An Assessment of How Integrated Financial Management Information System Enhances Financial Decision Making at TANESCO and TTCL, Tanzania

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Abstract

This study sought to find out the extent to which financial managers use IFMIS tools to generate financial information required to make informed financial decisions, especially in financial planning and capital budgeting. The study was conducted at TANESCO and TTCL, headquarters, Dar es Salaam. The study was quantitative aiming at describing the state of affairs as it existed in these organizations. The sample size consisted of 34 respondents drawn from 204 employees of the above mentioned organizations. The sampling unit consisted of all financial managers and IS officers of the above mentioned companies. To analyze data, the researcher used frequency counts, percentages, and correlation analysis. The findings indicated that 80.09% financial managers use IFMIS tools in generating financial planning information which contributes to the efficiency of their financial decision making while only 56.01% of them use IFMIS tools in capital budgeting, which shows that almost half of managers were making capital budgeting decisions without basing on the information generated through IFMIS. Recommendations are made to CFOs of both TANESCO and TTCL to improve the use of IFMIS in capital budgeting to be able to generate required, timely and adequate information for decision-making.

Keywords: Integrated Financial Management Information Systems, Financial information, Capital Budgeting, Financial Planning

Abbreviations:

CFO: Chief Financial Officer

IFMIS: Integrated Financial Management Information Systems

HQ: Headquarter

IS: Information Systems

TTCL: Tanzania Telecommunications Company Limited

TANESCO: Tanzania Electric Supply Company Ltd

1. Introduction and Background

Despite IFMIS wide number of tools and high capability to collect, process and provide timely and accurate financial information, the extent to which financial managers use them to carry out their tedious daily tasks to generate financial information to enhance their financial decision is still unsure, hence the motive of this study.

Financial decision making is an important managerial effort in any organization. This effort requires accurate, timely and relevant information. According to Aminu (1986), information systems are one of the major issues and indices of successful financial planning. Where appropriate information required for planning is not available at the appropriate time, organizations have a potential threat to poorly made decisions.

The more multifaceted an organization's arrangement is the greater the coordination within and between sections and departments. Nevertheless, central to the needed coordination is information. This observation is reinforced by Murdick and Ross (1971), when they opined that information is very essential to the survival of any organization. As organizations grow, complexity and an increased rate of change make appropriate information processing capacity unavoidable, hence the need of management information systems.

Burstein (1986) points out that Management Information Systems (MIS) do not have to be computerized, but with today's large, multinational corporations, computerization is a must for a business to be successful. Boland and Hirschheim (1987) defined the term "Financial Management Information Systems" as computer-based financial management systems which support financial managers in decisions concerning the financing of a business and the allocation and control of financial resources within a business.   Nevertheless, World Bank (2000) case study shows that adequate use of IFMIS enhances effective financial decision making. Other researches such as Ajayi and Omirin (2007) revealed that IFMIS was not adequately used for decision making on long-term planning, short-term planning and budgeting in most business organizations. Following these findings, this study

examined the extent of the use of IFMIS in the context of Tanzania business environment.

2. Problem Statement and Objectives

Speed in gathering and communicating information is vital particularly in financial management where money is at stake.   Where the appropriate information required for planning is not available at the appropriate time, there is a possibility of poor priority and poor decisions. There is a wide agreement that IFMIS, with their rapid ability to manipulate and summarize enormous quantities of data, give financial planners the flexibility to explore the financial effects of alternate strategies, hence enhance financial management by providing real-time financial information that financial managers can use to make informed decisions, such as to formulate budgets, and manage financial resources. However, notwithstanding its wide number of tools and high capability to collect, to process and provide timely and accurate financial information, the extent to which financial managers efficiently make the most use of IFMIS to carry out their tedious daily tasks to enhance their decision making is relatively unknown. The purpose of this study therefore was to describe the extent to which financial managers use IFMIS to enhance the financial decision making in financial planning and capital budgeting, at TANESCO and TTCL with reference to Rational Expectation theory.

3. Theoretical Framework

This study is guided by the Rational Expectations Theory propounded by Embretson (1999). This theory demonstrates how information is very important in finance and economics. The theory of rational expectations says that the actual price will only deviate from the expectation if there is an 'information shock' caused by information unforeseeable at the time expectations were formed. In other words, the actual price is equal to its rational expectation:

$P = P* + \varepsilon$

$E[P] = P*$

Where $P*$ is the rational expectation and ε is the random error term, which has an expected value of zero, and is independent of $P*$.

