

Effect of Intergrated Financial Management Information System on Financial Management at Nyanza District Hospital, Rwanda

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Abstract: the effect of Integrated Financial Management Information Systems (IFMIS) on Rwandan hospitals financial management was determined. The questions of the study on how risk management enhanced by the adoption of IFMIS influences Rwandan Hospitals financial management, How tracking mechanisms affects Rwandan Hospitals financial management, How real-time reporting impact Rwandan Hospitals financial management and How staff competency on IFMIS affect Rwandan Hospitals financial management effectively were answered. Findings in correlation show that there is a positive and very strong correlation between Risk management and the effect of IFMIS on financial management which indicates that risk management has significant influence of on the effect of IFMIS on financial management .The results show that there is a weak negative correlation between tracking mechanisms and the effect of IFMIS on financial management at Nyanza DH. This indicates that out of the considered other factors of the effect of IFMIS on financial management, tracking mechanisms have significant relationship with financial management. Findings show also that there is a negative and weak correlation between real time reporting and the effect of IFMIS on financial management at Nyanza DH, Rwanda. This indicates that, out of the considered other determinants affecting IFMIS on financial management at Nyanza DH, real time reporting has negative and weak relationship on financial management at Nyanza DH.

Keywords: Financial Management, Intergrated Financial Management Information System, Nyanza District Hospital

I. INTRODUCTION

Government accounting existed before formal budgets. Diamond and Pokar (2006) said government accounting centered on double-entry bookkeeping, which was incoherent. Then bookkeeping became accounting with measurements and transactions. In the 20th century, expenses accounting and management accounting were clarified, and the system as a whole evolved to satisfy varied purposes connected to business decision making. These techniques impacted government accounting.

Before 2006, government institutions lacked simplified accounting and reporting and good bookkeeping. High reliance on manual methods and procedures led to inefficiency and ineffectiveness in government activities. Corruption and fraud resulted from lack of openness and accountability. Introduction of the paper should explain the nature of the problem, previous work, purpose, and the contribution of the paper. The contents of each section may be provided to understand easily about the paper. Government agencies employed manual systems and procedures.

The Integrated Financial Management System (IFMS), introduced to developing nations in the 1990s, as one technique to handle finances successfully, according to Mohammed Aminatu (2015) of Korea University. Most countries failed to implement the system due to a lack of capacity building and over ambition. This research examined the impact of IFMIS on financial management at a District Hospital in Rwanda. IFMIS computerizes public expenditure management operations including budget preparation, execution, and accounting with a fully integrated system for line ministries and other spending agencies.

1.1 Statement of the Problem

In Rwanda, many institutions including Hospitals have been involved in financial scandals ranging from funds mismanagement as revealed by Office of Auditor General in his 2015 reports. The Auditor-General Obadiah Biraro reported that as many as 15 district hospitals mismanaged funds. He also stated that District hospitals continue to experience weaknesses in accounting and management of funds at their disposal. The gaps noted include omission of transactions from the books of account, un-reconciled balances, unjustified suspense accounts and unsupported transactions among others.

Studies on the impact of IFMIS have been conducted in different institutions including ministries and districts but no study has been conducted in NBA's like District Hospitals, thus this research sought to assess the effect of IFMIS on financial management in Rwandan District Hospital.

1.2 Significance of the study

This study helped in identifying the effective financial management framework that is more applicable to public institutions. It highlighted any challenges that may be uniquely relevant in the adoption and use of Integrated Financial Management Information Systems (IFMIS) and how such factors could be different from those identified by other studies. Identification of these factors would help governments to assess their situations as far as the existence and dominance of these factors is concerned.

This study served as reference to students, lectures, and other academicians who would visit library to undertake further investigation in the related problem and also served as reference to Policy makers as the research will help them in decision making as the result of the study will enhance the chances of successful implementation of strategies to steer the institutions towards gaining reliability and adequate financial management.

II. Review of related literature

2.1 Conceptual review

2.1.1 Financial Management

Paramasivan and Subramanian (2009), defined financial management as an integral part of overall management. It is concerned with the duties of the financial managers in the business firm. According to Solomon financial management was defined as the effective utilization of capital funds.

