading Amahoro National stadium project

There is gap in methodology on the study done by Mwanzaet al. (2020), did the study on the influence of project planning practice on performance of construction projects in Kenya where the previous studies used descriptive survey research design. Hence, the current study used bothdescriptive survey research design and correlational research design to find out the effect of project planning practices on implementation of Upgrading Amahoro National stadium project

Contextual gaps are also presented on the need to undertake a local empirical study for more applicability of the results. From survey of relevant literature, it has been found that there are few studies specific to Rwanda on the link of project planning process and performance of project in Rwanda. This study therefore intends to fill these pertinent gaps in literature by studying the effects of project planning process on implementation of construction project in Rwanda with reference toUpgrading Amahoro National stadium project for the period of 2020 up to

5. RESEARCH METHODOLOGY
The research methodology in this study deals with the research design, the population of the study, the sampling design, data collection measurement of variables**,** reliability and validity of the measurement instruments and method data analysis

5.1.Research Design
This study used descriptive research design and correlational research design. Descriptive research design was useful in describing the project planning practices such as stakeholder

mapping and analysis; project budgeting plan ; project scheduling plan and Project risk plan as independent variable and also the study described   implementation of upgrading Amahoro National stadium project by using quantitative and qualitative approach

The study used correlational research design to determine whether there is significant relationship between stakeholder mapping and analysis; project budgeting plan ; project scheduling plan and Project risk plan as independent variable and upgrading Amahoro National stadium project as dependent variable by using correlation and multiple linear regressions approach

5.2. Population of the study

Based on the nature of this study, the target population was 148 employees of upgrading Amahoro National stadium project from the different departments

Table 1: Target Population

Category	Population size
IT Department	4
Finance Department	7
HR Department	3
Construction team	19
Designer engineering team	4
Construction inspection team	7
Construction supervising team	9
Monitoring and evaluation department	3
Masons	20
Assistant masons	32
Total	**108**

Source: MINEFRA, 2022

This study used census inquiry method; because the whole population under study was used as it was not large and no need to determine sample size. Hence, in this study, the population size is equal to sample size which is 108 employees of employees of upgrading Amahoro National stadium project

5.2. Data collection instruments

The researcher therefore compounds the use of questionnaire and documentary analysis in the process of collecting primary data.

The questionnaire was administered to 108 employees of upgrading Amahoro National stadium project. It consisted of open-ended, closed questions and Likert scale questions. In close-ended

questions, the respondents were limited to specific answers to choose from the list while in open-ended questions, respondents were requested to give responses without any limitations on how project planning practices influence the project implementation of upgrading Amahoro National stadium project. Likert scale helped respondents provide views on the extent to which they evaluate the implementation of upgrading Amahoro National stadium project. and interview guide was used to collect in-depth information on the influence of project planning on implementation of construction project in Rwanda mainly Upgrading Amahoro National stadium project. The face-to-face interviews was conducted with 3 senior manager of Upgrading Amahoro National stadium project including project manager, operational manager, and director of planning of Upgrading Amahoro National stadium project because have additionally information regarding to implementation of Upgrading Amahoro National stadium project.

5.3. Reliability and validity of the measurement instruments

The validity of the data collection instruments was done with the help of an Expert (the Researcher's Supervisor) to edit the questionnaire and the interview guide. The researcher forwarded the structured questionnaire and the interview guide to supervisor who is an expert in the area covered by the research for editing and reviewing. The following formula was used to test validity index. According to Sekaran (2006) content validity index should not be less than 0.7.

$$\text{CVI} = \frac{\text{No. of items regarded relevant by judges}}{\text{Total No. of items}} = \frac{35}{40} = 0.875.$$ This implies that research instruments have internal validity because CVI computed is great than 0.7.

The reliability of the questionnaires was improved through pre-testing of pilot study of 11 employees of upgrading Amahoro National stadium project. This enabled the re-phrasing of some questions. To ensure accuracy, internal consistency and completeness, reliability of the instrument was established using Cronbach's alpha coefficient test. After the pilot study, the answers were submitted to a reliability analysis (with SPSS) for computation of the Cronbach's Alpha. Cronbach's alpha determines the internal consistency of items in a survey instrument to gauge its reliability. The output from SPSS yielding the Cronbach alpha shown how reliable the questionnaire is. The reliability coefficient (alpha) analysis can range between 0 to 1, with 0 showing that a questionnaire is not reliable and 1 showing absolute reliability of a questionnaire. A reliability coefficient (alpha) of 0.70 or higher is thought to be satisfactory reliable in SPSS.

Table 2: Reliability Statistics

Cronbach's Alpha	N of Items
.820	35

Source: Primary data, 2022

For the questionnaire, the calculated Cronbach's Alpha was 0.820, which is higher than 0.7. This being greater than 0.7, it indicates that there is greater internal consistency of the items in the scale, and that the research instrument used was very reliable.

