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PROJECT PROCUREMENT PRACTICES AND ITS EFFECTIVE IMPLEMENTATION IN PUBLIC INSTITUTIONS IN RWANDA: WATER SUPPLY INFRASTRUCTURE AND SERVICES IMPROVEMENT PROJECT IN MUHANGA-SOUTHERN PROVINCE

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Abstract:

Project implementation refers to the process of actualizing the investment plan by putting certain specific actions and structures in place in order to operationalize the investment dream and subsequently derive the targeted benefits from the project. Despite the high economic growth, poverty rate still remains high, at 44.9 percent. One of the biggest challenges facing Rwanda is the insufficient investment in infrastructure for energy, water and sanitation, and transportation coupled with the combined pressures of agricultural production, high population, economic expansion and rising energy needs are increasing the environmental stress in Rwanda. This study investigated the Project procurement practices and effective implementation in public institutions in Rwanda, with a case of Water Supply Infrastructure and Services improvement Project in Muhanga-Southern Province. The study applied quantitative and correlative approaches. Target population was 234 employees, and simple randomly sampling technique were used to select 148 respondents as sample size. The questionnaire was data collection instruments and descriptive statistics method and inferential analysis were methods of data analysis. Findings revealed that there is a strong correlation between Procurement Planning and effective project implementation as Pearson correlation is .842**; there is strong correlation between supplier selection and effective project implementation as Pearson correlation is .877**; there is very strong correlation between Contract Monitoring and Control and effective project implementation as Pearson correlation is .964**; and the results show that there is strong correlation between Contract Review and effective project implementation as Pearson correlation is .866**. The p-value is 0.000, which is less than both standard significance levels of 0.05 and 0.01. Based on the findings, research problem was solved, research objectives were achieved, and research questions were answered.

Key Words: Project Procurement, Practices, Project Implementation, WASAC

Introduction:

Project is an investment activity that involves a current or future outlay of funds in the expectation of a stream of benefits extending far into the future. A public project is therefore one where such an investment involves the use of public funds by a government body mandated to carry out certain specific missions to achieve specific objectives for the benefit of the greater public majority. Project implementation on the other hand refers to the process of actualizing the investment plan by putting certain specific actions and structures in place in order to operationalize the investment dream and subsequently derive the targeted benefits from the project [1]. Poor planning has been a major constraint in successful implementation of public projects in India culminating in projects becoming uneconomical as a result of time and cost over-runs. The end result has been retarded economic development. The local government projects in Nigeria where he identified key project impediments as poor project planning, inadequate quality manpower, inadequate finance and poor project monitoring [2].

Rwanda's development success over the last decade includes high growth, rapid poverty reduction and reduced inequality. Rwanda's strong economic growth was accompanied by substantial improvements in living standards, with a two-thirds drop in child mortality and near-universal primary school enrollment. A strong focus on homegrown policies and initiatives has contributed to significant improvement in access to services and human development indicators. Measured by the national poverty line, poverty declined from 59 to 39% between 2001 and 2014 but was almost stagnant between 2014 and 2017. The official inequality measure, the Gini index, declined from 0.52 in 2006 to 0.43 in 2017 [3]. Electronic procurement (e-procurement) systems have helped governments across the world to reduce costs and increase transparency in the procurement process. Beginning in 2014, the Rwanda government started the process of becoming the first country in Africa to realize those benefits, by partnering with a South Korean firm to develop its own e-procurement system.

Despite the effort made for effective projects designed with budget and scope for completion, most of the water projects of WASAC is accused to do not meet with deadlines; because they mostly took more time than expected time in implementation of water projects. There are doubt that the causes of these delays may be happened due to the lack effective procurement practices of materials from suppliers. The researcher was motivated to investigate how procurement planning, supplier selection, monitoring and evaluation and contract review may affect effective implementation of water projects of WASAC in southern province of Rwanda.

