EFFECT OF PROJECT IMPLEMENTATION ON PERFORMANCE OF TIGO RWANDA

A Case Study of Tigo Sales School Project

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ABSTRACT:

Implementation has been viewed as a tool for better productivity, general workforce skill development and motivation. Rwanda's mobile telecommunication sector has seen the need to invest in training and supervision projects of their business agents. This study was set to examine the effect of project implementation on the performance of Tigo Rwanda. The specific objective of this study were; to determine the effect of project scheduling on the performance of Tigo in Rwanda, to examine the project resource mobilization on the performance of Tigo in Rwanda, and to establish the effect of project financial management on the performance of Tigo in Rwanda, and to establish the effect of project supervision on the performance of Tigo in Rwanda. Descriptive survey design was employed in this study. Stratified random sampling was employed in this study with target population being 1000 and a sample size of 286 respondents determined by Yaro Yamane Formula (1967). Data was collected using structured questionnaires and focus group interview guides whose reliability and validity were tested at Cronbach's Alpha coefficient index of 0.70. A 5-point Likert Scale for multiple items on the questionnaire was used. Validation of the questionnaire was done by University Supervisors while content validation was done by a pilot survey. Data was analyzed by both multiple regression and content analysis. The finding was that there was statistically significant positive correlation effect of project implementation practices on the performance of Tigo Rwanda. The study concluded that enhancing management of project scheduling contributes more, followed by improving management of project supervision, project financial innovations and lastly improving management of project mobilization respectively in increasing the project profitability and market share in Tigo Rwanda. The study recommends that more attention be put on managing project implementation practices like scheduling with proper tools like CPM and PERT.

KEY WORDS: Project Implementation, performance, Profitability, market share

I. Introduction

This chapter presents the background to the study and builds a case for the research problem. It begins by reviewing the concepts of the effect of project implementation on the performance of Tigo Rwanda. This section also includes the background to the study, statement of the problem, objectives, hypotheses, justification, significance of the study, scope of the study, limitations of the study, assumptions of the study, operational definition of terms used in the study and the organization of the proposal.

II. Statement of the Problem

The influence of project implementation practices on organizational performance is one significant topic in the field of entrepreneurship and telecommunication industry development as evidenced by an increasing number of publications and studies on the topic (World Bank, 2013). According to Ahmad (2011), approximately 80% to 90% of business projects fail within 5-10 years.

According to the Economic Survey (2013), the performance of projects is weak as evidenced by the decline in growth rate from 5.4% in 2011 to a 4.3% in 2013. Such decline in performance may lead to unemployment in Rwanda which may also lead to social injustices and crime (RDB, 2013). Furthermore, the ways to address bimodal distribution of firms where 59% are MSEs, 16% medium firms, and 23% large firms is still an empirical matter (KPMG, 2012). Poor business performance in the telecommunication sector has for long remained unexplained most especially in the third-world countries perspective where the telecommunication is increasingly gaining importance (Brigham, 2002). However, studies from developed nations find inefficient project implementation practices to contribute immensely to MSEs poor business performance.

There is a challenge in Rwanda telecommunication related to the lack of technical capacity to effectively manage projects. It is therefore critical to increase the technical know-how in the country to maintain and manage voice, text and data technologies. One way of addressing the current shortage is for telecom operators to work closely with training providers in order to develop hands-on technical training projects. These could be targeted at young graduates, especially in areas related to telecommunications and engineering (RURA Annual Report 2008). Due to fast pace global and technological development, firms are now facing new changes and technological advancements have to be shaped to address the capabilities and competencies required to perform a particular tasks.

Thus, to cope with these challenges, more improved and effective training projects like, Tigo Sales Training School Project, are required by all corporate organizations. Effective training projects help in constructing a more conducive learning environment for the workforce and train them to cope with the upcoming challenges more easily and in time (Wei-Tai, 2006).

In spite of the large number of researches on the relationship between project implementation and organizational performance, there appears to be a gap between project implementation strategies and performance in the telecommunication industry. This study thus seeks to close this gap by deeply investigating this phenomenon through the relevant literature, to establish the relationship between project implementation practices and performance thus providing suggestions to the industry by examining the effect of implementation of Tigo Sales School Project on the Performance of Tigo Rwanda.

III. Research Objective

3.1 General objectives

To establish the effect of Project Implementation on the Performance of Tigo Rwanda

3.2 Specific objectives

I. To determine the effect of project scheduling on the performance of Tigo Rwanda
II. To examine the project resource mobilization on the performance of Tigo Rwanda
III. To measure the effect of project financial management on the performance of Tigo Rwanda
IV. To establish the effect of project supervision on the performance of Tigo Rwanda

IV. Research questions

I. What is the effect of project scheduling on the performance of Tigo Rwanda?
II. What is the impact of project resource mobilization on the performance of Tigo Rwanda?
III. What is the effect of project financial management on the performance of Tigo Rwanda?
IV. What is the effect of project supervision on the performance of Tigo Rwanda?

