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**IMPLEMENTATION AND USE OF FINANCE INFORMATION SYSTEMS:  
RESULTS OF A FIELD STUDY IN UGANDAN UNIVERSITIES**

**David Kiwana**



**LUND**  
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DOCTORAL DISSERTATION

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Informatics, Lund University, Sweden.

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	v
TABLE OF CONTENTS .....	vii
LIST OF FIGURES .....	x
LIST OF TABLES.....	xi
LIST OF ACRONYMS .....	xii
ABSTRACT .....	xiii
<b>Chapter One.....</b>	<b>1</b>
1.1 Introduction and Background .....	1
Description of finance information systems .....	2
1.2 Research problem .....	3
1.3 Research questions.....	5
1.4. Expected contribution/significance of the study.....	5
1.5 Definitions of key terms .....	6
1.6. Layout of the thesis.....	7
<b>Chapter Two.....</b>	<b>8</b>
Literature Review.....	8
2.1. Importance of finance information systems .....	8
2.2. Finance information systems in developing countries.....	9
2.3. Finance information systems in universities.....	11
2.4. Finance information system implementations .....	14
<b>Chapter Three.....</b>	<b>23</b>
Methodology .....	23
3.1 Research strategy/philosophy .....	23
3.3 Key activities in the research process.....	25
3.4 The Exploratory study .....	26
3.4.1Research design .....	26
3.4.2 Sampling process.....	26
3.4.3 Areas of investigation .....	26
3.4.4 Data collection method.....	28



3.4.5 Analysis of the data .....	29
3.5 The Quantitative field study .....	31
3.5.1 Research design for the quantitative field study.....	31
3.5.2 Study population and sampling process .....	31
3.5.3 Inclusion criterion.....	31
3.5.4 Data collection.....	32
3.5.5 Quality control.....	34
3.5.6 Quantitative data analysis.....	35
3.5.7 Measurement of variables.....	37
3.5.8 Ethical considerations.....	37
3.6. The Validation field study .....	38
3.6.1 Research design for the validation study.....	38
3.6.2 Sampling process.....	38
3.6.3 Data collection method.....	39
<b>The Exploratory Study.....</b>	<b>42</b>
4.1. Introduction.....	42
4.2. Makerere University and the FIS implementation.....	42
4.3 Origin of idea to implement the FIS.....	42
4.4 How the time to start the implementation was decided.....	45
4.5 Preparatory work activities.....	48
4.6. How the implementation was actually done:.....	49
4.7 Operationalising and using of the system.....	50
4.7 Summary of issues identified in the exploratory study .....	60
4.8.1 Top management support and FIS implementation.....	63
4.8.2 Capacity building initiatives and FIS implementation .....	65
4.8.4 System support initiatives and FISs implementations.....	75
4.9. Derived hypotheses and conceptual framework for the quantitative study.....	79
Chapter Five.....	83
<b>The Quantitative Study .....</b>	<b>83</b>
5.1 Background information on the universities that were used in the study.....	83

5.2.2 Ratings for performances of universities in administering factors perceived to influence FISs implementation .....	88
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**Chapter Six.....101**

The Validation Study .....	101
6.1. Top Management Support: .....	101
6.2. Capacity Building Initiatives .....	103
6.4. Systems Support Initiatives .....	111

**Chapter Seven .....115**

Discussion of Results and Lessons Learnt.....	115
7.1 Top management support during implementation and usage of FISs .....	115
7.2. Capacity Building Initiatives during implementation and usage of FISs .....	116
7.3. Organisation Facilitation Initiatives during implementation and usage of FISs .....	119
7.4. System support during implementation and usage of FISs .....	124

**Chapter Eight.....129**

Final Conclusion and Recommended Areas for further Research.....	129
8.1. Final conclusion.....	129
8.2. Areas recommended for future research.....	134

## **LIST OF FIGURES**

Figure 1: Representation of Modules of a finance information system.....	2
Figure 2: Areas that were investigated in the exploratory study .....	27
Figure 3: Factors that influenced Mak to make to implement the FIS .....	47
Figure 4: Conceptual model for relationship between factors perceived to influence implementation of FIS and its eventual usage.....	81
Figure 5: Model for relationship between factors perceived to influence implementation and usage of financial information systems .....	100
Figure 6: Model of how factors perceived to influence implementation impact of usage of FISs.....	177

## **LIST OF TABLES**

Table 1: Questions that were included in the Questionnaire .....	33
Table 2: Factors that influence implementation .....	33
Table 3: Summary of PLS quality (AVE, R Square, Composite Reliability and Cronbach's Alpha.....	34
Table 4: Discriminant validity results.....	35
Table 5: Details of informants Interviewed .....	39
Table 6: Details of the Quantitative Study .....	40
Table 7: Summary of issues of concern that emerged during implementation and mapping on the derived perceived to influence the implementation of FISs ....	58
Table 8: Showing how factors were merged .....	61
Table 9 : Universities from where Data was collected .....	85
Table 10: description of Respondents.....	86
Table 11: Rating for importance of Factors perceived to implementation of FISs presented in percentages scores .....	87
Table 12: Rating of Universities in administering factors perceived to influence implementation of FIS presented in percentage scores .....	88
Table 13: Combined summary of Results for measurement of importance and performance .....	90
Table 14: Results for construct Use.....	95
Table 15: Summary of Results for Construct Use.....	96
Table 16: Regressional Results.....	99
Table 17: Appendix I Details of informants interviewed .....	135
Table 18: Section A: Organization Information .....	144
Table 19: Appendix VI Results for Descriptive Statistics for each of the seven Universities.....	151
Table 20: Appendix VII Results for measurement of performance .....	160
Table 21: VIII Combined summary of results for measurement of importance and performance presented per University.....	169

## **LIST OF ACRONYMS**

BPR	Business Process Re-engineering
Busi	Busitema University
CSFs	Critical Success Factors
ERPS	Enterprise Resource Planning System
FINMAP	Finance Management and Accountability Programme
FGD	Focus Group Discussion
FIS	Finance Information System
ICT	Information Communication Technology
IS	Information System
IT	Information Technology
ITS	Integrated Tertiary Software
Mak	Makerere University
KYA	Kyambogo University
UMI	Uganda Management Institute
MUBS	Makerere University Business School

## **ABSTRACT**

Benefits arising from the use of finance information systems that include among others capability to offer improved timely and reliable accounts reports have been mentioned by many different scholars. The issue of successfully implementing and using the systems is however still a challenging problem especially in developing countries. A lot of critical success factors for implementation have been suggested, by different scholars but various organizations still fail to attain successful usage of their systems. This study therefore aimed at determining the factors that influence implementation of the finance information systems in the context of a developing country and how these factors impact usage of the systems. The study focused on Ugandan universities because at the time of the study, Ugandan government was in the process of embarking on a project of implementing a common finance information systems platform for all public universities in the country. This was after government's realization of a problem of non presentation of budgets to parliament for appropriation by various public universities, insufficient disclosure of internally generated funds, poor book keeping, and lack of standardisation in accounting policies, financial reporting and the classification of accounts.

The study was conducted in three phases using a mixed methods approach. The first phase was exploratory in its setting and it was done to purposely find out factors that probably influence the implementation of finance information systems in a university setup. The study was carried out on a finance information system implementation that was done in Makerere University in Uganda between 2004 and 2007. Data was collected through interviews from people identified as key informants in relation to the implementation. Abreast with results from this study, the investigation was extended to a wider population that included seven universities in order to first of all establish whether the findings in the exploratory study could be galvanized, and secondly to find out the impact of the found factors on usage of the systems. Data was collected through a quantitative survey and the respondents comprised of accountants in the seven universities investigated.

Finally, a third phase of the study was conducted to essentially find out circumstances in which the identified factors impact FIS usage.

Nine factors were found to have influence on the finance information systems implementation in the Ugandan universities. These nine factors were merged into four broad factors and out of these four, three were found to have significant impact on usage of the systems.

# **Chapter One**

## **Introduction and Background**

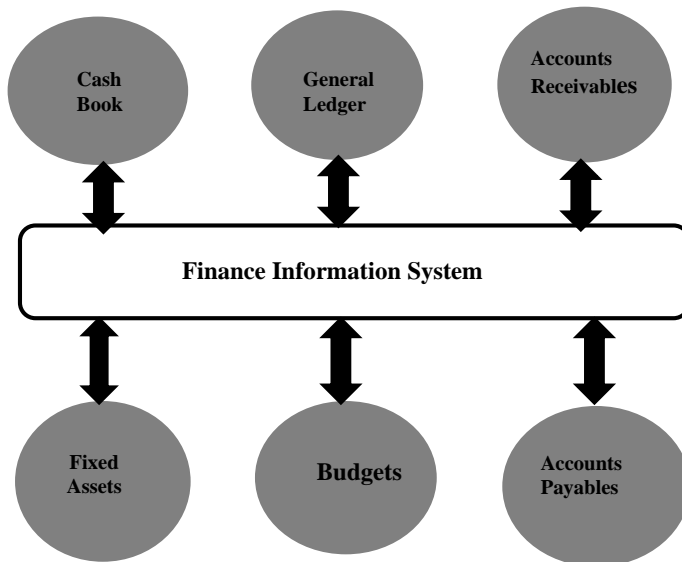
This study aimed at investigating the relationship between implementation and usage of finance information systems (FISs) in Ugandan universities. It was conducted in three phases beginning with an exploratory study on implementation of a finance information system that was done at Makerere University (the biggest university then in Uganda) basically to find out the factors that influenced that implementation. The outcome from this study pointed to nine (9) factors. In the second phase the investigation was expanded to include seven universities with intention of broadening the investigation to a wider population and to find out how the found factors impact usage of the systems. This was done through an empirical study that was conducted across a total of seven universities. The universities included; Makerere University (Mak), Kyambogo University (KYA), Mbarara University of Science and Technology (MUST), Makerere University Business School (MUBS), Uganda Christian University (UCU), Busitema University (Busi) and Uganda Management Institute (UMI). And in order to do better analysis ,the factors were merged into four. The results from this study were validated through a third study that was conducted in four universities out of the seven to mainly find out the circumstances under which the factors impact usage of the FISs.

This chapter presents the background to the study, description of finance information systems, the research problem, the purpose of the study, the research questions, the significance of the study, and the operational definitions.



## Description of finance information systems

A finance information system can be described as a set of automation solutions that enable users to plan, execute and monitor budgets by assisting in prioritization, execution, and reporting of expenditures and revenues (Dener, Watkins, & Dorotinsky, 2011). According to Khemani and Diamond (2005) FISs consist of; general ledger, budgetary accounting, accounts payables, accounts receivables and noncore modules can include; payroll system, budget development, procurement operating and capital budgets, working capital reports, cash flow forecast and project ledgers. Figure 1 shows a representation of an example of a finance information system with modules of cash book, general ledger, accounts receivables, accounts payables, budgets and fixed assets.



**Figure 1: Representation of Modules of a finance information system**

Conceptually Dener et al. (2011) describe a finance information system as a set of automated solutions that enable users to plan, execute and monitor budgets by assisting in prioritization, execution, and reporting of expenditures and revenues. It takes complex data and processes it into specialized reports, saving time and effort in dealing with business accounting. Dener et al. (2011) say that typically FISs represent a modern way of managing finance resources in organizations. This is because FISs have numerous advantages related to financial management that include; assistance in

tracking financial events, summarizing financial information, providing timely, accurate and reliable information so that decision making processes can be made more effectively and efficiently and maintaining transparency of financial information which is necessary to determine what is happening with an organization. In addition Peterson et al. (2006) says that FIS technology is generally adopted to; reduce coordination costs, increase productivity, or in response to demands by donors like World bank and international monetary fund (IMF) that call for having in place a FIS before funding can be approved. Peterson et al. (2006) too makes a case that computerization promotes two kinds of reform: efficiency reforms that accelerate the operation of existing procedures and effectiveness reforms that change existing procedures. As a result, many organisations in both developed and developing countries are increasingly adopting FISs in their financial management activities.

It is important to clarify that many times FISs are implemented as part of enterprise resource planning systems (ERPs) ((Bancroft, Seip, & Sprengel, 1997); (Davenport, 1998)). While a FIS focuses on finance/accounts functionalities, an ERP is a business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back office functions related to technology, services and human resources. This means that the implementation issues that are pertinent to ERPs are largely pertinent to the FISs. This research therefore is premised on the Idea that what is said about ERPs in terms of implementation is largely applicable to FISs implementations as well.

## **1.2 Research problem**

Mulira (2007) argued that many benefits that arise from FISs have been mentioned by many scholars for example; capability to offer improved timely and reliable accounts reports, however how to implement and how to use the systems successfully is still a challenging factor especially in developing countries. As a result, many organizations find difficulties to attain their desired success during implementation. Prasad Bingi, Maneesh K. Sharma, and Jayanth K. Godla (1999) argue that many large organisations have made significant investments in both time and capital to implement large information systems for various purposes, however, not all implementations go as well as would be desired. Pan, Hackney, and Pan (2008) posits that there is still a significant body of evidence that many information systems implementation projects

of the nature of FISs end in failure. Mulira (2007) argues that many critical success factors for IS implementation have been suggested, however actual evidence to devise solutions for failed projects has not been clearly established.