Objectives of the Study:

General objective of the study is to assess project procurement practices and its effective implementation in Rwanda. The specific objectives of this study paper are:

- To assess the influence of procurement planning on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga;
- To determine the influence of supplier selection on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga;
- To establish the influence of contract monitoring and control on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga;
- To establish the influence of contract review on effective implementation of Water Supply Infrastructure and Services project in Muhanga;

Research Hypotheses:

- Ho1: There is no significant influence of procurement planning on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga;
- Ho2: There is no significant influence of supplier selection on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga;
- Ho3: There is no significant influence of contract monitoring and control on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga;
- Ho4: There is no significant influence of contract review on effective implementation of Water Supply Infrastructure and Services project in Muhanga;
- Ho5: There is no significant relationship between project procurement practices and effective project implementation in Rwanda

Project Procurement Practices:

For the purposes of this study, the dependent variable is the effective implementation of projects whereas the independent variables are procurement strategies including procurement planning, supplier selection, contract review and monitoring and evaluation towards project implementation of Water Supply Infrastructure and Services improvement Project in Muhanga-Southern Province.

1. Procurement Planning: As a general planning principle, projects involve few activities, complex projects go beyond a certain threshold level of magnitude should proceed on the basis of a sound formal planning platform without which there may be chaos. Sound formal planning provides the basis for organizing the work on the project and allocating responsibilities to individuals. It is not only a means of communication and coordination between all those involved in the procurement project but also induces people to look ahead besides instilling a sense of urgency and time consciousness [4].

2. Supplier Selection: Supplier selection is the process by which firms identify, evaluate, and contract with suppliers. The supplier selection process deploys a tremendous number of firms' financial resources. In return, firms expect significant benefits from contracting with suppliers offering high value. Suppliers have been acknowledged as the best intangible assets of any business organization [5]. Strategic partnership with the right suppliers must be integrated within the supply chain to contain costs, improve quality and flexibility to meet end-customers' value and reduce lead time at different stages of the supply chain. Purchasing and supply management support the management of supplier network with respect to identification of supplier selection criteria, supplier selection decisions, and monitoring of supplier performance [6].

Quality: Quality of raw material and component requirements are very vitally important in any organization and firms need to select suppliers with supplier's certification, proven record of world-class service and quality raw materials [7]. Cost: Cost has traditionally been considered as one of the most important aspects of supplier selection criteria in the purchasing and supply management literature [8].Services: Supplier's services are imperative for any organization. They are expected to provide high-quality services that include consist of on-time delivery, value added services, and ease of communication [9].

Risk Management: suppliers must be able to proactively mitigate and manage supply risks. The ability of suppliers to help buyers reduce risk can positively affect cost containment, quality improvement operational efficiency, process improvement and consistency, and supply chain visibility [10]. Green Purchasing: this is the process of applying environmental criteria to selection problems. It is increasingly becoming an important criterion when making purchasing decisions. Financial Stability: it is always worth making sure that supplier has sufficiently strong cash flow to deliver what one want, when you need it. A partnership approach: a strong

relationship benefits both sides. One wants suppliers to acknowledge how important one's business is to them, so they make every effort to provide the best service possible [11].

3. Contract Monitoring and Control:

The key things to be planned, monitored and controlled are time (schedule), cost (budget) and scope (performance). The prescribed public sector procurement plan format as already discussed above exhibits the first two as very prominent features. It is useful to perceive the control process as a closed-loop system, with revised plans and schedules (if warranted) following corrective actions. The planning-monitoring-controlling cycle is continuously in process until the project is completed. This process should be constructed as an integral part of the organizational structure of the project, not something external to and imposed on it, or worse, in conflict with it. It is important to first define the key factors to be monitored and controlled: scope, cost and time and the boundaries within which they should be controlled [12].

4. Contract Review:

The relevance of contract review through communication in project implementation by asserting that projects are about communication, communication, communication. He argues that the biggest and most costly problem in any company is lack of contract review. In his view, a company may still succeed, but without good internal and external communication the cost of success is much higher than necessary. Lack of good communication can easily turn a corporate strategy, or an information system project, into a modern-day tower of babel [13].

Effective Project Implementation:

The effective project implementation or simply put, project success can be measured on the basis of time, cost and quality (performance), commonly known as the triple constraint. These three factors represent the key performance indicators (KPIs). To establish whether a project has been effectively implemented, or better still, if the project has been successful, one has to go back to the initial project goals of time, cost and quality (performance) and be able to measure the extent of their individual achievement [14]. A successful project must be on time, on budget and deliver quality (features and functions). Anything less is either a failed project or a challenged project. Thus, the envisaged initial project cost, time and project quality (performance) are the three fundamental cornerstones for measuring the effectiveness of any public project [15].

