



ASSESSMENT OF PROJECT PLANNING PRACTICES AND PROJECT PERFORMANCE OF SUSTAINABLE AGRICULTURE INTENSIFICATION AND FOOD SECURITY PROJECT (SAIP)

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ABSTRACT

In spite of the role of project resource management in order to improve the performance of project but many projects in Rwanda keep failing resulting in loss of millions of dollars for organizations. Project failure is also the main challenge of our country for example, 55% of the executed fail to meet its objectives (RDB, 2020). The research thesis “Project Planning Practices and Project Performance; a case of Sustainable Agriculture Intensification and Food Security Project (SAIP)” was guided by the following objectives: to determine the effect of human resource planning on performance of SAIP Project, to analyse the effect of financial resource planning on performance of SAIP Project, to determine the effect of material usage planning on performance of SAIP Project and to assess the effect of time management on performance of SAIP Project. The literature review focused on agency theory and resource dependence theory and empirical review based on the objectives of the study. The literature review discusses the conceptual review and research gap. The population of the study is 92 and the sample size which was used in the study is 92. Therefore, researcher used universal sampling to select 92 employees. Questionnaire and documentary review were used as tools of data

collection. Descriptive and inferential statistic such as multiple linear regressions was used to analyse data. For the first objective the results indicate that human resource planning has significance positive effect on SAIP project performance as indicated by $\beta_1 = 0.246$, $p\text{-value} = 0.004 < 0.05$. For the second objective, the results revealed that financial resource planning have significance positive effect on SAIP project performance as indicated by $\beta_2 = 0.181$, $p = 0.033 < 0.05$. For the third objective, the results revealed that material usage planning has significance positive effect on SAIP project performance as indicated by $\beta_3 = 0.395$, $p = 0.000 < 0.05$. For the fourth objective, the results revealed that time management has significance positive effect on SAIP project performance as indicated by $\beta_4 = 0.127$, $p\text{-value} = 0.031 < 0.05$. The implication in this study is that all target hypotheses were accepted. The findings revealed that SAIP project perform well. These are evidenced by the overall view of respondents on performance of SAIP project was very high with mean score of 4.29 and the standard deviation of 1.16 which implies that there is strong evidence of existing of fact and heterogeneity response that Performance of SAIP project was at very high extent. The researcher suggests that SAIP project should equip the human resources through appropriate and constant training programs addressing the performance of agriculture projects.

1. INTRODUCTION

Project performance involves organization of the firm's resources and motivation of the staff to achieve goals. Successful implementation is about working together and sharing information with each other. The value of any strategy and its potential contributions include increasing productivity, reducing costs, growing profits, and improving service or product quality (Galpin, 2017). Woolridge and Floyd (2017) noted that it can be much easier to think of a good strategy than it is to implement it as much of the shortcomings in the strategy area is attributable to failures in the implementation process rather than in the formulation of strategy itself.

Over the last decade, much research has been conducted in the field of project Resource Management and its association with project success. Prior studies in New Zealand have found substantial positive evidence for statistical associations between project Resource Management practices such as financial resource practices and human resource practices contributing to improved project implementation success. For organizations to survive in a global economy in the new millennium, they need to exploit all the available resources as a means of achieving competitive advantage (Zaha, 2017).

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 taking into account 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 taking into account 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 (Keitany et al., 2018).

The NGOs in Africa is still struggling with best practices to be adapted for effective and efficient management of resources as the benefits associated with it are slowly penetrating the African market. With reference to Colley and Price (2020) indicate that in Ghana, for example only a small percentage of public Sector organizations apply project resource management process effectively. This finding is consistent with a study conducted by the International Personnel Management Association (IPMA) that found project resource practices are not common in the public sector generally (Johnson & Brown, 2017).

In Eastern African countries like Kenya, one resource recognized as providing a source of competitive advantage is the human resources of the organization. A NGO must strive to attract, develop and retain qualified and enthusiastic employees, as they are the key to their success. NGOs now have a high demand for skilled employees to help the organization function at its best. Almost all the HR practices are being adapted by NGOs and the roles and responsibilities are equally challenging. Clear selection criteria must be created as they contribute significant value by helping HR practitioners in placing the right types of individuals in the right positions. They also ensure that employees are provided with support and understanding. Such initiatives are aimed at retaining qualified, enthusiastic employees and developing a positive organizational culture.