((Scott & Vessey, 2000); (Helo, Anussornnitisarn, & Phusavat, 2008b); (Madinios, Chatzoudes, & Tsairidis, 2011)) argue that failure of large information systems implementations like the ERPs and FISs is not caused by software itself, but rather by a high degree of complexity from the massive changes the systems cause in organisations. According to Helo et al. (2008b), the major problems of ERP implementations are more to do with organisation and human related issues like resistance to change, organisational culture, incompatible business processes, project mismanagement and top management commitment rather than technologically related issues such as technological complexity, compatibility, standardisation etc. Furthermore research by Z. Huang and Palvia (2001) identifies organisational and human related issues like inadequate IT infrastructure, government policies, lack of IT experience and low IT maturity to seriously affect the adoption decision in developing countries. What is not clear, is whether all such factors are exhaustively known and if so, how they (the factors) impact usage of the systems considering the fact that the failure rate is still high. The failure rate of major information systems appears to be around 70% (Davenport, 1998). Chakraborty and Sharma (2007) urged that 90% of all initiated ERP projects can be considered failures in terms of project management. Ptak and Schragenheim (2003) found out that the failure rates of ERP implementations are in the range of 60 % -90%. Helo, Anussornnitisarn, and Phusavat (2008a) say that in the worst scenarios, many companies have been reported to have abandoned ERP implementations. From this discussion it can be said that in FIS implementation, as a case of ERP implementation, the issues of concern are either technologically related or contextually related. It can also be stated that technologically related issues are not reported as problematic and as such, they are probably more or less the same in different contexts. This means that the contextually related issues may be more problematic and of interest for further research. In this research, the fact that contextual factors are mainly researched in a developed country context is challenged by focusing the research on these issues in a developing country context. Many factors believed to be critical for FIS implementations have been suggested, however there is no evidence yet that solutions to the failing projects have been devised. There remains therefore a critical need to carry out a deep study on FIS

implementations in order to understand the factors that influence implementations, how they impact usage and under what circumstances this happens, especially in universities in the developing world. This study therefore presents an exploration of factors shaping implementation with the aim of determining how the various factors impact the use of the systems and circumstances in which this happens. From this, the purpose of the study is formulated as follows:

*To find out factors that influence implementation of FISs in universities in a developing country, how the factors impact usage of the FISs and circumstances in which this happens.*

### **1.3 Research questions**

In order to fulfill the above purpose, the following three questions were therefore suggested to guide the study:

- i. What factors influence FISs implementations in universities in a developing country?*
- ii. How do factors that influence FISs implementation impact FISs use in universities in a developing country?*
- iii. In what circumstances do factors that influence implementations of FISs impact its use in universities in a developing country?*

### **1.4. Expected contribution/significance of the study**

- (i) To find out factors that influence implementation of FISs in a university in the developing world, while using Ugandan universities as a case study. How these factors impact usage of FISs and the circumstances in which this happens will help to identify gaps in achieving successful FISs implementations and usage especially in universities in developing countries.*
- (ii) For the researcher community – this research will add more knowledge to the existing literature in the areas of FIS implementation and eventual usage, therefore other researchers would be in position to refer to the contents of the study for any future related studies.*
- (iii) For other developing countries - other transitioning countries that have implemented FISs but are faced with high failure rates can use the findings of the study to ensure successful implementation and use of FISs in their countries.*

## **1.5 Definitions of key terms**

**Top management support:** This refers to the extent to which top managers in the university provide direction, authority, and resources during and after the acquisitions of IT systems, including FIS systems.

**Effective communication:** This was used to refer to formal promotion of the project by teams, advertisement of the project progress in the rest of the organization and delivery or transmission of notices or information within the organization.

**Evaluation of Staff performance:** This refers to assessment of work output generated by each person involved in implementing and using the FIS.

**Education and Training:** This refers to training and reskilling to understand how a new system would work and change business processes.

**Project management:** This refers to obedience to the whole processes right from planning, scope, design, control and ensuring that all steps in the cycle are implemented systematically for purposes of ensuring success.

**Change management:** This refers to management of the alteration of organizational cultures that can arise due to introduction of the FIS into organization.

**Effective IT Unit:** Refers to an IT unit that would have the necessary capacity and capability to execute its duties.

**Flexible IT Consultant:** This refers to willingness of vendors and consultants to resolve as quickly as possible problems that can arise.

**Capacity building initiatives:** Refers to the process by which individuals, groups, organizations and communities increase their abilities to; perform core functions, define and achieve objectives and understand and deal with their development needs in a broad context and in sustainable manner (Light et, al. 2002). In addition capacity building in the area of FISs can be defined as supporting organizations to build and maintain skills, infrastructure, and resources to

achieve their IT mission (Light et al., 2002). In this study therefore, capacity building initiatives meant a combination of education and training together with change management.

**Organization facilitation initiatives:** refers to initiatives or strategies put forward by an organization to enhance implementation of a project or stated program. Organization facilitation initiatives accordingly start by expressing a need for change, make needs assessment, mobilize for resources, put in place communication systems, implementation systems and then subsequent monitoring and evaluation (Connolly & Lukas, 2002). In this study therefore, organization facilitation initiatives referred to a combination of effective communication, effective IT unit and regular staff performance evaluation

**System support initiatives:** according to York (2005), this means processes advanced by an organization to enhance coordination, implementation and operation of a program. In this case, York (2005) defines system support initiatives in line with IT as mechanisms that are put in place to allow implementation of software. Therefore, in this study, system support initiatives referred to a combination of technical support, project management and flexibility of consultants

## **1.6. Layout of the thesis**

The rest of the chapters in the thesis are organized as follows:

- Chapter 2 presents literature review.
- Chapter 3 describes the research methodology that was adopted in the study
- Chapter 4 describes the first phase of the study being referred to as the exploratory study.
- Chapter 5 describes the second phase of the study which was a quantitative study.
- Chapter 6 describes the third phase of the study referred to as validation study.
- Chapter 7 presents discussions of results and lessons learnt
- Chapter 8 presents conclusion and recommendations.

# Chapter Two

## Literature Review

This chapter presents literature review which purposely discusses issues and challenges of finance information implementations and eventual usage. The review informs gaps that were explored in the exploratory study and results of which were further investigated in the subsequent studies that were made.

### 2.1. Importance of finance information systems

Simovic and Varga (2012) assert that the main purpose of FISs is to record all business events in companies in terms of finance and value expressions. They further posit that financial reports analysis as a sub-process is used for business analysis which is performed with the aim of finding out the company's finance strength so as to derive useful information for making financial decisions. The financial reporting system is designed to meet the users' needs for any required information on the company's business success and helps to maintain control over multiple streams of data and provides the basis for reporting and control mechanisms required by regulating agencies (Simovic & Varga, 2012). Heidenhof and Kianpour (2002) says that the integration of different functions and entities within a shared database provides managers with tools to plan, manage, and control public resources. Automation is an important FIS feature whose benefits include; improved transparency of public sector operations, rapid expedition of many transactions at once (contrary to manual systems which are cumbersome and slow), improved efficiency of financial controls and other expenditure management procedures, rapid compilation of data from many sources for improved financial analysis and decision making, and improved consistency of information and checks and balances (Heidenhof & Kianpour, 2002). According to Spathis and Constantinides (2003), the benefits from FISs include increased flexibility in financial information generation, increased integration of accounts applications and improved timely and reliable accounting reports. Poston and Grabski (2001) say that FISs reduce costs by improving efficiency through computerization, and enhance finance decision-making by providing accurate and updated organization-wide information, both of which should lead to improved organizational performance. Granlund and Malmi (2002) argued that a common organization-wide information structure and integrated information system could produce significant benefits for

global organizations. It has been found that FISs provide general benefits in terms of increased transaction processing, more access to information of high quality and great support for adhoc reporting. Evidence from a survey on companies which have adopted FISs and their impact on management accounting practice confirms a number of such benefits (Spathis & Constantinides, 2003). The most highly-rated perceived benefits include; increased flexibility in financial information generation, improved quality of reports, increased integration of accounts applications and improved decisions based on timely and reliable accounting information. More specifically, FISs help to reduce costs by improving efficiency through computerization and to enhance finance decision-making by providing accurate and updated organization-wide information, both of which should then lead to improved organizational performance (Poston & Grabski, 2001).

## **2.2. Finance information systems in developing countries**

Heidenhof and Kianpour (2002) presented that many African countries struggle with public financial management reforms whereby institutions, systems, and processes that deal with various aspects of public finance are weak, non-transparent, and often incapable of developing adequate budgets and providing reliable data for macroeconomic modeling.

According to McManus (2012), FISs in developing countries of Africa were developed in early 1990s when emphasis began to focus on improvement of public finance, in particular on budget and expenditure management reforms. Mainly as a response to concerns from donor community, governments started to critically review the existing systems and processes. As a response to inadequate and outdated systems, a recommendation was for introduction of FISs along with experience of developed countries in the '70s and '80s and integration of different functions of public finance on the basis of a uniform technical platform (Dvir, Sadeh, & Malach-Pines, 2006).

Namusonge (2005) posits that in developing countries, to get FIS reforms accepted, decision makers must be convinced that a problem exists and that benefits exceed risks involved when addressing those problems. Muchoki, Nyanchoga, and Ogula (2010) indicate that decision makers in developing countries tend to perceive computer technology as something that is risky, something that is complex, something that demands skilled staff, and something that requires procedural changes. Muchoki et al. (2010) further agitate that in developing countries, information systems are



usually introduced by expatriates, and therefore there is room for distrust and hostility. also indicates that in most developing countries, many times managers in government cannot reduce staff and they are severely limited in their capacity to change them. In such situations, information systems are not necessarily seen as a benefit to management if anything from a human resource viewpoint they could make the task of managers harder and more complex (Namusonge, 2005). Indeed Adams, Nelson, and Todd (1992) say that management of complex FIS projects requires considerable management skills, But then such skills are typically in short supply in developing countries (Gupta, 2013). Senior managers in developing countries rarely delegate responsibility and frequently get overloaded with work moreover when they are not very literate in computers (Gupta, 2013). Pearlson, Saunders, and Galletta (2016) further assert that due to limitation of computer literacy in developing countries, there is tendency to leave system development to system vendors with minimal user involvement. In such circumstances, there is every likelihood that the developed systems would not be user friendly, they would not match the capabilities of managers, and they would not have the required level of management ownership. It can therefore be said that the binding constraint when introducing FISs in developing countries may be technical capability but more so capacity to manage them.

In Ghana, a FIS for government emerged in 1996 when the government decided to start implementing an ambitious multi-faceted Public Financial Management Reform Program which aimed at addressing all Aspects of the budget and expenditure management process. Under the program, about 2,000 workstations were installed and integrated into one network (Jørgensen & Moløkken-Østvold, 2006). Several thousand public sector employees were trained to ensure compliance with the new system. In Tanzania, the FIS was introduced in 1998 to focus on budgeting, accounting, cash management, and commitment control (Mandal & Gunasekaran, 2003). Currently, over 500 terminals have been installed and over 1,500 staff have been trained (Dvir et al., 2006). In Burkina Faso, a new financial management system was introduced in 1994. It focused primarily on budget execution and expenditure management and entailed budget preparation. Currently, about 250 workstations are integrated into the system (Besner & Hobbs, 2008). Subsequent rollouts to the regional offices of line ministries are under consideration and in Malawi, FIS was initiated in 1995 in the budget management process, payroll and cash management (Yu, 2005).

In Uganda, an integrated FIS for government departments was introduced in 2002 with a major purpose to overhaul the budget and expenditure management processes at the central and decentralized governmental levels (Basheka & Sabiiti, 2011). In line with its decentralization policy, the government intended to delegate authority in the area of public finance to local governments (Ministry-of-Public-Service, 2010). The new system was used to address all stages of the financial management processes, including budget preparation, budget execution, accounting, cash management, fiscal reporting, and asset management. The new system up to now is being complemented by other parallel reforms, such as the adjustment of the regulatory framework for financial management, procurement and external audit reforms (Yukl, 2008). At the local government level, efforts are under way to enhance capacity for financial management (Government, 2014). The rollout of the new system began in 2002 and was completed in 2006 covering all central government ministries and departments, and now it covers 30 districts on 112 districts in Uganda (Uganda, 2014). Tiwana and Keil (2006) indicated that the implementation of FIS in Uganda has remained a big challenge since 2005 when it was set to have comprehensively immersed in public sector and among such challenges are low political and management will, low technical support, low funding to districts, resistance to change, poor infrastructures, rigidity of employees, lack of inspection, inadequate training and education of employees who have to implement the whole program.

### **2.3. Finance information systems in universities**

Pollock and Cornford (2004) argue that the need for implementation of FISs in high education sectors is a response to both internal and external factors requiring more efficient management processes due to increasing growth of students numbers, changes in the nature of academic work, increasing competition between institutions, increasing government pressure to improve operational efficiency, and growing diversity of expectations amongst stakeholder. Seo (2013) says that ERP implementation is believed to reinforce administrative authority as a model of governance. Allen and Kern (2001) however, posits that there can be resistance to FIS implementation because it involves not merely adoption of new information system, but holistic change in organizational culture. They argue that administrative staff may fear for their job security when redundant processes and work functions are automated across a university. Pollock and Cornford (2004) also urge that ERP implementations

create tension and affect identity of universities raising new organizational issues based on perceived uniqueness of specific universities. They further point out that as ERP systems are large integrated packaged solutions with dynamic complexity and may cause difficulties with implementation for management and IT staff in universities even for those who might have a comprehensive understanding of their own organizations. They say that this is because currently many universities have an expanded range of systems many of which sometimes have competing functions whenever they handle particular needs. They also argue that for academics, this may lead to fear that the use systems that result in increased transparency can result in a loss of control.

Seo (2013) asserts that standardization and integration, both of which are key features of ERP systems limit flexibility in university systems. This loss of flexibility may lead staff to create workarounds in which they could attempt to carry on their previous processes. This response to new ERP systems may ultimately increase staff workloads and create data gaps between the system and reality.

Lechtchinskaia, Uffen, and Breitner (2011) suggest that ERP software which incorporates best practices from the corporate business industry is not appropriate for universities, since universities have unique structures and decision-making processes. Lockwood and Davies (1985) points out that universities have a certain combination of unique characteristics that include; complexity of purpose, limited measurability of outputs, both autonomy and dependency with regard to wider society, and diffuse structures of authority and internal fragmentation. Duderstadt, Atkins, and Van Houweling (2002) pg. 93 urge that colleges and universities are organized along lines of academic and professional disciplines, grouped into larger units such as colleges as well as into smaller subunits (the departments). Seo (2013) suggests that this kind of parallel structure that is divided into highly specialized academic units makes decision-making processes different from those of corporations which have formal and hierarchical communication structures.

On the other hand Allen and Kern (2001) note that while the number of students in most universities has been increasing, rising expectations on the part of stakeholders, quality and performance requirements, and more competitive federal and local funding have encouraged universities to strive for administrative excellence and to provide the best opportunities for students to attain competitive advantages. As a result, in spite of their uniqueness, universities have been forced to adopt certain

corporate sector best practices for efficient and productivity in business. Duderstadt et al. (2002) urge that in addition to the competitive environment, rapid advances in information technology have reshaped university administrative practices. Frantz (2003) says that Higher Education Institutions (HEIs) consider ERP adoption as a method of achieving greater integration of their management systems to better manage increasingly complex operations. From decreasing government funding to increasing expectation by stakeholders, universities are currently under pressure to deliver higher quality educational services for lower costs and for these reasons, ERP systems can be very appealing to HEIs as a potential route to meeting these standards (Seo, 2013). With specific reference to Uganda, the Auditor General of the Government of Uganda consistently raised concerns about financial management in the Ugandan public universities for over a period of 5 years prior to 2008. The concerns included; non presentation of budgets to parliament for appropriation, insufficient disclosure of internally generated funds in the estimates and financial statements, poor book keeping, and lack of standardisation in accounting policies, financial reporting and the classification of accounts (GOU Ministry of Finance, 2009). As a result, the Ugandan government set up a project to implement a common FIS system across all government owned universities. The implementation of this project whose planning started in 2008 was commissioned in November 2014 and it was to be done in a phased manner (GOU Ministry of Finance, 2009). But then Mulira (2007) cautions that emerging public organizational networks in the developing world work with unpredictable environments and resource scarcity have led to higher failure rates of Information Systems (IS) development projects in developing countries. Additionally, Granlund and Malmi (2002) say that the implementations of information system packages represent considerable investments in any company's information system budget, in terms of both monetary and intellectual resources. This means that a failure of such a project would be so disastrous to the Uganda Government. This study therefore was intended to contribute knowledge that could be used to foster success in the implementation of this project and other similar projects in the future. Holland and Light (1999) argue that with a good understanding of the issues involved in FISs (FIS) implementations, decision makers in organizations are able to make critical decisions and allocate resources that are required to make the implementation successful.