V. Research Design

Descriptive survey research design was used to collect data from respondents. Descriptive research is designed to clearly describe a situation or behavior at a particular time (Diem, 2002). A descriptive research would give a thorough and accurate description survey by determining the how or why the phenomena came into being and also what was involved in the situation (Robson, 2002). According to Mugenda and Mugenda (1999), a survey design attempts to collect data from members of a population to determine the current status of that population with respect to one or more variables.

VI. Target Population

The unit of analysis of the study was the Tigo Rwanda with a population of 1000 employees. This comprised of senior managers, middle level managers and operations staff (clerks, customer care representatives, human resource officers, graduate clerks, computer

operators, secretaries, security officers, accountants, marketers, auditors and messengers) of Tigo Rwanda. The target population constituted 20 senior managers, 180 middle managers and 800 operations staff.

VII. Sample Design

7.2 Sampling technique

Stratified purposive sampling was employed since the target population was less than 100. In this study the whole population was 90 which was less than 100 so the study employed Stratified purposive sampling in which the whole population of 90 was taken as respondents.

VIII. Data Collection

8.1 Data collection Procedure

Data was collected from employees of Tigo Rwanda using self-administered questionnaires. Interviews were conducted on managers from whom the researcher would gather more perspectives. Transmittal letter was issued from the department to enable the researcher proceed to the field.

8.2 Data analysis

Statistical Package for Social Sciences (SPSS version 23) was used to analyse the data because it was able to handle large amounts of data. Descriptive and inferential statistics were used. Descriptive statistics such as frequencies, percentages, bar graphs and pie charts were used to present data besides narratives, explanations and discussions. Regression analysis was also used. Interpretation of the data was then be done and conclusion drawn.

The following general regression model was adopted:

$$P_i = \alpha + \beta_i \sum X_i + \varepsilon_i \text{ ……...…….. ……Eq. 3.1}$$

Where; $\boldsymbol{P}$ is Performance of the ith Tigo Agents, $\boldsymbol{\alpha}$ is Model Intercept, $\boldsymbol{\beta_i}$ $(i=1...4)$ are the slopes of Model and $\boldsymbol{\varepsilon_i}$ is Random Error assumed as Normally Distributed, independent and identically distributed, $\varepsilon \sim N(0, \sigma^2)$.

In the context of the current work, Eq. 3.1 can also be as follows:

$$P = \alpha + \beta_1 PSchd + \beta_2 PMob + \beta_3 PFm + \beta_4 PSup + \varepsilon \text{ ……. Eq. 3.2}$$

where; the variable $\beta_1 PSchd$ is Effect of Project Scheduling on Tigo Performance, $\beta_2 PMob$ = is the Effect of Project Mobilization on Tigo Performance, $\beta_3 PFm$ is the Effect of Project Financial Management on Tigo Performance and $\beta_4 PSup$ is the Effect of Project Supervision on Tigo Performance.

IX. Research and discussion

Table 4.1: Response Rate of the Study
The response rate of the study is indicated in Table 4.1 below.

Results	Frequency	Percentage (%)
Respondents	276	97
Non Respondents	10	3
Total	**286**	**100**

The questionnaires were distributed to 286 randomly selected respondents. From the 286 questionnaires, 276 were filled and returned, giving 96.5 % response rate. This was comparable with the study by Goldstein (2006) in which 100 respondents were sent questionnaires and the response was 92 which translated to 92% response rate. The collection procedures used involved personal administration of the questionnaires then followed up through mobile phone calls for confirmation date when they would be ready for collection. The response rate found was adequate for analysis and discussions of the study findings especially when compared to other results in the communication industry by Goldstein (2006) – 92%, Ward and Chapman (2003) – 89% and Afuah, (2003), –87%. The

3.0% unreturned questionnaires could be attributed to delay on the part of the respondent in completing the filling of the questionnaires thereby not being able to return by the collection date.

4.2 Background of Respondents

The demographic characteristics of the respondents were analyzed in terms of gender, highest educational level and age as shown below.

4.2.1 Gender Profile of Respondents

The respondents indicated their gender profile in terms of either male or female in order to determine the nature of gender relations in the construction industry. Table 4.2 illustrates gender profile of the sample.

Table 4.2: Gender of Respondents

Gender	Frequency	Percentage (%)
Male	89	28.62
Female	197	71.34
Total	**276**	**100**

The study found that 71% of the respondents were females and 29% were males. The results indicate the communication industry is dominated by the females who account for the majority of the respondents. The study results compare well and are consistent with the study by Research and Markets, (2013) in which 67% of the respondents were of the female gender confirming that the industry is female dominated.

4.2.2 Age of respondents

The respondents stated their age brackets as requested in the questionnaire and the results were as shown in table 4.3 below.

Table 4.3: Age of respondents

Ages	**Frequency**	**Percentage (%)**
21-30 yrs	75	27.17
31-40 yrs	136	49.27
41-50 yrs	39	14.13
51 & Above yrs	26	09.42
Total	**276**	**100**

Majority of the respondents 49% were aged 31 to 40 years. This was followed by 27% of the respondents being between 21 to 30 years. There were 14% of the respondents between the ages of 41 to 50 years. Those in age bracket of 51 years and above were only 9%. A cumulative 76% of the respondents are within 21 – 40 years. This implies that in the telecommunications industry, most of the people working or doing business are mainly the youth below 40 years. This is probably due to the level of technology involved which puts many people above 40 struggling to understand.

