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DETERMINANTS OF PROJECT IMPLEMENTATION DELAYS: CASE OF OIL AND GAS DEPOTS UPGRADE AT RUBiS ENERGY RWANDA

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ABSTRACT: The study investigated determinants of project implementation delays: case of OIL and Gas Depots Upgrade at RUBiS energy Rwanda. The specific objectives were to examine how financial implications affects the oil and gas project implementation in Rwanda; the influence of infrastructure to the oil and gas project implementation delays in Rwanda; to explore the influence of regulatory framework to OIL and Gas Depots Upgrade projects; and the effectiveness of current project management practices in addressing delays to OIL and Gas Depots Upgrade project implemented at RUBiS energy Rwanda. Target population was 60 participants the projects of OIL and Gas Depots Upgrade at RUBiS energy Rwanda. The questionnaires were given to 52 respondents as sample size. Interview and documentary techniques have been used to collect data. The analysis methods were descriptive statistic and multiple regression models. The results confirmed a significant and strong correlation between financial Implications and Oil and Gas projects implementation delays by r= 0.894. The results revealed very strong correlation between infrastructure factors and Oil and Gas projects implementation delays as shown by r= .917. Findings revealed that there is a significant very strong correlation between Regulatory features and Oil and Gas projects implementation delays as confirmed by r= .972. The results also show that there is very strong correlation between Project management practices and Oil and Gas projects implementation delays as stated by r= .952, with a p-value <0.01. The findings displayed those determinants of project implementation represented by project management practices, financial implications, infrastructure factors, regulatory features have contributed $R=.974^a$ of the variation in Oil and Gas projects implementation delays as explained by r^2 of .949 indicates 94.9% in the model as very strong, as the independent variable very highly explained the dependent variable and show that the model is a very good prediction.

Key words: *project implementation; delays; financial implications; infrastructure; project management practices*

INTRODUCTION

Project implementations delay is considered as the most frequent problems in the oil and gas project and delays have an adverse impact on the project success in terms of time, cost, quality and safety. Project implementations delay is considered as the most frequent problems in the oil and gas project and delays have an adverse impact on the project success in terms of time, cost, quality and safety. Delay is a situation when the contractor and the project owner jointly or severally contribute to the non-completion of the project within the original or the stipulated or agreed contract period (Al-Momani, 2000). Rwanda is a landlocked country in East Africa and has no significant oil or gas reserves. The country does not produce or export oil or gas, and it relies heavily on imported petroleum products to meet its energy needs. Despite the lack of oil and gas resources, the government of Rwanda has been exploring the possibility of developing renewable energy project as sources of power such as hydropower, solar, and geothermal energy. The country has made significant progress in developing its renewable energy sector, with the government aiming to increase the share of renewable energy in the national energy mix to 100% by 2024 (REG, 2018). The exploration process was not without controversy. There were concerns raised by local communities and environmental groups about the potential negative impacts of oil and gas exploration project on the environment and the livelihoods of local communities which was delaying the implementation of the project. In response to these concerns, the Rwandan government announced in 2014 that it would not grant any further oil and gas exploration licenses until it had conducted a thorough assessment of the potential impacts of such projects (IRIZA, 2022).

Rwanda imports all its petroleum requirements products abroad subsequently there is no local production. The petroleum consumption in Rwanda stands at 23 million liters per month. This constitutes about 20% of total national imports and has been steadily rising in the past five years, with an average annual increase of 12 per cent. The key policy objective for the sub-sector is to guarantee safety, sustainable, adequate, reliable, and affordable source of petroleum product. This involves boosting the investments in supply and infrastructure storage (REG, 2018).

STATEMENT OF THE PROBLEM

Despite the government's efforts to attract investments and develop the oil and gas industry, the project implementation delays have been a persistent challenge due to: Poor feasibility study of oil and gas projects, Financing issues in the oil and gas projects as it requires huge amount of funds, and regulations noncompliance as this type of projects is risk and danger to the environment. This results to significant economic losses through extended time of projects completion, cost overruns, and lost revenues that has adverse effects on the economy and energy sector (RURA, 2022).

Moreover, the implemented OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda are facing delays, which have negative impacts on project timelines, budgets, and ultimately, the company's bottom line. Despite the company's efforts to streamline project implementation processes, delays persist, and the root causes of these delays remain unclear. Therefore, there is a need to investigate and address the key determinants of project implementation delays in the sector of OIL and Gas. Depots Upgrade at RUBiS energy Rwanda, in order to improve project outcomes and enhance the company's competitiveness in the market and develop strategies to mitigate them. The study aimed to investigate the various determinants of project implementation delays in the OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda.