## **2.4. Finance information system implementations**

FIS implementation is an emblematic of complex project that constantly evolves and as it is the case with designing and implementation of any complex system aspects of leadership, collaboration and innovation are of importance in the implementation process (Dener et al., 2011). Dener et al. (2011) further argue that successful completion of a FIS implementation depends on external factors as well and adverse effects of country-specific political economic issues and political environment.

This particular issues being discussed in this section therefore touch on motivations and targets for FIS implementation, how to prepare for implementation, how implementation must be conducted, and challenges in implementation.

### **2.4.1. Motivations of finance information system implementations**

In order to attain success in a FIS implementation, various scholars indicate particular aspects that must be achieved. Khan, Syal, and Kapila (2006) say that establishing a FIS should not be viewed as merely computerizing procedures that are existing but it should rather be viewed as a reform for the organization. Pearlson et al. (2016) argue that the aim of an FIS should not be just to computerize the present processes but to improve work practices. At a minimum, Mintzberg (2013) says that implementation of FISs requires substantial groundwork to standardize manual procedures, including documentation used and processing rules across all users, redesigning and strengthening internal controls, plus redesigning reports and other analytical outputs. Rieley and Clarkson (2001) for example, argue that a new FIS would likely be most productive when it incorporates major upgrades in accounting. Accordingly, Pearlson et al. (2016) explain that it may be important to review accounting standards well in advance, and perhaps to consult national accounting bodies regarding the consistency of public and private sector standards in regard to accounting systems. Namusonge (2005) posits that if usage of a FIS is to improve amongst organization staff the issue of redesigning information flows, the way the flows are processed, the way the flows are managed, the way the flows are distributed and the way the flows are used for decision making would usually require changing operating procedures. Althonayan and Papazafeiropoulou (2013) however, agitate that inevitably, disruptions of well-established operating procedures can feel threatening to individuals who operate them, and hence it should not be surprising that such innovation can be resisted. Althonayan and Papazafeiropoulou (2013) further note that in developing countries, resistance is

compounded by the fact that many people have limited experience in IT systems. And Namusonge (2005) further contends that a tendency to leave the task of systems development to system vendors often means that organizational issues are downplayed, such that instead technical considerations dominate in the design and implementation of the project. There have also been arguments to the effect that often information that is included in FISs is overestimated. Adams et al. (1992) for example, say that there is often tendency for users to be too ambitious so that the intended scope of the FIS is made too wide and attempts to service all the requirements of potential users. Khan et al. (2006) therefore underlines that the user specification stage should be used to determine what the critical requirements for the initial version of the system are and what would be left for later versions or what would be removed from the user requirements.

#### **2.4.2. Preparing for finance information systems implementations**

Various scholars have given views on what pre-requisites for a FIS implementation should be. Hornik (2007) for example argues that a FIS as a tool of finance management must be carefully designed to meet the functional requirements of the targeted agencies. To Hornik (2007), often the design phase is the most difficult part of the FIS implementation project, and when in many instances, it does not receive attention it merits. Hornik (2007) suggests therefore that FISs need to have a functional requirement document to ease implementation. Without this, even if the implementation is done, usage would remain low. Rieley and Clarkson (2001) further argues that ideally, it should be a rule that any outside consultancy during the design stage should be independent of potential vendors. It should be undertaken by business rather than IT experts, and should be developed in conjunction with staff in finance departments to cater for local conditions.

Jarrar, Al-Mudimigh, and Zairi (2000) ascertain that the functional requirements document serves as the blueprint for later phases of the FIS project and if it is done wrongly, usage would be affected. Adams et al. (1992) also posit that the functional requirements document that serves as the blueprint for later phases of the system project is critical and if it is wrong, it is difficult to rectify the situation later. Adams et al. (1992) further agitates that the requirement analysis phase is important but tends to be an often neglected step. He says that it should not be rushed and for the accounting function alone, a detailed analysis can take three months to a year. Khan

et al. (2006) in their study in Columbia public institutions, ascertained that it is essential that sufficient time is taken during planning of a project to list all user requirements for the information to be derived from the FIS. Khan et al. (2006) further argue that without this, even if the implementation is done, usage would still remain low. Kwena (2013) adds that this part of planning phase is time consuming but very essential if the building of the system is to proceed smoothly. He says that it is usual for all users of the system to initially simply list all possible information requirements that they seek from the FIS. Rieley and Clarkson (2001) indicate that a process of review by a panel of major users would result in rationalization of the requirements to a manageable level and managers should be the ones to tell vendors what is required and not the other way round.

#### **2.4.3. How finance information systems implementations should be done**

Various scholars insist that some specific steps must be followed during implementation. Muendo (2013) for example idealized that implementing FISs in public institutions needs to observe steps that must include; planning, designing, implementing, monitoring and evaluation. Muendo (2013) further says that planning should be the first stage in the implementation cycle whereby meetings are conducted with different stakeholders to identify system needs and to develop specifications. Kwena (2013) points out further that implementing FISs should follow some six stages that include; requirement gathering and analysis, design, implementation, testing, deployment and maintenance. According to Ravichandran and Rai (1999), the phase for requirements gathering would be the main focus for project managers and stake holders in order to determine the system requirements like; Who is going to use the system?, How will they use the system?, What data should be input into the system? as well as, What data should be output by the system? .These are general questions that get answered during a requirements gathering phase. Rieley and Clarkson (2001) on the other hand caution that although the design phase is crucial for successful implementation, it should not be allowed to run too long and to encroach on time available for actual building of the system.

#### **2.4.4. Challenges in finance information systems implementations**

Issues of FISs implementations failures have been mentioned and discussed by various scholars. Malling (2000) posits that failures of information systems

implementations in general keep developing countries on the wrong side of the digital divide, turning ICTs into a technology of global inequality and it is a practical problem for developing countries that needs to be addressed. Information technology processes, objectives & values, staffing & skills, and management systems (ITPOSMO) checklist adopted from Malling (2000) shows that technological infrastructure (telecommunications, networks, electricity) is more limited in developing countries. Work processes are also more contingent in developing countries because of more politicized and inconsistent environment (Malling, 2000). When it comes to management and human resource structures developing country organizations are more hierarchical and more centralized, and also the cost of ICTs is higher than in industrialized countries whereas the cost of labor is lower (Heeks, 2002).

Kronbichler, Ostermann, and Staudinger (2009) say that a lot of FIS projects fail to reach the expected results due to technical issues, while Penman and Zhang (2002) say that one of the key problems facing the implementation of ERP/FIS systems is the problem of differing perceptions as regards their success. Senn and Gibson (1981) point to user resistance as symptomatic of system failure as users may aggressively attack the system, rendering it unusable or ineffective, or simply avoiding to use it. Ginzberg (1981) mentions user dissatisfaction with scope, user dissatisfaction with system goals, and user dissatisfaction with the general approach to the problem that the system is meant to address as some of the causes of implementation failure. Excessive focus on technology other than business user needs has also been found to be a big cause of failure. This view is well supported by Calogero (2000) who stated that excessive focus on technologies is one of the determinations of failure for ERP/FIS implementations. Nicolaou (2004) also articulated that projects initiated by technology are more likely to be unsuccessful than business-initiated projects due to the fact that technology-initiated projects are most frequently driven by such goals as replacement of an old system with a new one which usually is a complicated task. Lack of proper user education and practical training is another cause of failure of IS implementation projects. According to Nicolaou (2004), conducting user training beforehand causes unsuccessful ERP/FIS implementation due to limited scope of training before implementation. Kronbichler, Ostermann, and Staudinger (2010) assert that unclear concept of nature and use of an ERP/FIS systems from the users' perspective due to poor quality of training and insufficient education also leads to



failure of ERP/FIS implementation. In developing countries where there are more challenges due to unstable infrastructure, funding and unstable social/economic organizational environment, the quality of training becomes even poorer which leads to more failures of ERP/FIS implementations compared to developed countries (Mulira, 2007). Langenwalter (1999) says that some companies that implement FIS systems do not realise the full benefits of the systems because they are not organised in the correct fashion to achieve the benefits, i.e. they are not ready for integration and the various departments within them may have their own agendas and objectives that conflict with each other. FIS implementations involve broad organisational transformation processes, with significant implications to the organisation's management model, organisation structure, management style and culture particularly to people (Wood & Caldas, 2001).

Unrealistic expectations can also lead to superficial project planning and an under estimation of budget and resource allocation resulting into failure of an ERP implementation (Wong, Scarbrough, Chau, & Davison, 2005). Many times, project managers set a tight project schedule where implementation activities such as; project planning, user training and testing among others are conducted in a rush in order to meet the project deadline. This can result into poor knowledge transfer (Wong et al., 2005).

In a case study on the implementation of an enterprise system in Rolls Royce, Yusuf, Gunasekaran, and Abthorpe (2004) urge that an enterprise system software is always adaptable but not very malleable and companies that wish to use it correctly have to change their working practices to fit the software. Yusuf et al. (2004) point out that majority of the difficulties experienced by enterprise system implementations have been the costly development of additional software to bridge or retrieve information from legacy systems. They placed the problems into three categories which are; cultural, business and technical. In regard to culture, they said that some functionalities and processes may not get full appreciation as the previous legacy systems would have and say that this may be resolved by just illustrating improvements made to the organisation as a whole, although again they say that this may be considered to be breaking the segregation of the operation of business units and departments in some organisations. In regard to business problems, it was found that the system that was being implemented required a fairly rigid business structure for it to work successfully and therefore the people understood that their working

practices had to be adjusted to fit into the system processes, and this was achieved by doing an internal business process re-engineering (BPR). In regard to the issue of technical problems, Yusuf et al. (2004) found out that the problems that were encountered were to do with accuracy and conversion of data from the legacy systems. In their final observation, Yusuf et al. (2004) argue that the full benefits of the project implementation would not be fully achieved until the users adjust to the new working practices and when the system has had a period of stability for at least a whole year. Maditinos et al. (2011) notes that ERP failures are usually due to high degree of complexity and the massive changes that the systems cause in organisations. Zornada and Velkavrh (2005) point out that the failures can be explained by the fact that the implementations force companies to follow the principle of 'best practice' in most successful organizations and form appropriate reference models. This means that such companies get influenced more by the principle of best practices under looking other factors that may more critically be depending on the different local settings. S.-M. Huang, Chang, Li, and Lin (2004) stated some ten top risk factors that cause ERP implementation failure as being: Lack of senior manager commitment, ineffective communication with users, insufficient training of end users, failure to get user support, lack of effective project management methodology, attempts to build bridges to legacy applications, conflicts between user departments, composition of project team members, failure to redesign business processes and misunderstanding of change requirements.

In general, Pan et al. (2008) say that despite the adoption of FISs in developing countries, a number of factors have been pointed at as challenging its implementation success. Among such factors include; lack of IT unit or department in public and private organizations, low willingness from top management, resistance to change by organizations and employees, poor performance of employees, recruitment and retrenchment of employees, inadequate monitoring and evaluation of staff and other factors including lack of training and education of personnel, as well as inadequate technical support of the systems.

It has been argued by earlier researchers like (Davenport, 1998), Al-Mashari (2002) and Ifinedo (2006) that FIS is very difficult to implement. This is because FISs are different from other IT systems as their implementations often include constructed technological, operational, managerial, strategic, and organizational components (Markus, Axline, Petrie, & Tanis, 2000). By the same token, it has been observed that

approaches used in implementations of traditional IT packages may not be adequate for FIS (Davenport, 1998). For example, organizations adopting FIS often have to commit considerable amounts of resources (e.g., time and money) to the implementation process and need to be aware of the salient organizational changes that usually accompany FIS acquisitions ((Davenport, 1998); (Krumbholz & Maiden, 2001)). In the same vein, the complex nature of FIS makes it imperative for adopting organizations to depend on external mediating entities, i.e., vendors and consultants, to help them bridge the knowledge and technical gaps associated with implementing the software (Markus & Tanis, 2000). A wide range of contingency factors that positively influence the success of IT systems have been identified (Ein-Dor & Segev, 1978) and (Bajwa, Rai, & Brennan, 1998). These factors include; the organization's size, organizational culture, structure, internal IT support, top management support, and external expertise (quality vendor/consultant), among others. Only a few studies have investigated the impact of contingency factors on FIS success (Sedera, Gable, & Chan, 2003).

#### **2.4.5. Emerging issues from literature on finance information systems implementations**

In sections 2.4.1 to 2.4.4 above a number of issues are mentioned and discussed in regard to FIS implementations. For purpose of drawing conclusions from this literature review, the issues have been condensed into three categories. (1) Issues pertinent to task of problem identification, (2) issues pertinent to preparation of implementations, and (3) issues pertinent to actual implementation process.

Regarding the category of issues pertinent to problem identification, two issues emerge from the literature. First, FIS implementation should not be viewed only as a task of computerizing existing processes but rather as a reform within an organization. Secondly, users should avoid being over ambitious and overstretching the scope of implementation but rather select only what is critically necessary for initial versions and leave the rest for later versions. The implication of these two issues is that before embarking on implementation, users must be very clear about the processes flows in the organization and in addition, they should endeavor to priotise the problems so that it comes out very clearly on how the problem would be tackled in a progressive manner. Therefore in a FIS implementation study, one of the areas that must be

investigated is whether the problems that triggered the implementation were properly identified.

In regard to category of issues pertinent to task of preparations for implementation, some three issues have emerged from the literature review. First, that it is important to have a functional requirements document. Second, if there is need to hire external consultants, such consultants should be independent of potential vendors. This should be so in order to suffocate any possible emergence of conflicts of interest in this regard. Third, the FIS design process should be undertaken by business experts rather than IT experts because in a university environment, business requirements would supersede technology requirements. In an FIS implementation investigation, it is therefore very important to find how the implementation was prepared for so that it can be understood whether such issues were taken into consideration.