Rational Expectations Theory defines this kind of expectations as being identical to the best guess of the future (the optimal forecast) that uses all available information. Thus, it is assumed that outcomes that are being forecast do not differ systematically from the market equilibrium results. As a result, rational expectations do not differ systematically or predictably from equilibrium results. That is, it assumes that people do not make systematic errors when predicting the future, and deviations from perfect foresight are only random. The hypothesis of rational expectations addresses this criticism by assuming that individuals take all available information into account in forming expectations. Though expectations may turn out incorrect, they will not deviate systematically from the expected values.

4. Conceptual Framework

Reinchel and Ramey (1987) define a conceptual framework as a set of broad ideas and principles taken from relevant fields of inquiry and used to structure a subsequent presentation. The problem under study can be conceptualized as follows:
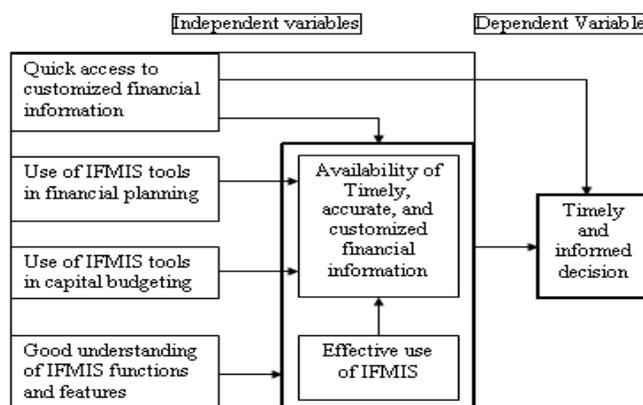
5. Hypothesis

Based on the conceptual framework above, the following are hypotheses which guided this research.

H01: There is a positive relationship between the levels of management and the extent to which financial managers access financial information from IFMIS.

H02: Financial managers use at a great extent the IFMIS tools to generate various financial planning reports.

H03: Financial managers use at a great extent IFMIS tools to perform capital budgeting tasks.

H04: Financial Managers have a good understanding of the functions and features of IFMIS.

6. Methodology

The research design adopted was a descriptive survey. The study population consisted of 204 employees of TANESCO (HQ) and TTCL (HQ) companies, in Dar es Salaam.   From the population, a sample of 34 respondents by using a purposive sampling method was drawn. This sample consists of all financial managers and IS officers for they are the right respondents in the sense that they are the only employees in these organizations who had the knowledge and understanding of the research problem in hand. The primary data was collected using questionnaires and secondary data were collected using existing literature and journal articles. The correlation analysis and descriptive statistics were used to analyse and present results.

7. Data Processing

Data were processed using SPSS. The data were analyzed using correlation analysis for hypothesis one and frequency counts, and percentages for hypotheses two, three and four.   The correlation analysis the researcher used to test the null hypothesis one sought to measure the degree of relationship between two variables: the management level and the managers accessibility to financial information through IFMIS. Concerning hypotheses two, three, and four, the researcher used percentages to describe the state of affairs as per research objectives. This study was not a comparative study and therefore data from both companies were combined in the data analysis.

8. Results and Discussion

The extent to which financial managers effectively use the IFMIS in their financial decision making is   a function of various factors including but not limited to their level of education, how timely they get required information, their familiarity with the software functions, their experience in the field, their level of management, assuming that other factors are held constant. These factors call for following financial managers' decision-making mathematical model:

$Di = \beta_0 + Ei + Xi + Ki + Ti + Ki + Mi$

Where: Di = Soundness of a financial decision to be made

β_0 = Constant, the value of Di when all other variables are zero.

Ei = Education level of the financial manager

Xi = Experience of the financial manager in finance field

Ki = Knowledge of the financial manager about the functionality of the software

Ti = The time it takes to get the required information for decision-making

Mi = Managerial level

9. Hypothesis One (H01)

The null hypothesis one (H01) stated that there is a positive relationship between the levels of management and the extent to which financial managers access financial information from IFMIS. Since information required for decision-making differs from one managerial level to another, the test of Hypothesis One (H01) sought to find out whether financial managers really access different financial information according to their managerial levels, i.e. top, middle and low level.   Respondents' responses to test this hypothesis were collected through question 6 of the questionnaire which sought to know the extent to which financial managers access financial information through IFMIS according to their managerial levels. The scales were "High Access", "Moderate Access", and "Low Access". The contingency table in the appendix, Figure 1, is a result of the cross tabulation between two variables, i.e. financial managers levels of management and the extent to which they access information from IFMIS. Figure 1, presents the correlation between the two variables.

