

Integrated Financial Management Information Systems Success Factors in Selected Local Governments Districts of Kanungu and Rukungiri

Arinatwe Winfred¹, Margaret Kareyo², Businge Phelix Mbabazi³
^{1,2,3}School of Computing and Information Technology, Kampala International University

Abstract—This study investigated the success factors of integrated financial management information system in selected local government districts of Kanungu and Rukungiri using by adapting employed the information systems success model of Delone and Mclean (2003) and the CRUT model of Kappos and Rivard (2008) and employing descriptive comparative design. Data was collected from 86 sample size in a total population of 110 using Interviews, observation and questionnaire method. findings revealed that information quality, organisational, technology and user factors were rated very high in Rukungiri and Kanungu with average mean above 3.3; while system and service quality were rated high in both districts of Rukungiri and Kanungu with average mean above 2.8. The study recommended improved IS training and capacity building and encourage IS users in quality participation.

I. INTRODUCTION

According (IFMIS Strategic Plan, 2011-2013) over the past decade, developing, transition and post-conflict countries have increasingly embarked on efforts to computerize their government operations, particularly with respect to public Finance Management (PFM). Most common among these have been efforts to introduce integrated financial management information systems (IFMIS) that computerize and automate key aspects of budget execution and accounting operations across the institutions of government.

Booth and Nsabagasani (2006) stress that IFMIS can enable prompt and efficient access to reliable financial data and help strengthen government financial controls, improving the provision of government services, raising the budget process to higher levels of transparency and accountability, and expediting government operations. Uganda offers an example of a country where introduction of a government IFMIS was overwhelming welcomed and adopted from the start. The implementation of the system began in March 2003 with the mapping and necessary configuration followed by user acceptance and testing operations in February 2004.

Kanungu District was created by the sixth Parliament of Uganda in July 2001. The district comprised two counties with the twelve sub-counties of Kihihi, Kambuga, Nyamirama, Rugyeyo, Rutenga, Kayonza, Mpungu, Kinaaba, Katetete, Nyakinoni, Nyanga, and Kanyantorogo, and the four town councils of Kanungu, Kihihi, Butogota, and Kambuga.

It is bordered by Rukungiri District to the north and east, Kabale District to the south-east, Kisoro District to the south-west, and the Democratic Republic of the Congo to the west. The district headquarters are approximately 60 kilometers (37 mi), by road, north-west of Kabale, and the largest town in the sub-region. This location is approximately 420 kilometers (260 mi), by road, south-west of Kampala, Uganda's capital and largest city. The central coordinates of the district are: 00°57'S, 29°47'E. In 1991, the national population census estimated the district population at 160,700. The 2002 national census estimated the population at 204,700. The annual

population growth rate for the district was calculated at 2.1 percent. It has been estimated that the population in 2012 was 252,100 (Local government's journal, 2016).

Rukungiri district is located in South Western Uganda bordering the Districts of Ntungamo in the East, Kabale in the South, Bushenyi in the North and Kanungu to the West. It lies at an approximate altitudinal range of about 615 m to 1,864 m above sea level. The administrative Headquarters of the district are situated in Rukungiri Town Council about 400 kms from Kampala, the Capital City of Uganda.

IFMIS in Kanungu and Rukungiri began in July 2016 and July 2013 respectively, mapping and necessary configuration, user acceptance and testing operations were also done in both districts. However the districts still faced implementation gaps that needed a solution provided by the new model proposed by this study.

The study employed the information systems success model of Delone and Mclean (2003) and the CRUT model of Kappos and Rivard (2008).

Delone and Mclean stated that "systems quality" measures technical success; "information quality" measures semantic success; and "use, user satisfaction, individual impacts," and "organizational impacts" measure effectiveness success. According to Delone and Mclean (2003), the desirable characteristics of an information system include ease of use, system flexibility, system reliability and ease of learning as well as system features of intuitiveness, sophistication and response times. Further, desirable characteristics of system outputs are in terms of management reports and web pages. For example, relevance, understandability, currency, timeliness and usability. Delone and Mclean (2003) stressed that the quality of the support that system users receive from the IS department and IT support personnel include responsiveness, accuracy, reliability, technical competence and empathy of the personnel staff.