2.1.2 IFMIS

MINECOFIN to advise end users of the IFMIS Integrated Financial Management information system IFMIS helps integrate information relating to government assets and money inflows and outflows. IFMIS is web-based software used by the Rwandan government to reduce staff effort. This system was meant to ease government processes including budget planning, execution, and report consolidation.

2.1.3 Risk Management

Fredrick, Peninah and Sarah (2014), established that the scope and functionality of IFMIS can vary across countries, but sub-systems normally include accounting, budgeting, cash management, debt management and related core treasury systems. IFMIS is a standard system for government entities, including federal, state, and municipal governments. IFMIS integration guarantees that all users conform to uniform standards, regulations, and processes, lowering the risk of misuse of public resources.

2.1.4 Financial Tracking

Donors are increasingly concerned about the quality of public sector financial management in emerging nations. A properly working IFMIS helps enhance governance by giving financial information that managers can utilize to run programs, develop budgets, and manage resources. Sound IFMIS systems, along with consolidated treasury operations, may assist developing nation governments acquire efficient financial control, increase transparency and accountability, and reduce political discretion and corruption (Jean, 2017).

2.1.5 Real-Time Reporting

To standardize the government financial accounting and budgeting process, computerized system for treasury management together with policy framework and institutional reforms must be implemented to the letter (Wamsteker, 1989). The implementation of financial systems requires consolidation and rapid compilation of large amounts of data across a set of financial offices and spending units dispersed across the company and the functional process associated with these systems are repetitive in nature and follow a prescribed set of rules. In such an environment the IFMIS provides government financial managers with a set of tools to consolidate, compile and access reliable and timely financial information for decision making process (Joerges&Dehouse, 2002).

2.1.6 Staff Competency

The business world has seen an increase in use of technology and innovative machines, but the place for human resources cannot be underestimated in improving the performance and profitability of the firms. The human resources manage and run the machines, technological application and systems and form an integral part of the organization. When adopting different technological systems and applications, and organizational approaches, mechanisms and operations, there is need to consider the skills, experiences, knowledge and competencies of the staff/human resources (Alsabbah& Ibrahim, 2016).

2.2 Theoretical Review

2.2.1 Ludwig von Bertalanffy model System theory

In Systems theory, Wang (2005) refers to information in the sense that assuming information does not necessarily require any conscious mind, and patterns circulating (due to feedback) in the system it may be considered information. Information in this sense might be interpreted as representation, while not being developed or provided for that purpose. Systems theory compares systems, according to Rudholf (2015). Kang'ethe (2002) defines a system as a collection of connected and interacting components working together to accomplish a goal. Chado (2016) argued that the necessity for efficiency and effectiveness necessitates establishing harmony and synergy between the human resource as the core resource that controls other resources, on the one hand, and contemporary ICT, on the other, to achieve office secretarial management goals. There is a strong requirement to understand human resource perception and possible conflict areas while contact with current ICT. InfoTech combines computer and communication technologies.

2.2.2 DeLone and McLean Model of Information Systems Theory

According to DeLone and McLean's (2003) in assessing the effect of IFMIS use in public sector, the main reforms concerned quality and service quality was included in the model. The model is interpreted by system quality (technical quality) and information quality (output quality) which affect both consumption and user satisfaction. The amount of consumption can affect user satisfaction and vice versa either positively or negatively. Use and user satisfaction are antecedents to individual impact which impact on the organization.

2.2.3 Rodger's Theory of Diffusion of Innovation

Rodgers develops diffusion of innovation (DOI) hypothesis in 1962; it's one of the oldest social science ideas. It originates in communication to describe how an idea or product spreads across a community or social structure. People accept a new concept, habit, or product as a consequence of this dissemination. In the present research, the above idea allows us to investigate IFMIS acceptance by national government departments. Adoption is the choice to utilize an invention fully, whereas rejection is the decision not to. This logic will explain IFMIS adoption and opposition in national government departments.