In regard to category of issues pertinent to actual implementation, three issues have been seen to emerge from the literature review. First, FISs are difficult to implement because they often include constructed technological, operational, managerial, strategic, and organizational components. Second, successful completion of FIS implementation depends on adverse effects of country-specific political economic issues and political environment. Third, organizational structures in universities are divided into highly specialized academic units thus making decision-making processes different from those of corporations which have formal and hierarchical communication structures. In addition to these issues, problems regarded to face FIS implementations in respect to developing countries have also been highlighted. It emerges therefore that in a FIS implementation investigation, it is very important to find how actual implementation was done and extent at which the FIS is being used. This would be one of the ways of finding out and understanding the problematic areas in the implementation.

Basing on issues that emerge from literature as described above, and considering the objective of the study which is to find out factors that influence implementation of FISs in Ugandan universities, the specific issues for investigation in the exploratory study which was to focus on FIS implementation in a single university would be:

- i.** To understand what triggered the implementation, and how the time to start the implementation was decided,
- ii.** To understand how the implementation process was prepared for,
- iii.** To understand how the implementation was done,

**iv.** To understand the extent at which the FIS was being used .

# Chapter Three

## Methodology

This chapter describes how data for the study was collected, how it was analyzed and interpreted in order to answer the research questions and thereby meet the purpose of the study. The chapter describes the research strategy/philosophy that was used, the research method that was employed, the key activities that were executed and the research designs that were employed during the different stages of the study.

### 3.1 Research strategy/philosophy

Trochim (2006) defines research strategy as a plan of action that gives direction to your efforts, enabling you to conduct research systematically rather than haphazardly. The two broad methods of research reasoning are deductive and inductive logic approaches, (Aqil, Ahmad, & Mehmood, 2006). Trochim (2006) describes *inductive reasoning* as moving from specific observations to broader generalizations and theories informally called a "bottom up" approach which with specific observations and measures, detects patterns and regularities, formulates some tentative hypotheses that can be explored, and finally ends up developing some general conclusions or theories, (theory building). *Deductive reasoning* works from the more general to the more specific, informally called a "top-down" approach. It begins with developing a theory about a topic of interest, then narrowing that down into more specific hypotheses that can be tested through collection of data to address the hypotheses (theory testing), (Trochim, 2006). Both inductive and deductive research strategies were used in this research. According to Devers and Frankel (2000), qualitative research design is inductive while quantitative research employs the deductive logic. Inductively, the researcher began by collecting data in what was named an exploratory study that was thought relevant to the topic. Once a substantial amount of data was collected, the researcher then took a breather from data collection, stepping back to get a bird's eye view of the data. At this stage, the researcher looked for patterns in the data, which later brought about reviewing literature on the variables established. Then this was moved from a single experience at one university to a more general set of research findings. The deductive approach was used in the quantitative study to confirm the factors that influence implementation and how they impact on the use of FIS in the Ugandan Universities.

### **3.2. Mixed research methods approach**

This study employed a combination of qualitative and quantitative approaches in collecting and verification of the study findings, thus constituting a mixed-model research (Saunders & Lewis, 2009). The rationale of this model as argued by Eisenhardt and Graebner (2007) is that triangulation made possible by multiple data collection methods provides stronger substantiation of constructs. The qualitative approach which is one of the components of mixed methods research is useful for understanding the rational or theories underlying relationships, and also for understanding why and why not emergent relationships hold. It also allows flexibility of data collection techniques and research design. For example, in crafting instruments and protocols, inductive researchers typically combine data collection methods such as interviews, observations and archival sources (Easterby-Smith, Golden-Biddle, & Locke, 2008). In addition adjustments can be made on data collection instruments, such as addition of questions on interviews or on questionnaires which in most cases can be probed by constant overlapping of data analysis with data collection (Eisenhardt & Graebner, 2007). The results obtained then can be galvanized through a quantitative approach by conducting a survey over a wider population, which is the other component of mixed methods (Jick, 2014 cited in (Eisenhardt & Graebner, 2007). After the relationship is supported through quantitative analysis, the qualitative approach can further provide a good understanding of the dynamics underlying the relationship, that is the "why" of what is happening. This is crucial for establishment of internal validity (Eisenhardt & Graebner, 2007).

In this study, therefore as a first step, an exploratory study was undertaken at a single university namely Makerere University to find out factors that influence implementation of FISs. This took a qualitative approach. The emergent results and hypotheses were compared with extant literature. According to Eisenhardt and Graebner (2007), literature discussing similar findings is important because it ties together underlying similarities in phenomenon normally not associated with each other. The result is often a theory with stronger internal validity, wider general usability and higher conceptual level (Eisenhardt & Graebner, 2007) After the exploratory study and development of the hypotheses, the researcher went ahead to conduct a quantitative survey on seven universities to find out the extent at which the found results as per the exploratory study would be galvanised and also to find out the

relationship between FIS implementation and eventual use. And lastly a qualitative validation study was conducted to explain the findings from the quantitative survey. In employing mixed methods, it is possible to overcome a number of challenges faced by single based studies like limited knowledge, biases, and inflexibilities, but rather, it becomes imperative to integrate qualitative and quantitative data, sampling techniques (Greene, 2008). Quantitative and qualitative research fields made it easier to apply differing designs, sampling techniques, data collection methods and validity studies to capture a detailed understanding of the study objectives and components. Therefore, mixed methods was advantageous since it helped the researcher to complement the strengths of a single design, to overcome weaknesses of a single design, to address the questions at different levels and to address the theoretical perspective at different levels.

### **3.3 Key activities in the research process**

The key activities in the research process consisted of the following:

- Reviewing literature on challenges of FISs implementations.
- Conducting an exploratory qualitative study to identify factors that influenced the implementation of a FIS at the biggest university in Uganda, Makerere Universities.
- Reviewing literature on factors perceived to influence implementation of FISs.
- Conducting a quantitative field study on implementation and usage of FISs in seven Ugandan universities to confirm the factors that influence implementation of the systems, and to determine the impact of each of the factors on usage of the systems.
- Conducting a qualitative study to validate results from the quantitative field study and to determine the circumstances in which the factors that influence implementation impact use of FISs in developing countries.



### **3.4 The Exploratory study**

#### **3.4.1 Research design**

The study approach used in the exploratory study was a post-mortem case study. Makerere University was chosen for this case study because at the time of starting the investigation, only four years had elapsed after completion of their ITS implementation, so it was believed that most of the issues which had transpired were still fresh in people's minds. In addition, Mak with an enrolment of about 40,000 students at the time was a relatively big institution and therefore it would provide a good ground for a wide range of issues pertinent to the study.

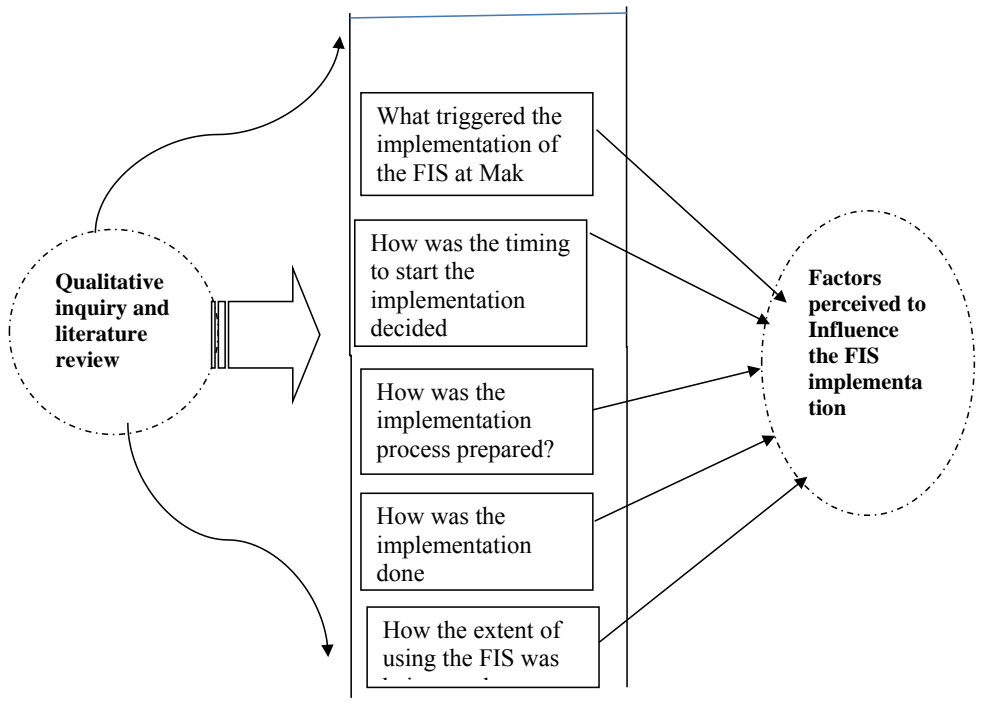
#### **3.4.2 Sampling process**

In the study, non-probability sampling technique that included purposive sampling was used. Purposive sampling was used to select medium and where necessary top level university officials who were targeted due to knowledge by the researcher that they had information about how the implementation was done because the researcher was an employee of Mak by then. This technique was employed following the postulate that if sampling has to be done from smaller groups of key informants, there is need to collect every informative data, and thus; the researcher needs to select the sample purposively at one's own discretion (Amin, 2005). Also purposive sampling method enables the researcher with a purpose to have access to a particular subset of people and excludes those that do not fulfill the conditions in mind (Amin, 2005). In purposive sampling, the researcher decides what needs to be known and sets out to find the people who can and who are willing to provide the information by virtue of knowledge or experience. In this study therefore the informants were chosen based on their relevance to the conceptual questions and closeness to the subject matter rather than their representativeness. This was also guided by the philosophy of social construction of technology which advises that sampling and data gathering must be conducted amongst relevant social groups rather than aiming at a representative sample of the total population (Sahay et al, 1994). In view of this, the informants were selected mainly from the finance and IT units.

#### **3.4.3 Areas of investigation**

With reference to section 2.4.5 in literature review, the areas that were investigated in the study included; question of what the trigger for implementation of the FIS at

Makerere University was, how time to start the implementation was decided, how preparation for the implementation process was done, how the actual implementation was done, and how the extent of using the FIS was. These areas are represented in Figure 2 below.



**Figure 2: Areas that were investigated in the exploratory study**

**Step 1:**

Step to signify that literature review had to be done and in this regard to especially explore challenges in FIS implementation.

**Step 2:**

Step to find out how the implementation was done.

- i. ***What triggered the implementation of the FIS at Mak:*** Investigation of this was intended to understand the problem that Mak had to decide that the FIS would be solution.
- ii. ***How the time to start the implementation was decided:*** Investigation of this was intended to understand whether Mak was actually ready to start the implementation. In other words, to find out how all the factors that motivated the implementation had reached critical moment.
- iii. ***How the implementation process prepared:*** Investigation of this was intended to understand the preparations in terms of infrastructure, human resource and other materials that had to be done before starting the implementation
- iv. ***How the actual implementation was done:*** Investigation of this was intended to understand how the various activities were done during implementation and therefore to find out the merits and demerits of the various approaches that were used.
- v. ***The extent at which the FIS was being used:*** Investigation of this was intended to understand how the system was being used

### **Step 3:**

Factors perceived to influence implementation that emerged from the investigation.

#### **3.4.4 Data collection method**

Face-to-face interviews with key informants were employed to elicit qualitative data from the respondents guided by open ended questions. The reason for choosing this technique was that face-to-face interviewing provides direct contact with a respondent, which gives additional benefit of recognising and processing non-verbal communications as well. This was intended to obtain in- depth data; it was also intended to allow respondents talk freely with undue influence from the researcher. Verbal interviews were preferred because the questions were probing in nature seeking detailed information, and where questions were not clear to the respondent, there was more explanation for clarity by the researcher. According to Barley and Kunda (1992), interviews provide a guard against confusing items. If a respondent has misunderstood a question, the interviewer can clarify, there by obtaining relevant responses (Barley & Kunda, 1992). The researcher therefore asked questions orally and wrote down the respondents' answers and in many cases tape recordings were

made. Before doing an interview, the informant would be approached to seek for approval on the willingness to be interviewed. Individuals were not only selected on the basis of prior knowledge but also on the basis of their willingness to participate in the study.

The study spanned for over a period of five months, from September 2011 until February 2012. The questions that were asked were mainly in four areas; general information about the organisation and the system, information on how the implementation was done, information on how the system was being run, and how the social setting affects the running of the system. Interview guides with open ended questions were used in order to obtain in-depth information through probing and prompting. See the samples in the Appendix.

Eleven people were interviewed and they included; the head of the finance department, the head of the IT unit, the local coordinator of the funding agency (NORAD), two Senior Assistant Bursars, four Accounts Assistants, one Systems Administrator and one consultant. See the details in Appendix 1.

### **3.4.5 Analysis of the data**

Thematic analysis (Braun & Clarke, 2006) was used in analyzing the data. This involved discovering themes and categories that emerged from the data and attempting to verify, confirm and qualify them by searching through the data and repeating the process to identify further themes and categories. In order to do this, once the recorded data was transcribed in verbatim, notes and short phrases that sum up what is being said in the text were made. The aim was to offer a summary statement or word for each of the issues that were discussed. This was not adopted in cases when the respondent clearly went off track and begun to move away from the topic under discussion.

In a second stage, the researcher collected together all the words and phrases from all of the interviews onto a clean set of pages. These were then worked through and all duplications were crossed out. This reduced on the numbers of 'categories' considerably. Once this second, shorter list of categories was compiled, the researcher went a stage further and looked for overlapping or similar categories. Informed by the analytical and theoretical ideas developed during the research, these categories were further refined and reduced in number by grouping them together. A list of several

categories (perhaps up to a maximum of nine factors) were then compiled. This reduced list formed the final category list that was used to divide up all of the interviews.

### **3.5 The Quantitative field study**

#### **3.5.1 Research design for the quantitative field study**

The quantitative research approach was majorly employed to check the findings from the exploratory study that was conducted at Makerere university. In here, nine factors that were found to influence implementation as per the exploratory study and later merged into four were investigated over a wider a population with more universities in order to find out whether those findings could be galvanized. Further to this, an investigation was carried to find out how the factors impact usage of FISs. All this was done with use of questionnaires that were distributed to respondents in seven Ugandan universities. This quantitative case study was chosen to verify empirically the exploratory study analyses in order to facilitate exploration of a phenomenon within its context using a variety of data sources. This ensured that the issue was not explored through one lens, but rather through a variety of lenses which allowed for multiple facets of the phenomenon to be revealed and understood.

#### **3.5.2 Study population and sampling process**

The geographical scope focused on universities in Uganda, with staff working in finance departments. The study population included; Makerere University, Busitema University, Uganda Management Institute, Uganda Christian University, Mbarara University, Kyambogo University and Makerere University Business School (MUBS). The respondents were chosen on assumption that they were aware of the factors that affect implementation, and that they would be able to make thorough comments as to why they use or not use the various components of their systems. The total number of respondents was 128.