Control, Reliability, User Participation, and Training (CRUT Model) of Kappos and Rivard (2008) stressed that maintenance can be conducted through systems control,

reliability, user participation, and training (CRUT) to ensure information systems success.

Kappos and Rivard noticed that organizations become heavily involved in IS adoption, management is more likely to pay attention to factors that would enable them to properly maintain the quality of the IS. Considering the societal framework in which IS initiatives are established, Kappos and Rivard (2008) declared that the perspectives IS researchers have about systems do not capture the relationship between culture and the method of manufacturing IS. To properly adopt the right IS to accomplish organizational goals, management should consider utilizing systems that can be controlled and maintained.

Other IS researchers have addressed the centrality of reliability in IS success, how IS can be manufactured clearly for control and harmonization of organizational operations, the importance of user participation in IS development and the benefits of training employees on IS maintenance (Spears & Barki, 2010).

However, some scholars claimed that the Delone and Mclean model is incomplete and suggested that more dimensions should be included in the model the other models be proposed. (Seddon, 2014). Therefore, researcher went ahead and proposed a new model that integrates Delone and Mclean model and CRUT that can be used to make IFMIS implementation succeed in local governments of Kanungu and Rukungiri

According to local government scorecard conducted by Advocates For Development And Environment (ACODE) in conjunction with Mending Broken Hearts Uganda (MBHU) in 2016, IFMIS has not only helped Rukungiri and Kanungu local Government to gain effective control over its finances, but also enhance transparency and accountability, reducing political discretion and act as a deterrent to corruption and fraud. However, improvement of these local governments in their performance regarding service delivery is uncertain. The system has occasions of delayed budget planning and execution by providing untimely and in accurate data for budget management and decision-making. Some users adhere to common standards, rules and procedures, with the view to reducing risks of mismanagement of public resources in the district but some activities still remain unaccomplished yet their budget allocations are returned to the coffers of ministry of finance at the end of a given financial years. There have been several studies on the implementation of IFMIS in Uganda especially on the ministry of finance in general but no

critical assessment has been conducted on local governments to ascertain the success factors of IFMIS, this study can help find out success factors that can be used to implement IFMIS and improve general performance of local governments and service delivery. The main purpose of the study was to assess success factors of the integrated financial management information system towards improving performance of local governments.

IFMIS is an information system that tracks financial events and summarizes financial information. It supports adequate management reporting, policy decisions, priority responsibilities and the preparation of auditable financial statements. In its basic form, an IFMS is little more than an accounting system configured to operate according to the needs and specifications of the environment in which it is installed and IFMIS design must carefully meet the functional needs and requirements of agencies, including the accounting and financial management tasks. In some cases, programmes must create interfaces with existing IT systems (Semakula and Muwanga, 2012).

A well-Integrated Financial Management Information System will support government wide as well as agency level policy decisions. It will also integrate budget and budget execution data, allowing greater financial control and reducing opportunities for discretion in the use of public funds. This system will provide information for budget planning, analysis and government wide reporting. It also facilitate preparation of financial statements and provide a complete audit trail in order to facilitate audits (Research Journal of Finance and Accounting, 2014).

1.1 IFMIS Success Factors

This study was guided by the information systems success model adapted from DeLone and McLean (2003) and The CRUT model) of Kappos and Rivard (2008). These outlined the success factors as follows:

System quality

According Delone and Mclean (2003), the overall quality of a system is also one of the most common dimensions along which information systems are evaluated. System quality indirectly impacts the extent to which the system is able to deliver benefits by means of mediational relationships through the usage intentions and user satisfaction constructs. These come in form of reliability, responsiveness, assurance, and empathy to measure service quality.

TABLE 1. Descriptive statistics on information quality.

