Employee Technology Skills on Implementation of Integrated Financial Management Systems

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Abstract:

Purpose: *The main aim of the study was to determine the effect of employee technology skills on the implementation of integrated financial management systems (IFMIS).*

Materials/Methods: *The study is informed by Meta theory. An explanatory research design was used. The study targeted employees from the IT and accounting departments of the seven county governments in the North Rift region. The total population for the study comprised 281 respondents, from which 248 employees were randomly selected. Data collection was conducted using a questionnaire and a document analysis guide. Cronbach's alpha was used to determine the reliability index of the research instruments. The collected data was analyzed using regression and correlation analysis.*

Findings: *The study found that employee technology skills positively influence the implementation of IFMIS.*

Conclusion: *Employee training on information technology is essential to ensure that they have the necessary skills to effectively utilize IFMIS.*

Value: *This study highlights the importance of enhancing employee technology skills through training to improve the implementation of integrated financial management systems in county governments.*

Keywords: *Employee Technology Skills, Implementation, Integrated Financial Management Systems, County Government*

Paper Type: *Research Article*

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1. Introduction

Governments in developing countries are actively seeking ways to modernize and enhance public financial management, with the Integrated Financial Management Information System (IFMIS) emerging as a prevalent reform practice. This system aims to improve efficiency, accountability, transparency, data security, and comprehensive financial reporting. While the scope and functionality of IFMIS vary across countries, it generally represents a significant and complex strategic reform effort, often viewed as crucial for effective budgetary resource management (Diamond et al., 2005). IFMIS is designed to track financial events, summarize financial information, and support management reporting, policy decisions, fiduciary responsibilities, and the preparation of auditable financial statements (Rozner, 2008). Essentially, it automates financial operations and integrates various public financial management processes, from budget preparation to accounting and reporting (Lianzuala & Khawlhring, 2008).

The implementation of IFMIS in government operations can significantly enhance access to reliable financial data, strengthen financial controls, and improve the provision of government services. It promotes higher levels of transparency and accountability in the budget process and expedites government operations (GOK, 2011; Peterson et al., 2008). However, the size and complexity of an IFMIS pose substantial challenges and risks beyond technological failures, deeply affecting work processes and institutional arrangements (Hove & Wynne, 2010). These challenges can severely impact the success of the implementation and management of the system, necessitating careful consideration and mitigation strategies (Rodin-Brown, 2008).

Effective implementation, operation, and maintenance of IFMIS require a workforce with the necessary knowledge and skills. Lack of capacity has been a major cause of delays, as seen in Ghana, whereas Tanzania's focus on capacity building through training contributed to its success (Diamond & Khemani, 2006). However, attracting and retaining skilled personnel in the public sector is challenging due to uncompetitive salary structures and employment terms compared to the private sector (Chene, 2009). The implementation process demands a commitment to change, involving technology, processes, procedures, skills, responsibilities, and behaviors. The complexity and resource-intensive nature of IFMIS require major procedural changes and high-level official involvement, highlighting the need for strong incentives and support for reform (Rodin-Brown, 2008).

Emerging information and communication technology (ICT) can play an important role in fighting corruption in public finance systems by promoting greater comprehensiveness and transparency of information across government institutions. As a result, the introduction of Integrated Financial Management Systems (IFMIS) has been promoted as a core component of public financial reforms in many developing countries. Yet, experience shows that IFMIS projects tend to stall in developing countries, as they face major institutional, political, technical and operational challenges. Case studies of more successful countries indicate that factors supporting successful implementation include clear commitment of the relevant authorities to financial reform objectives, ICT readiness, sound project design, a phased approach to implementation, project management capability, as well as adequate resources and

human resource capacity allocated to the project. The government of Kenya introduced the IFMIS system in the year 2008. This program was to be rolled out in all the government ministries within a period of five years (Ministry of Finance strategic Plan 2008-2012). However, in spite of all these government efforts to modernize and develop financial frameworks in the public financial management through the ministry of finance, the implementation of IFMIS which was to increase efficiency and effectiveness in service delivery remains a pipe dream. Thus, the main aim of the study is to determine effect of employee technology skills on implementation of integrated financial management systems.