1. Timeliness of Project: Cycle time: the time needed to complete a certain task or activity. This is helpful for repeated tasks in a project. On-time completion percentage: whether or not an assignment or task is completed by a given deadline. Time Spent: The amount of time that is spent on the project by all team members or, if you like, by each team member individually. Number of adjustments to the schedule: how many times your team has made adjustments to the completion date of the project as a whole.

2. Effective use of Budget/Cost: Budget variance: how much the actual budget varies from the projected budget? to track this KPI, measure how close the baseline amount of expenses or revenue is to the expected value. Budget creation (or revision) cycle time: The time needed to formulate an organization's budget. This includes the total duration of research, planning, and coming to a final agreement. Line items in budget: line items help owners and managers keep track of individual expenditures and provide a more detailed way to see how the budget was spent. Number of budget iterations: The number of budget versions produced before its final approval. A higher number of budget iterations means more time is being spent planning and finalizing a budget. Planned value: the value of what's left to complete in a project in other words, the planned cost of what still needs to be done. Use this project KPI to compare against the actual cost and adjust the budget if needed. Cost performance index: compares the budgeted cost of the work you have accomplished so far to the actual amount spent. This is a ratio to measure the expense efficiency of a project earned value divided by actual costs.

3. Quality of Project: Customer satisfaction/loyalty: whether or not someone is satisfied and would come back again. This can be measured effectively by a survey. This comes more into play when the project deals directly with a client or customer.Net promoter score: similar to customer satisfaction and loyalty, NPS (or net promoter score) is a user satisfaction KPI measured by a one-question survey whose purpose is to gauge brand loyalty. Number of errors: how often things need to be redone during the project.

4. Effectiveness of Project: Number of project milestones completed on time with sign off: there are different parts within a project are they being completed in a timely manner? Additionally, were the milestones completed and approved by the owner or buyer? Number of returns: If you have a capital project that requires many parts, you may track the return rate of those parts; this helps you see if you did a good job planning or adjusting to the project during implementation. Training/Research Needed for Project: You may track this in hours, number of courses, or something similar. If you need to do a lot of this, your project might get started later than you hope.

Research Design and Methodology:

Quantitatively the study described the influence of procurement planning on effective projects implementation of WASAC southern province of Rwanda; influence of supplier selection on effective project implementation in WASAC southern province of Rwanda; monitoring and evaluation on effective project implementation in WASAC southern province of Rwanda; and influence of contract review on effective project

implementation in WASAC southern province of Rwanda. The target population was 234 employees in management team of Water supply infrastructure and services improvement Project in Muhanga-Southern Province include engineers, project designers and planners, project technicians, project managers and assistants, team committee of follow up of water projects of WASAC in southern. The sample size is selected from the target population. This study uses 5% of margin errors and confidential is 95%. The study applies the formula of Taro Yamane (1982)

$n = \frac{N}{1+N*(e^2)}$; n = sample size; N= Total population; e= margin error; $n = \frac{234}{1+(234*(0.05)^2)} = 147.6 \cong 148$

The questionnaires were distributed to 148 respondents worked with Water Supply Infrastructure and Services improvement Project in Muhanga-Southern Province. The questionnaire is composed by close end questions where we expect participation rate of 100% for responding the questionnaire. Descriptive Statistics methods described project procurement practices and effective implementation of projects in Rwanda. It is in that case descriptive statistical was used to present the frequencies, percentages, mean and standard deviation. The correlation coefficient was used to determine the relationship between two variables. This was done to analyze the relationship between project procurement practices and effective implementation of water projects of WASAC in southern province of Rwanda. The regression models were formulated to measure the relationship between sub-variable representing project procurement practices and effective implementation of projects. The models were as follows: X= independent variable = project procurement practices (PPP), which has four indicators:x1= Procurement Planning (PP); x2= Supplier Selection (SS); x3= Monitoring and Control (MaC); x4= Contract Review (CR); Y= dependent variable= Effective project implementation (EPI) which also has five indicators as follows: Based on these variables, the following functions have been set: Y= f(X) Therefore, Y= EPI = $\beta 0+\beta 1PP+\beta 2SS+\beta 3MaC+\beta 4CR+\varepsilon$Where $\beta 0$= Constant, $\beta 1$- $\beta 4$ are coefficients of determination.