4.2.3 Highest Education Level

The respondents were requested to give their highest educational level. Table 4.4 illustrates the levels of qualification for the entire sample.

Table 4.4: Highest Education Level

Education level	**Frequency**	**Percentage (%)**
Diploma	128	46.37
Undergraduate	101	36.59
Post-Graduate	47	17.03
Total	**276**	**100**

Slightly less than half (46%) of the respondents were diploma holders with 37% being undergraduate holders. Only 17% of the respondents had post-graduate degree qualifications. This shows that the respondents are capable and reliable to explore the underpinning issues related to the study. However, the number of respondents with diploma was high probably due to the age group of majority involved which could still be in colleges and universities pursuing their further studies.

4.2.4 Experience Levels

The respondents stated their age brackets as requested in the questionnaire and the results were shown in table 4.5 below.

Table 4.5: Experience Levels

Ages	Frequency	Percentage (%)
1-3 yrs	151	54.71
4-5 yrs	96	34.78
6-9 yrs	19	06.88
10 & Above yrs	10	03.62
Total	**276**	**100**

Majority (55%) of the respondents were having an experience level of between 1-3 years followed closely with 35% having experience level of between 4-5 years. 7% of the respondents had 6-9 years experience while only 4% of the respondents had experience level of 10 years and above. This implies that most of the people in the telecommunications industry just joined the industry. This could be attributed to the fact that they could have just left colleges or universities and being technology savvy, they fit best in the telecommunications sector which requires a very vibrant group of staff in terms of learning and innovations.

4.3 Presentation of Descriptive Statistics According to Research Questions

Descriptive analysis was done on the responses obtained from the questionnaire to investigate how the respondents rated the effect of project scheduling practices, project mobilization practices, project financial innovation practices and project supervision practices on the performance of projects in Rwanda. The results were summarized in table 4.6 and table 4.7.

Table 4.6 Descriptive Statistics for Project Implementation Practices and Project Profitability

Project Implementation Practices	N	Project Profitability		Mean	Std Dev
		Frequency	Percentage		
Our profit levels have consistently increased since we always engage our stakeholders in time to determine the likely project activity duration	276	218	79	2.232	0.135
The way we have been sequencing the project activities according to the order in which they should be carried out has always improved our profits	276	195	71	1.446	0.324
All resources used in the project are always planned for in advance thus the increasing trend of our profits	276	213	77	2.146	0.245
Our large network of partners have helped us to realize more profits	276	215	78	1.884	0.443
Our collaborative approach with our partners in the provision of our services has helped increase our profitability	276	218	79	2.324	0.324
Our projects good financial innovations have helped to manage our diverse finance portfolio effectively so is our profitability	276	232	84	1.628	0.301
The high level of accountability in our project has been the source of our profitability	276	246	89	2.137	0.202

Our budgets are always put in place well in advance. This help mange project funds well hence our profitability	276	199	72	1.211	0.384
Our internal and external supervision to our operations as well as the use of team supervision from our various operational teams has been a good driver to our sales hence profit growth	276	185	67	1.245	0.246

Source: Survey Data (2016)

The results in Table 4.6 show that 79% (Mean 2.232: SD=.135) of the respondents believe that project profit levels have consistently increased since they always engage stakeholders in time to determine the likely project activity duration and in effect improve project performance in terms of project profitability. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. 71% (Mean 1.446: SD=.324) of the respondents agreed that sequencing of the project activities according to the order in which they should be carried out has always improved their project profitability. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. The results further indicate that 78% (Mean 2.146: SD=.245) of the respondents agreed that project resources are always planned for in advance thus the increasing trend of their project profitability. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. 78% (Mean 1.884: SD=.443) of the respondents agreed that large network of partners have helped the project to realize more project profitability. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. 79% (Mean 2.324: SD=.324) of the respondents agreed that collaborative approach with our partners in the provision of our services has helped increase the project profitability. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact. 84% (Mean 1.628: SD=.301) of the respondents agreed that good financial innovations have helped to manage their diverse finance portfolio effectively so is project profitability. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact. 89% (Mean 2.137: SD=.202) of the respondents agreed that high level of accountability in our project has been the source of improved project profitability. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact. 72% (Mean 1.211: SD=.384) of the respondents agreed that budgets are always put in place well in advance and that this helped mange project funds well hence improved market share. 67% (Mean 1.245: SD=.246) of the respondents agreed that internal and external supervision to their operations as well as the use of team supervision from various operational teams has been a good driver to their sales hence project profitability growth. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact.