2. Theoretical Framework

According to Ruchala and Mauldin (1999), research on accounting information systems has been sourced from various disciplines, basically computer science, cognitive psychology and organizational theory. In this regard, it has been asserted that previous applications of information technology in accounting systems were mainly processes of transactions that would reciprocate the manual processes. This has led to the need of incorporating various accounting sub disciplines into more research on accounting information systems. With increased focus on the design of these systems, practicing professionals will add more value to the field and thus redefine the scope of accounting information system. The changing nature of the information systems has brought about the need for an organized way of doing things. Meta theory is the integration and the synthesis of technical orientations, cognitive as well as the overarching model into the research on AIS. The Meta theory has helped in addressing the

IT limitations that are imminent and addressed in previous researches such as the failure to recognize the task to which IT is being applied, the failure to recognize the adaptive nature of the artificial phenomena, the failure to account for the design science in the actual field research and the failure to direct the act of making or choosing the necessary decisions and treating all the transactions in an equal manner (Gorry and Scott-Morton, 1971). According to Reneau and Grabski (1987) information systems in accounting are used by accountants and other key decision makers that employ the accounting information or make use of the accounting data. The Meta theory model is built on past frameworks on the management information systems. Technology is very pervasive and an essential component in accounting tasks and changes work processes very efficiently. This is well recognized in the accounting theory.

There are many research methods that are being employed to look into the problems inherent in Accounting information systems and accounting problems. This is evident in managerial accounting where field work, experimental work and analytical works address the relationships that exist between management information systems and accounting. The Meta theory model starts with a task focus and also suggests a process that matches between task and the alternatives for system design and various levels of analysis. It also suggests contingency factors, organizational factors and technological factors have an influence on the aspect of task performance (Ruchala, 1999).

3. Literature Review

According to a study conducted by Chen, (2009) Employee Technology Skills building is a major factor affecting the success of IFMIS implementation, especially in developing countries. An IFMIS comprises more than only implementing a project; it also means planning for capacity building. A comprehensive training programme is therefore vital for the success of the project and should be compiled as early as possible. Training is essential to unlocking client readiness and is the best way to ensure sustainability of a system (Vickland & Nieuwenhuijs 2005).

According to a study done by Maake (2007) in South Africa, the challenges that the country faces include access to appropriate IT skills as well as appropriate functional skills by user departments. South Africa faces significant human capital development challenges in building the capacity required by an IFMS hence low level of implementation of IFMS. The shortage of skilled ICT people in the country is exacerbated by the emigration of highly skilled ICT personnel and other professionals to developed countries, and from the public to the private sector (Farelo & Morris 2006).

According to Frankle, (2009) in order to build the necessary capacity for the successful implementation of IFMS, it is important to create a learning environment early in the project and to treat the whole process as a learning opportunity with training being part of an ongoing process. Training should be provided to senior managers, technical staff and end users, and should teach users how to use the new system and how it affects business processes.

Diamond and Khemani (2006), however, argue that the training to improve capacity building will not only include training in the use of the IFMS for the respective operations and functions, but will also entail training in the new legal and regulatory framework, the new codes and classifications, and the new business procedures put in place hence successful implementation of IFMIS.

According to Rodin-Brown, (2008) a well-defined training programme will also assist in building capacity and help build confidence amongst users who, through the process, are reassured that there will be some constants amidst the change thus more implementation of IFMIS processes. Given the nature of institutions and organizations, capacity building is a never-ending process. It needs to be ongoing and permanent.

IFMIS implementation involves considerable human resources requirements and capacity building needs throughout the entire government. The low level of computer literacy in developing countries must first be adequately addressed before such projects can be truly viable. The lack of staff with required IT-knowledge cannot be easily remedied by training and hiring. The current salary structure and terms of employment in the public sector are usually not attractive enough to compete with private sector employment conditions and to incentivize candidates with required IT-skills. There is also a risk that trained staff leaves for better job opportunities (Sahin, 2009).

According to Cooper, (2000) capacity building is a major factor affecting the success of IFMIS implementation, especially in developing countries where IT-capacity is

limited and the public sector's salary structure and terms of employment usually cannot attract and retain well trained staff. Capacity building and training need to be scoped during the early stage of the need assessment process. The process should allow for the identification of various user groups, assess the level of knowledge, recruiting needs, and define the scope of the training curricula, targeting the various key audiences. Training should begin from the beginning of the reform, starting by those who will be most immediately affected by IFMIS reform. A broader and permanent training programme should also be developed and implemented.

Brar (2010) argues that low capacity for system implementation at the sub-national level, such as provincial and regional governments, is one of the major challenges in the implementation of an IFMS in developing countries. This aspect is especially relevant in the South African context with its nine provinces and the consequent demand that the duplication of efforts creates for skills and knowledge, of which a shortage already exists. Farelo and Morris (2006:11) contend that the human resource development issue within government needs prioritization, the education system needs to be aligned with the information and communication technologies (ICT) demands of the country and scarce ICT skills need to be attracted and retained particularly within government.