#### **3.5.3 Inclusion criterion**

Inclusion criteria is considered to refer to the characteristics that prospective subjects must have if they are to be included in a study, while exclusion criteria are those characteristics that disqualify prospective subjects from inclusion in the study (Amin, 2005). In this study, the inclusion criterion was that the university must have been implementing and using the FIS for 5 or more years. This period was deemed sufficient enough to identify institutional challenges and opportunities in the implementation and use of the FISs by the stakeholders. Secondly, the university must have had an IT unit for not less than 3years. This is because without an IT unit, it

would be difficult to find out how the FIS was being propagated. Thirdly, the university must have sought out for consultancy in the program. This was used to establish whether flexibility in consultancy was adhered to and why. Therefore, of the nine public universities in Uganda at the time, six universities met the inclusion criterion while of the entire private universities, only one met the inclusion criterion (Uganda Higher Institutions of Learning Report, 2009). Therefore, the study sampled all the seven universities that met the inclusion criterion for the study and all staff in the finance departments of the respective universities were included in the sample.

### **3.5.4 Data collection**

According to Mugenda and Mugenda (2003), quantitative data collection methods rely on random sampling and structured data collection instruments that fit diverse experiences into predetermined response categories. They produce results that are easy to summarize, compare, and generalize. The study therefore used a structured questionnaire consisting of a series of closed-ended questions to collect the data. Closed-ended questions were preferred because they were easy for the respondents to answer and for the researcher to analyze. The questionnaire design was based on DeLone and McLean (2003), which is a success model but an extra construct was included for factors perceived to influence FIS implementation that were being investigated. However, when analysing data, it was only this extra construct and the Use construct that were considered. This was because it was realized that those two constructs were sufficient to answer the research questions as essentially what was under investigation was how factors that influence FIS implementation impact its eventual usage. A questionnaire was found to be ideal for a large sampled population for questions that sought to quantify responses. The staff population was estimated to be more than 100 respondents, therefore this kind of questionnaire was found to be the most suitable tool to gather quality and quantifiable data that could be used to gauge the attitudes, knowledge and experiences of staff on the diverse aspects of FIS implementation and use within the universities. All the questions were of the Likert scale nature offering a rating scale of best responses to the statements. The questions that were used in the questionnaire and their sources are indicated in Tables 1 and 2.

**Table 1: Questions that were included in the Questionnaire****Usage construct**

No	<i>Rate the following statements with regard to the use of your FIS</i>	Source
E.1	<b>Dependency:</b> My work fully depends on the system	Petter, DeLone, and McLean (2008)
E.2	<b>Frequency of use:</b> I use the system all the time	
E.3	<b>Amount of use:</b> I generate and prepare all my financial reports form the system	
E.4	<b>Nature of use::</b> The system is used almost by everybody in the accounts department	

*Source: secondary data, 2008*

**Table 2: Factors that influence implementation**

Construct	Measure	Source
Top Management Support	Through participation in implementation process. e.g. attending implementation meetings	Ragu-Nathan, Apigian, Ragu-Nathan, and Tu (2004)
	Through Swift decisions making	
	Through Demand for regular implementation progress reports	
Effective Communication	There is a clear communication channel on all issues that pertain to the system	Amoako-Gyampah and Salam (2004)
Evaluation of Staff Performance	There are regular Staff performance evaluations on system use	
Education and Training	There was adequate training on FIS use	Amoako-Gyampah and Salam (2004)
	Refresher training on FIS use is provided from time to time	
Technical Support	Quick support service is provided	Amoroso and Cheney (1991)
Project Management	There is a clear mechanism of addressing issues and problems that arise in FIS implementation	
Change Management Program	I was taken through a change management/sensitization program before using the system	
Effective IT unit	The institution has an IT unit responsible to support the IT system operations including the FIS	Antony, Leung, Knowles, and Gosh (2002)
Flexible consultants	The suppliers/consultants are always willing to incorporate desired new changes into the system without much difficulty	



### 3.5.5 Quality control

The researcher pilot tested the instruments by gathering information on the flow of the questions before full formal survey. Pre-testing instruments ensured clarity and relevance of issues for the final data collection.

#### (i) Convergent validity

Convergent validity of the scale items was assessed using Average variance extracted (AVE). Basing on Joe F Hair, Ringle, and Sarstedt (2011) indicators with outer loadings below 0.40 should be eliminated. For this study all average variances extracted (AVE) were above 0.40 in arrange of (0.4834 - 0.686) as detailed in table 3 below. Therefore, all the factors studied passed and had the required degree of convergent validity to satisfy the intended study objectives.

**Table 3: Summary of PLS quality (AVE, R Square, Composite Reliability and Cronbach's Alpha**

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
Top Management Support	0.686	0.8656	0	0.7815	0.6860	0
Capacity Building Initiatives	0.5486	0.7081	0	0.6050	0.5486	0
Organisation facilitation Initiatives	0.5315	0.7652	0	0.6448	0.5315	0
System Support Initiatives	0.4834	0.7315	0	0.5399	0.4834	0
Use	0.5416	0.8205	0.5267	0.7043	0.5416	0.1649

#### (ii) Discriminative validity

Discriminant validity reflects the extent to which a measure is unique and not simply a reflection of other variables (Peter & Churchill Jr, 1986). Discriminant validity was assessed using single measures of cross-loadings. As seen in Table 4, correlation coefficients (diagonal elements) are higher than the correlation between each pair of constructs (off-diagonal elements). This indicates that, all the factors studied were unique and shared different purpose and levels of contributions to the study objectives. Though some of the cross loadings were negative and others

positive, this indicates that each study factor was unique to others, which reveals a high degree of Discriminant Validity of the results. The cross loading results ranged between -0.3409-0.5626 as detailed in Table 4 below.

**Table 4: Discriminant validity results**

	Top Management Support Initiatives	Capacity Building Initiatives	Organisation facilitation Initiatives	System Support Initiatives	Use
Top Management Support Initiatives	1	0	0	0	0
Capacity Building Initiatives	0.1482	1	0	0	0
Organisation facilitation Initiatives	0.0280	0.2206	1	0	0
System Support Initiatives	0.2734	0.3116	0.1915	1	0
Use	0.5626	-0.1019	-0.3409	0.3037	1

**(iii) Reliability of measures**

To measure internal consistency, composite reliability analysis was adopted and composite alpha values were used to report the reliability levels. Based on (Joseph F Hair, Black, Babin, Anderson, and Tatham (2006); Rossiter (2002)), construct reliability coefficients should all exceed the 0.70 lower limits. For this study, the composite reliability factors values revealed a high degree of reliability, with values ranging from 0.8656 for the highest score construct to 0.7081 for the lowest score factor as indicated in table 3. Hence all the factors studied had the required level of internal consistency and therefore meeting the required degree of Reliability measure.

**3.5.6 Quantitative data analysis**

The first thing that needs to be mentioned here is that while data was collected from seven universities, both descriptive statistics and regression analysis were generated wholesomely without distinguishing the universities. The researcher chose to take this approach because having identified the factors perceived to influence FIS implementation which was done during the exploratory study, the interest at this stage was to find out people’s views in totality regarding the impact of each factor on usage

of the FISs. The issue of identifying out distinctively views of the different universities was done during the third stage of the study where by circumstances under which the factors impact usage of the FISs was found out.

To analyse the data, three levels of analysis were performed. These included; univariate, bivariate and multivariable. Descriptive statistics, correlation analysis and regression analysis were produced. This approach was adopted because the study aimed at establishing conclusions on attributes of FIS use which was found to be suitable in measuring, peoples practices, perception and interest. The univariate level of analysis guided in generating descriptive statistics that mainly included frequency distributions. At the bivariate level, discriminant validity results were obtained, and at the multivariate level, the general research model was developed and conclusions regarding the significance of the study and model general recommendations were drawn.

Two software packages were used in the analysis and these were SPSS that was used in extracting descriptive statistics, and Smart PLS (SEM) that was used in developing the study model, performing validity and reliability analysis and testing the significance of the study results, as well as generating the study conclusions based on 95% confidence interval.

In production of relationships, structural equation modeling (SEM) for data analysis was used. SEM assesses the properties of the scales employed to measure the theoretical constructs and estimates the hypothesized relationships among the said constructs (Barclay, Higgins, and Thompson (1995); Chin, Marcolin, and Newsted (2003); Westland (2007)). This helped in assessing the importance of the factors under investigation in regard to usage of FIS in the universities. Therefore, SEM was able to answer a set of interrelated research questions simultaneously through the structural model.

The decision to use PLS was guided by the fact that PLS was developed to handle both formative and reflective indicators whereas other SEM techniques may not permit this. This capability enabled the designation of the type of relationships that were believed to exist between the manifest (independent) variables and the latent (dependent) constructs.

The model was assessed using three criteria: 1) path coefficients ( $\beta$ ); 2) path significant (p-value); and 3) R squared which measures a construct's percent variation that is explained by the model (Wixom & Todd, 2005). To test the statistical significance of each path coefficient bootstrap re-sampling method was employed (Chin & Newsted, 1999). Rossiter (2002) states that for the structural model, all paths should result in a t-statistic value not less than 1.96 and latent variable R-squared ( $R^2$ ) should be greater than 50.

### **3.5.7 Measurement of variables**

Mugenda and Mugenda (2003) support the use of nominal, ordinal, and Likert type rating scales during questionnaire design and measurement of variables. A five point Likert type scale (1- strongly disagree, 2-disagree, 3-not sure, 4- agree and 5-Strongly agree) was used to measure the variables. The choice of this scale of measurement was that each point on the scale would carry a numerical score that would be used to measure the respondent's attitude. According to Mugenda and Mugenda (2003) and Amin (2005), the Likert scale is able to measure perceptions, attitudes, values and behaviors of individuals towards a given phenomenon.

### **3.5.8 Ethical considerations**

Informed consent was sought from the respondents before any interview. Data was collected using a self-administered questionnaire which was coded to best fit of the required responses set on a Likert scale of five. The researcher ensured that all citations and references of different respondents and authors were acknowledged. The researcher maintained confidentiality of the respondents and protection of their privacy at all times.

### **3.6. The Validation field study**

This section describes the methodology that was used in the validation study that was carried out on results that were obtained from the second study which was a quantitative study.

#### **3.6.1 Research design for the validation study**

The research design adopted was qualitative through focus group discussions (FGDs). Four universities were selected and these included; Kyambogo University, Uganda Christian University, Makerere University Business School and Uganda Management Institute, and the informants constituted of staff from the respective finance departments. These were selected on the basis that they had been employed in the quantitative field study and had not been included in the exploratory study. Secondly after eliminating Makerere University on the basis that it had been employed in the exploratory study, these four universities were the biggest in terms students' population out of the remaining six (see Table 9, Chapter five) and a number four universities out of six was considered to be an adequate representative.

#### **3.6.2 Sampling process**

Both purposive and convenience sampling were used to select the different officials and a total of 14 respondents. Respondents were chosen based on their relevance to the conceptual questions and closeness to the subject matter rather than their representativeness. This was guided by the philosophy of social construction of technology which advises that sampling and data gathering must be conducted amongst relevant social groups rather than aiming at a representative sample of the total population (Sahay, et al, 1994). In view of this the informants were selected mainly from finance and IT departments. Details of people who were interviewed were as follows in Table 5:

**Table 5: Details of informants Interviewed**

<b>Institution</b>	<b>Date of interview</b>	<b>Duration</b>	<b>People Interviewed</b>	<b>FIS found</b>
KYA	28 <sup>th</sup> July 2015	50 Min	4 people were interviewed and they included: two Administrative Assistants, one Accounts Assistant and one Revenue Collection Assistant	Navision being used for recording of payments and e-Campus and academic records being used for fees collection. Integration of the 2 systems is being done. For final reports they use Excel.
MUBS	30 <sup>th</sup> July 2015	45 Min	2 people were interviewed, both working as Assistant Directors of Finance	Internally developed system for especially recording fees collections
UCU	5 <sup>th</sup> August 2015	48 Min	4 people were interviewed and they included: two Administrative Assistants, one Accounts Assistant and one Revenue Collection Assistant	Focus being used for all accounts transactions and then a new system SAP being implemented.
UMI	16 <sup>th</sup> August 2015	52 Min	4 people were interviewed and they included: one Senior Accounts Assistants, one Accounts Assistant, One Payroll Officer and one Stores Assistant	Navision being used for all accounts functions

### **3.6.3 Data collection method**

Data was gathered through focus group discussions on results that were obtained from the quantitative study. Four FGDs were conducted in four universities. In Kyambogo University, 4 people were interviewed and they included: two Administrative Assistants, one Accounts Assistant and one Revenue Collection Assistant. In MUBS, 2 people were interviewed, both working as Assistant Directors of Finance. In UCU,

4 people were interviewed and they included: two Administrative Assistants, one Accounts Assistant and one Revenue Collection Assistant and in UMI, 4 people were interviewed and they included: one Senior Accounts Assistants, one Accounts Assistant, One Payroll Officer and one Stores Assistant.

This method was chosen because it was found to be a good way to gather together people from similar backgrounds or experiences to discuss a specific topic of interest. The strength of FGD relies on allowing the participants to agree or disagree with each other in order to provide an insight into how a group thinks about an issue, the range of opinion and ideas, and the inconsistencies and variation that exists in a particular community in terms of belief and their experiences and practices (Abugabah & Sanzogni, 2010). FGDs were used to explore the meanings of quantitative study findings that could not be explained statistically, the range of opinions/views on a topic of interest and to collect wide variety of local terms. The results from the quantitative survey that were presented to the informants in the various Universities and discussed were as follows in Table 6.

**Table 6: Details of the Quantitative Study**

<b>Factor that influences FIS implementation</b>	<b>Impact on FIS use</b>		
Top Management Support	Participation in meetings	Significant	Positive
	Demand for Report		
	Quick Decision Making		
Capacity Building Initiatives	Education Training	Not Significant	Negative
	Change Management		
Organisation facilitation Initiatives	Effective Communication	Significant	Negative
	Effective IT Unit		
	Regular Staff Performance		
System Support Initiatives	Technical Support	Significant	Positive
	Project Management		
	Flexible consultants		

### **3.6.4 Data analysis**

As it was done in the exploratory study, thematic analysis was used in analyzing the data. This involved discovering themes and categories that ‘emerged from the data and then attempting to verify, confirm and qualify them by searching through the data and repeating the process to identify further themes and categories. In order to do this, once the recorded data was transcribed in verbatim, notes and short phrases that summed up what was being said in the text were made.