Table 4.7 Descriptive Statistics for Project Implementation Practices and Project Market Share

Project Implementation Practices	N	Project Profitability		Mean	Std Dev
		Frequency	Percentage		
Our profit levels have consistently increased since we always engage our stakeholders in time to determine the likely project activity duration	276	213	77	1.175	0.233
The way we have been sequencing the project activities according to the order in which they should be carried out has always improved our market share	276	207	75	1.546	0.395
All resources used in the project are always planned for in advance thus the increasing trend of our market share	276	215	78	2.322	0.626
Our large network of partners have helped us to realize more market share	276	199	72	1.483	0.757
Our collaborative approach with our partners in the provision of our services has helped increase our market share	276	210	76	2.138	0.336
Our projects good financial innovations have helped to manage our diverse finance portfolio effectively so is our market share	276	177	64	1.527	0.353
The high level of accountability in our project has been the source of our market share	276	229	83	2.139	0.215
Our budgets are always put in place well in advance. This help mange project funds well hence our market share	276	204	74	1.212	0.283
Our internal and external supervision to our operations as well as the use of team supervision from our various operational teams has been a good driver to our sales hence market share growth	276	213	77	1.123	0.237

Source: Survey Data (2016)

The results in Table 4.7 show that 77% (Mean 1.175: SD=.233) of the respondents believe that project profit levels have consistently increased since they always engage stakeholders in time to determine the likely project activity duration and in effect improve project performance in terms of market share. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. 75% (Mean 1.546: SD=.395) of the respondents agreed that sequencing of the project activities according to the order in which they should be carried out has always improved their project market share. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. The results further indicate that 78% (Mean 2.322: SD=.626) of the respondents agreed that project resources are always planned for in advance thus the increasing trend of their project market share. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. 72% (Mean 1.483: SD=.757) of the respondents agreed that large network of partners have helped the project to realize more market share. However, the standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with it. 76% (Mean 2.138: SD=.336) of the respondents agreed that collaborative approach with our partners in the provision

of our services has helped increase the project market share. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact. 64% (Mean 1.527: SD=.353) of the respondents agreed that good financial innovations have helped to manage their diverse finance portfolio effectively so is project market share. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact. 83% (Mean 2.139: SD=.215) of the respondents agreed that high level of accountability in our project has been the source of improved market share. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact. 74% (Mean 1.212: SD=.283) of the respondents agreed that budgets are always put in place well in advance and that this helped mange project funds well hence improved market share. 77% (Mean 1.123: SD=.237) of the respondents agreed that internal and external supervision to their operations as well as the use of team supervision from various operational teams has been a good driver to their sales hence market share growth. The standard deviation so realized indicate that not all the respondents agreed with this fact, some disagreed with this fact.

4.4.1 Effect of Project Implementation Practices and Project Profitability

4.4.1.1 Effect of Project Scheduling Practices and Project Profitability

Table 4.7: Correlation Coefficients & Regression Analysis of Project Scheduling Practices and Project Profitability

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	1.291	1.113		1.021	.000		
Project Scheduling	.783	.072	.778	4.162	.000	.735	1.360
R-squared	0.613	Mean dependent variable		1.804			
Adjusted R-squared	0.609	S.D. dependent var		0.472			
F-statistics	7.236	Durbin-Watson statistic		1.766			
Prob(F-statistics)	0.032						

Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project scheduling on the performance (profitability) Tigo Rwanda. From table 4.6, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.613. This means that 61.3% of variation in the dependent variable-project profitability can be explained by the variance in independent variable-project scheduling with only 38.7% of the variation in dependent variable being explained by the error-term or other variables other than project scheduling. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 1.291+0.783X_1 + \varepsilon}$

The results in the coefficient table 4.6 thus show that there was a significant effect of project scheduling on the performance (profitability) of Tigo Rwanda since $p=0.000$ which is less than $p<0.05$ at a 95% confidence interval. There was also a positive unstandardized beta coefficient of 0.783 as indicated by the coefficient to the project scheduling. The computed F statistic (10, 276) = 7.236 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project scheduling on the performance (profitability) of Tigo Rwanda ($F=7.236$, $R^2 = 0.613$, Sig=0.000 at $\alpha=0.05$). The probability of the t statistic (4.162) for the b coefficient is $p<0.001$ which is less than the level of significance of 0.05.

The regression model further demonstrates that a one unit change in the project profitability is attributed to an increase of 0.783 in the project scheduling in Tigo Rwanda. The Tolerance (0.735) and Variance Inflation Factor (VIF) (1.360) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.1.2 Effect of Project Mobilization Practices and Project Profitability

Table 4.8: Correlation Coefficients & Regression Analysis of Project Mobilization Practices and Project Profitability

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	2.051	1.113		1.843	.000		
Project Mobilization	.643	.112	.632	3.385	.011	0.694	1.440
R-squared	0.413	Mean dependent variable		1.407			
Adjusted R-squared	0.409	S.D. dependent var		0.243			
F-statistics	9.654	Durbin-Watson statistic		1.596			
Prob(F-statistics)	0.002						

Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project mobilization on the performance (profitability) Tigo Rwanda. From table 4.7, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.413. This means that 41.3% of variation in the dependent variable-project profitability can be explained by the variance in independent variable-project mobilization with only 58.7% of the variation in dependent variable being explained by the error-term and other variables other than project mobilization. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 2.051+0.643X_2 + \varepsilon}$

The results in the coefficient table 4.7 thus show that there was a significant effect of project mobilization on the performance (profitability) of Tigo Rwanda since $p=0.011$ which is less than $p<0.05$ at a 95% confidence interval. There was also a positive unstandardized beta coefficient of 0.643 as indicated by the coefficient to the project mobilization. The computed F statistic (10, 276) = 9.654 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project mobilization on the performance (profitability) of Tigo Rwanda ($F=9.654$, $R^2 = 0.413$, Sig=0.011 at $\alpha=0.05$).