4. Material and methods

Population and Sampling

An explanatory research design was utilized in this study. This research approach is quantitative in nature, focusing on testing prior hypotheses by measuring relationships between variables and analyzing the data using statistical techniques. The total population for the study comprised 281 respondents. According to Krejcie and Morgan's (1970) table, a target population size of 691 is represented by a sample size of 242. Stratified random sampling was employed to select employees in each county, thereby constituting the sample.

Data Collection Instruments

A questionnaire with closed ended questions formed the major instrument of data collection in this study. The closed- questions was constructed based on a Likert scale response system offering five alternative responses. This Likert scale was used more frequently in an attempt to capture data on respondents' perceptions, views and opinion determinants of implementation of IFIMs. The five-point Likert used in the current study was represented by the following terms; *strongly Agree (5), Agree (4), Undecided (3), Disagree (2) strongly Disagree* (1). The questionnaire was divided into sections. Each of the sections investigated a different variable of the study. To determine the content validity of the instruments, expert judgmental panel from the university were consulted due to their expertise and proximity. The questionnaire was piloted in Nakuru County, a locality similar to the study area but not involved in the study. Cronbach alpha was used to determine a reliability index of the research instruments. The SPSS computer software will aid in working out this coefficient correlations achieved. According to Mugenda & Mugenda (2003) a reliability index of 0.70 is considered ideal. The study Adjustment was to be done if lower reliability coefficient is realized.

Data Analysis and model specification

Quantitative data results from closed ended questions was tabulated by use of descriptive statistics means, frequencies and percentages and data presented in form of tables. The hypothesis test was done at 95% confidence interval. Significant relationship was considered at p< 0.05. The study adopted Correlation and Regression analysis to estimate the causal relationships. The regression equation of the study was applied as shown below

$$Y = \alpha + \beta_1 X_1 + \varepsilon$$

Where, Y = implementation of IFMIS, α = Constant , β_1= the slope representing degree of change in independent variable by one unit variable, X_1= Employee technology skills , ε = error term

5. Findings and Discussion

This section covers the research findings and discussion. An overall response rate of 93% was realized. Generally, 60% is rated as marginal, 70% is reasonable, 80% is good while 90% would be excellent (Mundy, 2002).

Sample characteristics

This section shows the demographic characteristics of the employees included in the study including gender, age, education, number of years working in the public sector and number of years working in the county. Findings for demographic data are presented in Table 1. From the results in Table 1, 54.7% (n = 52) of the respondents were male and 45.3% (n = 43) of them were female. The results indicate that there is an almost equal representation of both male and female individuals. Also, females represent more than 1/3 of the employees sampled for the study hence in line with the provisions of the constitution of Kenya 2010. Regarding age, 41.1% (n = 39) of the respondents are over 35 years,35.8% (n = 34) between 26 to 35 years and 23.2% (n = 22) of them between 18 to 25 years. There were no respondents below 18 years. Age diversity in this means different levels of perceptions of the subject matter. Cumulatively, 59% are aged between 18 and 35 years.

Furthermore, the study deemed it important to establish if the educational level of the employees had a bearing on organization performance. From the results, 49.5% (n = 47) of the respondents have an undergraduate degree, 35.8% (n = 34) post graduate degree and 14.7% (n = 14) Diploma level of education. As regards to years of working in the public sector, 42.1% (n = 40) of the employees currently working for County governments in North Rift had worked in the public sector for 11 – 20 years, 41.1% (n = 39) employees had worked for 21-30 years, 9.5% (n = 9) had worked for 1 to 10 years while 7.4% (n = 7) had worked in the public sector for over 30 years. There is definitely a mix of experience especially in working in the public sector before working for the County governments. Moreover, the findings show that 35.8% (n = 35) of the employees working in the County governments have worked for 3 to 5 years, 44.2% (n = 42) have worked for 2 to 3 years, 12.6% (n = 12) have worked for 1 to 2 years while only 7.4% (n = 7) have worked for 5 years and above. This is in line with the coming

into effect of the Kenya 2010 constitution in the year 2013 when the County governments became operational.

