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Effect of Teamworking on Success of Government Agricultural Projects in Rwanda: A Case of Kirehe Watershed Management Project (KWAMP)

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Abstract: ***Evolution of team working and its concept started during the industrial revolution, where most organizations shifted from the hierarchical approach and used scientific management to design organizations and jobs. According to Kirehe Watershed Management Project financial and performance reports (2016), it used annually around twenty millions Rwandan francs to promote teamwork and increase the capacity of its staff. However, despite the huge amount of money used by Kirehe Watershed Management Project, its performance has not been very successful and one of the reasons given by project's consultants and evaluators is poor project teamwork whereby, some factors of effective teamwork like effective communication, competencies and attitudes have not been given attention during the project implementation process. Therefore the general objective of this study was to analyze the effect of team working on success of government agricultural projects in Rwanda. Its specific objectives were to determine the effect of team competencies on success of Kirehe Watershed Management Project, to assess the effect of team communication practices on success of Kirehe Watershed Management Project and to analyze the contribution of team behaviors and attitudes on success of Kirehe Watershed Management Project. This study used descriptive research design. The study population was 600 direct beneficiaries and 46 project staff under Kirehe Watershed Management Project which in total gives 647 people. The researcher collected data from 247 respondents which is the sample size calculated using Yamane formula. During collection of primary data, questionnaires were used as main instrument of data collection. To analyse data, the procedure was governed by the main headings of the researcher's questionnaires; also, findings and interpretations were analysed interchangeably. To make this analysis efficient, the researcher examined all the answers in the same way. In this research data were analyzed quantitatively using inferential and descriptive statistics. The study showed that there is a strong positive correlation between team competencies and success of KWAMP project the Pearson correlation coefficient was .777, the correlation analysis demonstrated that there is strong positive relationship at 1% level of significance with r = .712. The correlation analysis helped to demonstrate that there is a moderate positive relationship between these two variables at a significance level of 1% with r = .661. The regression analysis showed that the β coefficient for the variable team communication practices was .149 which means that if there is an increase of one unit in this variable, it will cause the project success to increase by 0.149 units if other variable remain constant. Based on the information drawn from findings the researcher concluded that the effect of team competencies on success of Kirehe Watershed Management Project is significant, the study also concluded that team behaviors & attitudes has a great effect on success of Kirehe Watershed Management Project.***

Keywords: Team working, Success of Agricultural projects

1. Introduction

Building effective teams and teamwork is not limited to a specific organization; this is an approach that can be used anywhere that collaboration is required among multiple people, teams or projects. Every team needs to be able to work together towards a common goal in order to be successful. Due to ever-growing economic, political, and technological forces, more and more organizations are struggling to how effectively compete and become successful in today's constraints of scarce resources. They are often forced to work smarter, more strategically, and with better efficiency just to survive (Wageman, 2007). Evolution of team working and its concept started during the industrial revolution, where most organizations shifted from the hierarchical approach and used scientific management to design organizations and jobs. The use of teamwork in organizations has become extremely popular. Business leaders, project managers and chief executive officers of global companies alike agree on the value that teamwork bring to organizations, and expect the use of teamwork to increase as organizations strive for even higher levels of success (Katzenbach & Smith, 2013).

2. Statement of the problem

Organizations from both private and public sector are increasingly embracing the practice of teamwork in anticipation that this will translate to improved performance. The increasing use of teamwork in organizations provides a strong indication that the result obtained in a teamwork structure is above and beyond those obtained by individuals (Gourty, 2008), and that teams are able to effectively adapt to changing demands in the business world (Cohen, 2015). Researchers and project managers alike agree that effective teamwork is crucial if project objectives are to be met. The list of proclaimed benefits achieved through the use of teamwork is lengthy. For example: increased productivity (Campion, Medsker, & Higgs, 2003); enhanced performance (Tannenbaum et al., 2015), greater employee satisfaction (Cohen, & Spreitzer,2005), Higher quality (Kinlaw, 20111; Steel & Jennings, 2012), higher performance ratings (Cohen et al., 20066), increased organizational performance and competitiveness (Cordery, 2006; Katzenbach, 2013) improved customer service and satisfaction (Guzzo, 20055; Reilly &McGourty, 2008; Sundstrom, 2009) and improved efficiency (Dickson, 2006).