In a second stage, all the words and phrases from all of the interviews were collected onto a clean set of pages. These were then worked through and all duplications crossed out. This reduced the numbers of 'categories' considerably. Once this second, shorter list of categories was compiled, the researcher went a stage further and looked for overlapping or similar categories. Informed by the analytical and theoretical ideas developed during the research, these categories were further refined and reduced in number by grouping them together. This reduced the list and formed the final category list that was used.



# **Chapter four**

## **The Exploratory Study**

### **4.1. Introduction**

This chapter presents findings of the exploratory study that was undertaken to find out factors presumed to influence implementation of FISs in universities in the context of developing countries. This was done as the case in point to find out such factors that later guided the researcher in reviewing literature and attesting quantitative data over a wider population consisting of seven universities. This exploratory study was carried out at Makerere University (Mak) in Uganda on an implementation of a FIS that happened between 2004 and 2007.

### **4.2. Makerere University and the FIS implementation**

Makerere University is a public university in Uganda with a students' enrolment of about 40,000 students and 5,000 members of staff. The university procured an integrated enterprise system called Integrated Tertiary Software (ITS) to be used in finance management, students' administration, and human resource management. The finance subsystem (FIS) is the focus of this study and it has 8 modules that included: general ledger, students' debtors, account receivables, accounts payables, cash books, income & expenditure budgeting, and procurement fixed assets register. During the implementation, the ITS had to be installed, customised to fulfil the Mak requirements and staff had to be trained. Thereafter support and maintenance was to be provided for a period of 3 years.

### **4.3 Origin of idea to implement the FIS**

From the data that was collected from the various people who were interviewed in regard to issue of rationale for the implementation, one thing that was mentioned by almost everybody was the problem of lack of efficiency in managing fees payments of students due to the relatively very big number of students (in the range of 40,000 at the time). When talking about this, the head of the finance department said:

*“The problem was students' numbers and the most risky area was revenue. As a finance manager that was my main focus. With the rest ,we could afford to handle manually. For example with the expenditure, the vouchers are with you, but with revenue, you would not know who has paid and from what faculty”.*

Head of the finance department

The Senior Assistant Bursar and the person who headed the implementation team said:

*“The privatisation scheme that was introduced in the nineties brought up an increase in the students’ population. Mak could no longer accurately tell how much money was being received and reports could no longer be given in a timely manner”.*

This was also supported by The Head of the IT unit who said:

*“The main motivating factor for the implementation was the big number of students and lack of efficiency that subsequently followed”.*

*“In the late 1990s, Mak had a student population of around 30,000 and all functions that include student administration and all other support functions as well as academic had become increasingly inefficient to manage.”* He added.

In addition to the factor of the big student numbers, another factor was donor influence along with best practice which both played a role in influencing the decision for implementation. In an internal report by Tusubira (2005), it is said that, around the period 1999/2000, a number of funding agencies which were also being referred to as Development Partners were coming to Mak to support many different areas. But most of them put up a demand that they needed assurance that Mak had adequate capacity in the area of finance management to provide assurance that the institution would be able to efficiently manage the kind of support that they intended to provide. For example, during the interview with the coordinator of NORAD (Norwegian funding agency under the Mak planning unit) by then he said:

*“NORAD had been supporting some faculties that included Agriculture and Science, and in 1999/2000, they decided to expand the scope of their support to include other units. But before making a decision to support, NORAD requested for an audit to be carried out at Mak in order to establish the capacity of the institution to implement the kind of support of USD 14 Million that was to be provided”.*

The audit was carried out by Price Water House Coopers Ltd, and according to the NORAD coordinator the results showed that Mak had capacity to manage the funding except that the information management systems at that time were manual, so there would not be as much efficiency as would be desired. This triggered Mak to develop

proposals for improving the management of the information systems including the finance information system, and it was because of this development that NORAD developed interest to fund the implementation project according to the NORAD coordinator. This is evidenced by a comment that was made by Head of IT who said:

*“Donors were looking at institutions within the country to create efficiencies, and automation was being seen as the best practice that was being proposed elsewhere. Makerere had started looking ahead towards automation but already there was a move by development partners requiring public institutions to improve performance. So Makerere’s big numbers coincided with the push by the development partners to automate systems and being the highest institution of learning in the country, Makerere was a prime choice for donors to fund”.*

The Head of IT continued to say that automation was not decided by the players like the

head of the finance and head of academic records. He was quoted saying:

*“What they presented was just increasing challenges to support top management in their bid to solicit funding from the donors for the automation. These players could have presented the challenges without knowing that they were supporting a case for top management”.*

In other words, according to the head of IT, the push for implementation was a top-down approach motivated by a position that institutions in developing countries needed to comply with donor requirements. The Head IT unit summarised by saying:

*“Mak being a public institution, being a prime choice for funding, then moves to get supporting data of the challenges it was facing from the players below”.* She added that; *“things actually happened in parallel. Donors came in to look for efficiency and they found Mak already grappling around to see how to solve the problems of inefficiency”.*

In the same way, the head of finance also said that;

*“as we would discuss with the donors there were issues they would raise and so in the process you would learn that you needed this”.*

All what this means is that along the way there was evidence that donors strongly influenced Mak to make a decision to implement the FIS sub-system ITS.

Another influencing factor had to do with best practice. This is exemplified by the head of finance's comments who said that;

*“When I joined the university, everything was manual and the thinking at the time was how to make Mak ICT enabled. That argued us to look into that area and we wanted to catch up with other universities so we said that we would look for funders because government wouldn't”.*

The IT Unit head also said;

*“the adoption of systems in many institutions of higher learning, and automation of functions whether administrative or academic is not a reinventing the wheel, most institutions follow best practice. What is important is that you have a champion to introduce the automation, you need to have the funding and the team players. Then at the end you need to have a change management team that can influence and effect the changes. So it is essentially adopting best practice and that is what Mak did.”*

#### **4.4 How the time to start the implementation was decided**

As has been mentioned and described in 1.5.2 above, during the 1999/2000, a number of factors started emerging requiring Mak to ensure availability of efficiency in the management systems. This meant that Mak had to rise up and start doing something particularly in the direction of ICT. However according to the report by Tusubira (2005), by the year 2000, Mak had only rudimentary Local Area Networks (LANs) in only about thirteen faculties and institutes and none of them were interconnected. Tusubira (2005) asserts that the first time the need for a coordinated policy and an ICT master plan in Mak was mooted was in February 1999 when the Head of Department of Mathematics and Chairman of the Senate computing management committee at that time wrote that the Senate computer management committee had tried to develop policy in a number of areas but it would be very difficult to progress unless the university established, perhaps under the university secretary's office an office charged with the implementation of a coherent ICT policy and programme at Makerere University.

With all these demands on the table, the Vice Chancellor organised a conference for all heads of departments to discuss the question of ICT development in the university. During this conference, the university resolved to develop an ICT policy and master

plan for a period 2001 - 2004 which was aimed at defining the strategy that Mak would take in its bid to develop the use of ICT in the university management systems. In regard to this Tusubira (2005) pgs. 86-97 specifically indicated:

*“Makerere University was able to address some of the challenges of integration of ICT services and systems in all aspects of the university through a systematic process of internal consultation, creating awareness and ownership through the development of a clear ICT Policy and Master Plan owned by the stakeholders, thus reducing a very complex undertaking to sets of consistent and related activities that enabled resources and funds from development partners to be directed at different parts of the whole”.*

The key components or activities that were to be carried out in the ICT Policy and master plan according to Tusubira (2005) were: (1) skills training for all end users in the university, (2) implementation of the library information system, (3) implementation of the academic records information system, (4) implementation of the finance information system, (5) implementation of the human resource information System, (6) general data communication infrastructure, (7) email and internet/intranet access, office automation and (8) establishment of a fully-fledged Directorate for ICT support unit in the university (DICTS). Therefore, the master plan comprised of all the planned ICT activities of the university for the period of 5 years (2001 to 2004) and the mandate of implementing the plan was given to DICTS. It is therefore this master plan that guided when each activity would be implemented and DICTS being the unit that was spearheading the implementation. That master plan had a lot of influence in determining when and how the different activities would be implemented.

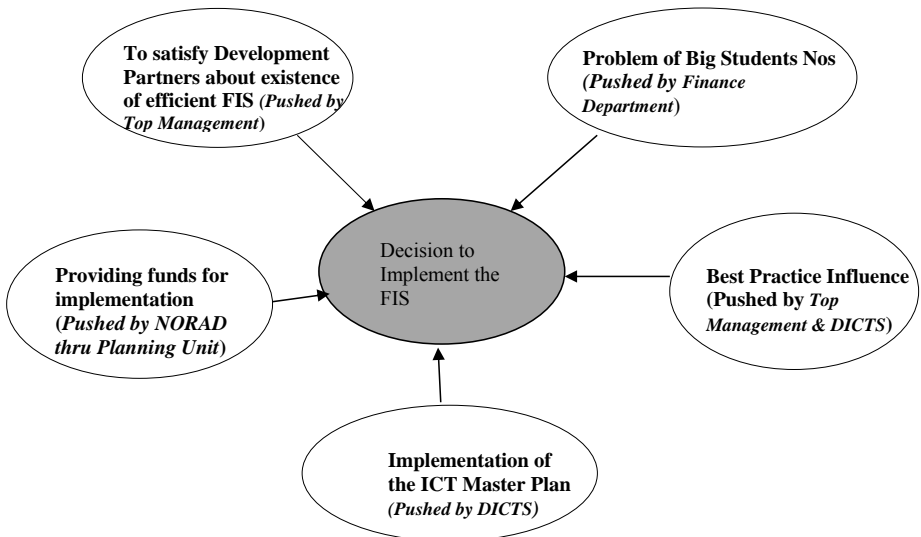
According to the head of the IT Unit the first activity needed was to build up the infrastructure as this would support the systems and services. When this was done to a level of developing email and Internet accessibility, then the university started implementing the FIS sub-system ITS, which is the focus in this study.

## **Summary of factors that motivated the implementation**

- 1. Need by the university top management to give development partners satisfaction that Mak had the necessary capacity to manage finance information efficiently*

2. *Need from the finance department to find a way of managing increasing students' fees records in time as a result of increasing student numbers following issuance of a policy by Mak to start admitting privately sponsored students in the nineteen nineties.*
3. *Influence from best practice that pointed to automation of systems as a must way to go during that time as seen by Top Management and DICTS.*
4. *Need by Mak under the stewardship of the Directorate for ICT Support to execute the activity of implementing information systems that included the FIS as had been prescribed in the University ICT master plan for 2001-2004*
5. *Funds provided by a developing partner; NORAD under stewardship of the Mak Planning Unit, which had to be utilised within a specific period i.e. 2001-2004) being available.*

Figure 3 below gives a diagrammatic representation of the above factors in relation to decision to implement the FIS at Mak.



**Figure 3: Factors that influenced Mak to make to implement the FIS**

## 4.5 Preparatory work activities

- ***Running an ICT awareness workshop:***

An ICT awareness workshop for staff in the finance department was held for 2 days in June 2001. The aim of the workshop was to introduce staff to the ICT master plan, and to capture from them more ideas about the plan for further refinement. This workshop was organised and run by DICTS but according to the Head IT unit, not much was actually captured from the participants that was used for refining the plan.

- ***Training of staff in basic computer skills:***

A program for training all university staff in basic computer skills was organised by the university. All staff were put on the program because the other main sectors of the university that included students' administration and human resource department were also to go through computerisation processes. The program was run by the university's faculty of computing and information technology and the people were trained in phases over a period of one year during 2001-2002.

- ***Carrying out a systems requirements study and producing request for proposal:***

The university engaged a consultant from Delft University in Netherlands to carry out a systems requirements study. This was done for a period of about 2 months (July-Aug 2002), after which a request for proposal that described the Mak finance systems requirements and which was to be used as the bid document was produced. Similar studies were done for students' administration and human resource management during the same period by different consultants.

- ***Tendering the procurement:***

The university advertised the procurement of the finance information systems through the media. During the same period, the tenders to supply systems for students' administration and human resource management were also advertised.

- ***Carrying out the procurement process and awarding of the tender:***

After receiving tender documents from 11 companies, a procurement committee that comprised of staff from procurement, finance, academic registrar, human resource and IT departments was set up to evaluate the bids and to conduct the entire procurement process during the period Sep-Dec 2003. As part of evaluation, the companies that tendered were also invited to give demonstrations of their systems. The tender was won by ITS Holdings from South Africa who bided jointly with Computer Point Ltd (CPL), a Ugandan local computer company to supply an

integrated enterprise system called Integrated Tertiary Software (ITS). This was after they scored highest in the technical and financial proposals. It was an integrated system for finance/accounting, students' administration and human resource. A contract for supply was signed between Mak and CPL and the contractual obligation for the suppliers was to deliver the system, install, customise the system to meet the Mak requirements, train staff and then support and maintain the system for a period of 3 years.

- ***Purchase of computers:***

Several new computers were bought for staff who were not having access to computers during the period March-June 2004, to ensure that everybody could access the system.

#### **4.6. How the implementation was actually done:**

Several activities were done during implementation as described here below:

- ***Installation and customising the system:***

Installation was started in February 2004 by the consultants, and it included installing the server, the database platform which was oracle, and the FIS. After this, the consultants started training the users while at the same time customising the system to meet the actual Mak requirements. This was done in such a way that the consultants would work on each set of requirement and on completion the work done would be tested by the users together with the consultants.

- ***Formation of implementation teams and their functions:***

Two implementation teams were formed to spearhead the implementation in February 2004. The first team was comprised of 13 people in which 12 came from the finance department and only 1 from the IT Unit. Their focus was on the implementation issues within the finance department. The second team comprised of 15 people and each of the departments i.e.; finance, students' administration, human resource, IT support unit and the suppliers was represented by 3 people. They were charged with overseeing implementation in all the three subsystems (i.e. finance, students' administration and human resource) in an integrated manner.

- ***Training:***

Immediately after installation, training started and it was done by the ITS Holdings consultants. The entire finance department of about 30 people was trained together as



one group for a period of 2 months that is; February to March 2004. The trainings were done on a half day basis and the users were trained on how to use the various modules.

- ***User acceptance and commissioning***

While customising the system the consultants did module by module and for any module that would be declared complete, a user acceptance test would be carried out by the implementation team to verify the work done. By the end of 2006, all the modules were found to be functional although only 3 were being used at the time (i.e. students' debtors, cash book and electronic banking). Based on this information, it was resolved that the system be commissioned, and it was commissioned in Feb 2007.