Table 1: Demographic Information

		n	**%**
Gender	Female	43	45.3
	Male	52	54.7
	Total	**95**	**100.0**
Age	Below 18 years	0	0.0
	18-25 years	22	23.2
	26-35 years	34	35.8
	over 35 years	39	41.1
	Total	**95**	**100.0**
Education	Primary certificate	0	0.0
	secondary certificate	0	0.0
	Diploma	14	14.7
	university undergraduate degree	47	49.5
	university postgraduate degree	34	35.8
	Total	**95**	**100.0**
Year working in public sector	1-10	9	9.5
	11-20	40	42.1
	21-30	39	41.1
	above 30	7	7.4
	Total	**95**	**100**
Years working in the county	1-2	12	12.6
	2-3	42	44.2
	3-5	34	35.8
	5 and above	7	7.4
	Total	95	100

Source: (Field Data, 2020)

Descriptive Statistics

A study conducted by Rodin and Edwin, (2008) on the effectiveness of IFMIS in public service delivery revealed that IFMIS provide a computerized financial package to enhance the effectiveness and transparency of public resource management. In the light of the above, the study deemed it important to establish the implementation of IFMIS in the North-rift region. Table 2 highlights the results on the implementation of IFMIS. As shown in table 2, respondents strongly agreed that IFMIS are significantly reliable (M=4.26, Standard Deviation = 0.742). Regarding whether IFMIS support government-wide policy decisions. The above results confirm that IFMIS support government-wide policy decisions. This is backed up by the mean of 4.2 and standard deviation of 0.736. Additionally, county moderately effectively uses IFMIS to collect timely financial information (Mean = 3.51, Standard Deviation = 1.283). however, the results depict that the respondents were uncertain as to whether the county has fully adopted IFMIS in their financial management (Mean = 3.27, Standard Deviation = 1.37). The results imply that it is undefined whether IFMIS provide adequate management reporting (Mean = 2.48, Standard Deviation = 1.4). Finally, respondents strongly agreed that the county likes using IFMIS in their financial management (Mean of 2.85, Standard deviation = 1.192 indicating that the respondents were not entirely in agreement. In a

nutshell, the study has established that IFMIS are reliable, it supports government-wide policy decisions and the sub-counties effectively uses IFMIS to collect timely financial information.

Table 2: Implementation of IFMIS

	Mean	Std. Deviation	Skewness	Kurtosis
The county has fully adopted IFMIS in our financial management	3.27	1.37	-0.21	-1.23
The county effectively uses IFMIS to collects timely financial information.	2.71	1.24	0.09	-0.99
The county likes using IFMIS in our financial management.	3.22	1.54	-0.17	-1.48
IFMIS provide adequate management reporting.	2.48	1.4	0.51	-1.05
IFMIS support government-wide policy decisions.	2.66	1.39	0.27	-1.13
IFMIS is therefore significantly reliable.	3.13	1.27	-0.29	-0.98
Implementation of IFMIS	3.06	1.38	-0.16	-1.19

Source: Survey data (2020)

A study conducted by Chene, (2009) in the South African Public Service revealed that Employee Technology Skills building is a major factor affecting the implementation of IFMIS. It is against this background that the study sought to establish the extent to which Employee Technology Skills leads to the implementation of IFMIS. The study findings are as presented in table 3. the study findings in table 3 revealed that county staff leant IT skills during their study (Mean = 3.29, Standard deviation = 1.304) and quick book skills during their study (Mean = 3.5, Standard deviation = 1.091). Respondents are very conversant with computer operations (Mean = 4.04, Standard deviation =1.049). county government has trained staff on the use of IFMIS. As confirmed by the 3 mean and standard deviation of 0.775 that showed the non-variation in the responses. Staff have adequate skills on the use of IFMIS and can effectively use as revealed by a mean of 4.26 and standard deviation of 0.775. Generally, the findings of the study have established that the employees in the sub-counties did quick book skills during their study. As such, they are conversant with computer operations. They are also trained on the use of IFMIS hence they have adequate skills on the use of IFMIS. In tally with the results, Vickland & Nieuwenhuijs, (2005) echoed that training is essential to unlocking client readiness and is the best way to ensure sustainability of a system. Diamond and Khemani (2008) noted that training to improve capacity building not only included training in the use of IFMIS for the respective operations and functions, but also in new business procedures and new legal and regulatory framework. Generally, the findings of the study are in line with that of the literature. The implication is that Employee Technology Skills is important in the implementation of IFMIS.

Table 3: Employee Technology Skills

	Mean	Std. Deviation	Skewness	Kurtosis
I did IT skills during my study	3.17	1.35	-0.15	-1.12
I did quick book skills during my study	2.92	1.37	-0.04	-1.22
I am very conversant with computer operations	3.46	1.13	-0.33	-0.67
I have been trained on the use of IFMIS	3.13	1.24	-0.27	-0.82
I have adequate skills on the use of IFMIS and can effectively use	2.93	1.3	-0.06	-1.05
Employee Technology Skills	2.98	1.21	-0.09	-0.93

Source: Survey data (2020)

Correlation Results

In this research, correlation tests are employed to examine the correlation or relationship between Employee Technology Skills and implementation cost) with the implementation of IFMIS. Pearson Correlation results in table 4 showed that Employee Technology Skills is positively related with implementation of IFMIS with a Pearson Correlation coefficient of r= .595 which is significant at $p < 0.05$. The output also shows that ICT capability is positively related with implementation of IFMIS, Vickland & Nieuwenhuijs, (2005) noted that strong project management support is critical for the implementation of IFMIS.