9.1 Discussion of hypothesis one (H01)

The researcher tested the null hypothesis one, i.e., H01, using the spearman correlation that the researcher generated by using SPSS, which provided a correlation coefficient between the two variables namely, financial managers levels of management and the extent to which they access information from IFMIS. Anderson, et al. (2002) define the correlation coefficient as a descriptive measure of the strength of the linear association between two variables, x and y. They explain that values of the correlation coefficient are always between -1 and +1. A value of +1 indicates that the two variables x and y are perfectly related in a positive linear sense. A value of -1 indicates that x and y are perfectly related in a negative linear sense. Values of the correlation coefficient close to zero indicate that x and y are not linearly related. Back to the hypothesis testing, the correlation coefficient is 0.871. It is closer to 1. With reference to the above discussion, this correlation coefficient indicated that there was a strong relationship or association between the two variables, i.e. financial managers levels of management and the extent to which they access information from IFMIS. In a nutshell, as a financial manager assumed higher position he got a privilege to the higher access to financial information through IFMIS, which provided him an advantage to access enough information for financial decision making, as the theory of rational expectations, which is the base of the Efficient-Market Hypothesis, highlighting the importance of information in financial decisions.

10. Hypothesis Two (H02)

The null hypothesis two, (H02) stated that financial managers used at a great extent the IFMIS tools to generate financial planning reports. The alternative hypothesis (HA2) was: "Financial managers do not use at a great extent the IFMIS tools to generate various financial planning reports."

The intention was to find out which tasks could be performed by the IFMIS, the tasks that financial managers were performing, among those tasks which could be performed using IFMIS, and, definitely, the tasks which financial managers were performed using IFMIS, among those tasks that they were performing and which also could be performed by using IFMIS. The objective was to find out the extent to which financial managers were using IFMS in performing their financial tasks, especially in generating financial planning reports and tasks.

10.1 Substantiation of hypothesis Two (H02)

Statistics show that the IFMIS was capable of performing 84.9% of the listed tasks and respondents performed 69.3% percent of the mentioned financial tasks supported by IFMIS. Among those 69.3% tasks, 55.5 % of them were performed using IFMIS while IFMIS could support 84.9% of the tasks. Among those tasks, financial managers performed 69.3% of them where 55.5% of these were performed by financial managers using IFMIS tools.

10.2 Discussion of hypothesis Two (H02)

In mathematical context, 69.3% representing the reports and tasks performed by financial managers among the tasks which could be performed using IFMIS, correspond to a 100% of the manager's routine tasks. Among those routine tasks, financial managers could perform 55.5% percent of them using IFMIS. This percentage represents $[(0.555/0.693)*100]= 80.09\%$ of their routine tasks. Therefore, it was concluded that financial managers used IFMIS at 80.09% percent in performing their financial tasks, (or 0.8009, closer to 1) especially in generating financial planning reports. This percentage supported the null hypothesis stating that financial managers were using at a great extent the IFMIS tools to generate various financial planning reports and rejects the alternative hypothesis (HA2) which stated that financial managers were not using at a great extent the IFMIS tools to generate various financial planning reports. The use of IFMIS tools in generating financial planning reports was far from the mid-way. Therefore, given that IFMIS provided timely, accurate and required information for decision making, given that financial managers used these tools at 80.09%, it implied that financial managers got required and timely financial information generated from the financial reports through IFMIS to enhance their financial decision-making.

11. Hypothesis Three (H03)

The third null hypothesis (H03) stated that financial managers used at a great extent IFMIS tools to perform capital budgeting tasks. On contrary, the alternative hypothesis (HA3) stated that financial managers were not using at a great extent IFMIS tools to perform capital budgeting tasks. The intention was to find out the extent to which financial managers were using the IFMIS capacity. This was sought by looking at the number of tasks that the IFMIS could perform and, among them, the tasks that financial managers were performing by help of IFMIS.