OBJECTIVES OF THE STUDY

The general objective of this study to investigate the determinants of the project implementation delays in oil and gas projects at the RUBiS Energy Rwanda. This study had the four specific objectives:

- ✓ To examine how financial implications affects the oil and gas project implementation in Rwanda at RUBiS energy.
- ✓ To study the influence of infrastructure to the oil and gas project implementation delays in Rwanda at RUBiS Energy.
- ✓ To explore the influence of regulatory framework to oil and gas project implementation at RUBiS Energy Rwanda.
- ✓ Evaluate the effectiveness of current project management practices in addressing delays to the oil and gas project implementations in the oil and gas at RUBiS Energy Rwanda

RESEARCH QUESTIONS

- ✓ Do financial implications have effects on OIL and Gas Depots Upgrade project implemented at RUBiS energy Rwanda?
- ✓ Does infrastructure influence the OIL and Gas Depots Upgrade projects at RUBiS energy Rwanda?
- ✓ Does regulatory framework influence the OIL and Gas Depots Upgrade projects at RUBiS energy Rwanda?
- ✓ To what extent does the project management practices address delays in OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda.

LITERATURE REVIEW

Financial implications affect the project implementation and delays may happen through cash flow problems in organizations, lack of funding and late release of project fund. (Al-Hejji, 2006), identified finance and payments for work, poor project cost estimations, difficult in accessing finances from credit facilities and material price fluctuations as the common finance issues that determine project delays.

Overdue payment

The parties included in the procedure of payment claim such as superintending officer, client, architect, contractor, banker, quantity surveyor, and other project companies can be the root cause of a payment to be late which affects the implementation of the project. Payment delayed by a part involved in the process of payment claim may influence the supply chain through payment in whole.

Cash flow management

According to (Ward, 2015) the greatest important feature of cash flow management is to dodge extended cash deficiencies that are caused by having great a gap between cash inflows and outflows. In analyzing the project cash flow, it forecast an essential technique to head off cash flow problems. It is important to develop and use strategies that will uphold an adequate cash flow for the project during implementation phase. Therefore, a good managed cash flow will improve the project' s cash flow and subsequently advance the timely performance of a project implementation.

Insufficient financial resources

According to (Kaming, 2010), one of the biggest issues causing delays in big projects implementation as he has seen in Indonesia is the shortage of resources. The resources include financial resources, human resources, material resources and equipment resources.

Financial market instability

The primary causes to financial market instability, which would lead to cash flow problems in oil and gas project implementations include increase of interest rate in repayment of loan, inflation of material prices, labor wages, transportation costs and increment of foreign exchange rate to the imported materials.

Project management practices and project implementation

Integrating individual managerial knowledge for example, a constellation of people such as a team can provide additional services as the ones rendered by individual managers, because working with each other enables them to provide services that are uniquely valuable for the operations of the particular group with which they are associated (Van Den Bosch, 2006).

Project Risk Management Practices

According to (Tzvi, 2002) have conducted research on risk management, project success and technology uncertainty. Based on data collected on over 100 projects performed in Israel in a different industry, they examine the extend practice of some risk management practices such as probabilistic risk analysis, risk identification, planning for uncertainty and trade-off analysis, the difference in application across different types of projects and their influence on numerous project implementations success dimensions.

Communication practices

According to (Campbell, 2014) the project managers who represented over thirty countries were asked to assess what made projects successful and what caused others to fail. From the findings, number one success factor was communication.

Stakeholder Management Practices

According to (Eskerod, 2014) there is need of two-way exchange of information between the stakeholders to ensure succession of the project. Inclusivity cultivates communication and flow of information that is positive and enhance the successful implementation of the project. Human behaviors allow concern for projects or activities if there is sufficient involvement and consultation process.

Infrastructure and project implementations

Infrastructure refers to the fundamental physical, organizational structures and facilities that may be needed for operation of a society or enterprise. This can include things like roads, bridges, buildings, power grids, water systems, and more. In the context of project management, infrastructure can play a critical role in the success or failure of implementing the project.

Regulatory Framework and Project Implementation

A regulatory framework is a model people use for improving and enacting regulations in logical and an effective way. Regulatory framework is laws and regulations that outline the legal requirements to be met. They may also be complemented by policies, standards directives and guidelines. The oil and gas projects are heavily regulated in most countries around the world due to its potential and severe impact on the environment, public safety, and national security. The regulatory framework in the oil and gas typically consists of a combination of laws, regulations, guidelines, and standards that govern the implementation of projects through exploration, production, transportation, and their storage.

CONCEPTUAL FRAMEWORK

The conceptual framework outlined the dependent and independent variable and shows how are they related as it has been debated in the literature review.