In Rwanda, the achievement of Rwandan government projects is until today facing many challenges due to the weakness found in procuring entities' procurement systems. The main challenges are related to the projects resources management which are illustrated by different problems that arise during the projects implementation and their related contracts management, among which the financing problems come on the first place, the poor project resource management results from badly done projects studies which use the biggest portion of the national budget (Umulisa, & Shukla, 2015). There have been projects which were abandoned

without being completed and others took longer execution period than the planned ones. This has caused the government to incur important losses and extra unnecessary costs; the recent example is the fiscal year 2012-2013 during which nine projects worth FRW 908 million were abandoned by the contractors and FRW 23 billion were lost in poor contracts management procedures (OAG, 2004). Hence, this study seeks to investigate the effect of project planning practices on performance of SAIP Project

2. Statement of the problem

For organizations to survive in a global economy, they need to utilize all the available resources to achieve a competitive advantage. Financial, material resource and human resource such as ability, skills and motivation must be aligned with the needs of the organization to improve performance and implementation of project (Werner and DeSimone, 2018). The NGO sector, one of the dynamic sectors in Rwanda has seen continued growth despite the many challenges due to the nature of operation which is ‘not-for-profit’ thereby requiring proper project planning like human resource planning, time usage planning and financial resource planning to be put in place to enhance effective project execution and performance.

In spite of the role of project resource management in order to improve the performance of project but many projects in Rwanda keep failing resulting in loss of millions of dollars for organizations. Project failure is also the main challenge of our country for example, 55% of the executed fail to meet its objectives (RDB, 2020). This persisting challenge has led many project management professionals to attempt to identify the critical factors that need to be tackled head on to produce a successful project management outcome. There exist literatures on critical success factors for specific industry sectors, or specific country situations with a common mention of the triple constraint triangle consisting of time, cost and scope.

However, there has been little research that reveals how effective project planning contributes to project performance. A study by Mutula (2013) on influence of project planning on projects performance found that there is a positive correlation between project planning and project performance and that the study recommended that firms should plan for projects resources to ensure that they get an edge over competitors’ as well enabling survival in the end. Time spend on planning helps increase chances of success for the project while lessening risks associated with the project. The current knowledge on this subject is inadequate in relation to understanding

the factors enabling the success of projects in different organizational conditions. Hence, this study assesses the influence of human resource planning, financial resource planning, materials usage planning and time management in different stages of project that seems to be required for the performance of SAIP Project.

3 .Objectives of the study

1. To determine the effect of human resource planning on performance of SAIP Project;
2. To analyse the effect of financial resource planning on performance of SAIP Project;
3. To determine the effect of material usage planning on performance of SAIP Project;
4. To assess the effect of time management on performance of SAIP Project.

4. LITERATURE REVIEW

4.1. Theoretical framework

This study is based on theory of project resource planning and project performance. The key theory namely agency theory and resource dependence theory are discussed below:

Agency Theory

Jensen and Meckling developed the Agency theory in 1976. The authors identified two types of agency conflicts. The first focuses on the conflict between shareholders and managers and the second on the conflicts between equity-holders and debt holders. Conflicts between shareholders and managers arise because managers do not hold total claims thus they cannot capture the entire gain from their value maximizing activities. The second type of conflict arises between debt holders and equity holders because debt holders give equity holders an incentive to invest sub optimally (**Mandell**, 2008). According to the theory, project managers of asset left on their own are expected to act on the best interest of those who have appointed or elected them. This implies that the entire project ought to be carried out in a manner to benefit owners (Lan, 2010). In agency theory terms, the project beneficiaries are principals and project managers are the agents. Therefore, the agents, since they hold power on behalf of the principal, are expected to exercise control for the benefit of the principal by ensuring sufficient returns. According to Bonazzi (2007), Agency theory specifies mechanisms that reduce loss and increasing benefits (wealth creation) to the principal thus, managers should always act to the best interest of the

beneficiaries. This theory is significant in managing projects and it indeed emphasizes on the need of taking the interest of the stakeholder in all management decision of the projects. Agency theory is applicable to the study in that it supports the works of project managers in ensuring that resources such as time, finance, human and materials are utilized to the best interest of the citizens/beneficiaries.