The probability of the t statistic (3.385) for the b coefficient is $p<0.001$ which is less than the level of significance of 0.05. The regression model further demonstrates that a one unit change in the project profitability is attributed to an increase of 0.783 in the project mobilization in Tigo Rwanda. The Tolerance (0.694) and Variance Inflation Factor (VIF) (1.440) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.1.3 Effect of Project Financial Innovation Practices and Project Profitability

Table 4.9: Correlation Coefficients & Regression Analysis of Project Financial Innovation Practices and Project Profitability

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	1.149	1.543		2.437	.000		
Project Financial Innovations	.767	.008	.758	2.642	.003	0.996	1.004
R-squared	0.588	Mean dependent variable		1.804			
Adjusted R-squared	0.585	S.D. dependent var		0.472			
F-statistics	8.429	Durbin-Watson statistic		1.766			
Prob(F-statistics)	0.046						

Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project financial innovations on the performance (profitability) Tigo Rwanda. From table 4.8, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.588. This means that 58.8% of variation in the dependent variable-project profitability can be explained by the variance in independent variable-project financial innovations with only 41.2% of the variation in dependent variable being explained by the error-term or other variables other than project financial innovation. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 1.49+0.767X_3 + \varepsilon}$

The results in the coefficient table 4.8 thus show that there was a significant effect of project financial innovations on the performance (profitability) of Tigo Rwanda since $p=0.003$ which is less than $p<0.05$ at a 95% confidence interval. There was also a positive unstandardized beta coefficient of 0.783 as indicated by the coefficient to the project financial innovations. The computed F statistic (10, 276) = 8.429 and the p-value for the overall regression relationship was (p = 0.003), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project financial innovations on the performance (profitability) of Tigo Rwanda (F=8.429, R^2 = 0.588, Sig=0.003 at α=0.05). The probability of the t statistic (2.642) for the b coefficient is less than the level of significance at 0.05.

The regression model further demonstrates that a one unit change in the project profitability is attributed to an increase of 0.767 in the project financial innovations in Tigo Rwanda. The Tolerance (0.996) and Variance Inflation Factor (VIF) (1.004) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.1.4 Effect of Project Supervision Practices and Project Profitability

Table 4.10: Correlation Coefficients & Regression Analysis of Project Supervision Practices and Project Profitability

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	1.761	1.113		2.879	.000		
Project Supervision	.716	.072	.698	2.162	.000	.727	1.375
R-squared	0.513	Mean dependent variable		1.912			
Adjusted R-squared	0.505	S.D. dependent var		0.758			
F-statistics	8.837	Durbin-Watson statistic		1.864			
Prob(F-statistics)	0.017						

Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project supervision on the performance (profitability) of Tigo Rwanda. From table 4.9, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.513. This means that 51.3% of variation in the dependent variable-project profitability can be explained by the variance in independent variable-project supervision with only 48.7% of the variation in dependent variable being explained by the error-term or other variables other than project supervision. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 1.291+0.783X_1 + \varepsilon}$

The results in the coefficient table 4.9 thus show that there was a significant effect of project supervision on the performance (profitability) of Tigo Rwanda since $p=0.000$ which is less than $p<0.05$ at a 95% confidence interval. There was also a positive unstandardized beta coefficient of 0.716 as indicated by the coefficient to the project supervision. The computed F statistic (10, 276) = 8.837 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project supervision on the performance (profitability) of Tigo Rwanda (F=8.837, R^2 = 0.513, Sig=0.000 at α=0.05) The probability of the t statistic (2.162) for the b coefficient is $p<0.001$ which is less than the level of significance of 0.05.

The regression model further demonstrates that a one unit change in the project profitability is attributed to an increase of 0.783 in the project scheduling in Tigo Rwanda. The Tolerance (0.727) and Variance Inflation Factor (VIF) (1.375) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.1.5 Effect of Project Scheduling Practices and Project Market Share

Table 4.11: Correlation Coefficients & Regression Analysis of Project Scheduling Practices and Market Share

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	2.328	1.678		1.437	.000		
Project Scheduling	.787	.004	.783	3.436	.000	.640	1.563
R-squared	0.622	Mean dependent variable		1.605			
Adjusted R-squared	0.613	S.D. dependent var		0.472			
F-statistics	9.484	Durbin-Watson statistic		1.546			
Prob(F-statistics)	0.029						

Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project scheduling on the performance (market share) Tigo Rwanda. From table 4.10, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.622. This means that 62.2% of variation in the dependent variable-project market share can be explained by the variance in independent variable-project scheduling with only 38.8% of the variation in dependent variable being explained by the error-term or other variables other than project scheduling. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 2.328+0.787X_1 + \varepsilon}$

The results in the coefficient table 4.10 thus show that there was a significant effect of project scheduling on the performance (market share) of Tigo Rwanda since $p=0.000$ which is less than $p<0.05$ at a 95% confidence interval. There was also a positive unstandardized beta coefficient of 0.787 as indicated by the coefficient to the project scheduling. The computed F statistic (10, 276) = 9.484 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project scheduling on the performance (market share) of Tigo Rwanda (F=9.484, R^2 = 0.622, Sig=0.000 at α=0.05).