#### **4.7 Operationalising and using of the system**

The modules which were fully operationalized were only 3, i.e. students' debtors, cash book and electronic banking. The factors that emerge from the investigation are described here below:

- ***Factor of project management in implementing FIS:*** referring to obedience to the whole processes righting from planning, scope, design, control and ensuring that all other steps in the cycle are implemented for purposes of ensuring success.

When one of the accountants was asked why some modules were successful while others failed, he said that some supervisors seemed to have not been interested.

*”The administrator of the system was from audit section and so people in the finance department may have not liked that. Also some people who were committed to the system were sidelined and the head of finance at time was not pushy”,* the Accountant said.

Another Accountant said that in 2009 they realized that the system had a problem with bank reconciliation. When he was asked why it took them too long to identify this problem considering that the system had been commissioned in 2007, the Accountant said that before that time, people were still actually using the older systems so they were not putting much emphasis on the new system.

*“It was only when the university decided to try to fully operationalize the system when we realized that there was actually a problem with reconciliation”* Accountant said.

He said that he reported the problem to all the people who were concerned that included the person who was working as the application administrator but he failed to get a precise answer to the problem.

*“I think the application manager failed to get a solution to the problem because he was formally in another department so he may have not had enough time on the system”* Accountant said.

The above quotation suggested labelling this as ***factor of project management***.

There were too many bank accounts because virtually each unit/department had its own bank account and an accountant. So the people who were scattered in many different units and working on different cash books could not all always update them within the desired timelines for reliable reports to be generated. The head of the implementation said;

*“The cash books were too many as a result of the big number of bank accounts which were almost over 200. The people working on them and scattered in many different units could not all update them in a timely manner to have any meaningful reports generated”*. And continued to say *“I pushed for closing of the many bank accounts but this was never taken up by the head of finance. Actually nobody took the initiative to operationalize the entire system”*.

Therefore the planning was not adequate for example; all bank accounts could not be managed efficiently on the system. It is suggested to categorise this as a factor ***of project management***

The data for opening balances of the accounts at the time of starting the implementation was not available. One Accountant said:

*“The implementation started in the middle of the year, so users could not easily access opening balances and this became a big challenge. Also the fees structure was both in local and foreign currency, so there were always arguments on how to apply the conversion rates”*.

There was therefore failure to avail data that was required to operationalize some of the modules and it is suggested to categorise this also as a ***factor of project management***.

A lot more than what was critically needed was taken up all at once. This may have been due to the fact that the push to implement was from top to bottom, after all funds which were being provided by development partners were available. When the IT unit head was asked whether the story would have been different if Mak was to be financing the project from its own internal budget instead of the Development Partners she said:

*“If there were budget constraints whereby Mak would have to look for donors, then Mak would think a lot more about how that money would be spent, and if Mak was using their own money they would have tasked the finance department from inception more, because they would have said that we do not have money tell us only those critical modules that have to be funded within a constraint budget”.*

The IT Unit head added:

*“But we have a top down approach supported by challenges from below that already has funding coming from some source aside so we do not have to involve them too much because they have already given us their challenges to support our case and we got the money. And once we put up a bid and the best system came up it was adopted in its entirety. And because the finance department was just like supporting a cause and then becoming players when the system is coming on board they are not going to think too much about it. It is only when the system becomes operational that they would say that no, we would not have taken on this.”* In conclusion the IT unit head said;

*“Budgeting constraints would have forced a more concise scheme and more involvement of the user department. But this was not the case. They were there to support the cause by only challenges as the money had been got from somewhere else”.*

It was suggested to categorise this as a ***factor of project management***.

When the head of finance was asked whether the tender evaluation committee should be blamed for failing to detect that Computer Point Limited CPL (local partner) actually did not know much, he said

*“No, that is not true, being new in the area, the evaluation committee did not know very much about how the joint venture was supposed to work”.*

The Head of finance concluded by saying that the main reason for this shortcoming was that during negotiations, there were things that were not foreseen like an issue of paying consultants from South Africa to come from South Africa. All in all, it was suggested to categorize this as a ***factor of project management***

- **Factor of Technical Support**

Support was always never timely causing frustrations to many people. This is exemplified by a statement by an accountant who said that:

*“Support was always not timely and this rendered people to fall back to their original methods of work in order to meet targets”.*

It was found out that the problem of the delayed response for technical support was caused by the fact that the calls for support always had to go to the agent first and then only escalated to the actual designers of the system only when the problem persisted. Secondly since the actual designers of the system were never on ground (they were in South Africa), in most cases it would take too long to even diagnose the problem. There was therefore inadequate technical support and it is suggested to categorise this as a ***factor of technical support***

- **Factor of Education and Training:** Referring to training and reskilling to understand how the new system will change business processes. Educating employees should be considered as top priority at the beginning of the project to ensure successful implementation of the new system.

According to the data that was gathered, people who were at a user levels were trained through the entire system module by module and all the people (about 30) were trained from one big room. The arrangement of training all the people at once in big room turned out to be very difficult for the trainees to get attention from the trainers at personalised levels whenever they needed it and this influenced negatively the level at which the various users could use the system. Secondly, after training the trainers immediately went back to South Africa (where they had come from) keeping very far away from users who were just maturing. The head of the user team said:

*“The whole department was trained together as one group for two months, but in addition the trainers should have done individualised training, and they should have remained in close proximity”.*

And one of the accountants said:

*“The training which was done was theoretical and whole sale. Implementation also should have been phased”.*

When asked to comment on the fact that during training the people were taken through the entire system but that the situation on ground did not reflect that, the head of finance said;

*“That was the case because they were doing an implementation of this nature for the first time”.*

He added that;

*”People went for training only once, so after time they forgot and the problem was that there was lack of people to guide Makerere. Computer Point Ltd reached a point when they would want to charge whenever they would be called and so financial implications came in. Computer Point could help on the system but they could not help on the functionalities.”*

It was suggested to categorize this as a ***factor of education and training***.

- **Factor of Evaluation of Staff Performance:** Referring to the evaluation of staff performance through the project.

There were too many bank accounts as each unit in the university had its own bank account and the supervision of staff was not very effective. It was therefore very hard to have all the cash books across the university up-to-date to enable a complete set of reports to be generated in a timely manner. The head of implementation said:

*“The cash books were too many as a result of the big number of bank accounts which were almost over 200. The people working on them and who were scattered in many different units could not all update them in a timely manner to have any meaningful reports generated in a timely manner”.*

It can be visualised that if the staff members were required to account for their work outputs, their performances on this task would grow higher. It is therefore suggested to label this as a ***factor evaluation of staff performance***.

- **Factor of change management program:** Referring to alteration of organizational cultures that seem to deter incorporation of FIS into organization.

The study showed that there was lack of a clear plan for people to turn away from using the older systems. When one accountant was asked why the modules to do with expenditure failed to be operationalized whereas the revenue module for students' debtors had succeeded he remarked that:

*“The form of record keeping at that time was in a decentralized manner, so supervising people was not easy and secondly, the people were allowed to continue with the older systems. Student debtors succeeded only because there was no alternative”.*

Talking about the same, the head of finance said:

*“At beginning, the problem was students' numbers, and the most risky area was on revenue. So there was much focus on revenue. The rest you could afford to handle manually. For example with the expenditure, the vouchers are with you, but with revenue you do not know who has paid and from what faculty”.*

This means therefore that the expenditure module was available right from the start but the actual need for it was not critically there. It is suggested to categorise this as a ***factor of change management program***

According to the head of the IT unit, the human resource structure had not been designed to rhyme fully with the new automation factor. The head of the IT unit remarked that

*“The human resource had been used to using a manual system and now they had to take on a new system, with too many modules, and the structural adjustments started being done after the system was installed”.*

He added that;

*“It was much later after evaluating the system when a decision was made to strike off some particular modules. If this had been done at the beginning, the people would have easily mastered the system and the university would have saved money.”*

It is suggested to categorise this also as a ***factor of change management program***.

- **Factor of Effective IT Unit:** Being used to measure the effectiveness of the IT unit in the organization or public universities in this case.

The study found that the IT unit needed to do a little more than what they did when searching for the system that was procured. For example, when one of the accountants was asked to talk about things that should have been handled differently in order to achieve better results, he said:

*“The university should have taken time to do more research and come up with a system that would perform better. It was only at Mak with no any comparisons within Uganda”.*

Indeed the IT unit is the unit that is mandated to spearhead the searching of the system that was to be procured. This means that the IT unit needs to be a very effective unit, therefore it is suggested to categorize this as a **factor effective IT unit**.

- **Factor of top management support:** Referring to the extent to which top managers in the organization provide direction, authority, and resources during and after the acquisitions of IT systems, including FIS systems.

Another accountant said:

*“Nobody took initiative to operationalize the entire system”.*

We suggest categorising this as a **factor of top management support**

- **Factor of Effective Communication:** Referring to formal promotion of the project by teams and the advertisement of the project progress in the rest of the organization. It was observed that some people did not know and did not believe that adequate searching for a suitable system was done before the system was procured. One accountant commented that;

*“The university should have taken time to do more research and come up with a system that would perform better. It was only at Mak with no any comparisons within Uganda”.*

It was discovered that the belief of the accountant was not correct because as per the head of the IT unit, before a decision to procure the system was made, Mak sent a team of people in some foreign universities where a similar system was being used to find more about it. This means that there was lack of information with some people and we therefore suggest categorising this as a **factor of Effective Communication**.

- **Factor of flexibility of consultants:** Referring to how the organizations implementing FIS/ERP works well with vendors and consultants to resolve any problems quickly as they arise such as software problems.

It was found that due to some omissions or deficiencies that existed in the Requirements Specifications Document, some functionalities could not adequately run. For example; when one of the accountants was asked whether the organisation took time to review all the relevant organisation policies to ensure that they were all adequately accommodated in the automated environment, he remarked that;

*“Some were done like the registration of students but at a later time. Some were not done, for instance the system could not handle multicurrency features for fees”.*

In some instances, the consultants would accept to quickly do the necessary rectifications and in some instances they would not which would cause problems. We suggest categorising this as *a factor of flexibility of consultants*.



**Table 7: Summary of issues of concern that emerged during implementation and mapping on the derived perceived to influence the implementation of FISS**

<b>Factor perceived to influence implementation derived from the investigation</b>	<b>Examples of issues of concern supporting derived factors</b>
<b><i>Top Management Support</i></b>	The study found that there was lack of initiative to operationalize the system in its entirety. It was found out that this was as a result of lack of adequate vigilance by top management.
<b><i>Effective Communication</i></b>	The study found out that some people did not know and did not believe that enough effort was done to search for a suitable system before procurement was done. However, it was found out that this was not perfectly correct as per the head of the IT unit who said that Mak sent a team of people in some foreign universities where a similar system was being used to find more about it before a final decision on procurement was made. This therefore means that it is possible that all the activities that were done during the procurement process were not being effectively communicated to all the stakeholders.
<b><i>Evaluation of Staff Performance</i></b>	The study found out that all bank accounts could not be managed efficiently on the system because all the people could not meet the set timelines for updating the cash books they were working on. This is exemplified by the comments of the head of implementation who said that the cash books were too many as a result of the big number of bank accounts which were almost over 200. So the people working on them and scattered in many different units could not all update them in a timely manner to have any meaningful reports generated. It can be visualised that if the staff members were required to account for their work outputs, their performance on this task would grow higher.
<b><i>Education and Training</i></b>	The study found out that the training was not very effective. For example, all the people (about 30) were trained from one big room and this turned out to be very difficult for the people to get desired attention from the trainers at personalised levels whenever they needed it. This must have influenced the level at which the various users could use the system. For example one of the accountants said; <i>“the training which was done was theoretical and whole sale”</i> . <i>Implementation also should have been phased”</i> .
<b><i>Technical Support</i></b>	The study found out that support was always never timely causing frustrations to many people. This is exemplified by the comments by one of the accountants who said that; <i>“Support was always not timely and this rendered people to fall back to their original methods of work in order to meet targets”</i> .
<b><i>Project Management</i></b>	The study found out that the supervision of the operatives during the implementation was not adequate. This is exemplified by the comment by one of the accountants who was asked why some modules especially the revenue modules were successful while the others especially the expenditure modules failed. The

	<p>accountant said that the administrator of the system was from audit section so people in the finance department might have not liked that. The accountant also said that some people who were committed to the system were sidelined and the head of finance at times was also not pushy.</p> <p>There was failure to avail data that was required to operationalise some of the modules. One of the Accountants said that the implementation started in the middle of the year, so users could not easily access opening balances and this became a big problem.</p> <p>The implementation of the various modules or functionalities should have been done in phases as the actual needs emerge, but this was not the case.</p> <p>A lot more was procured than what was required to solve the problems that were at hand. For example, the head of finance said “At beginning, the problem was students’ numbers, and the most risky area was on revenue. So there was much focus on the revenue and as a finance manager that was my main focus of point. For the rest, you could afford to handle manually”. This meant therefore that although the expenditure module was available right from beginning, the need for it was not critical.</p>
<b><i>Change Management Program</i></b>	<p>The human resource structure was not designed adequately enough to accommodate fully the new automation aspect that was being done. This is exemplified by comments of the head of the IT unit who said that “The human resource had been used to using a manual system and now they had to take on a new system, with too many modules, and the structural adjustments started being done after the system was installed”.</p> <p>There was lack of a clear plan to shift people away from using the older systems. This is exemplified by what the head of finance department said that; “at the beginning, the problem was students’ numbers, and the most risky area was on revenue. So there was much focus on revenue. The rest you could afford to handle manually”.</p>
<b><i>Effective IT unit</i></b>	<p>The study found out that the IT unit needed to do much more than what they did when searching for the system that was procured. For example when one of the accountants was asked to talk about things that should have been handled differently in order to achieve better results, he said; “<i>the university should have taken time to do more research and come up with a system that would perform better.</i> Indeed the IT unit was the unit that was mandated to spearhead the searching of the system to be procured. This means that the IT unit needs to be a very effective unit.</p>
<b><i>Flexible Consultants</i></b>	<p>The study found out that due to some omissions or deficiencies that existed in the requirements specifications document, some functionalities could not adequately run. In some instances the consultants would accept to quickly do the necessary rectifications and in some instances they would not and this would cause problems.</p>

#### **4.7 Summary of issues identified in the exploratory study**

The aim of the exploratory study was to find out and to understand issues that emerge from implementation of finance information systems in universities in developing countries. Previous studies on FIS implementation show that designing and implementing FIS solutions is challenging and requires development of country specific solutions to meet the associated functional and technical requirements. The previous studies also show that as a result of increased challenges due to unstable infrastructure, insufficient funding and unstable social economic organisational environment in developing countries, the quality of training gets poorer which leads to increased implementation failures compared to the situation in developed countries. The study identified nine factors that were perceived to influence implementation. These were top management support, effective communication, staff training, evaluation of staff performance, change management, project management, technical support, effective IT unit and flexibility of consultants. As indicated in the discussion in 4.8 below, these factors were merged into four broad factors and these are; ***Top management support, capacity building initiatives*** that included; education/training and instituting of change management, ***organisation facilitation initiatives*** that include effective communication, effective IT unit and evaluation of staff performance, and ***systems support initiatives*** that include technical support by consultants, project management, and having flexibility of consultants. These factors are related to different activities in the implementation and they all influence the results of the implementation. They are assumed to influence the result of implementation of FIS in terms of relevance, reliability, completeness, timeliness, understandability and verifiability. This research further focuses on finding out the circumstances in which different factors influence use of implemented systems in developing countries.