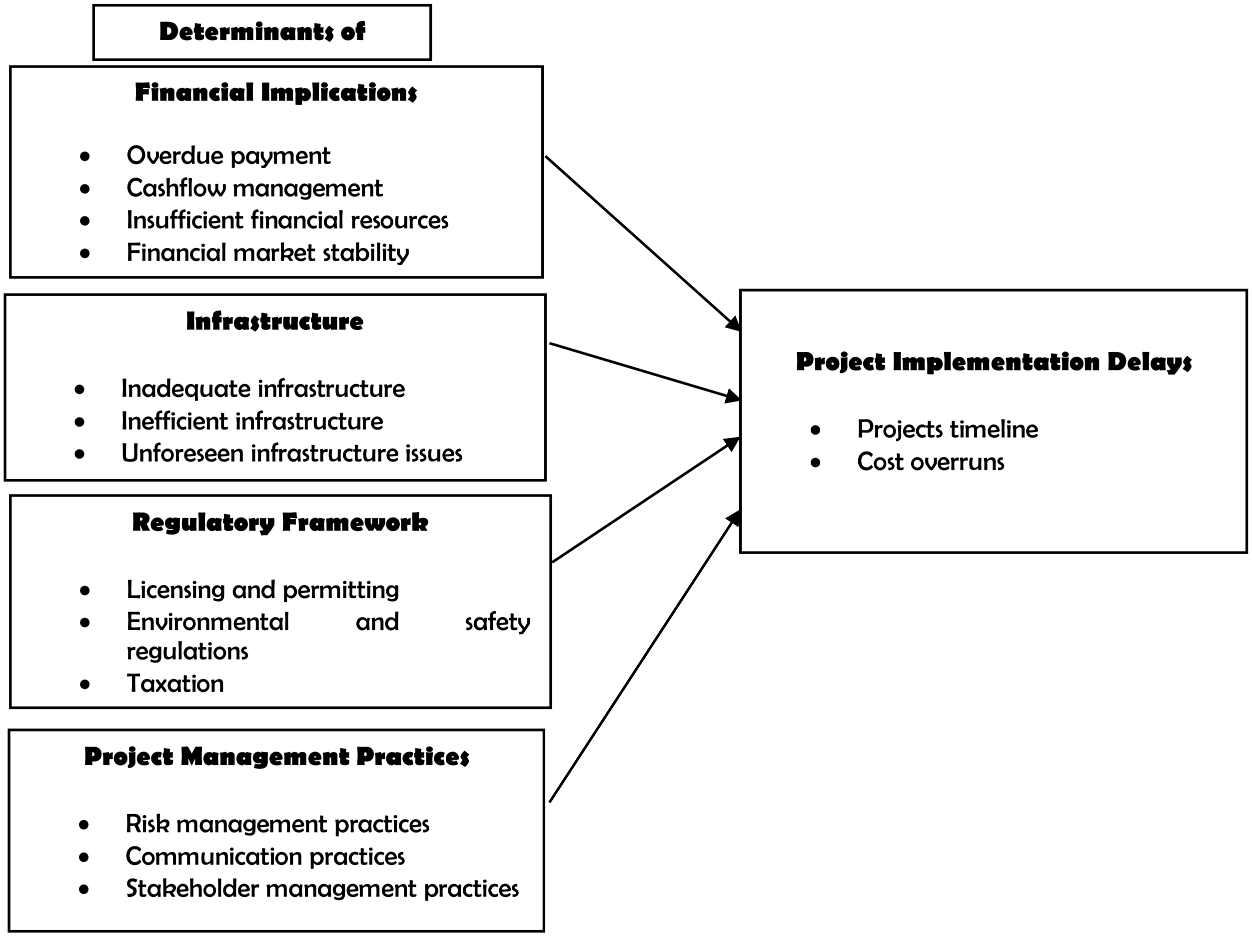

Figure 1: Conceptual Framework

RESEARCH METHODOLOGY

Qualitative research involves collecting and analyzing non-numerical data which could be such text and audio to understand concepts, opinions, or experiences from the interviewed respondents. Regression analysis approach used for the estimate of relationships between independent variables and dependent variable. It is also utilized to measure the strength of the relationship between variables and for demonstrating the future relationship between them. Target population was 60 participants the projects of OIL and Gas Depots Upgrade at RUBiS energy Rwanda. Sampling is selecting a given number of subjects from a defined population as representative of that population. From the target population of sixty (60) participants that interacts with OIL and Gas Depots Upgrade at RUBiS energy Rwanda. The researcher purposively sent questionnaires to specific respondents working in specific areas concerned and handled by RER. Purposive sampling technique has been used based on researcher judgment for population to participate in the study which results to time effectiveness. The sample size determined by using Yamane equation has been obtained from sixty (60) targeted population.

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{60}{1 + 60(0.05)^2}$$

$$\boldsymbol{n = 52\ Respondents}$$

$n = Sample\ size$

$N = Population$

$e = Error\ term$

The random samples selected from distinct group or strata within the population. Sample size for each stratum reflects stratum population of the populations.

$$\mathbb{S} = \left(\frac{s}{N}\right) * n$$

$\mathbb{S} = Sample\ size\ for\ stratum,$

$s = Number\ in\ stratum,$

$n = Overal\ sample\ size.$

This study collected primary data by using questionnaire and various documentary techniques which have been used to collect data. The methods of data analysis were the descriptive statistical method to summarize the data of this research and multiple regression models. The model was estimated as: y represent dependent variable which is project implementation delays:

x represent the independent variables which are the determinants of delays and are the following:

x_1 which represent financial implication,

x_2 which represent infrastructure,

x_3 which represent regulatory framework,

x_4 which represent project management practices.

By basing on statistics models, $y = f(x)$

$$\boldsymbol{y = B_0 + B_1x_1 + B_2x_2 + B_3x_3 + B_4x_4 + \alpha}$$

Where B_0 is constant; B_1, B_2, B_3 and B_4 are coefficients; while α is an error term.