5.4. Data analysis

This study used descriptive statistical method and inferential statistics such as correlation analysis and multiple linear regression model was used to analyze the data. The data in this study was computed and analyzed using Statistical package for social sciences (SPSS) which is software for data analysis.

Descriptive statistics: Descriptive statistics was used to describe the basic features of the data in the study in the tendencies and then replicated in tabular manner. It involved use of percentages, frequencies, mean and standard deviation.

Correlation analysis: The correlation analysis was used to find out the relationship between project planning practices such as stakeholder mapping and analysis, project budgeting, project scheduling and project risk planning as independent variable and successful implementation of upgrading Amahoro National stadium Project as dependent variable

Multiple regression models: Multiple regression analysis was used to find out the effect of each predictor of stakeholder mapping and analysis, project budget planning, project scheduling and project risk planning as independent variable on successful implementation of upgrading Amahoro National stadium Project as dependent variable

Model specification

The following statistics model was used as follow:

The equation $(Y = \beta 0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e)$

Where B_o = constant

$\{\beta_1, \beta_{2 \text{ and }} \beta_3\}$= coefficients of independent variables and μ = error term

Y= Implementation of upgrading Amahoro National stadium Project

X_1= Stakeholder mapping and analysis,

X_2= Project budget planning

X_3= Project scheduling and

X_4=Project risk planning

The result of a statistical test, denoted p, shall be interpreted as follows, the null hypothesis H0 is rejected if p<0.05 level of significant. The regression was conducted using a multistage analysis which involving first running the R2 and F-test without the moderator while the second stage involved running the tests with the moderator included. The purpose was to compare the changes in R^2 value and F-value to determine the effect of the moderator in the relationship between independent variables and the dependent variable. Presence of a significant difference would indicate significant effect of the moderator. Hypotheses in the study were tested using beta, t and p values. The test was done at 95% confidence level, 1 tailed test. This implies that the significance value was set at 0.05. The values less than 0.05 was deemed as significant while those greater than the significance value was deemed to be insignificant (Yin, 2011). Finally, thematic analysis techniques were used to analyze qualitative data collected in the open-ended questions. On the other hand, qualitative data was analyzed using content analysis and this involved organizing data into categories, coding and sorting them to identify patterns and interpret meaning of responses.

6. FINDINGS
This section helps to respond the objectives of this study which was to assess the influence of stakeholder mapping and analysis on implementation of upgrading Amahoro National stadium project; to find out the influence of project budgeting plan on implementation of upgrading Amahoro National stadium project; to assess the influence of project scheduling plan on implementation of upgrading Amahoro National stadium project and to examine the influence of project risk plan on implementation of upgrading Amahoro National stadium project by using both correlation analysis and multiple regression analysis to test the influence among the variables.

Table 3: Correlational coefficient

	X_1	X_2	X_3	X_4	Y

Stakeholder mapping and analysis	Pearson Correlation	1				
Project budget planning	Pearson Correlation	.477**	1			
Project scheduling	Pearson Correlation	.160	.168	1		
Project risk planning	Pearson Correlation	.255**	.178	.056	1	
Implementation of UANS project	Pearson Correlation	.758**	.706**	.578**	.710**	1
	Sig. (2-tailed)	.000	.000	.004	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

A Pearson Correlation was performed, and the result of the Pearson correlation test as presented in Table 4.8, show a high positive correlation (r)) = 0.758**; p=0.000<0.05) between stakeholder mapping and analysis and implementation of Upgrading Amahoro National Stadium Project. This implies that the stakeholder mapping and analysis positively correlated to the implementation of Upgrading Amahoro National Stadium Project.

In addition, the correlation between project budget planning and implementation of Upgrading Amahoro National Stadium Project was significant at (r=0.706, p=0.00<0.05) which implying a linear relationship between project budget planning and implementation of Upgrading Amahoro National Stadium Project. This shows that project budget planning significantly influenced implementation of Upgrading Amahoro National Stadium Project. This implies that Josephson and Hammarlund (2016) have shown that delays, cost overrun and quality problems in construction projects are attributable to poor design management practices. In addition, the study sought to establish the relationship between project scheduling and implementation of Upgrading Amahoro National Stadium Project. The study findings are in tandem with the literature review by Owino (2016) that resource planning is an entity that contributes to the accomplishment of project activities. Time and cost are directly dependent on the availability of resources. The time required maybe determined by dividing the productivity associated with the resources used on the activity into the defined quantity of work for the activity. Each activity is allocated with a specific resource and must be completed within the time limit, otherwise it may adversely affect the overall duration of the project.

