

Influence of Project Management Information Systems on the Performance of Projects in Rwanda; A Case of Ruhengeri Referral Hospital Projects, Musanze District

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Abstract

This study focuses on the evaluation of influence of Project Management Information Systems on the performance of projects in Rwanda. The study aimed at finding out whether the influence of Project Management Information Systems on the performance of projects in Rwanda were effective most especially in Ruhengeri Referral Hospital projects /Musanze District. The design of this study was a qualitative and quantitative research design. During the data collection, the researcher used quantitative methods where the questionnaire distributed to the respondents from Ruhengeri Referral Hospital project, in addition documentation technique have been used where the research will visit the libraries and referring to different reports for data collection purposes. This study has based on 102 respondents as sample size from the total population of 320 employees from Ruhengeri Referral Hospital. These respondents were selected purposively where the researcher used his own judgment to select the respondents who can meet his research purpose. Data analyses were made with the support of SPSS version 20. The study findings have revealed that Project Management Information Systems has significant influence on the Performance of Projects.

Keywords: Project information collection; Project information analysis; Project reporting.

1. Introduction

It has a long history of providing project managers with an accurate and dependable information system that may assist them in making decisions, planning, and administering the project. This trend began in the 1960s with Luca Pacioli's presentation of the "double-entry accounting system."

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"Following to use of American military from this technology and contemporary with the emergence of computers in businesses, the first official use of PMI was the punch-card in offices, which made managers capable of managing employees' working hours [1]. The world has undergone an evolution when it comes to structural change and technological transformation. However, Africa is still lagging behind in this modern world whose development is largely determined and led by technological advances. Increasingly, ICT plays an important role in determining levels of development and the quality and accessibility of services in our modern societies. It is in this context that governments and world leaders made a strong commitment towards building a people-centered, inclusive and development-oriented Information Society for all, where everyone can access, utilize and share information and knowledge [2] And finally, the result of these concepts was called Management Information Systems or MIS [3]. The project management needs a modern management system within the organization. This category, however, have not be created in the presence of an information system and requires changes in the skills of project management team, increase in IT literacy of organizations and project management team, and also reformation of procedures and structures within the organizations. Here, it is natural that the projects because of their diverse and nonrecurring nature for a structure different from daily routines of the organizations[4]. World is experiencing a new industrial and technological revolution which is bringing about a significant, fast and extensive transformation of society and economic activity resulting in a rapid transformation of the processes of production as well as the transmission of goods and services produced. The ICT systems are pervading virtually all forms of human endeavor: work, education, leisure, communication, production, distribution, and marketing. ICT is a pervasive input to almost all human activities and breaks barriers to human development by providing content to knowledge, breaking barriers to participation and breaking barriers to economic opportunity (e.g. by requiring less initial capital investment and by being more labor intensive [5]. Africa is still in the early stages of development, and most ICT applications have been trial projects. The moment has come for best practice to be rigorously evaluated, replicated, and scaled up. ICTs are now assisting Africa in overcoming long-standing market failures such as infectious diseases and the public-goods elements of having a literate and numerate populace[6]. Without information about the project and how it links to the larger organizational environment in which it is found, project planning, organizational design, project stakeholder motivation, and meaningful project reviews simply cannot be carried out [7]. However, even though project managers in many industries are increasingly using Project Management Information Systems, little is known about the properties of these systems that contribute to project performance. The Ruhengeri Referral Hospital uses PMIS, a system that helps them improve budget control, financial reporting, financial planning, effective communication, channel of information, and meeting deadlines, as well as a storage area tool for organizational information and making it available to all their stakeholders.

2. Methods

A qualitative and quantitative research design was used in this study to find out whether the influence of Project Management Information Systems on the performance of projects in Rwanda were effective most especially in Ruhengeri Referral Hospital projects /Musanze District. This study has based on 102 respondents as sample size from the total population of 320 employees from Ruhengeri Referral Hospital. These respondents were selected purposively where the researcher used his own judgment to select the respondents who can meet his research purpose. Data collection was done by using a questionnaire. Statistical analysis using inferential statistics was

used considering p-value 0.05 as the level of significance and 95% Confidence Interval (95% CI).

3. Results and Discussion

This section is concerned with the analysis of data collected for the research as well as the interpretation of the findings to assist the researcher in reaching a conclusion. The study's conclusions are based on both primary and secondary data analysis, and they are presented in the form of tables and percentages using SPSS.

Table1: ANOVA^a on project information collection from Ruhengeri Referral Hospital projects.