DATA ANALYSIS AND FINDINGS

Data were gathered from 52 respondents in two weeks of responding to the questions in the questionnaire. Findings indicated the participation rate of 100.0% of responding, and data were analyzed quantitatively using computer software of SPSS IBM 23.0 version. The findings on gender, age, educational level, and experiences of respondents from OIL and Gas Depots Upgrade at RUBiS energy Rwanda. Findings in table 3 presents socio-demographic characteristics of respondents.

Table 2: Socio-Demographic Characteristics of Respondents

	Data	Frequencies	Percentages
Gender	Females	23	44.2
	Males	29	55.8
	Total	**52**	**100.0**
	18-30yrs	9	17.3
Age	31-40 years	16	30.8
	41-50yrs	17	32.7
	51-60yrs	7	13.5
	61yrs and above	3	5.8
	Total	**52**	**100.0**
	Master's Degree	5	9.6
Education level	Bachelor's Degree	21	40.4
	Diploma (A1)	24	46.2
	Vocational training	2	3.8
	Secondary	0	0.0
	Total	**52**	**100.0**
Experiences	Less than 2years	7	13.5
	2-5years	10	19.2
	5-10years	31	59.6
	More than 10years	4	7.7
	Total	**52**	**100.0**

Source: *Primary data (2023)*

Findings indicated on table 2 show social demographic characteristics of respondents from OIL and Gas Depots Upgrade at RUBiS energy Rwanda. In regard to gender of respondents; 23 or 44.2% of respondents were females while 29 or 55.8% of respondents were males from OIL and Gas Depots Upgrade at RUBiS energy Rwanda. The findings related to age of respondents confirmed by 9 or 17.3% who have between 18-30years old; 16 or 30.8% have from 31 to 40 years; 17 or 32.7% fit in range from 41-50yrs; 7 or 13.5% have ages between 51-60years while 3 or 5.8% stated that they have 61 years and above. Concerning to education level of respondents; more than 21 or 40.4% respondents have bachelor's degree; 24 or 46.2% have diploma (A1) but they said that most of them are still in university for looking A0; 5 or 9.6% have master's degree while only 2 or 3.8% have Vocational training. RUBiS Energy Rwanda has hired the majority qualified employees to help organization/company to reach on their project goals. Experience is greater thing that every employer should look for while hiring the employee; during the study, findings indicated that majority of 31 or 59.6% have between 5-10years of experience; 10 or 19.2% respondents have 2-5years of experience; 4 or 7.7% have experience of more than 10years while 7 or 13.5% respondents have experience of less than 2years

Inferential Statistics

Normality Test

It's important to note that normality tests have limitations. They can be sensitive to sample size, and they may not always provide clear-cut answers. In practice, it's often a good idea to complement normality tests with graphical methods, such as histograms, quantile-quantile (Q-Q) plots, and box plots, to better understand the distribution of your data. Additionally, consider the context of your analysis and the assumptions of the specific statistical methods you plan to use. If your data deviates from normality, you may need to explore alternative approaches or transformations

Table 3. Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Determinants of Project Implementation	52	100.0%	0	0.0%	52	100.0%
Oil and Gas projects implementation	52	100.0%	0	0.0%	52	100.0%

Table 4. Descriptive

			Statistic	Std. Error
Determinants of Project Implementation	Mean		0E-7	.13867505
	95% Confidence Interval for Mean	Lower Bound	-.2784018	
		Upper Bound	.2784018	
	5% Trimmed Mean		.0562085	
	Median		.7397254	
	Variance		1.000	
	Std. Deviation		1.00000000	
	Minimum		-1.92806	
	Maximum		.86381	
	Range		2.79187	
	Interquartile Range		1.72165	
	Skewness		-.696	.330
	Kurtosis		-1.059	.650
Oil and Gas projects implementation	Mean		0E-7	.13867505
	95% Confidence Interval for Mean	Lower Bound	-.2784018	
		Upper Bound	.2784018	
	5% Trimmed Mean		.0787627	
	Median		.7827045	
	Variance		1.000	
	Std. Deviation		1.00000000	
	Minimum		-2.28904	
	Maximum		.78270	
	Range		3.07175	
	Interquartile Range		1.53587	
	Skewness		-1.030	.330
	Kurtosis		-.204	.650

Table 5: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Determinants of Project Implementation	.289	52	.000	.794	52	.000
Oil and Gas projects implementation	.302	52	.000	.765	52	.000

a. Lilliefors Significance Correction

The mean and median as shown in the descriptive table are extremely similar. The skewness for the combined determinants of Project Implementation is -.696; and -1.030 for Oil and Gas projects implementation as shown in the 'Descriptive' table, which is well within the acceptable range of -1 to 1. The kurtosis for combined determinants of Project Implementation is -1.059 and -.204 for Oil and Gas projects implementation as shown in the 'Descriptive' table, which is within the acceptable range of -1 to 1. The value for the Shapiro-Wilk test for combined determinants of Project Implementation is .794 and .765 for Oil and Gas projects implementation as listed under 'Sig.' in the 'Tests of Normality' table, which is greater than .05 as required. The stem and leaf plot are roughly symmetrical. The points do not deviate much from the line in the Normal Q-Q plot, and there are roughly equal number of points above and below the line in the detrended Q-Q plot.