11.1 Substantiation of hypothesis Three (H03)

Research findings showed that, on average, IFMIS was capable of performing 69.1% of capital budgeting tasks as

they were listed on the research questionnaire, but financial managers were using IFMIS to perform an average of only 38.7% of tasks which were supported by the IFMIS.

11.2 Discussion of hypothesis Three (H03)

As enlightened above, the researcher found that in capital budgeting, among the common financial tasks, IFMIS was capable of performing 69.1% of them which represented 100% of IFMIS ability in capital budgeting in the context of the study scope. Among those tasks, financial managers performed only 38.7% of their routine tasks using the IFMIS tools, which represent $[(0.387/0.691)*100]= 56.01\%$ of the tasks that IFMIS supported. With reference to the null hypothesis, H03, which stated that financial managers were using at a great extent IFMIS tools to perform capital budgeting tasks, the above statistics show that financial managers were neither using IFMIS at great extent nor at little extent. The statistical value 56.01% is almost half a way, showing that financial managers were only using almost half of the IFMIS capacity to carry out their financial tasks in capital budgeting. The financial tasks, especially capital budgeting tasks, that they performed using IFMIS were only a half of the tasks that they could perform using the IFMIS. Thus, based on these results the researcher rejected the null hypothesis stating that financial managers were using at a great extent IFMIS tools to perform capital budgeting tasks. Rather, financial managers were using IFMIS tools at satisfactory level, rather than at great extent, to perform capital budgeting tasks. The researcher, hence, accepted the alternative hypothesis which stated that financial managers did not use at a great extent IFMIS tools to perform capital budgeting tasks.

12. Hypothesis Four (H04)

The fourth hypothesis, (H04) stated that financial managers had good understanding of the functions and features of IFMIS while the alternative hypothesis (HA4) stated that financial managers had no good understanding of the functions and features of IFMIS. At this juncture, the objective of the study was to find out whether financial managers had better understanding of IFMIS functions and features or not. The understanding of IFMIS functions and features is very important in enhancing financial decision-making based on IFMIS generated information. The researcher believed that if financial managers had no good understanding of the functions of IFMIS, they would spend a lot of time performing a trivial task which otherwise could take few minutes to be completed. Additionally, they would underutilize IFMIS because they would not know that IFMIS could do more than what they knew. Poor understanding of IFMIS functions and features would also lead to dissatisfaction and demoralisation in using it.

12.1 Substantiation of hypothesis Four (H04)

The test of understanding of IFMIS functions and features of financial managers was based o the following areas: the researcher needed to find out whether financial managers were trained on how to use IFMIS. It was revealed that 88.24% of financial managers were given trainings on how to use IFMIS. Through these trainings, they acquired knowledge and understanding on how to use IFMIS tools. Additionally, 76.47% of financial managers were provided with IFMIS user manuals which showed and described functions and features of IFMIS. Moreover, through IFMIS user manuals, users could make reference to them whenever they would feel that they lacked certain IFMIS skills.

Even more, 73.53% of financial managers understood that IFMIS provided timely and current information that they needed to make financial decisions and 64.71% of them understood that IFMIS provided accurate and adequate information to them which enhanced their financial decision-making process. On average, 75.74% of all financial managers were conversant with the functions of IFMIS. According to the Rational Expectations Theory regarding financial market forecasting based on available information, information is power, especially in finance where money is at stake.

12.2 Discussion of hypothesis Four (H04)

From the above findings, it was found out that financial managers were trained on how to use IFMIS and, additionally, they were provided with IFMIS user manuals for reference in case of need. Through these trainings and manuals, they gained knowledge and understanding of IFMIS functions. Furthermore, financial managers understood that IFMIS provided timely, accurate, current and adequate information required for making informed financial decision as highlighted by the theory of Rational Expectation.

Thus, based on these findings, researchers accepted the null hypothesis stating that financial managers had good understanding of the functions and features of IFMIS and rejected the alternative hypothesis (H$_A$4) which stated that financial managers had no good understanding of the functions and features of IFMIS.

13. Conclusions and Recommendations

The study sought to find out the extent to which financial managers were using available technology, especially IFMIS, to enhance their financial decision-making. In testing hypothesis H_01, the correlation coefficient between the two variables, x and y, was 0.871. This correlation coefficient indicates that there was a strong relationship or association between the two variables, i.e. financial managers' levels of management and the extent to which they access information from IFMIS.