Resource dependence theory

Resource dependence theory was developed by Pfeffer and Salancik in 1978. The theory describes projects as being exposed not only to internal but also to external contingencies. The contingencies arise because projects depend on resources of its environment which are necessary for project organization to exist and excel in successful completion of projects. External factors are able to control these resources to a certain degree which can influence the behavior of project team members and build external dependence. To increase control of power over resources and ensure successful completion of projects, project organizations try to minimize their own dependence or increase the dependence of others on themselves (Ulrich and Barney, 2010). In doing so, resources dependence theory proposes theoretically and empirically that project organizations concentrate more on resources which are critical for their long-term survival (Jawahar and Mclaughlin, 2001).

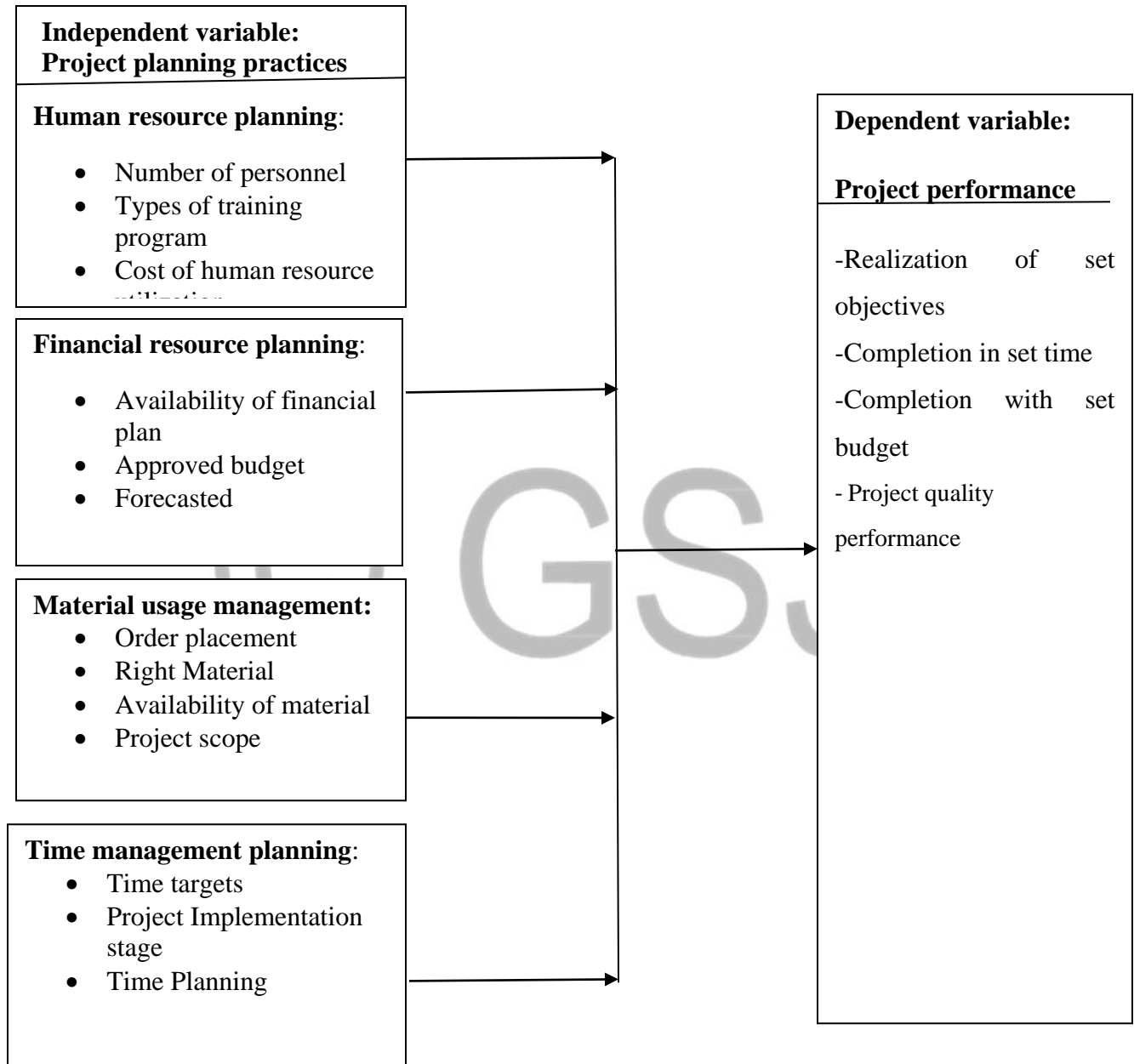
The implication of resources dependence theory in this study is that management of project should concentrates on how a project organization can manage resource dependence such as human resource, financial resource; time resource and material resource on its environment to ensure a successful outcome of project. Furthermore, the success of a project also depends on the support of its executive sponsors, reason why it is critical to win their support throughout the project lifecycle. Where boards can provide a firm access to scarce, valuable and non-replicable resources, it can become a variable resource, particularly when compared to a board that focuses mainly on monitoring and minimizing agency costs. Thus, a board's capabilities may be valuable resources that cannot be easily duplicated or substituted and so may provide the project with a district competitive advantage.