A Pearson Correlation was performed, and the result of the Pearson correlation test as presented in Table 4.8, show a correlation (r) = 0.578**; p=.004<0.05) between project scheduling and implementation of Upgrading Amahoro National Stadium Project. This implies that the project scheduling is positively correlated to the implementation of Upgrading Amahoro National

Stadium Project. In addition, the correlation between these two variables was significant, that is p<0.05 implying a linear relationship between project scheduling and implementation of Upgrading Amahoro National Stadium Project. This shows that project scheduling significantly influenced implementation of Upgrading Amahoro National Stadium Project. The study findings agree with the findings by Halpin (2016) that the main objective of scheduling is to produce timetables for individual activities following the plan. There are numerous possible plans available for any given project, hence evolving different schedules. While experience is a good guide to construction planning, each project is likely to have special problems or opportunities that may require considerable ingenuity and creativity to overcome or exploit. Unfortunately, it is quite difficult to provide direct guidance concerning general procedures or strategies to form good plans and schedules in all circumstances.

Further, the study sought to establish the relationship between project risk planningand implementation of Upgrading Amahoro National Stadium Project. A Pearson Correlation was performed, and the result of the Pearson correlation test as presented in Table 4.8, show a correlation (r) = 0.710^{**}; p=0.000<0.05) between project risk planningand implementation of Upgrading Amahoro National Stadium Project. This implies that the project risk planningis positively correlated to the implementation of Upgrading Amahoro National Stadium Project. In addition, the correlation between these two variables was significant, that is p<0.05) implying a linear relationship between project risk planningand implementation of Upgrading Amahoro National Stadium Project. This shows that project risk planning significantly influenced implementation of Upgrading Amahoro National Stadium Project.

Multiple linear regression analysis

Regression analysis is a statistical tool for the investigation of the relationship between variables. A multiple regression analysis was conducted to investigate the joint causal relationship between the independent (project planning) and dependent variables (implementation of Upgrading Amahoro National Stadium Project). Usually, researcher seeks to maintain the causal effect of one variable upon another. Regression analysis allows you to model, examine and explore spatial relationship, and can help explain the factors behind observed spatial patterns. Regression analysis is also used for prediction.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.780[a]	.6084	.594	.37332

a. Predictors: (Constant), X4=Project risk planning, X3= Project scheduling and, X2= Project budget planning, X1= Stakeholder mapping and analysis,

Model summary provides the coefficient of determination (R^2) which shows explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (implementation of Upgrading Amahoro National Stadium Project) that is explained by all the four independent variables (Stakeholder mapping and analysis, project scheduling; project budget planning and project risk planning).

From the study findings, it is notable that correlation determination of by R^2 value (0.6084). The study results imply that Stakeholder mapping and analysis, project scheduling; project budget planning and project risk planning jointly accounted for 60.84% of the implementation of Upgrading Amahoro National Stadium Project as represented by the R^2. This therefore means that other factors not studied in this research contribute 39.1% to the implementation of Upgrading Amahoro National Stadium Project. This implies that these variables are very significant and need to be factored to implementation of Upgrading Amahoro project. Therefore, further research should be conducted to investigate the other factors (39.1 percent) that influence implementation of Upgrading Amahoro National Stadium Project

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.568	4	3.642	26.133	.000[b]
	Residual	14.355	103	.139		
	Total	28.923	107			

a. Dependent Variable: Implementation of upgrading Amahoro National stadium Project

b. Predictors: (Constant), X4=Project risk planning, X3= Project scheduling and, X2= Project budget planning, X1= Stakeholder mapping and analysis,

Table 5 shows the Analysis of Variance (ANOVA) of regression analysis between independent variable including project planning practices and a dependent variable; implementation of constituency development funded projects. Further, the analysis of variance was used to examine whether the regression model was a good fit for the data. The F-critical (4, 103) was 2.46 while the F-calculated was 26.133 as shown in Table 5. This shows that F-Calculated was greater than the F-critical and hence there is significant linear relationship between the project planning and implementation of Upgrading Amahoro National Stadium Project. In addition, the p-value was 0.000, which was less than the significance level (0.05). Therefore, the model can be a good fit

for the data and hence it is appropriate in predicting the influence of the four independent variables (project planning) on the dependent variable (implementation of Upgrading Amahoro National Stadium Project).

Table 6: Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	.895	.294		3.044	.008
X1= Stakeholder mapping and analysis	.369	.081	.369	4.559	.000
X2= Project budget planning	.201	.066	.133	3.045	.008
X3= Project scheduling	.187	.075	.175	2.476	.015
X4=Project risk planning	.308	.058	.383	5.317	.000

a. Dependent Variable: Implementation of upgrading Amahoro National stadium Project

Further, the study ran the procedure of obtaining the regression coefficients, and the results were as shown on the Table 6. The coefficients or beta weights for each variable allows the researcher to relative importance comparatively of the project planning. In this study the unstandardized coefficients and standardized coefficients are given for the multiple regression equations. However, discussions are based on the unstandardized coefficients.