Correlation Coefficient Test

A correlation coefficient matrix is used to summarize data and input into a more advanced analysis, and as a diagnostic for advanced analyses. In correlating, the study is using Pearson correlation analysis to get table:

Table 6: Correlations between Financial Implications and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda;

		Financial Implications	Oil and Gas projects implementation
Financial Implications	Pearson Correlation	1	.894**
	Sig. (2-tailed)		.000
	N	52	52
Oil and Gas projects implementation	Pearson Correlation	.894**	1
	Sig. (2-tailed)	.000	
	N	52	52

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

Findings in table 6 present correlations between financial implications and Oil and Gas projects implementation delay indicated by r= 0.894** with a p-value<0.01. This is an indicator that there are significant strong correlations between financial implications and Oil and Gas projects implementation.

Table 7: Correlations between Infrastructure factors and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda;

		Infrastructure factors	Oil and Gas projects implementation
Infrastructure factors	Pearson Correlation	1	.917**
	Sig. (2-tailed)		.000
	N	52	52
Oil and Gas projects implementation	Pearson Correlation	.917**	1
	Sig. (2-tailed)	.000	
	N	52	52

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

Findings in table 7 present correlation coefficient between Infrastructure factors and Oil and Gas projects implementation which indicated by r= 0.917** with a p-value<0.01. This is an indicator that there are significant positive and very strong correlations between Infrastructure factors and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda.

Table 8: Correlations between Regulatory features and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda;

		Regulatory features	Oil and Gas projects implementation
Regulatory features	Pearson Correlation	1	.972**
	Sig. (2-tailed)		.000
	N	52	52
Oil and Gas projects implementation	Pearson Correlation	.972**	1
	Sig. (2-tailed)	.000	
	N	52	52

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

Findings in table 8 present correlations between Regulatory features and Oil and Gas projects implementation which indicated by r= 0.972** with a p-value<0.01. This is an indicator that there are significant positive and very strong correlations between Regulatory features and Oil and Gas projects implementation.

Table 9: Correlations between Project management practices and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda;

		Project management practices	Oil and Gas projects implementation
Project management practices	Pearson Correlation	1	.952**
	Sig. (2-tailed)		.000
	N	52	52
Oil and Gas projects implementation	Pearson Correlation	.952**	1
	Sig. (2-tailed)	.000	
	N	52	52

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

Findings in table 9 present Correlations between project management practices and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda which indicated by r= 0.952** with a p-value<0.01. This is an indicator that there are significant positive and very strong Correlations between Project management practices and Oil and Gas projects implementation.

Table 10: Correlation between determinants of Project Implementation and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda;

		Determinants of Project Implementation	Oil and Gas projects implementation
Determinants of Project Implementation	Pearson Correlation	1	.961**
	Sig. (2-tailed)		.000
	N	52	52
Oil and Gas projects implementation	Pearson Correlation	.961**	1
	Sig. (2-tailed)	.000	
	N	52	52

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

Findings in table 10 present Correlation between determinants of Project Implementation and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda which indicated by r= 0.961** with a p-value<0.01. This is an indicator that there are significant positive and very strong correlation between determinants of Project Implementation and Oil and Gas projects implementation.

Multiple Linear Regression Analysis

Table 11: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.974a**	**.949**	**.944**	.23609283

a. Predictors: (Constant), *Project management practices, Financial Implications, Infrastructure factors, Regulatory features*

Findings in the model summary table 11 explain whether the model is a good predictor. From the results of the analysis, the findings displayed that determinants of project implementation represented by project management practices, financial implications, infrastructure factors, regulatory features have contributed **R=.974a** of the variation in the OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda as explained by r^2 of **.949** indicates 94.9% in the model as very strong, as the independent variable very highly explained the dependent variable (i.e., Oil and Gas projects implementation delays) and show that the model is a very good prediction. Adjusted R-Square is also **.944** used as to compensate other factors which are not in the model of this study.

Table 12: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.380	4	12.095	**216.991**	**.000[b]**
	Residual	2.620	47	.056		
	Total	51.000	51			

***a. Dependent Variable:** OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda;*

***b. Predictors: (Constant),** Project management practices, Financial Implications, Infrastructure factors, Regulatory features*

The findings in table 12 revealed that the level of significance was 0.000[(b)]; this implies that the regression model is significant in predicting the relationship between determinants like Project management practices, financial implications, infrastructure factors, regulatory features and Oil and Gas projects implementation delays. The findings also showed level of f-test model is 216.991 which is positive with p-value of 0.000[b] less than standard significance level of 0.01.