According to Kirehe Watershed Management Project financial and performance reports (2016), it used annually around twenty millions Rwandan francs to promote teamwork and increase the capacity of its staff. However, despite the huge amount of money used by Kirehe Watershed Management Project, its performance has not been very successful and one of the reasons given by project's consultants and evaluators is poor project teamwork whereby, some factors of effective teamwork like effective communication, competencies and attitudes have not been given attention during the project implementation process. Therefore this study aimed at analyzing the effect of team working on success of government agricultural projects in Rwanda.

3. Objectives of the Study

3.1 General Objective

The general objective of this study was to analyze the effect of team working on success of government agricultural projects in Rwanda

3.2 Specific Objectives

1. To determine the effect of team competencies on success of Kirehe Watershed Management Project
2. To assess the effect of team communication practices on success of Kirehe Watershed Management Project
3. To analyze the contribution of team behaviors and attitudes on success of Kirehe Watershed Management Project

4. Conceptual framework of the research

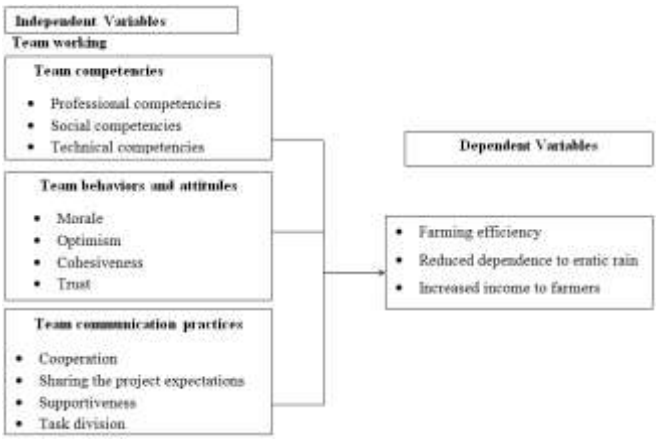

Figure 1: Conceptual Framework

5. Research Methodology

This research used the descriptive survey design. The study population equaled to 600 beneficiaries and 46 project staff under KWAMP project which in total gives 647 respondents. The researcher used the sample size of 247 respondents due to the fact that it couldn't be easy to collect data from all beneficiaries and staff of KWAMP. This sample size has been determined using Yamane formula: $n = \frac{N}{1+N(e)^2}$,

where: n= sample size, N= target population, e= margin error.

Using this Yamane formula:

$$n = \frac{N}{1+N(e)^2} = \frac{647}{1+647\,(0.5)^2} = \frac{647}{2.6175} = 247 \text{ Respondents.}$$

In collection of primary data, questionnaires were used as main instruments for data collection. The questionnaires were designed by the research and distributed to the respondents by the researcher herself. To analyse data, the procedure was governed by the main headings of the researcher's questionnaires; also, findings and interpretations were analysed interchangeably. To make this analysis efficient, the researcher examined all the answers in the same way. In this research data were analyzed quantitatively using inferential and descriptive statistics. The quantitative data generated were keyed in and processed by use of Statistical Package of Social Sciences (SPSS) version 23 to generate information which was presented using tables. The correlation analysis was used to show the relationship between independents and dependent variables. The linear regression model was used to show contribution of the model in predicting the success of KWAMP. The following multiple linear regression model was used: $Y= \beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon$.The ethical issues have been considered in this research. Participants of this study were assured of the confidentiality of the information given prior to and after the research process. Assurance of confidentiality allowed for sincere responses from the participants. To comply with all the required ethical rules, no personal information has been collected.

6. Research findings

6.1 Respondent rate

Table 1: Response Rate of the Study

Results	Frequency	Percentage (%)
Questionnaires returned	239	97
Questionnaires not returned	8	03
Total	**247**	**100**

In this study; 247 questionnaires were distributed to respondents. 239 of them were filled and returned, giving a response rate of 97%. The collection procedures used involved personal administration of the questionnaires then followed up through mobile phone calls for confirmation date when they was ready for collection. The response rate found was adequate for analysis and discussions of the study findings.

6.2 Descriptive statistics

Table 2: Mean and standard deviation per variable

	N	Minimum	Maximum	Mean	Std. Deviation
Team_Competencies	239	3.00	5.00	4.4059	.56372
Team_behavior_and_attitudes	239	3.00	5.00	4.3305	.66385
Team_communication_practices	239	3.00	5.00	4.4435	.63175
Success_of_KWAMP	239	2.00	5.00	4.3640	.67777
Valid N (listwise)	239				

The study used 5 point Likert scale statements from strongly disagree to strongly agree by ascendant order. The Table 2 shows the descriptive statistics namely min, max, mean and standard deviation for each variable. For variables team competencies, team behavior & attitude and team communication practices, the minimum was 3 and the maximum was 5 which means that none of respondents disagreed nor strongly disagreed with the statements, rather they agreed and strongly agreed with the statement but some of them were undecided regarding the statements. The mean for those three variables varies from 4.3 to 4.4 which means that many of the respondents agreed and strongly agreed with the statement regarding each variable. For the variable success of KWAMP the min was 2 and the max was 5; this implies that among respondents some disagreed with the statement and some were undecided.