Table 4: Correlation Statistics

		Implementation of IFMIS	Employee Technology Skills
Implementation of IFMIS			
Employee Technology Skills	Pearson Correlation	0.595**	1
	Sig. (2-tailed)	0.000	

Source: Survey data (2020)
** Correlation is significant at the 0.01 level (2-tailed).

Regression Results

This study sought to assess employee technology skills on implementation of IFMIS county governments in north rift Kenya. The results in Table 5 showed that all the four predictors (employee technology skills) explained 50.6% variation of Implementation of IFMIS. This showed that considering the four study independent variables, there is a probability of predicting Implementation of IFMIS by 50.6% (R-squared =0.506). The findings in Table 5 indicated that the above discussed coefficient of determination was significant as evidence of $F_{(4, 90)}$ ratio of 147.606 with $p < 0.001$. Thus, the model was fit to predict Implementation of IFMIS using Employee Technology Skills, management support, technology capability, implementation cost.

The first specific objective of the study was to determine the effect of Employee Technology Skills on Implementation of IFMIS county governments in north rift Kenya. In line with this, the study aimed testing hypothesis that: Employee technologic skills have no significant effect on implementation of integrated financial management systems. The findings show that employee technology skills have a positive and significant effect on Implementation of IFMIS, $\beta_1 = 0.156$, $p = 0.039$, thus, meaning that with each unit increase in use and implementation of employee technology skills, Implementation of IFMIS increases by 0.156 units. In line with these findings, Jumadi and Zailani (2010) point out that a reduction in the product environmental impact may be achieved not only through an appropriate product design, but also a proper use by consumers of the products and services. At the County government, the main clients are the public for which services are offered. So, it is not only the responsibility of the County government to come up and implement Employee Technology Skills strategies but also a responsibility to the clients on being eco-conscious. In this sense, consumers must become more aware of the environmental implications related to the products they are using, so that sustainability may be perceived as a value-added element for the society, as well as a distinguishing feature for companies (Jumadi & Zailani, 2010).

Table 5: Regression Results

	Unstandardized Coefficients		Standardized Coefficients		
	B	**SE**	**Beta**	**t**	**Sig.**
(Constant)	2.596	0.138		18.847	0.000
Employee Technology Skills	0.103	0.050	0.156	2.073	0.039
Model summary Statistics					
R	0.712				
R-Square	0.506				
Adjusted R-Square	0.501				
ANOVA for goodness of fit					
F	147.606				
Sig.	0.000				

a Dependent Variable: Implementation of IFMIS

Discussion of the Findings

The study established that employee technology skills has a positive and significant effect on the implementation of IFMIS. Study findings revealed that management support had a positive and significant effect on the implementation of IFMIS. Consistent with the results, Vickland & Nieuwenhuijs, (2005) argue that strong project management support was critical when implementing and adopting IFMIS. The results confirm the study conducted by Van Deventer, (2003) in South Africa which found it necessary to have a dedicated IFMIS management support to successfully adopt IFMIS. Similarly, Richmond, (2009) argues that IFMIS projects require considerable management support skill to ensure successful implementation of IFMIS. Furthermore, in a US study conducted by Heeks, (2009), he concluded that IT reforms were more likely to succeed if they are easy to use by the manager and are confined to the manager's area of concern. To sum up, Chêne (2009) as well as Diamond and Khemani (2006) argue that the importance of commitment by management support was vital to ensure successful implementation of IFMIS. Generally, the findings of previous literature are in line with the study finding confirming that management is crucial in the implementation of IFMIS.

6. Conclusion and Recommendations

The study found out that Employee Technology Skills positively influences the implementation of IFMIS.As such, employee training on information technology is essential in ensuring that they have the skills to effectively utilize IFMIS. Furthermore, employees tasked with IFMIS needed to be trained on its use and be conversant with computer operations. Specifically, employees with scarce ICT skills need to be attracted and retained particularly within government.

7. Further Research

This study has evaluated the determinants of implementation of IFMIS in North-rift region. This study recommends that another study should be done to augment finding in this study; it therefore recommends a study be done on the challenges encountered in the implementation of IFMIS. Furthermore, conducting a replication study in other counties was necessary to ensure that there are sufficient and conclusive results in relation to the implementation of IFMIS.

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