The probability of the t statistic (3.436) for the b coefficient is $p<0.001$ which is less than the level of significance of 0.05. The regression model further demonstrates that a one unit change in the project market share is attributed to an increase of 0.787 in the project scheduling in Tigo Rwanda. The Tolerance (0.640) and Variance Inflation Factor (VIF) (1.565) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.1.6 Effect of Project Mobilization Practices and Project Market Share

Table 4.12: Correlation Coefficients & Regression Analysis of Project Mobilization Practices and Market Share

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	1.041	1.146		1.743	.000		
Project Mobilization	.733	.002	.730	1.194	.000	.642	1.556
R-squared	0.538	Mean dependent variable		1.6 34			
Adjusted R-squared	0.533	S.D. dependent var		0.472			
F-statistics	9.433	Durbin-Watson statistic		1.615			
Prob(F-statistics)	0.003						

Dependent Variable: Market Share
Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project mobilization on the performance (market

share) of Tigo Rwanda. From table 4.11, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.538. This means that 53.8% of variation in the dependent variable-project market share can be explained by the variance in independent variable-project scheduling with only 46.2% of the variation in dependent variable being explained by the error-term or other variables other than project mobilization. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 1.291+0.783X_2 + \varepsilon}$. The results in the coefficient table 4.6 thus show that there was a significant effect of project mobilization on the performance (market share) of Tigo Rwanda since $p=0.000$ which is less than $p<0.05$ at a 95% confidence interval.

There was also a positive unstandardized beta coefficient of 0.733 as indicated by the coefficient to the project scheduling. The computed F statistic (10, 276) = 9.433 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project scheduling on the performance (market share) of Tigo Rwanda (F=9.433, R^2 = 0.733, Sig=0.000 at α=0.05) The probability of the t statistic (1.194) for the b coefficient is p<0.001 which is less than the level of significance of 0.05.

The regression model further demonstrates that a one unit change in the project market share is attributed to an increase of 0.733 in the project mobilization in Tigo Rwanda. The Tolerance (0.642) and Variance Inflation Factor (VIF) (1.556) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.1.7 Effect of Project Financial Innovation Practices and Project Market Share

Table 4.13: Correlation Coefficients & Regression Analysis of Project Financial Innovation Practices and Market Share

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	1.759	1.463		1.383	.000		
Project Financial Innovation	.784	.032	.752	2.162	.000	.913	1.095
R-squared	0.615	Mean dependent variable		1.671			
Adjusted R-squared	0.566	S.D. dependent var		0.472			
F-statistics	7.296	Durbin-Watson statistic		1.438			
Prob(F-statistics)	0.001						

Dependent Variable: Market Share
Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project financial innovations on the performance (market share) of Tigo Rwanda. From table 4.6, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.615. This means that 61.5% of variation in the dependent variable-project market share can be explained by the variance in independent variable-project financial innovations with only 38.5% of the variation in dependent variable being explained by the error-term and other variables other than project financial innovations. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 1.759+0.784X_3 + \varepsilon}$

The results in the coefficient table 4.6 thus show that there was a significant effect of project financial innovations on the performance (market share) of Tigo Rwanda since $p=0.000$ which is less than $p<0.05$ at a 95% confidence interval. There was also a positive unstandardized beta coefficient of 0.784 as indicated by the coefficient to the financial innovations. The computed F statistic (10, 276) = 7.296 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project financial innovations on the performance (market share) of Tigo Rwanda (F=7.296, R^2 = 0.615, Sig=0.000 at α=0.05). The probability of the t statistic (2.162) for the b coefficient is p<0.001 which is less than the level of significance of 0.05.

The regression model further demonstrates that a one unit change in the project market share is attributed to an increase of 0.784 in the project financial innovations in Tigo Rwanda. The Tolerance (0.913) and Variance Inflation Factor (VIF) (1.095) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was

above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.1.8 Effect of Project Supervision Practices and Project Market Share

Table 4.14: Correlation Coefficients & Regression Analysis of Project Supervision Practices and Market Share

Model	Unstandardized Coefficients		Stand. Coef.	t	Sig.	Collinearity Statistics	
	B	Std. Er.	Beta			Tolerance	VIF
1(Constant)	2.245	1.012		1.437	.000		
Project Supervision	.747	.018	.729	2.725	.003	.529	1.889
R-squared	0.558	Mean dependent variable		1.895			
Adjusted R-squared	0.534	S.D. dependent var		0.523			
F-statistics	8.855	Durbin-Watson statistic		1.597			
Prob(F-statistics)	0.002						