	Local Government							
	Rukungiri				Kanungu			
	N	Mean	Std.D	Interptn	N	Mean	Std.D	Interptn
The IFMIS addresses local government's needs	43	3.91	.294	Very high	43	3.67	.522	Very high
Information used for different purposes in the local government is always accurate	43	3.86	.516	Very high	43	3.63	.536	Very high
New information is quickly processed and communicated to its local governments	43	3.37	.655	Very high	43	3.16	.721	High
The information systems produce complete information for local government	43	3.56	.502	Very high	43	3.35	.650	Very high
The local governments information system coherently and consistently produce information	43	3.42	.499	Very high	43	3.33	.474	Very high
Local government's information format is produced in a clear underlying form and its context for interpretation	43	3.30	.465	Very high	43	3.14	.601	High

The information system enables the local government to access information when needed	43	3.37	.578	Very high	43	3.44	.590	Very high
Local government's information system produces information which can be combined with other information	43	3.21	.600	High	43	3.14	.560	High
The information system for local government is protected from people natural disasters	43	3.91	.294	Very high	43	3.44	.700	Very high
Information system satisfies appropriate standards related to other dimensions such as accuracy, timeliness, completeness and security	43	3.93	.258	Very high	43	3.37	.578	Very high
Average mean	43	3.58	0.466	Very high	43	3.37	0.593	Very high

Information quality

According to dimensions of information systems model, Information quality refers to the quality of the information that

the system is able to store, deliver, or produce, and is one of the commonest dimensions along which information systems are evaluated.

TABLE 2. Descriptive statistics on system quality.

	Descriptive Statistics							
	Local Government							
	Rukungiri				Kanungu			
	N	Mean	Std.D	Interptn	N	Mean	Std.D	Interptn
IS has up-to-date hardware and software	43	3.95	.305	Very high	43	3.81	.450	Very high
IS for this local government is dependable	43	2.14	.804	Low	43	3.26	.875	Very high
The IS used in local governments are not properly maintained	43	1.51	.506	Very low	43	2.37	.787	Low
IS employees give prompt service to users	43	1.74	.539	Very low	43	2.49	.910	Low
IS employees have the knowledge to do their job well	43	3.93	.338	Very high	43	3.35	.752	Very high
Users of IFMIS have it at best interests of their heart	43	3.93	.258	Very high	43	3.26	.727	Very high
Average mean	43	2.87	0.458	High	43	3.09	0.75	High

Service Quality

Delone and Mclean (2003) explained that with information quality and system quality, information systems are also commonly evaluated according to the quality of service that they are able to deliver.

Kappos and Rivard (2008) in their CRUT model criticized DeLone and McLean's attempt to comprise too much in one model and described it as confusing and erroneously specified.

They emphasised the use of Control, Reliability, User Participation, and Training (CRUT) Model to properly adopt the right IS to accomplish organizational goals, management should consider utilizing systems that can be controlled and maintained as one of delivering quality services.

Control

In responding to the system objectives, organizational management may preserve the quality of their organizational IS by exercising control over the systems. Management should consider exercising control to uphold roles and responsibilities and avoid scope divergence, schedule slippages, and cost overruns.

Reliability

Reliability is defined as the ability of IS to work effectively under obligatory circumstances for a pre-assigned time (Agmon & Ahituv, 2014). Unreliable systems may result in unforeseen problems. For instance, systems may not accomplish the intended tasks and information may be lost.

User participation

User participation in the quality of IS is important for effective maintenance. Prior to 2008, the terms user participation and user involvement had been employing interchangeably in IS examination (Jun and King, 2008).

IS Training and capacity building

Offering various training programs for IS employees would enable them to use the systems to achieve the organization's' goals. Barki (2010) suggests that users' responsibilities and accountabilities should be categorized according to IS roles depending on user involvement in the systems process.

TABLE 3. Descriptive statistics on service quality.