Table 13: Coefficients between the variables under study

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.249E-016	.033		.000	1.000
	Financial Implications	.155	.094	.155	1.641	.107
	Infrastructure factors	-.118	.126	-.118	-.939	.353
	Regulatory features	.888	.163	.888	5.443	.000
	Project management practices	.058	.160	.058	.362	.719

***a. Dependent Variable:** OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda;*

The results from Table 13 indicated that financialimplications have positive and insignificant effect of Financial Implications on OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda involved β_1= 0.155, t= 1.641; p-value= 0.107 greater than significant standard level of 10%. This is an indicator that there is insignificant relationship between financial implications and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda as it is suggested that a 1-unit change financial implications leads to 0.155-unit change affecting OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda. Therefore, if ignore other factors affecting OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda and stay with financial implications, the results indicated that Y =9.249+0.155x1+0.09

The findings revealed that the infrastructure factors have positive and insignificant effect on OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda involved at 10% level of significance show that β_2= -0.118, t= .939; and p-value= 0.353 greater than 10% as significant standard level. This is an indicator that there is insignificant relationship between infrastructure factors and OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda as it is suggested that a 1-unit change infrastructure factors lead to 0.118-unit change on OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda. Therefore, if ignore other factors affecting OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda, and stay with infrastructure factors, the results indicated that Y =9.249+0.118x2+0.126.

Findings indicated that the regulatory features have a significant effect on OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda involved at 10% as standard level of significance, as $\beta 3$= 0.888, t= 5.443 and p-value =0.000 less than 10%. This is an indicator that there is greater relationship between regulatory features and Oil and Gas projects implementation days as it is suggested that a 1-unit change regulatory features lead to 0.888-unit change on OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda. Therefore, if ignore other factors affecting OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda, and stay with regulatory features, the results indicated that Y =9.249+0.888x3+0.163.

The results designated that the project management practices have insignificant effect on OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda involved at 10% as standard level of significance, as shown $\beta 4$= 0.058, t= 0.362 and p-value =0.719 greater than 10%. This suggests that a 1-unit change project management practices lead to 0.058-unit change on OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda. Therefore, if ignore other factors affecting OIL and Gas Depots Upgrade projects implemented at RUBiS energy Rwanda, and stay with project management practices, the results indicated that Y =9.249+0.058x4+0.160.

CONCLUSION AND RECOMMENDATION

As conclusion, project completion time scheduled was affected due to poor project initiation, poor project planning/design system, poor project monitoring, and evaluation and controlling system, poor communication and improper project closure negatively. Regarding the relative influence of an individual component of delay factors on project completion is concerned; the result of multiple regression coefficient shows that poor project initiation is the most dominant factors in determining the project completion. An organization or institution can underachieve in relation to key competition pointers if the manager is under qualified and has insufficient levels of training and development or otherwise perceived to be less competent. In many organizations, indicators of management capabilities therefore include management knowledge, skills and aptitudes. Integrating the managerial knowledge of individuals, an organization achieves its managerial capabilities.

The study also concludes that the practices that lead to reduction in delay on implementation of projects financed by RUBiS are use of efficient project-specific activate, assigning well trained workers for specific tasks, good project planning and controlling, conflict resolution during project implementation, establishment of good governance, good public accountability, management and good forecasting of work plan, estimation project duration, assigning specific tasks to project teams and also assigning projects to specific teams.

Aligned with the above conclusion, the researcher proposes the following corrective measures that should be considered by concerned stake holders in order to reduce project implementation delay regarding RUBiS financed projects. These include: As finding of the study shows poor project initiation is the most determinants of project delay so that any business initiators should select project those are more familiar and interesting for them and scope of project should be established, controlled and must be clearly defined and be limited. This includes the amount of the systems implemented and amount of projects process reengineering needed.

Bibliography

Abd El-Razek, M. B. (2008). Causes of delay in building construction projects in Egypt. *Journal of Construction Engineering and Management*, 831.

Adebakin, I. (2016). *Project Delivery Delay: The Nigeria Experience.* Lagos: Yaba College of Technology Lagos.

Ahmed,. (2002). *Construction delays in florida.* Florida.: an empirical study.

Ahmed, S. .. (2003). Delays in Construction: A Brief Study of the Florida Construction Industry , Proceeding of the 39th Annual ASC Conference. Clemson, SC: Clemson University.

Alaghbari, S. E. (2017). The significant factors causing delay of building construction projects in Malaysia . *Engineering, Construction and Architectural Management*, 14 (2) : 192 – 206 .

Al-Ahmadi, H. (2009). *Factors Affecting Performance of Hospital Nurses in Riyadh Region, Saudi Arabia.* International Journal of Health Care Quality Assurance, 22, 40-54.

Al-Hejji, A. (2006). Causes of delay in large construction projects. *International Journal of Project Management*, Vol. 24 No. 4, pp. 349-357.

Alhomidan, A. (2013). *Factors Affecting Cost Overrun in Road Construction Projects in Saudi Arabia.* Semantic Scholar.

Al-Khalil, M. ..-G. (1999). Delays in public utility projects in Saudi Arabia . . International Journal of Project Management.

Arditi, R. .. (1985). Reasons for delays in public projects in Turkey . Construction Management and Economics.

Arditi. Akan, a. G. (2017). Reasons for delays in public projects in Turkey. *Construction Management and Economics*, 3: 171 – 181.