Dependent Variable: Market Share
Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project supervision on the performance (market share) Tigo Rwanda. From table 4.13, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.558. This means that 55.8% of variation in the dependent variable-project market share can be explained by the variance in independent variable-project scheduling with only 44.2% of the variation in dependent variable being explained by the error-term or other variables other than project supervision. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 2.245+0.747X_4 + \varepsilon}$

The results in the coefficient table 4.13 thus show that there was a significant effect of project supervision on the performance (market share) of Tigo Rwanda since $p=0.003$ which is less than $p<0.05$ at a 95% confidence interval. There was also a positive unstandardized beta coefficient of 0.783 as indicated by the coefficient to the project supervision. The computed F statistic (10, 276) = 8.855 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project supervision on the performance (market share) of Tigo Rwanda (F=8.855, R^2 = 0.558, Sig=0.003 at α=0.05). The probability of the t statistic (2.725) for the b coefficient is $p<0.001$ which is less than the level of significance of 0.05.

The regression model further demonstrates that a one unit change in the project market share is attributed to an increase of 0.747 in the project supervision in Tigo Rwanda. The Tolerance (0.529) and Variance Inflation Factor (VIF) (1.889) indicate there was no problem of multi-collinearity (there was no overlap between the predictors) since VIF was less than 5 and the tolerance was above 0.20. This indicates that the predictor variables were appropriate for this study and were also objective for the purpose of this study.

4.4.2. Joint Model: Effect of Project Implementation Practices and Project Performance

4.4.2.1 Joint Model: Effect of Project Implementation Practices and Project Profitability

Table 4.15 Effect of Project Implementation Practices and Project Profitability

Dependent Variable: Project Profitability					
Sample: 286					
Included Observations: 276					
I. Variable: PIP	**Coefficient**		**Std. Coefficient**	**t-Statistics**	**Prob.**
	B	**Std. Error**	**Beta**		
1(Constant)	2.345	1.05		2.475	0.000
P-Scheduling	0.732		0.729	2.221	0.005
P-Mobilization	0.429		0.425	2.318	0.002

P-F Innovation	0.584		0.576	2.059	0.004
P-Supervision	0.693				
R-squared	0.796		Mean dependent variable		1.891
Adjusted R-squared	0.746		S.D. dependent variable		0.729
F-statistics	9.214		Durbin-Watson statistics		1.567
Prob(F-statistic)	0.003				

Source: Survey Data (2016)

Regression analysis was conducted to investigate the statistical significant effect of project scheduling on the performance (profitability) Tigo Rwanda. From table 4.14, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.796. This means that 79.6% of variation in the dependent variable-project profitability can be explained by the variance in independent variable-project scheduling with only 20.4% of the variation in dependent variable being explained by the error-term or other variables other than project scheduling. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to understand this relationship was: $\boldsymbol{P = 2.345+0.732X_1 + 0.429X_2 + 0.584X_3 + 0.693X_4 + \varepsilon}$

The results in the coefficient table 4.14 thus show that there was a significant effect of project implementation practices on the performance (profitability) Tigo Rwanda since $p=0.000$ which is less than $p<0.05$ at a 95% confidence interval. The computed F statistic (10, 276) = 9.214 and the p-value for the overall regression relationship was (p = 0.000), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project implementation practices on the performance (profitability) Tigo Rwanda (F=9.214, R^2 = 0.796, Sig=0.000 at α=0.05) The probability of the t statistic (2.475) for the b coefficient is p<0.001 which is less than the level of significance of 0.05.

The regression model further demonstrates that a one unit change in the project profitability is attributed to an increase of 0.732 in the project scheduling, 0.429 in project mobilization, 0.584 in project financial innovation and 0.693 in project supervision in Tigo Rwanda. However, the model indicates that improving management of project scheduling (β=.732) contributes more, followed by improving management of project supervision (β=.693), project financial innovations (β=.584) and lastly improving management of project mobilization (β=.429) respectively in increasing the project profitability in Tigo Rwanda.

4.4.2.2 Joint Model: Effect of Project Implementation Practices and Project Market Share

Table 4.16 Effect of Project Implementation Practices and Project Market Share

Dependent Variable: Project Market Share					
Sample: 286					
Included Observations: 276					
I. Variable: PIP	Coefficient		Std. Coefficient	t-Statistics	Prob.
	B	Std. Error	Beta		
1(Constant)	2.795	1.356		3.087	0.002
P-Scheduling	0.684	0.091	0.675	3.221	0.005
P-Mobilization	0.457	0.060	0.451	3.318	0.002
P-F Innovation	0.573	0.027	0.546	3.056	0.006
P-Supervision	0.672	0.004	0.668	3.542	
R-squared	0.748		Mean dependent variable		1.391
Adjusted R-squared	0.685		S.D. dependent variable		0.472
F-statistics	8.386		Durbin-Watson statistics		1.750
Prob(F-statistic)	0.021				