	Local Government							
	Rukungiri				Kanungu			
	N	Mean	Std.D	Interptn	N	Mean	Std.D	Interptn
Local government have control over the systems	43	2.44	.825	Low	43	2.42	.731	Low
Information system has the ability to work effectively under obligatory circumstances for a pre-assigned time	43	2.81	.588	High	43	2.95	.486	High
Local government's Information System is the input of systems production services of the individuals who make use of IS on a regular basis	43	3.14	.413	High	43	3.05	.434	High
Local government offer various training programs for IS to employees to enable them to use the systems to achieve the organizations' goals	43	3.51	.631	Very high	43	3.26	.727	Very high
Average mean	43	2.98	0.614	High	43	2.92	0.595	High

Technology Factors

Moran 1998 and Khaled (2003) argue that Technological change, ICT infrastructure, Electricity availability,

Appropriate technology, Complex project design/large procurement play a very important roles in helping the

decision-makers choose the most adaptable and appropriate IFMIS tools for their environments.

The sheer size and complexity of an Integrated Financial Management Information System (IFMIS) poses significant challenges and a number of risks to the implementation process that go far beyond the mere technological risk of

failure and deficient functionality. Studies conducted in various countries such as Tanzania, Ghana, Uganda, Malawi and Rwanda indicated that there are a number of challenges that may influence the successful implementation of an IFMIS but technological factors out ride the rest (Diamond & Khemani, 2006; Rodin-Brown, 2008).

TABLE 4. Descriptive statistics on technological factors.

	Local Government							
	Rukungiri				Kanungu			
	N	Mean	Std.D	Interptn	N	Mean	Std.D	Interptn
Local government is normally affected by technological change in effecting information systems	43	3.95	.213	Very high	43	3.58	.731	Very high
Local government has a good ICT infrastructure for implementing information systems	43	3.49	.592	Very high	43	3.23	.922	High
Local government has available electricity to support information systems	43	2.67	.837	High	43	2.70	.860	High
Local government appropriately meet technology standards regarding information systems	43	3.12	.625	High	43	3.00	.655	High
Average mean	43	3.31	0.567	Very high	43	3.13	0.792	High

Organization Factors

Implementing any system in the organization brings about changes in processes, roles policies and functions. With these changes come resistance from some of those affected. Hendricks (2012) asserts that resistance to change may come from various stakeholders in the organization such as individuals with vested interests who benefited from previous methods, civil servants who see it as a threat to their jobs and people who resist change for the fear of the unknown. Change management is therefore the process of creating, maintaining and systematically evaluating changes that occur in the organization (Barcan, 2010). This can be done through clear communication, education, training and other methods that emphasize on the need and benefits of the change. This can be

done through various channels such as the media, workshops, seminars or conferences.

The objectives for a project provide the overall guidance for the upfront planning that translates into the future vision for the organization, and the steps needed to accomplish the IT system implementation. This should also result in specified measures of success that can be used to evaluate the outcome of the system implementation. The requirements provide the checklist as to what needs to be accomplished and what needs to be embodied in the software itself, and the implementation plan provides the actual steps to be performed. The project team and project manager should then be evaluated against these outcomes (Grabski & Leech, 2007).

TABLE 5. Descriptive statistics on organisational factors.

	Local Government							
	Rukungiri				Kanungu			
	N	Mean	Std.D	Interptn	N	Mean	Std.D	Interptn
Local government has a clear vision and strategy concerning success factors of information system	43	3.86	.413	Very high	43	3.53	.631	Very high
The district has Government support for information system	43	3.95	.213	Very high	43	3.67	.474	Very high
Local government works under external pressure and donor support for information systems	43	3.95	.213	Very high	43	3.40	.821	Very high
The Local government faces a challenge of organizational resistance when establishing information systems	43	3.93	.258	Very high	43	3.30	.914	Very high
The Local government effectively coordinate the project of information system	43	3.37	.489	Very high	43	3.23	.611	High
Average mean	43	3.81	0.317	Very high	43	3.43	0.69	Very high

User Factors

Kalbasi (2007) found that it is critical to build a cross-functional team. A team with a mix of consultants and internal staff should be created to enable internal staff to develop technical skills for design and implementation. Grabski and Leech (2007) found that an organization, however, cannot completely rely on consultants to implement an IT system, as consultants have limited specific knowledge of the organization's detailed operations. Thus, a close working relationship between consultants and the organization's project team could lead to a valuable skill transfer (Bowen

1998). Somers and Nelson (2001) found that many organizations use consultants to facilitate the implementation process and that these consultants generally have experience in specific industries with comprehensive knowledge about certain modules.