Armstrong K. (2003). *Job Analysis and Job Design, Human Resource and Personal Management, 4th Edition.* India: Tata McGraw-Hill Publishing Company Limited.

Assaf, A.-H. (2006). Causes of delay in large construction projects . International Journal of Project Management.

Ayudhya, B. I. (2011). *Evaluation of Common Delay Causes of Construction Projects in Singapore.* Semantic Scholar.

Baake, P. K. (2007). *A regulatory framework for new and emerging markets.* Available at SSRN 978730.

Bakker A, Albrecht, & Leiter, M. (2011). *Key questions regarding work engagement. .* European Journal of Work and Organizational Psychology, 20, 4-28.

Bartholomew, S. .. (1998). *Construction Contracting/Business and Legal Principles . Upper Saddle River,.* NJ: Prentice-Hall .

Basak, M. C. (2018). *Risk Factors Affecting Delays in Upstream Natural Gas Mega-Projects: An Australian Perspective. SPE Asia Pacific Oil and Gas Conference and Exhibition.* Australia: Brisbane.

Borg, W. &. (2009). *Educational research: An introduction. (5th ed.).* New York: Longman.

Bramble, B. .. (1987). *Construction Delay Claims.* New York: John Wiley.

Campbell, G. M. (2014). *Communications skills for project managers.* New York: AMACOM.

Chan, W. .. (1998). Contributors to construction delays. Construction Management and Economics .

Dennis, D. P. (2016). *Project leadership: understanding and consciously choosing your style.* Project Management Institute.

Edinburgh, G. (2003). *Sustainable Construction and the Regulatory Framework Summary Report.* Scotland.: University of Dundee.

Eskerod, P. &. (2014). *Managing for stakeholders. In J. R. Turner (Ed.), Gower handbook of project management (5th ed.).* England: Gower: Aldershot,.

Fatma M. et al. (2018). *The relationship between job design and nurses' satisfaction.* SOJ Nursing & Health Care.

Frimpong, Y. .. (2003). Signifi cant factors causing delay and cost overruns in construction of groundwater projects in Ghana . *Journal of Construction Research* , 1 (2) : 175 – 187.

Fugar, F. a.-B. (2010). Delays in Building Construction Projects in Ghana. *Australian Journal of Construction Economics and Building*, 103-116.

Fung, I. .. (2006). Construction delays in Hong Kong civil engineering projects . Journal of Construction Engineering and Management.

Grag, P. & Rastogi, R. (2015). *A New Model for Job Design: Motivating employee's Performance.* Journal of Management Development, 25(6), 572–587.

Grant, A. M. (2017). *Relational job design and motivation. .* Academy of Management Review, 32(2), 393–417.

Halbesleben. (2010). *A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences.* London: In A. B. Bakker and M. P. Leiter (Eds.), Work engagement: A handbook of essential theory and practice (pp. 102-117). London.

Hillage, T. a. (1997). Relation to non-participation in. vocational training.

Inceoglu, Ilke and Warr, Peter. (2016). *Personality and Job Engagement. Journal of Personnel Psychology. .* Retreived on February 25, 2013 from: http://www.shef.ac.uk/polopoly_fs/1.157453!/file/Warr_JPP_Personality_and_Engagement_pdf.pdf.

Infrastructure, M. o. (2016). *Energy and Infrastrucure Forum.* Kigali: IPAD Rwanda.

IRIZA, D. (2022). Rwanda has been exploring the use of gas from Lake Kivu for cooking, industrial use and vehicles. *Africa News.*

Kaming, .. P. (2010). Factors influencing construction time and cost overruns on high-rise projects in Indonesia. *Construction Management and Economics* , Pages 83-94.

Kim, H. J., Shin, K. H., & Swanger, N. (2009). *Burnout and engagement: A comparative analysis using the Big Five personality dimensions. .* International Journal of Hospitality Management, 28, 96-104.

Kimemia, J. G. (2011). *Determinants of Project delays in construction.* Mombasa Campus: University of Nairobi.

Kliem, R. (2014). *Effective communications for project management;.* Taylor & Francis group, Ne. .

Lawrence, M. (2016). *The effect of risk management at project planning phase on performance of construction projects in Rwanda.* Kigali.

Leiter, M. P., & Bakker, A. B. (2010). *Work engagement: An introduction. In A. B. Bakker and M. P. Leiter (Eds.), Work engagement: A handbook of essential theory and practice (pp. 1-9). .* London and New York: Psychology Press.

Love D, H. G. (2002). Using Systems Dynamics to better Understand Change and Rework in Construction Project Management Systems. *International Journal of Project Management,*, 20 (6), 425-436.

Macey, W. H., & Schneider, B. (2018). *The meaning of employee engagement. Industrial and Organizational Psychology, 1, 3-30.*

Mahoney, J. T. (1995). The management of resources and the resource of management. *Journal of Business Research*, 1995, vol. 33, issue 2, 91-101.

Mansfi eld, N. .. (1994). Causes of delay and cost overruns in Nigerian construction projects . International Journal of Project Management.