Results and Discussion for Findings:

A correlation matrix is a table showing correlation coefficients between variables. Each cell in the table shows the correlation between two variables. A correlation matrix is used to summarize data, as input into a more advanced analysis, and as a diagnostic for advanced analyses. Table 1 illustrates findings on the correlation matrix test of this study between variables of project procurement practices as independent variable and effective implementation in public institutions as dependent variable

Table 1: Correlation Matrix Analysis

		Procurement Planning	Supplier Selection	Contract Monitoring And Control	Contract Review	Project Procurement Practices	Effective Project Implementation
Procurement Planning	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	139					
Supplier Selection	Pearson Correlation	.968**	1				
	Sig. (2-tailed)	.000					
	N	139	139				
Contract Monitoring and Control	Pearson Correlation	.850**	.877**	1			
	Sig. (2-tailed)	.000	.000				
	N	139	139	139			
Contract Review	Pearson Correlation	.980**	.960**	.847**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	139	139	139	139		
Project Procurement practices	Pearson Correlation	.981**	.985**	.922**	.979**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	139	139	139	139	139	
Effective project implementation	Pearson Correlation	.842**	.877**	.941**	.866**	.911**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	139	139	139	139	139	139
**. Correlation is significant at the 0.01 level (2-tailed).							

Source: Primary data (2021)

From the correlation matrix Table 1 results show that there is a very strong correlation between procurement planning and effective project implementation as Pearson correlation is .842** with the p-value of 0.000, which is less than both standard significance levels of 0.05 and 0.01. This indicates that, out of the considered other factors affecting effective project implementation, only procurement planning from project procurement practices has significant effect on project implementation of Water supply infrastructure and services project in Muhanga. The results show that there is strong correlation between supplier selection and effective project implementation as Pearson correlation is .877**. The p-value is 0.000, which is less than both standard significance levels of 0.05 and 0.01, and this indicates that, out of the considered other factors of project procurement practices, only the supplier selection has significant relationship of 87.7% with effective project implementation in Water supply infrastructure and services project.

The results show that there is positive and very strong correlation between Contract monitoring and control and effective project implementation as Pearson correlation is .941**. The p-value is 0.000, which is less than both standard significance levels of 0.05 and 0.01. This indicates that, out of the considered other factors affect effective project implementation, only contract monitoring and control has significant relationship of 96.4% with project implementation in Water supply infrastructure and services project. The results show that there is strong correlation between contract review and effective project implementation as Pearson correlation is .866**. The p-value is 0.000, which is less than both standard significance levels of 0.05 and 0.01. This indicates that, out of the considered other factors affect effective project implementation, only contract review has significant relationship of 86.6% on project implementation in Water supply infrastructure and services project. Findings revealed that p-value is 0.000 which is less than both standard significance levels of 0.05 and 0.01 as it is an indicator of existence of significant relationship between project procurement practices and effective project implementation in Water supply infrastructure and services project, since, as Pearson correlation value was .911**which is positive and very strong correlation between two variables (project procurement practices and effective project implementation of Water supply infrastructure and services project in Rwanda especially Muhanga District).

Testing Ho1:

"There is no significant influence of procurement planning on effective implementation of Water supply infrastructure and services improvement project in Muhanga"

Table 2: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842[a]	.708	.706	5.58357
a. Predictors: (Constant), Procurement Planning				

Table 2 shows the value of R-square in this study is 70.8% means that the proportion of effective implementation of Water supply infrastructure and services improvement Project in Muhanga (dependent variable) is explained by the independent variables (procurement planning) at 70.8%. This indicates that the model is strong, as the independent variable highly explain the dependent variable. The adjusted R-square is used to compensate for additional variable in the model. In this case, the adjusted R-square is also 70.6%.