The mean in this case was 4.3 which show that a great number agreed and strongly agreed with the statement regarding success of KWAMP. The mean varies from 4.3 to 4.4 which means that many of the respondents agreed with the statement. The standard deviation varies from 0.56 to 0.67. This means that there was a certain degree of heterogeneity in the answers of respondent.

6.3 Inferential statistics

6.3.1 Correlation analysis

In order to assess if there is a relationship between independent variables and dependent variable the Pearson correlation coefficient has been processed. The results are shown in the following Table-4.3.

Table 3: Pearson correlation coefficient

		Team_ Competencies	Team_behavior_and_attitude	Team_communication_practices	Success_of_ KWAMP
Team_Competencies	Pearson Correlation	1	.329	.243	.777**
	Sig. (2-tailed)		.000	.000	.000
	N	239	239	239	239
Team_behavior_and_attitude	Pearson Correlation		1	.221	.712**
	Sig. (2-tailed)			.000	.000
	N		239	239	239
Team_communication_practices	Pearson Correlation			1	.662**
	Sig. (2-tailed)				.000
	N			239	239
Success_of_KWAMP	Pearson Correlation				1
	Sig. (2-tailed)				
	N				239
**. Correlation is significant at the 0.01 level (2-tailed).					

The findings in Table 3 revealed that there was a very strong positive relationship between team competencies and success of KWAMP at a significance level of 0.01; The Pearson correlation coefficient between them is .777. The strong positive relationship has been observed between team behavior & attitude and success of KWAMP at a significance level of 0.01. The Pearson correlation coefficient between them was .712. Lastly a moderate positive relationship at 0.01 level of significance has been observed between Team communication practices and success of KWAMP with r=.662. The next table 4.4 helped appreciating how much the model contributed to success of KWAMP.

Table 4: Coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.811[a]	.657	.653	.39921
a. Predictors: (Constant), Team_communication_practices, Team_behavior_and_attitude, Team_Competencies				

The findings of table 4 helped to appreciate how much the model as a whole contributed to success of KWAMP. The coefficient of determination (R^2) of 0.657 means that 65.7% of the variation in success of KWAMP is caused by team work practices. Only 34.3% of the variation in success of KWAMP is not explained by the model. In order to assess if the model is a good fit for the data the p-

value given by the analysis of variance (ANOVA) was computed and results are shown in next Table-4.5

Table 5: Significance of the model

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.880	3	23.960	150.347	.000[a]
	Residual	37.451	235	.159		
	Total	109.331	238			
a. Predictors: (Constant), Team_communication_practices, Team_behavior_and_attitude, Team_Competencies						
b. Dependent Variable: Success_of_KWAMP						

The results in Table 5 indicated that the p-value for the overall regression relationship was (p = .000), this value is much less than the level of significance of 0.05. which means that there is almost zero chances over one thousand that the model as a whole can be removed from predictors without affecting the success of KWAMP. This indicates that there was a statistically significant effect of team working practices on KWAMP. In order to know the contribution of each independent variable to the prediction of IT project performance. In order to appreciate statistically how much the change in value of one independent variable affected the success of KWAMP while variables remained constant, the regression coefficients have been calculated and answers are shown in Table 6.

Table 6: Regression coefficients

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.028	.211		-.133	.894
	Team_Competencies	.561	.080	.467	7.034	.000
	Team_behavior_and_attitude	.293	.058	.287	5.066	.000
	Team_communication_practices	.147	.062	.137	2.360	.019
a. Dependent Variable: Success_of_KWAMP						

The findings in Table6 revealed that the beta coefficients of the model. It helps to appreciate how much every independent variable contributes to the prediction of the dependent variable. One should notice that the p(t)>0.05 for all variables which means that every independent variable count in this model. From the table above the regression equation may be written as follow:

$Y= \beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon$;

$Y= -.028+0.561X_1+0.293X_2+0.147X_3+0.399.$

The regression model demonstrates that a unit increase in team competencies increases Project success by 0.561 units, while other variables remain constant. One unit increase in Team behavior & Attitude would increase KWAMP success by 0.293 units if other variables remain constant. Finally, a unit change in communication practices would increase KWAMP success by 0.147 units, while other variables stay constant.