Mardiana, P. P. (2018). The Effect of Risk Management on Financial Performance with Good Corporate the Governance as a Moderation Variable. *Management and Economics Journal*, 2(3),2598-9537.

McCaffer, H. (2013). *Modern Construction Management, 5th edn. .* UK: Blackwell Science.

Mudau R., a. P. (2009). Project Control and Risk Management for Project Success: A South African Case Study. *Proceeding of the Portland International Conference,*, 1409-1414.

Niazi, G. a. (2017). *Significant Factors Causing Cost Overruns in the Construction Industry in Afghanistan.* Procedia Engineering .

Odeh, A. a. (2002). Causes of construction delay: traditional contracts. *International Journal of Project Management*, 67-73.

Olive M Mugenda, A. G. (2007). *Research Methods: Quantitative and Qualitative Approaches.* African Centre for Technology Studies.

Ostroff, C., & Judge, T. A. (2017). *Perspectives on organizational fit. New York:.* Erlbaum/Routledge.

P Lofgren, S. B. (2016). Proceedings of the Ninth ACM International Conference on Web. *Scholar.*

Rahman, A. (2013). Modeling Causes of Cost Overrun in Large Construction Projects with Partial Least Square-SEM Approach: Contractor's Perspective. *Research Journal of Applied Sciences, Engineering and Technology*, 5(6):1963-1972.

REG. (2018). *Rwanda Energy Group*. Retrieved from Rwanda Energy Group: https://www.reg.rw/what-we-do/petroleum/

Remington, K. (2011). *Leading complex projects.* London: Gower.

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2020). *Job engagement: Antecedents and effects on job performance.* Academy of Management Journal, 53, 617-635.

Roberts, Chernyshenko, & Goldberg. (2015). *The structure of conscientiousness: An empirical investigation based on seven major personality questionnaires.* Personnel Psychology, 58, 103-139.

Roque R., M. M. (2013). Understanding the Impact of Project Risk Management on Project Performance. *Journal of Technology management and innovation,*, 8, 0718-2724.

Ruqaishi, M. a. (2015). Causes of Delay in Construction Projects in the Oil and Gas Industry in the Gulf Cooperation Council Countries: A Case Study. *Journal of Management in Engineering* , 1943-5479.

RURA. (2022). *DOWNSTREAM PETROLEUM SUB-SECTOR.* Retrieved from Rwanda Utilities Regulatory Authority: https://rura.rw/index.php?id=66

Sageer, D. S. (2012). *Identification of Variables Affecting Employee Satisfaction and their impact on the organization. .* IOSR Journal of Business and Management, Volume 5 (Issue 1), 32-39.

Sambasivan, M. a. (2007). Causes and effects of delays in Malaysian construction industry. *International Journal of Project Management*, 517-526.

Shen, L. .. (1997). Project risk management in Hong Kong. International Journal of Project Management.

Shirom, A. (2020). *Feeling energetic at work: On vigor's antecedents. In A. B. Bakker and M. P. Leiter (Eds.), Work engagement: A handbook of essential theory and practice (pp. 69-84).* London and New York: Psychology Press.

Shona, M. R. (2019, Revised June, 2023 22). *Sampling Methods | Types, Techniques & Examples.* Retrieved from Scribbr: https://www.scribbr.com/methodology/sampling-methods/

Simanjuntak, J. a. (2015). *Factors Affecting Delay of Upstream Oil and Gas Construction Projects in Indonesia: Case Study 2012-2013.* Nusa Dua, Bali, Indonesia: SPE/IATMI Asia Pacific Oil & Gas Conference and Exhibition.

Sweis, H. S. (2017). Delays in construction projects: The case of Jordan. . *International Journal of Project Management*, 26: 665 – 674.

Taylor, F. W. (2004). *The Principles of Scientific Management. .* New York, NY: Harper and Brothers.

Tumi, S. O. (2009). Causes of delay in construction industry in Libya. *The International Conference on Administration and Business, , ICEA-FAA Bucharest*, 14-15.

Tzvi, R. A. (2002). *Risk Management Practices, Project Success and Technological Uncertainty.* R&D management,.

Ubaid, U. (1991). *Factors Affecting Contractor Performance.* Dhahran: King Fahd University of Petroleum and Minerals.

Van Den Bosch, .. a. (2006). Exploratory Innovation, Exploitative Innovation, and Performance: Effects of Organizational Antecedents and Environmental Moderators. *Management Science*, Vol. 52, No. 11 (Nov., 2006), pp. 1661-1674 (14 pages).

Vlex. (1971, April 28). *Dawnays Ltd v F. G. Minter Ltd and Trollope and Colls Ltd.* Retrieved from VlexJustis: https://vlex.co.uk/vid/dawnays-ltd-v-f-792521269

Ward. (2015, February 4). *Cash flow analysis,.* Retrieved from http://sbinfocanada.about.com/cs/management/g/cashfl owanal. htm,

Yang, J. a. (2010). Causes of delay in the planning and design phases for construction projects. *Journal of Architectural Engineering*, 80-83.

Yin, R. K. (2009). *Case Study Research: Design and Methods: Volume 5 of Applied Social Research Methods.* SAGE,.