Table 3: ANOVA[a]

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10372.516	1	10372.516	332.705	.000[b]
	Residual	4271.153	137	31.176		
	Total	14643.669	138			
a. Dependent Variable: Effective project implementation						
b. Predictors: (Constant), Procurement Planning						

In this case, from the ANOVA Table 3, level fit mode is 332.705 with p-value is 0.000 which is less than both 0.05 and 0.001, set as standard significance levels. This means that researcher failure to accept null hypothesis (Ho1) stated that "There is no significant influence of procurement planning on effective implementation of Water supply infrastructure and services improvement project in Muhanga" and goes by the alternative hypothesis, which stated that the independent variable affects effectively the implementation of Water supply infrastructure and services improvement project in Muhanga District.

Table 4: Coefficients[a]

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.614	2.043		1.769	.079
	Procurement Planning	2.054	.113	.842	18.240	.000
a. Dependent Variable: Effective project implementation						

Y = 3.614+ 2.054 (Procurement Planning) +0.113

The regression equation shows that effective implementation of Water supply infrastructure and services improvement project always depend on a constant factor of 3.614 regardless of the existence of other factors. The other variables explain that; every unit change in procurement planning will affect effective implementation of Water supply infrastructure and services improvement project by a factor of 2.054.

Testing Ho2:

"There is no significant influence of supplier selection on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga."

Table 5: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877[a]	.769	.767	4.96840
a. Predictors: (Constant), Supplier Selection				

Table 5 shows the value of R-square in this study is 76.9% means that the proportion of effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga (dependent variable) is explained by the independent variables (Supplier Selection) at 76.9%. This indicates that the model is high, as the independent variable strongly explain the dependent variable. The adjusted R-square is used to compensate for additional variable in the model. In this case, the adjusted R-square is also 76.7%.

Table 6: ANOVA[a]

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11261.827	1	11261.827	456.222	.000[b]
	Residual	3381.842	137	24.685		
	Total	14643.669	138			
a. Dependent Variable: Effective project implementation						
b. Predictors: (Constant), Supplier Selection						

In this case, from the ANOVA Table 6, model of fit was 456.222 with p-value is 0.000 which is less than the 0.05 and 0.001, set as standard significance levels. This means that null hypothesis (Ho2) stated that there is no significant influence of supplier selection on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga is rejected, and goes by the alternative hypothesis which states that the independent variable affected effectively the implementation of Water Supply Infrastructure and Services improvement Project in Muhanga.

Table 7: Coefficients[a]

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.272	1.628		3.852	.000
	Supplier Selection	1.535	.072	.877	21.359	.000
a. Dependent Variable: Effective project implementation						

Y = 6.272+ 1.535 (Supplier Selection) +0.072

The regression equation shows that effective implementation of Water supply infrastructure and services improvement project will always depend on a constant factor of 6.272 regardless of the existence of other factors. The other variables explain that; every unit change in supplier selection will affect effectively implementation of Water supply infrastructure and services improvement project by a factor of 1.535.

Testing Ho3:

"There is no significant influence of contract monitoring and control on effective implementation of Water Supply Infrastructure and Services improvement Project in Muhanga"

Table 8: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.941[a]	.885	.884	3.50452
a. Predictors: (Constant), Contract Monitoring and Control				

Table 8 shows the value of R-square in this study is 88.5% means that the proportion of effective implementation of Water supply infrastructure and services improvement Project in Muhanga (dependent variable) is explained by the independent variables (Contract Monitoring and Control) at 88.5%. This indicates that the model is strong, as the independent variable highly explain the dependent variable. The adjusted R-square is used to compensate for additional variable in the model. In this case, the adjusted R-square is also 88.4%.

Table 9: ANOVA[a]

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12961.085	1	12961.085	1055.322	.000[b]
	Residual	1682.584	137	12.282		
	Total	14643.669	138			
a. Dependent Variable: Effective project implementation						
b. Predictors: (Constant), Contract Monitoring and Control						

In this case, from the ANOVA Table 9, model fit is 1055.322 with p-value is 0.000 which is less than 0.05 and 0.001, set as standard significance levels. This means that researcher rejected the null hypothesis (Ho3) stated that there is no significant influence of contract monitoring and control on effective implementation of Water supply infrastructure and services improvement Project in Muhanga, and study goes by the alternative hypothesis, which states that independent variable influence effectively implementation of Water supply infrastructure and services improvement Project in Muhanga District.