The Multiple regression model equation would be ($Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$) becomes:

$Y = 0.895 + 0.369 X_1 + 0.161 X_2 + 0.187 X_3 + 0.308 X_4$.

This indicates that Implementation of Upgrading Amahoro National Stadium Project = 0.895 + 0.369 (stakeholder mapping and analysis) + 0.161 (project budget planning) + 0.187 (Project scheduling) + 0.308 (Project risk planning).

According to the regression equation established, taking all factors into account project designing, scheduling, project resource planning and participatory planning process constant at zero, implementation of Upgrading Amahoro National Stadium Project was 0.895.

The findings from the table 6, revealed that stakeholder mapping and analysis has significance positive effect on implementation of Upgrading Amahoro National Stadium Project as indicated by $\beta_1 = 0.369$, p-value=$0.000 < 0.05$, t=4.559. The implication is that an increase of one unit in stakeholder mapping and analysis would lead to an increase in implementation of Upgrading

Amahoro National Stadium Project by 0.369 units.The situational analysis aims at describing the community situation as it is currently, identifying and listing pressing problems being encountered by the community. The findings also correlate with Obegi&Kimutai(2017) who stresses the importance of project initiation process in the success of project accomplishment. The findings are also in line with Ndavi (2019) who emphasize that needs assessment is one of the critical stages in the project development process, reliable, accurate and usable information is needed that reflects the ideas articulated by representative groups of the target population and other stakeholders in the community.

The findings from the table 6, revealed that project budget planning has significance positive effect on implementation of Upgrading Amahoro National Stadium Project as indicated by β_2= 0.201, p-value=0.008<0.05, t=3.045. The implication is that an increase of one unit in project budget planning would lead to an increase in implementation of Upgrading Amahoro National Stadium Project by 0.201 units.

The findings from the table 6, revealed that project scheduling has significance positive effect on implementation of Upgrading Amahoro National Stadium Project as indicated by β_3=.187, p-value=0.015<0.05, t=2.476. The implication is that an increase of one unit in project scheduling would lead to an increase in implementation of Upgrading Amahoro National Stadium Project by 0.187units. The study findings agree with the findings by Halpin (2016) that the main objective of scheduling is to produce timetables for individual activities following the plan.

In addition, the findings in Table 6, indicates that project risk planninghad coefficients of estimate which was significant basing on $\beta4 = 0. 308$ (p-value = 0.000 which is less than $\alpha = 0.05$). Also, the effect of Project risk planningis more than the effect attributed to the error and supported by the t values whereby t cal= 5.317> t critical =1.96 at a 5 percent level of significance,thus we conclude that Project risk planning significantly influence implementation of Upgrading Amahoro National Stadium Project.

7. CONCLUSION AND RECOMMENDATIONS

This section presented conclusions, and recommendations of the research. The chapter also contains suggestions of related studies that are carried out in the future.

7.1. Conclusion

The study aimed at finding out influence of project planning on implementation of construction project in Rwanda. Based on the findings the study made the following conclusion. The findings concluded that combination of stakeholder mapping and analysis, project scheduling; project

budget planning and project risk planning jointly accounted for 60.84% of the implementation of Upgrading Amahoro National Stadium Project as represented by the R^2 at 95% of confidence interval. The study results indicated that stakeholder mapping and analysis as positive significant influence on implementation of Upgrading Amahoro National Stadium Project. The study concluded that the improvement in stakeholder mapping and analysis leads to improvement implementation of Upgrading Amahoro National Stadium Project. Project budgeting plan was found to be highly significant on the influence it has towards successfully implementation of upgrading Amahoro National stadium project. The study also concluded that project budgeting plan have very great impact on successfully implementation of upgrading Amahoro National stadium project. The results showed that project scheduling have a positive and statistically significant influence on implementation of Upgrading Amahoro National Stadium Project. The study concluded that the improvement in project scheduling leads to improvement implementation of Upgrading Amahoro National Stadium Project. The study concludes that respondents use Project risk plan to manage their construction projects. Moreover, the study concludes that construction projects that use Project risk plan to manage different project parameters accrue more profit margins than projects that do not to a very great extent. The study concludes there exists a positive correlation between Project risk plan and implementation of upgrading Amahoro National stadium project.

7.2. Recommendations

Based on the above discussions and analysis, the study recommends the following:

The project managers should be aware that participation of community in project planning teaches communities how to resolve conflict and allows for different perspectives to be heard.

Before commencing a project, the project should adequately plan for and work schedule be prepared that will guide the project implementation.

Project planning team should incorporate all project stakeholders in throughout the entire process of project planning

The study recommends that risk analysis should be carried out early in a project when the information is highly limited within several areas. all persons associated with a project should be encouraged to identify risks.

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