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|--------------|----------------|-----|-------------|----------|-------------------|
| 1 Regression | 1324.255 | 1 | 1324.255 | 2689.655 | .000 ^b |
| Residual | 49.235 | 100 | .492 | | |
| Total | 1373.490 | 101 | | | |

a. Dependent Variable: project performance

b. Predictors: (Constant), project information collection

Source: Survey August 2021

The findings from above table indicated that statistical significance of the variables is 0.000. From the ANOVA, the *P*-value is less than 0.05 and this show that the model is a perfect fit for the data. The findings indicated that there is positive relationship between project information collection and project performance for Ruhengeri Referral Hospital.

Table 2: ANOVA^a on Project Reporting from Ruhengeri Referral Hospital projects.

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|--------------|----------------|-----|-------------|----------|-------------------|
| 1 Regression | 1322.321 | 1 | 1322.321 | 2584.235 | .000 ^b |
| Residual | 51.169 | 100 | .512 | | |
| Total | 1373.490 | 101 | | | |

a. Dependent Variable: project performance

b. Predictors: (Constant), project reporting

Source: Survey August 2021

The results from above table indicated that statistical significance of the variables is 0.000. From the ANOVA, the *P*-value is less than 0.05 and this show that the model is good fit for the data. The findings indicated that there is positive relationship between project reporting and project performance for Ruhengeri Referral Hospital in Musanze District.

Table 3: ANOVA^a about project performance from Ruhengeri Referral Hospital.

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|----------|-------------------|
| 1 | Regression | 1363.326 | 3 | 454.442 | 4381.629 | .000 ^b |
| | Residual | 10.164 | 98 | .104 | | |
| | Total | 1373.490 | 101 | | | |

a. Dependent Variable: project performance

b. Predictors: (Constant), project reporting, project information collection, project information analysis

Source: Survey August 2021

The results from above table indicated that statistical significance of the variables is 0.000. From the ANOVA, the *P*-value is less than 0.05 and this shows that the model is good fit for the data. The findings indicated that there is positive relationship between project reporting, project information collections, project information analysis and project performance for Ruhengeri Referral Hospital in Musanze District.

Table 4: Correlations between project information collection; project information analysis; project reporting and project performance.

| | | Project information collection | Project information analysis | Project reporting | Project performance |
|--------------------------------|---------------------|--------------------------------|------------------------------|-------------------|---------------------|
| Project information collection | Pearson Correlation | 1 | .973** | .951** | .982** |
| | Sig. (2-tailed) | | .000 | .000 | .000 |
| | N | 102 | 102 | 102 | 102 |
| Project information analysis | Pearson Correlation | .973** | 1 | .969** | .990** |
| | Sig. (2-tailed) | .000 | | .000 | .000 |
| | N | 102 | 102 | 102 | 102 |
| Project reporting | Pearson Correlation | .951** | .969** | 1 | .981** |
| | Sig. (2-tailed) | .000 | .000 | | .000 |
| | N | 102 | 102 | 102 | 102 |
| Project performance | Pearson Correlation | .982** | .990** | .981** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 102 | 102 | 102 | 102 |

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

Above table reveals that questionnaires were responded by 102 respondents from Ruhengeri Referral Hospital projects, the correlation is statistically significant as *p* value is 0.00 which is less than 0.05 and Pearson Correlation value is between 1-0.990 for both variables which shows that there is a perfect linear relationship. Based on that results the researcher proved that there is positive and very strong relationship between project information collection; project information analysis; project reporting and project performance of Ruhengeri Referral Hospital projects.

4. Conclusion

The Project Management Information System is very important for every project because provides major advantages such as collection of information and improvement of project communication. Project Management

Information system is the main pillar of quick communication for its users within project organization and facilitate in quick service delivery, quick reporting, scheduling, planning, budgeting and easy control and monitoring. It facilitates the managers to analyze the transactions or operations made from projects/organization and lead them to take better decisions, hence improve the performance of Ruhengeri Referral Hospital project. The study findings revealed that the project reporting is highly contributed on the performance of Ruhengeri Referral Hospital, The results from the respondents show that the Project Management Information System highly contributed on the project information analysis from Ruhengeri Referral Hospital and findings revealed that the project information collection highly contributed on the project design from Ruhengeri Referral Hospital.

5. Recommendations

The projects in Rwanda need to use the project management information system, because this system enabled them to improve the project implementation and lead to the project performance

The hospitals projects managers are advised to encourage all employees to adapt on PMIS because it is the main pillar for implementing the project plan.

The Hospital projects manager need to provide trainings to the employees on PMIS software so that they can all be involved in project implementation and be able to process all activities through the system as channel of quick communication and store of project data.

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