4.2. Conceptual framework

The conceptual framework means the parts of a building or an object that support its weight and shape. This research will deal with two variables, that means the independent variables (Human

resource planning, financial resource planning material usage planning and time management) and dependent variables is project performance in terms of realization of set objectives, completion in set time, completion with set budget and project quality performance.

Figure 2.1: Conceptual framework



Source: Researcher compilation (2022)

5. MATERIALS AND METHODOLOGY

5.1. Research Design

This study adopted both a descriptive research design and inferential. Descriptive research design which was useful in describing the project planning practices such as human resource planning, financial resource planning material usage planning and time management and also descriptive research design was also useful in describing the level of project performance in terms of realization of set objectives, completion in set time, completion with set budget and quality performance. The inferential statistics such as multiple linear regressions was used to determine the relationship between project planning and performance of SAIP Project

5.2. Population of the study

According to **Saunders** et al (2018), a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. The population of interest of this study was 92 employees of SAIP project

5.3. Sample size

A sample is defined as a subset of the population. It comprises some members selected from the population (**Kothari**, 2011). According **Creswell** (2013), when the population is less than 100 the sample size is universal sample. In this study the population consists of 92 employees of SAIP project. The researcher used universal sampling technique to select 92 employees of SAIP because the target population equals to the sample size..

5.4. Data collection instruments

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

Questionnaire

There are three basic types of questionnaires; closed ended, open-ended or a combination of both. Closed-ended questionnaires are used to generate statistics in quantitative research while open-ended questionnaires are used in qualitative research, although some studies quantify the answers during the analysis stage (**Saunders et al**, 2013), the designed questionnaires were focused on respondents' profile, factors affecting the performance of program. The aim of using this method is to get broad-based views from the respondents. It includes close-ended of pre-determined answers and a few open-ended questions. The questionnaire also uses a 5-point Likert rating scale to secure the degree of the presence of the variables of interest in the study

population. In cases of open ended questions, the respondents were encouraged to express themselves more freely as well as provided any other information as they see fit.

5.5. Reliability and validity of the measurement instruments

Before data collection it is important to test for reliability and validity of research instruments as shown in the section below.

Validity of the measurement instrument

Mugenda and Mugenda (2003). define validity as the "best available approximation to the truth or falsity of a given inference, proposition or conclusion. After constructing the questionnaire, the researcher contacted two research experts in order to determine whether the questionnaire tool was valid in a way of collecting information that was used in understanding the research problem. The following formula was used to test validity index.

$$CVI = \frac{\text{No. of items regarded relevant by judges}}{\text{Total No. of items}}$$

For this study the calculated C.V.I was

$$C.V.I = 25/30 = 0.83$$

If the calculated C.V.I is greater than 0.60 (Saunders et al, 2007) the questionnaire was considered valid. Therefore, this study is greater than 0.60, the questionnaire is valid.

Reliability of the measurement instrument

According to Creswell (2013), reliability refers to the consistency of measurement and is frequently assessed using the test–retest reliability method. Reliability was increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. The researcher also selected a pilot group of 10 employees Gikuriro project to test if they give consistent results, and this exercise was done before actual period of data collection to remove bias and subjectivity on the side of researcher. The answers were submitted to a reliability analysis (with SPSS) for computation of the Cronbach's Alpha. According to Sekaran (2006) Alpha values for each variable under study should not be less than 0.7 for the statements in the instruments to be deemed reliable. The reliability ensure by testing the instruments for the reliability of values (Alpha values) by calculating Cronbatch alpha values.