Grabski and Leech (2007) found that a lack of project team expertise is often associated with software development risk. In a survey by Nah (2003), it was found that having competent members in the project team is the most important success factor for IT system implementations. Both business and technical knowledge are essential for IS success (Bingi et al.

1999; Sumner 1999). Grabski and Leech (2007) identified that knowledge; skills, abilities, and experience in both technical and business aspects are all critical factors in determining a project's success or failure. Doom et al. (2009) noted that

attention should be paid to the composition of the project team which should contain both business and well trained technical team members.

TABLE 6. Descriptive statistics on user factors.

	Local Government							
	Rukungiri				Kanungu			
	N	Mean	Std.D	Interptn	N	Mean	Std.D	Interptn
Local government normally rise consumer expectations while establishing information systems	43	3.93	.258	Very high	43	3.30	.887	Very high
Local government has the capacity for training about the project of information systems	43	3.95	.213	Very high	43	3.35	.813	Very high
Local government's employees have good leadership and are committed to their work	43	3.77	.427	Very high	43	3.49	.592	Very high
Average mean	43	3.81	0.317	Very high	43	3.43	0.69	Very high

1.2 Proposed Model

Delone and Mclean (2003) and Kappos and Rivard (2008) explained information quality, system quality, service quality as the major constructs that determines success of information systems. They neglected other key success factors in Kanungu

and Rukungiri context like technological factors, organization factors and user factors, these factors together with performance dimensions of local government performance discussed in the later in this study informed the new model adopted by the researcher.

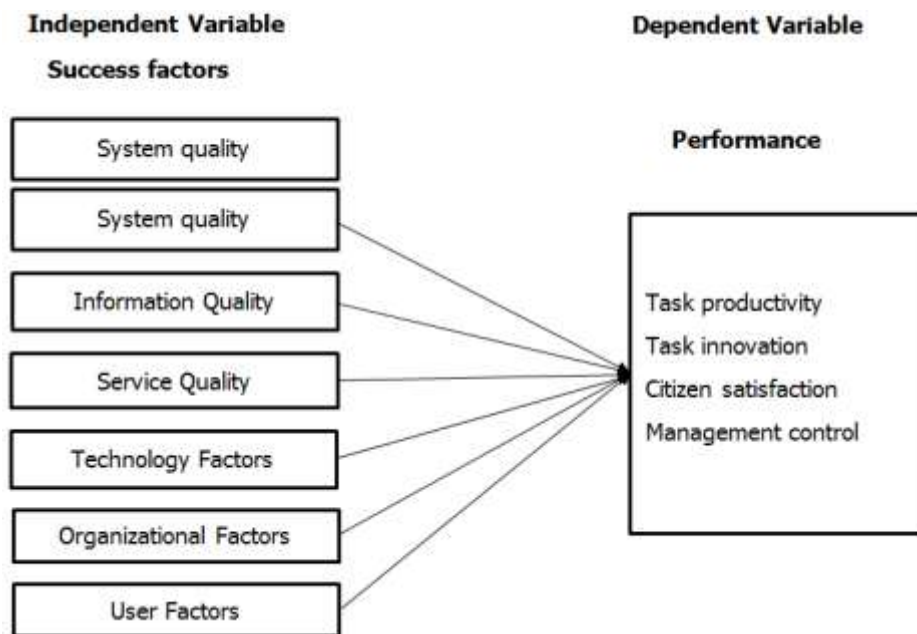


Fig. 1.1. IFMIS success model factors.