Concerning H_02, it was found out that financial managers were using IFMIS at 80.09% percent in performing their financial tasks, especially in generating financial planning reports. This percentage supported the above null hypothesis and rejected the alternative hypothesis (H_A2) which stated that financial managers were not using at a great extent the IFMIS tools to generate various financial planning reports. Therefore, given that IFMIS provided timely, accurate and required information for decision making, given that financial managers were using these tools at 80.09%, it implied that financial managers got sufficient and timely financial information generated in the financial reports through IFMIS to enhance their financial decision-making.

With reference to the null hypothesis, H_03, stated above statistics showed that financial managers are neither using IFMIS at 56.01%, which is neither at a great extent nor at little extent. It was rather almost half way, showing that financial managers were only using almost half of the IFMIS capacity to carry on their financial tasks in capital budgeting. Thus, based on these results the researcher rejected the null hypothesis stating that financial managers used at a great extent IFMIS tools to perform capital budgeting tasks. Rather, financial managers were using IFMIS tools at satisfactory level, rather than at great extent, to perform capital budgeting tasks. The researcher, hence, accepted the alternative hypothesis which stated that financial managers were not using at a great extent IFMIS tools to perform capital budgeting tasks.

As far as H_04 is concerned, it was found out that financial managers were trained on how to use IFMIS and, additionally, they were provided with IFMIS user manuals for reference in case of need. Through these trainings and manuals, they gained knowledge and understanding of IFMIS functions. Furthermore, financial managers had an understanding that IFMIS provided timely, accurate, current and adequate information required for making informed financial decision as highlighted by the theory of Rational Expectation. Thus, based on these findings, the researcher accepted the null hypothesis stating that financial managers had good understanding of the functions and features of IFMIS and rejected the alternative hypothesis (H_A4) which stated that financial managers had no good understanding of the functions and features of IFMIS.

Concerning the association between the access to financial information generated by IFMIS by financial managers and their managerial levels, findings revealed that financial managers had access to financial information relevant to their nature of financial decisions. However, it was revealed that some managers, commonly known as BBC (Born Before Computers, as opposed to BAC which meant Born After Computers or else dot coms), meaning those managers who attended their schools when computers were not yet introduced, hence had little experience with computers, despite that they were directly connected to the financial information database, still, requested other staff to access the information and print it on their behalf. They were described as being technophobia. At this point, the researcher recommended the management of TANESCO and TTCL to build a culture of using available ICT facilities such as IFMIS to timely access real-time and accurate information required to enhance success of their decision making in their organizations.

With regard to the extent to which financial managers were using IFMIS tools to generate various financial planning reports, the findings showed that financial managers at great extent were using IFMIS tools, i.e. at 80.09%. If TANESCO and TTCL management could consider increasing this magnitude, it is the expectation of the researcher that more information would be timely available through various financial and planning reports and the financial decision making process would be based on current situation and timely information. Nevertheless, concerning the extent to which financial mangers were using IFMIS tools in performing capital budgeting tasks, findings showed that they were using IFMIS to perform only almost a half of their routine tasks, hence decision making in capital budgeting was not mostly based on the information generated by IFMIS. The researcher recommended to the CFOs of both TANESCO and TTCL to build a culture of their staff to use IFMIS tools in capital budgeting so as to enrich the financial information they got and as a result enhance the decisions they daily make regarding capital budgeting.

Last but not least, the research findings showed that 75.74% of financial managers understood the functions and features of the IFMIS they were using leaving 24.26% of them having no good understanding of IFMIS functions and features. This percentage is significant in the sense that, for they had no good understanding of IFMIS aspects, they impliedly were not using effectively the technological tools available to them, hence lacked required timely financial information generated by IFMIS while they are involved in financial decision making. Therefore, the researcher recommended to the CFOs of both TANESCO and TTCL to increase trainings to make sure the 24.26%

of managers are trained and have got good understanding of IFMIS functions and features.

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Appendix

Data collected, summarized and analyzed by the researcher.

Table 1 Population and sample size

Organization	Population	Department	Managers	Sample size
TANESO	96	Finance	11	
		IS	3	14
TTCL	108	Finance	14	
		IS	6	20
Total	**204**		**34**	**34**

Figure 1: Contingency table

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.870	.117	9.996	.000[c]
Ordinal by Ordinal	Spearman Correlation	.871	.122	10.009	.000[c]
N of Valid Cases		34			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.