Table 3.1: Reliability Statistics

Cronbach's Alpha	N of Items
0.779	30

Source: Primary data, 2022

The findings indicated that all variables had a coefficient of 0.779. All constructs depicted that the value of Cronbach's Alpha are above the suggested value of 0.7 thus the study was reliable.

5.6. Data analysis

According to Cooper and Schindler (2013), the analysis of data allows the researcher to organize the data collected during the study in order to assess and evaluate the findings so as to arrive at some reasonable, valid and relevant conclusion. This study used descriptive statistical method for representing and summarizing of the bio data. The statistical instruments that used for research analysis were mainly descriptive and inferential statistics such as correlation analysis and multiple linear regression model was used to analyze the data. The data in this study were computed and analyzed using Statistical package for Social sciences (SPSS) which is software for data analysis.

Descriptive statistics: Descriptive statistics such as mean, frequency and standard deviation will be used to assess the factors affecting the performance of project/program.

Multiple regression models: Multiple regressions analysis was used in order to assess the effects of multiple predictor variables (rather than a single predictor variable) on the dependent measure. A multiple regression model was used to test the significance of the effect of the independent variables on the dependent variable. Based on other models that were used to test the factors affecting the performance of SAIP project, the present study adopted the following model:

Model specification

The following econometric model was used as follow:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e$$

Where B_0 = constant

Where: Y = Performance of SAIP project

$\{\beta_i; i=1, 2, 3 \text{ and } 4\}$ = The coefficients representing the various independent

Variables B_0 = the Y intercept

$\{X_i; i=1, 2, 3 \text{ and } 4\}$ = Values of the various independent (covariates) variables.

e = the error term which is assumed to be normally distributed with mean zero and constant variance, Y= Performance of SAIP project, X1= Human resource planning, X2 = Financial resource planning X3= Material usage planning and X4= Time management

On the other hand, qualitative data were analyzed using content analysis and this involved organizing data into categories, coding and sorting them in order to identify patterns and interpret meaning of responses. Saunders et al. (2020) argues that this method allows researchers to categorize the information and organize them into themes and patterns for easy interpretation. On the other hand, qualitative data was presented in a narrative form and inferences drawn from it.

6. FINDINGS

6.1. Multiple linear regression analysis

Multiple linear regression analysis is used to determine whether resources planning such as human resource planning, financial resource planning, material usage planning and time management planning as independent variables have an impact on SAIP project performance. 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 addition, statistically significant relationship between the dependent variable and independent variable from the model were accepted at 5% significance level. The analysis applied the statistical package for social sciences (SPSS) to compute the measurements of the multiple regressions for the study. Based on the model summary, the coefficient of determination (R squared) shows the overall measure of strength of association between independent and dependent variables.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.905 ^a	.819	.811	.20333

a. Predictors: (Constant), human resource planning, financial resource planning, material usage planning and time management planning

The results from the table 4.7, the value of adjusted r squared was 0.811 (81.1%) an indication that there was variation of 81.1% on SAIP project performance of its beneficiaries was due to changes in human resource planning, financial resource planning, material usage planning and time management planning at 95% confidence interval. This meant that in an ideal situation without interference from extraneous variables, the independent variables accounted for up to 81.1% of the total variance in SAIP project performance. The model summary indicates that at 95% confidence level, project planning practices is a significant explanatory variable for any change in SAIP project performance, the magnitude of which is explained by the coefficient of determination (R²). Additionally, this therefore means that factors not studied in this research contribute 18.9% of SAIP project performance.

Table 4.8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.630	4	4.157	98.97	.000 ^b
	Residual	3.680	87	.042		
	Total	20.309	91			

a. Dependent Variable: SAIP project performance

b. Predictors: (Constant), human resource planning, financial resource planning, material usage planning and time management planning

To test whether the data was good fit for regression model, the ANOVA was undertaken and the data being good fit for data was tested at 5% level of significance. Since from the Table 4.8, indicated an F-value of 98.97 is greater than the critical $F_{(v_1=4, v_2=91)} = 2.46$ and also because p-value calculated =0.000 is less than Critical p-value =0.05 level of significant. From table 4.8, the combined project planning practices such as human resource planning, financial resource planning, material usage planning and time management planning as independent variables was statistically significant in explaining the variations in SAIP project performance. This is supported by a p value of 0.000 which is less than the acceptance critical value of 0.05. This implies that there was a goodness of fit of the model fitted for this study.