Regression analysis was conducted to investigate the statistical significant effect of project implementation practices on the performance (market share) of Tigo Rwanda. From table 4.15, R^2 is the models goodness of fit for the regression line which was obtained using the correlation coefficient. In this case R^2 was 0.748. This means that 74.8% of variation in the dependent variable-project market share can be explained by the variance in independent variable-project implementation practices with only 25.2% of the variation in dependent variable being explained by the error-term or other variables other than project scheduling. Therefore, from the analysis, the regression line of the model was strongly fitted to the data. The identified model equation to

understand this relationship was: $P = 2.795+0.684X_1 + 0.457X_{2+} 0.573X_{3+} 0.672X_{4+} \varepsilon$

The results in the coefficient table 4.15 thus show that there was a significant effect of project implementation practices on the performance (market share) of Tigo Rwanda since $p=0.002$ which is less than $p<0.05$ at a 95% confidence interval. The computed F statistic (10, 276) = 8.386 and the p-value for the overall regression relationship was (p = 0.002), which was also less than the level of significance of 0.05. This indicates that there was a statistically significant effect of project implementation practices on the performance (market share) of Tigo Rwanda (F=8.386, R^2 = 0.748, Sig=0.002 at α=0.05) The probability of the t statistic (3.087) for the b coefficient is less than the 0.05 level of significance.

The regression model further demonstrates that a one unit change in the project market share is attributed to an increase of 0.684 in the project scheduling, 0.457 in project mobilization, 0.573 in project financial innovation and 0.672 in project supervision in Tigo Rwanda. However, the model indicates that improving management of project scheduling (β=.684) contributes more, followed by improving management of project supervision (β=.672), project financial innovations (β=.573) and lastly improving management of project mobilization (β=.457) respectively in increasing the project market share in Tigo Rwanda.

X. Conclusion and recommendation

10.0 Summary of Findings

The research was meant to establish the effect of project implementation practices on the performance of Tigo Rwanda. The implantation practices considered included project scheduling, mobilization, financial innovations and project supervision. A total of 286 questionnaires were issued with a response rate of 96.5 %. This was considered sufficient enough for the study. The results of the study shows that the industry is female dominated. The study also found that 71% of the respondents were females and 29% were males. This indicates that the communication industry is dominated by the females who account for the majority of the respondents. Majority of the respondents (49%) were aged 31 to 40 years. This was followed by 27% of the respondents being between 21 to 30 years. There were 14% of the respondents between the ages of 41 to 50 years. Those in age bracket of 51 years and above were only 9%.

A cumulative 76% of the respondents were within 21 – 40 years. This implies that in the telecommunications industry, most of the people working or doing business are mainly the youth below 40 years. This is probably due to the level of technology involved which puts many people above 40 struggling to understand. Slightly less than half (46%) of the respondents were diploma holders with 37% being undergraduate holders. Only 17% of the respondents had post-graduate degree qualifications. This shows that the respondents are capable and reliable to explore the underpinning issues related to the study. However, the number of respondents with diploma was high probably due to the age group of majority involved which could still be in colleges and universities pursuing their further studies. Majority (55%) of the respondents were having an experience level of between 1-3 years followed closely with 35% having experience level of between 4-5 years. 7% of the respondents had 6-9 years' experience while only 4% of the respondents had experience level of 10 years and above. This implies that most of the people in the telecommunications industry just joined the industry. This could be attributed to the fact that they could have just left colleges or universities and being technology savvy, they fit best in the telecommunications sector which requires a very vibrant group of staff in terms of learning and innovations.

10.1 Conclusion

In any economy, communications infrastructure championed by the telecommunications industry is a major pillar for economic development. It provides several employment opportunities to the various segments of country's labour force, offers market for telecommunication gadgets hence uplifting the living standards to many people and provides the infrastructural platform for further economic development. Due to the study sought to establish the effect of project implementation practices on the performance of Tigo Rwanda.

The study thus concludes that enhancing management of project scheduling contributes more, followed by improving management of project supervision, project financial innovations and lastly improving management of project mobilization respectively in increasing the project profitability and market share in Tigo Rwanda.

10.1 Recommendations

The study suggests that project manager should put more attention in improving the project implementation practices in the order of importance being project scheduling, followed by project supervision, project financial innovations and lastly improving management of project mobilization respectively to increasing their project profitability and market share

The study suggests that Project scheduling should be executed using proper tools like Critical Path Method (CPM) and Project Evaluation Review Technique (PERT). CPM scheduling tool should be applied where there is ability to identify the critical path

through the project network which would predict the earliest date that the project can be completed. PERT on the other hand would be best placed to handle activity duration estimates in highly uncertain individual.

10.2 Suggestions for further Studies

The researcher suggests the following future research directions regarding project implementation practices and project performance:

This research recommends that more research is needed in this area to produce a comprehensive telecommunication project-implementation guide for use by investors, and practitioners/

The study was based on a cross-sectional survey design which would only give a snapshot picture at a single point in time. The researcher recommends a future longitudinal research to provide comparatively more conclusive results to the project implementation practices and project performance model.

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