2.3 Empirical Literature Review

2.3.1 Risk Management and Financial management

Fredrick and his colleagues said that deploying IFMIS aims to improve state financial management and encourage the adoption of contemporary public spending methods in line with worldwide norms and benchmarks (Fredriket al, Peninah and Sarah, 2014).

According to these authors, a successful implementation of IFMIS requires a defined risk management objective and the expertise of workers and other stakeholders who use the system, which is preferably an IT product (IT).

2.3.2 Financial Tracking and Financial management

In designing IFMIS, the current manual budget execution and accountability procedures appear to have been automated without considering a better, more efficient alternative. The public sector, especially the civil service, is essential for delivering public services that are vital to a state's economy (Njeri, 2016). Ineffective or limited service delivery harms people's quality of life and national growth.

Sammy Lamba (2018) found that one significant benefit of IFMIS in a public company is monitoring financial information by governance authorities. Financial procedures and functions are allocated to various groups in an organization, from data entry clerks to cashiers, operational accountants to chief financial controllers, who report to the parastatal's directors. Transparency requires a steady flow of correct information from lower-level employees to top executives. IFMIS's financial information tracking qualities include effective monitoring, rapid report generating, regulating, and planning.

2.3.3 Real-Time Reporting and Financial management

Julias and Khalundu (2014) studied the effects of integrated financial management information system on public sector performance. They found that governments implement IFMIS to integrate financial data since finance has its own revenue numbers. Procurement has a different version, and other business units may have their own. Because everyone uses the same system, an IFMIS establishes a single, unchallengeable truth (Norris & Wade, 2002).

Sammy Lamba (2018) found that IFMIS improved real-time reporting in companies, which encouraged online access to data and consumers' information used to charge them and decide whether to disconnect them from services. The system must be trustworthy and effective to fulfill these aims. These goals require personnel integrity and political goodwill. This includes reducing corruption and embezzlement by junior or top management. It's a vital tool for the government to monitor financial transactions and usage by departments and parastatals.

III. Methodology

This study adopted a descriptive research design which is concerned with describing the characteristics of a particular individual, or groups (Kothari, 2010). This method is suitable in describing determinants of IFMIS implementation in public institutions; since it allows flexible data collection procedures and the respondents will not be manipulated. Inferential statistics will be done through correlation, regression (model summary and ANOVA) as well as multiple regressions to test the relationship between the independent variables (Risk Management, Tracking Mechanism, Real Time Reporting, staff competency) and the dependent variable (Financial Management). The regression mode that will be adopted is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Financial Management

X1 = Risk Management

X2 = Tracking Mechanism

X3 = Real Time Reporting

X4 = Staff Competency

β_0 = Constant,

$\beta_1, \beta_2, \beta_3$ and β_4 = Regression Coefficients

ε = Error Term

IV. Findings

4.1 Correlation results

Findings in correlation table 1.10 show that there is a positive and very strong correlation between Risk management and the effect of IFMIS on financial management given that Pearson correlation is 0.664** with the p-value of 0.000, which is less than standard significance level of 0.01. which indicates that risk management has significant influence of 66.4% on the effect of IFMIS on financial management .The results show that there is a weak negative correlation between tracking mechanisms and the effect of IFMIS on financial management at Nyanza DH as Pearson correlation is -.339 with the p-value of .067 which is greater than the standard significance levels of 0.01. Findings show also that there is a negative and weak correlation between real time reporting and the effect of IFMIS on financial management at Nyanza DH, Rwanda Pearson correlation is -.114 with the p-value of .549, which is greater than standard significance level of 0.01. This indicates that, real time reporting has negative and weak relationship of 11.4% on financial management at Nyanza DH.

		finance management	risk management	Tracking mechanism	real time reporting	staff competence
finance management	Pearson Correlation	1	.644**	-.339	-.114	-.043
	Sig. (2-tailed)		.000	.067	.549	.820
	N	30	30	30	30	30
risk management	Pearson Correlation	.644**	1	-.077	-.126	-.356
	Sig. (2-tailed)	.000		.685	.508	.053
	N	30	30	30	30	30
Tracking mechanism	Pearson Correlation	-.339	-.077	1	.253	-.011
	Sig. (2-tailed)	.067	.685		.178	.955
	N	30	30	30	30	30
real tim reporting	Pearson Correlation	-.114	-.126	.253	1	.157
	Sig. (2-tailed)	.549	.508	.178		.407
	N	30	30	30	30	30
staff competence	Pearson Correlation	-.043	-.356	-.011	.157	1
	Sig. (2-tailed)	.820	.053	.955	.407	
	N	30	30	30	30	30