7. Discussions

7.1 Team competencies and success of Kirehe Watershed Management Project

The coefficient of correlation between Team competencies and success of KWAMP equal to 0.777and is significant at 0.01 level which means that there is a strong (Deborah, 2016) positive relationship between team competencies and success of KWAMP. The regression analysis helped to appreciate statistically the influence of team competencies to predict the success of KWAMP. The regression coefficient of the variable team competencies is 0.561. The value of this coefficient means that if the variable team competencies were increased by one unit, it would have caused the success of KWAMP to increase by 0.561. P-value for team competencies is 0.000 which means that there is almost zero chance in 1000 that the parameter team competencies be zero, which implies that the term of the regression equation containing the parameter team competencies cannot be eliminated without significantly affecting the accuracy of the regression.

These results are in harmony with those of Smith et al(2013) who concluded that when the project team possesses professional, technical and social competencies; the project has a very high probability to achieve its intended objectives and goals (Smith et al, 2013). They are also in line with the findings of Bradley et al, (2007) who proved that team competencies is relevant to the achievement of the project's goals, milestones, and objectives, as defined by the project's requirements outlined by the owner; whereas, success is closely associated with how sound the task work and teamwork are completed.

7.2 Team behavior & attitude and success of Kirehe Watershed Management Project

According to the findings, there is a strong positive correlation between team behavior & attitude and success of KWAMP. The Pearson correlation coefficient between them was .712. The regression coefficient for the variable team behavior & attitude was .293 this implies that if team behavior & attitude was increased by one unit, the success of KWAMP would have increased by 0.293 at the condition other variables remaining constant. The observation of the p-value of this variable (team behavior & attitude) indicated that it is a very important factor in predicting success of KWAMP. These results are in line with those of (Haggard, 2013) who found that the efforts to promote team spirit, positive attitudes characterized by high level of optimism and a culture of excellence in

project management were designed to create a very positive working environment throughout the whole project and to help employees to feel healthier and perform their jobs effectively.

7.3 Team communication practices and success of Kirehe Watershed Management Project

The Pearson correlation coefficient computed (.662) showed that there is moderate positive correlation between team communication practices and success of project. The β coefficient for team communication practices (.147) implies that if this variable is increased by one unit, it will cause the success of the KWAMP to increase by 0.147 units if other variable stay constant. The observation of p-value allow to conclude that the variable team communication practices is of great importance in success of project and particularly in the case of KWAMP project because there is only 19 chances over 1000 that the project may succeed without team communication practices. These findings have similarity with those of Yang et al (2011) who found that effective project team communication is crucial in order for the objectives to be achieved since it helps to build team synergy that result in productive, collaborative efforts which in turn lead to project performance. This has been also confirmed by Cephas and Paul (2017) who confirmed that communication is a very important factor to take into consideration regarding contract performance in a project.

8. Conclusions

According to the interpretation of collected and analyzed data during the course of this study; the researcher came up with the following conclusions:

- The researcher concluded that the effect of team competencies on success of project is significant. It was found out that the project could not succeed without team competencies and that the increase of one unit in team competencies increases the project success by .561 units if other variables remain constant.
- This study demonstrated that there is a strong relationship between the team behavior & attitude and success of project. The study found out that team behaviors & attitudes has a great effect on success of project. It showed that the increase of one unit in team behaviors & attitudes would increase the success of project by .293 units if other variables remain constant. Moreover it showed that this variable is a very important factor in project success
- The study demonstrated that there is moderate relationship between team communication practices and success of project. Statistically the increase of one unit in team communication practices increases the success of project by .149 units if other variables stay constant. The indispensible role of this variable in project success has been proved by its p value which showed that it can't be ignored in the model without affecting deeply the accuracy of the prediction by the model.

9. Recommendations

After analysis and interpretation of data, the researcher came up with the following recommendations To Whom It May Concern especially to project managers:

- Project managers must base the recruitment of staff on competencies and enhance the competency level of the staff by providing adequate trainings to them.
- Project managers must pay attention to the behavior and attitude of their subordinate and know every employee individually so that they could manage their behavior and this will increase the success of the project under their responsibility.
- Project managers must pay attention to the behavior and attitude of their subordinate and know every employee individually so that they could manage their behavior and this will increase the success of the project under their responsibility

10. Areas for further research

This research has been limited only on KWAMP Project in Rwanda; other similar researches may be done in other projects and locations to confirm or to contradict the findings

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