Table 10: Coefficients[a]

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.331	1.253		.264	.792
	Contract Monitoring and Control	1.952	.060	.941	32.486	.000
a. Dependent Variable: Effective project implementation						

Y = 0.331+ 1.952 (Contract Monitoring and Control) +0.060

The regression equation shows that effective implementation of Water supply infrastructure and services improvement Project in Muhanga District will always depend on a constant factor of 0.331regardless of the existence of other determinants. The other variables explain that; every unit change in contract monitoring and control will affect effective implementation of Water supply infrastructure and services improvement Project in Muhanga District by a factor of 1.952.

Testing Ho4:

"There is no significant influence of contract review on effective implementation of Water Supply Infrastructure and Services project in Muhanga"

Table 11: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.866[a]	.749	.747	5.17644
a. Predictors: (Constant), Contract Review				

Table 11 shows the value of R-square in this study is 74.9% means that the proportion of effective implementation of Water supply infrastructure and services project in Muhanga (dependent variable) is explained by the independent variables (Contract Review) at 74.9%. This indicates that the model is strong, as the independent variable highly explain the dependent variable. The adjusted R-square is used to compensate for additional variable in the model. In this case, the adjusted R-square is also 74.7%

Table 12: ANOVA[a]

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10972.688	1	10972.688	409.498	.000[b]
	Residual	3670.981	137	26.795		
	Total	14643.669	138			
a. Dependent Variable: Effective project implementation						
b. Predictors: (Constant), Contract Review						

In this case, from the ANOVA Table 12, model of fit is 409.498 p-value is 0.000 which is less than the 0.05 and 0.001, set as standard significance levels. This means that the study can't accept the null hypothesis (Ho4) stated that there is no significant influence of contract review on effective implementation of Water supply infrastructure and services project in Muhanga and goes by the alternative hypothesis, which stated that the independent variable influences effectively implementation of Water supply infrastructure and services project in Muhanga District.

Table 13: Coefficientsa

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.375	1.808		2.420	.017
	Contract Review	1.575	.078	.866	20.236	.000
a. Dependent Variable: Effective project implementation						

Y = 4.375+ 1.575 (Contract Review) +0.078

The regression equation shows that effective implementation of Water supply infrastructure and services project in Muhanga District will always depend on a constant factor of 4.375 regardless of the existence

of other factors. The other variables explain that; every unit increase in Contract Review will affect effective implementation of Water supply infrastructure and services project in Muhanga District by a factor of 1.575.

Conclusion and Recommendations:

As conclusion, the findings revealed that p-value is 0.000 is less than both standard significance levels of 0.05 and 0.01. In this research, results confirmed the relationship between project procurement practices and effective project implementation in Water supply infrastructure and services project. Since the Pearson correlation value was .914** which is positive and very strong correlation between two variables. Based to the findings obtained above, research problem was solved, research objectives were achieved, and research questions were answered. It is therefore the study confirmed that there is significant and positive relationship between project procurement practices and effective project implementation in Water supply infrastructure and services project in Rwanda, Muhanga District-southern province.

According to the findings that show the value of R-square of this study is 83.1% means that the proportion of effective project implementation in Rwanda (dependent variable) is explained by the independent variables (project procurement practices) at 83.1%. This indicates that the model is strong, as the independent variable highly explain the dependent variable. The adjusted R-square is used to compensate for additional variable in the model. In this case, the adjusted R-square is also 82.9%. The study indicated strong influences of Project Procurement practices on effective implementation of Water supply infrastructure and services project in Muhanga District. It therefore, to get very strong relationship between Project Procurement practices and effective implementation of Water supply infrastructure and services project; the decision makers and implementers of WASAC projects should in construction and post-constructive phase numerous trainings be given especially to beneficiaries where these trainings should cover the ways the project management, natural resources management and catchment development. The beneficiaries should have the duties like management of infrastructures in the site and use them effectively. The actors in government should mostly visit to communities and provides advices on life style in construction project.

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