4.2 Regression analysis

42.1 Model Summary

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The findings showed that effect of IFMIS related factors (i.e.: risk management, tracking mechanisms, real time reporting and staff competency) has contributed R=0.731a of the variation on financial management at Nyanza DH as explained by r² of 0.534 which indicates that model is very strong correlated, as the independent variables represented by the effect of IFMIS related factors explained the dependent variable (financial management at Nyanza DH) and show that the model is a good prediction.

Mo del	R Square	R ed R Square	Std. Adjust ed R Square	Error of the Square Estimate	R Change	Change Statistics			Sig. Change	F Change
						F Change	df1	df2		
1	.73	.534	.459	.3831	.534	7.152	4	25	.001	
1a										

a. Predictors: (Constant), staff competence, Tracking mechanism, real time reporting, risk management

b. Dependent Variable: finance management

4.2.2 ANOVA

The results of the findings above revealed that the level of significance was 0.001(b) this implies that the regression model is significant in predicting the relationship between effect of IFMIS related factors (i.e.: risk management, tracking mechanisms, real time reporting and staff competency) and financial management at Nyanza DH. The findings also showed level of fitness model of 7.152 which is positive with p-value of 0.001b less than both standard significance levels of 0.05 and 0.01.

Model	Sum Squares	df	Mean Square		F	Sig.
1	Regression	4	1.050		7.152	.001b
	Residual	25	.147			
	Total	29				

a. Dependent Variable: finance management

b. Predictors: (Constant), staff competence, Tracking mechanism, real time reporting, risk management.

4.3 Regression Coefficients

The study sought to establish the extent to which effect of IFMIS related factors (i.e.: risk management, tracking mechanisms, real time reporting and staff competency) as representing independent variable impact financial management at Nyanza DH as Y. Based on these variables the following regression equation was obtained: as Y is f(X); therefore, $Y = -2.191 + 1.425x_1 + (0.142x_2) + 0.015x_3 + 0.169x_4 + 1.731$.

The multiple linear regression equation showed that financial management at Nyanza DH always depend on a constant factor of -2.191 nevertheless of the presence of other factors in factors influencing the effect of IFMIS.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-2.191	1.731		-1.266	.217
risk management	1.425	.302	.694	4.724	.000
Tracking mechanism	-.142	.070	-.287	-2.024	.054
real time reporting	.015	.148	.015	.104	.918
staff competence	.169	.126	.199	1.345	.191

V. Conclusion and Recommendation

The model summary in Table 11 in coefficient of determination was used to explain whether the model is a good predictor. From the results of the analysis effect of IFMIS related factors (i.e.: risk management, tracking mechanisms, real time reporting and staff competency) has contributed $R=0.731a$ of the variation on financial management at Nyanza DH as explained by r^2 of 0.534 which indicates that model is very strong correlated, as the independent variables represented by the effect of IFMIS related factors explained the dependent variable (financial management at Nyanza DH) and show that the model is a good prediction.

The study recommends that for a better performance of financial management in District Hospitals, full implementation of IFMIS should be done and encouraged. It also recommends that trainings should be continuous and this will enable the staff to have adequate knowledge to use the integrated system to improve financial management.

A properly working IFMIS helps promote accountability by giving managers with real-time financial information to administer plans of action, establish budgets, and manage resources. For this reason, further empirical investigations in different regions and countries are needed. The methodology that has been chosen to achieve the research objectives was limited to questionnaires. This study looked at 4 only in independent variables. The researcher recommends further researchers to investigate the other factors that affect financial management in Rwandan hospitals. Further research should be carried out in other public entities to ascertain whether these findings are universal. Therefore, the researcher opens the doors for further researchers to consider other factors which have not been considered in this study.

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