Table 4.9: Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.203	.288		.706	.482
	Human resource planning	.246	.083	.190	2.971	.004
	Financial resource planning	.181	.084	.190	2.166	.033
	Material usage planning	.395	.092	.406	4.306	.000
	Time management planning	.127	.058	.216	2.188	.031

a. Dependent Variable: SAIP project performance

The equation ($Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4$) becomes:

$$\text{SAIP project performance} = 0.203 + 0.246X_1 + 0.181X_2 + 0.395X_3 + 0.127X_4$$

The regression equation above has established that taking all factors into account (human resource planning, financial resource planning, material usage planning and time management planning) constant at zero; SAIP project performance was 0.203

The regression results revealed that human resource planning has significance positive effect on SAIP project performance as indicated by $\beta_1 = 0.246$, $p\text{-value} = 0.004 < 0.05$, $t = 2.971$. The implication is that an increase of one unit in human resource planning would lead to an increase in SAIP project performance by 0.246 units.

The regression results revealed that financial resource planning have significance positive effect on SAIP project performance as indicated by $\beta_2 = 0.181$, $p = 0.033 < 0.05$, $t = 2.166$. The implication is that an increase of one unit in financial resource planning would lead to an increase in SAIP project performance by 0.181 units.

The regression results revealed that material usage planning have significance positive effect on SAIP project performance as indicated by $\beta_3 = 0.395$, $p = 0.000 < 0.05$, $t = 4.306$. The implication there is sufficient evidence that an increase of unit in material usage planning would lead to an increase in SAIP project performance by 0.395 units

The regression results revealed that time management has significance positive effect on SAIP project performance as indicated by $\beta_4 = 0.127$, $p\text{-value} = 0.031 < 0.05$, $t = 2.188$. The implication is

that an increase of unit in time management would lead to an increase in SAIP project performance by 0.127 units.

7. CONCLUSION AND RECOMMENDATIONS

7.1. Conclusion

Based on the findings related to project planning practices and SAIP project performance, the results revealed that the overall view of respondents on performance of SAIP project was very high with mean score of 4.29 and the standard deviation of 1.16 which implies that there is strong evidence of existing of fact and heterogeneity response that on Performance of SAIP project was at very where 75% of respondents stated that the project has completed on time, 71.7% of respondents strongly agreed that the project has completed according to the budget allocated 75% of respondents strongly agreed that the project has directly benefited the intended users either through increasing efficiency or employee effectiveness. 53.3% of respondents strongly agreed that they are satisfied with the process by which the project was implemented and 76.1% of respondents strongly agreed that the project was handed upon the project's overall standards. Additionally, the study concludes that formulation and implementation of human resource training are in line with overall goal. The study concluded that human resource planning positively and significantly contributes to SAIP project performance of SAIP project. The study concludes that financial resource planning has a positive and significant effect on SAIP project performance. The study concludes that the budget for the project was properly determined and that the budgeted funds were enough to complete the project. The study concludes that material human resource, financial resource, material usage and time management planning have a positive and significant effect on the SAIP project performance.

7.2 Recommendations

Based on the study findings, the researcher suggests the following:

SAIP project should equip the human resources through appropriate and constant training programs addressing the performance of agriculture projects.

Financial resource planning, on the other hand has a major influence on both the planning and execution parts of a project. For efficient utilization of the resource, total costs and individual costs of the diverse work packages in **the project should be kept track of.**

The project scope should be used to estimate the cost of the project

Estimating the costs of individual activities based on execution conditions will assist to generate correct overall cost estimation. On the same the study recommends that for successful agricultural project planning, materials management should be a focus to ensure that projects are within time and budget.

The study recommends development of time schedules. A time schedule without control is not useful to the project organization hence regular checks and controls should be conducted in order to identify deviations as early as possible. Early detection of deviations will enable necessary



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