Source: McLean and Delone (2003), Kappos and Rivard (2008)

II. RESEARCH METHODOLOGY

The study employed descriptive comparative design. The study used a total population of 110 and a sample size of 86 respondents, specifically finance department staffs, vendors, departmental heads, ICT staff and district engineers. Interview guides, observation guides and questionnaire were used in collecting data.

III. FINDINGS

Descriptive statistics used included means and standard deviation. In regard to IFMIS success factors, findings revealed that information quality was rated very high in

Rukungiri (Av. mean=3.58) and very high in Kanungu (Av. mean=3.37); system quality exist and was rated high in both districts of Rukungiri (average mean of 2.87) and Kanungu (Av. mean=3.09); service quality exists in local governments of Rukungiri (rated high and Av. mean=2.98) and Kanungu (rated high and Av. mean=2.92); technology factors exist in local governments of Rukungiri (rated very high and Av. mean=3.31) and Kanungu (rated high and Av. mean=3.13); organisational factors exist in local governments of Rukungiri (rated very high and Av. mean=3.81) and Kanungu (rated very high and Av. mean=3.43); and user factors exist in local governments of Rukungiri (rated very high and Av.

mean=3.88) and Kanungu (rated very high and Av. mean=3.38).

IV. DISCUSSION

Findings that revealed that information quality and system quality exist high in both districts of Rukungiri agreed with DeLone & McLean (2003) that "... 'service quality,' properly measured, deserves to be added to 'system quality' and 'information quality' as components of IS success." and that "... each of these quality dimensions will have different weights depending upon the level of analysis. To measure the success of a single system, 'information quality' or 'system quality' may be the most important quality component. This implied that the information quality and system quality are relevant in both district and contribute highly to IFMIS success.

DeLone and McLean (2003) further argue that measuring the overall success of the IS department, as opposed to individual systems, 'service quality' may become the most important variable. The context should dictate the appropriate specification and application of an information system regarding system requirements. However the study found out that both local governments have no control over the systems in Rukungiri and Kanungu district. The item of local government have control over the systems was rated low in both local governments. This clearly showed low service quality.

The study also found out that both local governments are normally highly affected by technological change in effecting information systems, however Heeks (2002) advises governments to define their technological needs and agendas with regard to government IFMIS during implementation and use tiers that are compatible with their technology capability at hand.

Both local governments have a high clear vision and strategy concerning success factors of information system. This is in line with Chene (2009) who indicated that the clear commitment by the relevant authorities is one of the main factors supporting successful implementation of an IFMIS. To him an IFMIS must be supported by a coherent legal framework governing the overall public finance system. Amongst other things there should be clear legal guidance on the roles and responsibilities of all institutions.

User factors of IFMIS in both districts exist, the study found out that both local governments normally rise consumer expectations while establishing information systems; local governments have the high capacity for training about the project of information systems; and both local government's employees have good leadership and are committed to their work. Grabski and Leech (2007) found that a lack of project team expertise is often associated with software development risk. In a survey by Nah (2003), it was found that having competent members in the project team is the most important success factor for IT system implementations. They identified that knowledge, skills, abilities, and experience in both technical and business aspects are all critical factors in determining a project's success or failure

V. CONCLUSIONS

The conclusions were based on research objectives of the study that success factors of the integrated financial management information system improve performance of local governments. According to the findings; information quality, system quality, service quality, technology factors, organisational factors and user factors exist in districts of Rukungiri and Kanungu as success factors of IFMIS.

VI. RECOMMENDATIONS

To effectively sustain the quality of IS used in local governments, administration should encourage IS users in quality participation.

To improve IS training and building, users' responsibilities and accountabilities should be categorized according to IS roles depending on user involvement in the systems process. Furthermore, IS participants should be accountable as users for their behavior and activities to achieve overall success on a project. In addition, organizational leaders should be responsible in ensuring that their staffs are informed as IS users through ongoing systems accountability training programs and the creation of training manuals.

Future research on effect of success factors of the integrated financial management information system on performance of organisations. Future research should also be done extensively by examining the effect of each success factor of IFMIS on performance of organisations.

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