#### **4.8. Discussion of factors found to influence finance information systems implementations as per the exploratory study**

As mentioned in 4.7, the factors that were identified were collapsed into four broad factors as shown in Table 8 below.

**Table 8: Showing how factors were merged**

<b>Factors before merging</b>	<b>Factors after merging</b>
Top Management Support	Top Management Support
Education/Training	Capacity building initiatives
Change Management	
Effective Communication	Organisation facilitation initiatives
Effective IT unit	
Evaluation of staff performance	
Technical Support	Systems support initiatives
Project Management	
flexibility of consultants	

This was done in order to increase the accuracy of results that were to be obtained considering the nature of data that was collected in the field. The strategy used in development of the groups was rooted from studies of Dwivedi et al. (2015) and Hove & Wynne (2010). Dwivedi et al. (2015) in a Panel discussion entitled “The Information Technology Paradox: Why Some Companies Succeed and Some Fail?”, which took place at a conference of IFIP 2013 in Bangalore suggested factors that should mainly be focused on during IS implementations. These were related to organization characteristics, people/user characteristics, system characteristics, and management characteristics.

Dwivedi et al. (2015) asserts that under organizational characteristics, an organization undertaking implementation must ensure that it has; parallel communication systems, an IT unit and staff evaluation systems.

These characteristics would favor the implementation and usage of the information system. Under user characteristics, Dwivedi et al. (2015) established that users must have the required skills to implement and to keep using the system. And on system characteristics, Dwivedi et al. (2015) indicated that an organization must have in place a technical wing, consultancy wing and coordination wing. The technical wing would

make follow up on the system, the consultancy wing would come in to provide knowledge on what may not be working and the coordination wing would manage the whole project while ensuring that plans, control and evaluation of staff performance are being done. Lastly, Dwivedi et al. (2015) talk about management characteristics which they found as being the primary characteristics if implementation and usage of IS are to be successful. These scholars indicated that the top most administration formed a formidable part in the success of IS. So the organization must have structures in place that allow their decisions to be heard, to be part of the whole preparation process and follow up exercises.

In addition to this, Hove and Wynne (2010) looked at three teams that were responsible for implementation of a finance information system at Rwanda Revenue Authority (RRA) in Republic of Rwanda. The implementation was however not successful and Hove and Wynne (2010) found out that factors behind the failure were related to; capacity of users, top management support, technical support and the authority or institution itself. In regard to capacity of users, Hove and Wynne (2010) found out that there was lack of user support especially failure by RRA to provide re-training programs to users after they completed initial training. Hove and Wynne (2010) also suggested that users needed to be supported by preparing them for change from older practices to new systems and there after train them. In regard to top management, Hove and Wynne (2010) discovered that despite the fact that top management was involved in early stages of implementation, their involvement after implementation was minimal. In regard to RRA itself, Hove and Wynne (2010) found that although they had an effective IT unit, communication to all concerned parties was inadequate and performance of staff towards the use of the system was rarely evaluated. For example for three years that the project ran, evaluation was done only twice.

Therefore, by considering the nine factors that were perceived to influence FIS implementation as per the exploratory study in conjunction with studies of Dwivedi et al. (2015) and Hove and Wynne (2010) as described above, it was decided that the implementation of FIS in an organisation can be based on four main factors namely; top management support, capacity building initiatives (that include training together with change management), system support initiatives (that include technical support, project management and flexibility of consultants), and organization facilitation initiatives (that include effective communication, effective IT unit and regular staff

performance evaluation). It is therefore assumed that successful implementation and usage of FIS should ensure that there is top management support, user capacity support, system support and organizational IT support factors as advanced by Dwivedi et al (2015) and Hove & Wynne (2010). These factors are expounded below:

#### **4.8.1 Top management support and FIS implementation**

Conceptually, top management support is defined by Hansen & Mowen (2007) as the extent at which top managers in the organization provide direction, authority, and resources during and after acquisitions of IT systems. vom Brocke (2007) illustrates that top management support is the degree to which senior management understands the importance of the information systems function and the extent to which they get involved in the information system activities. For purposes of successful usage of FIS, Zwikael (2008) considers top management support as an area that has high impact. This is in congruence with Hansen and Mowen (2007) who ascertained that FIS projects success or failure relies more on top management willingness and commitment.

Motwani, Subramanian, and Gopalakrishna (2005) in-line with the above scholars indicate that top management is very critical since it is top managers who set the direction and rhythm under which an organization runs and as well, control funds utilization. This means that they would always have a decisive role on whether they support system implementation or not (Motwani et al. (2005). The views of Motwani et al. (2005) are complemented by what Wee (2000) found out that the role of top managers is fundamental in IS implementations since they ordinarily have the duty to publicly and explicitly identify the IS project as a top priority. He adds that they also have to go ahead and take the project as a shared vision for the organization, while communicating the role of the new system and structures to the employees. In relation to the above arguments, Fui-Hoon Nah, Lee-Shang Lau, and Kuang (2001) mention that an organisation that implements with a cautious, evolutionary and bureaucratic strategy registers greater success because this way, top management is able to develop a shared vision for the organisation and also be able to communicate the new system more effectively to the employees.

In support of Fui-Hoon Nah et al. (2001), Ifinedo (2006) indicates that FIS implementation and usage success is high when seamless support and commitment from top executives for the various departments and functions in the organization is

visible. In order to illustrate further the relevance of top management support on usage of FIS, Prasad Bingi, Maneesh K Sharma, and Jayanth K Godla (1999) indicated that the success of a major project like an FIS implementation hinges completely on the strong, sustained commitment of top management. This commitment when percolated downwards through the organizational levels results in an overall organizational commitment. To put this differently, top executives need to provide direction, participate in the process, show support for all entities in the organization, and ensure that organizational members are satisfied with the changes that they make for new system (Davenport, 1998). It is suffice to say that when the level of support and commitment from top management is seen to be high, it is logical to expect the success of the system to be high as well (Davenport, 1998). Indeed, Liang et al. (2007) found out that top management participation and involvement is positively related to FIS usage, and is sometimes associated with FIS success (DeLone & McLean, 2003).

In addition to the above views, Davenport (1998) argues that conventional wisdom suggests that when top managers support an IT project publicly, other organizational members usually interpret such moves positively and act accordingly. Conversely, Marchand and Raymond (2008) ascertained that lack of support from top managers for an IT implementation project could spell disaster for that project. In fact, top management support is relevant for the overall success of the project at the post-implementation stages as well. (Doherty and King (2005), Luna-Reyes, Zhang, Gil-García, and Cresswell (2005) further show that the majority of executives in the software sector perceive that organizational issues are more important than technical ones. These findings imply that top management involvement is truly important for project success. Top management support has become a specifically important factor in the software sector with the introduction of maturity models, such as; Capability Maturity Model Integrated and Organizational Project Management Maturity Model (Amoako-Gyampah & Salam, 2004). These models analyze projects as an organizational effort, rather than a project manager's exercise. An important assumption of these models is that an organization has a direct effect on the way project managers run their projects. One example of evidence is seen in what Besner and Hobbs (2008) indicated to strengthen this assumption that top management support highly influences the tools project managers decide to use in projects.

While there are many ways in which top management can support its project managers in implementation of FIS, it is important to focus on the most effective processes.

These are called critical success processes–CSPs (Zwikael, 2008). A critical success process is one that most significantly improves project success. Critical top management support processes that an organization may consider to implement include; developing project procedures, involving the project managers during initiation stage, supporting ongoing project management training programs, establishing a project management office (PMO), developing a supportive project organizational structure, defining clear project success measures and supporting projects in quality management (Zwikael, 2008).

Despite the theoretical relevance of the fact that top management support during implementation could have an impact on usage of FIS, such processes seemed to be general and hence the researcher thought that much more specific processes would be needed for the unique software industry like that of universities in Uganda. This became a big loophole thus creating the need for this study which hence aimed at identifying top management support attributes that influence the usage of financial information systems and also how top management support during implementations impacts on usage of FISs in developing countries particularly in the Ugandan universities. It was therefore hypothesized that top management support during implementation influences positively the usage of FIS systems.

#### **4.8.2 Capacity building initiatives and FIS implementation**

Dwivedi et al. (2015) posits that users must attain necessary skills if implementation of an information system is to succeed. This was in line with Hove and Wynne (2010) who investigated the implementation of a FIS at Rwanda Revenue Authority (RRA) in Republic of Rwanda after it failed to succeed. Hove and Wynne (2010) found out that one of the reasons for the failure was that users were not well supported in that they were trained at beginning but there was no follow-up training. (Dwivedi et al., 2015) say that one-time training has little impact on users and argue that users need to first be prepared on why they should change from using traditional practices to a new information system. They should then be trained, and then from time to time be taken through re-training. Three aspects therefore emerge from the issue of users' roles in implementation and usage of FISs. These are; change management, initial training, and continual refresher training on usage of the system. This therefore became the basis for using factors of change management, initial training, and



refresher training when investigating user capacity support in this study. Beginning with change management, literature review on each of these aspects is given below:

### ***Change management***

Fui-Hoon Nah et al. (2001) say that at beginning of a project phase it is important to start a change management program and continue with it throughout the entire system life cycle. Fui-Hoon Nah et al. (2001) extended this argument while saying that a culture with shared values and common aims is conducive for success and organizations should have a strong corporate identity that is open to change. This argument brings out the fact that organizations should possess cultural values that are not static and do not promote resistance to change. Oliver, Rosario, and Pentland (2000) articulated that users must be trained, and concerns must be addressed through regular communication, working with change agents, leveraging corporate culture and identifying job aids for different users. Oliver et al. (2000) conclude that without a change management program and forecasts, there is a very high failure rate among information systems projects.

Wallace, Keil, and Rai (2004) affirm that in nearly every organization, information systems projects take much more time and money to implement than originally anticipated, otherwise the completed system would not work properly. When an information system fails to work properly or when it costs too much money to develop, companies may not realize the benefits from the investment, and the system may not solve the problems for which it was intended. The development of a new system must be carefully managed and orchestrated, and the way a project is executed is likely to be the most important factor influencing its outcome. Wallace et al. (2004) further argue that a successful financial information system innovation comes with initial change management and irrisistance from employees. In other words, if employees can welcome change, it becomes easy to have it through.

Hall (2012) conversely posits that sensitizing subordinate staff about new changes or introducing a new technology should be done because, many times they (the staff) end up resisting its incorporation and implementation in their departments. On the other hand, Arad (2007) agitates that values like rigidity, control, predictability, stability and order mostly associated with hierarchical structures will hinder an innovation or new information systems.

Tushman J. S. (2006) conversely argues that co-operative teams have an influence on the degree to which innovation takes place in an organization. And well-established work teams which allow diversity and individual talents that complement one another can promote success of an information system (Tushman J. S., 2006). Mumford, Campion, and Morgeson (2007) add that cross-functional teams which encourage social and technical interaction between developers and implementers can improve and promote success of an information system. Such effective teamwork is partly based on the team members' skills and abilities and partly on the shared values within the group (Shattow, 2006). This can entirely lead to success of an information system implementation in an organization.

This discussion indicates that change management program as component of capacity building initiatives would induce an impact on usage of FIS. It was found out though that; many organizations usually do not mobilize and sensitize their employees about using the FISs.

### ***Education and training***

According to James (2011), the basis of education and training in the implementation of FIS relies on creating awareness on the 'to do' part of the software. James argues that employees need training and re-skilling to understand how a system can change business processes. James's main argument is that educating employees should be considered a top priority at the beginning of a project to ensure successful implementation of the new system. Kumar and van Hilleberg (2000) assert that such training should be embroiled in an induction process covering orientation and on-boarding. This can facilitate the socialization of new employees in the organisation to the use of the FIS. Society-for-Human-Resource-Management (2006) ascertains that orientation means a training program that occurs when an employee first begins employment within an organization. This prepares the employee on how to use and implement a system and establishes work relations. On boarding refers to the orientation process for newly hired managers (Society-for-Human-Resource-Management, 2006). Similar to orientation, an on boarding program involves introducing new managers to the work they would be supervising and helping them to understand the culture and the operation of the company's FIS.

Putting definitions aside, Berard (2005) ascertained that effective orientation and on boarding are important components in helping new appointees to quickly take charge of using FIS. Seibert, Kraimer, and Liden (2001) in line with Berard (2005) argued that, implementation of FIS needs to be made as a practice or part of the operational processes which must be undergone through by all employees both new and old employees.

Aceituno (2005) asserts that training of employees in FISs is used to provide receivable management solutions to financial service institutions both in government and private sector, this makes the implementation and use of the FIS easy. James (2001) adds that there is always a need for the departments concerned with ICT to come up with Public Financial Management Reform Programmes (PFMR) which calls upon training and educating employees, if the implementation and effective use of FIS is to be realized. Dhillon (2007) agrees to the fact that such training programs can strengthen the implementation of FIS in a bid to enhance transparency, accountability and responsiveness to public expenditure policy priorities among employees. Aceituno (2005) indicates that lack of knowledge required in implementing FIS has much connotation to the failure of usage of FIS since most of the employees tend to think that the system is complicated and therefore resort to other traditional means of sharing information.

In line with the views of Aceituno (2005), Al-Mashari (2002) asserts that the purpose of training employees in a financial information system is to connect, accumulate, process, and provide information to all parties in the organization on a continuous basis. Al-Masahri adds that all participants in the system, therefore, need to be able to access the system, and to derive the specific information they require to carry out their different functions. The importance of training and education as per Avgerou (2008) lies in much of the information systems which involve the application of ICT knowledge. Personnel who have no or poor training in that line would not be very effective in implementing the same. Hence, training and re-skilling managers and other administrators in ICT facilities are paramount for an effective FIS application. FIS training according to Avgerou (2008) should be done through upgrading skills, on job training and refresher courses.

The above literature seemed to be contrary to what Bunyasi, Bwisa, and Namusonge (2014) discovered. They argue that many employees in organizations especially smaller ones tend not to afford the cost of acquiring, installing and maintaining ICT

equipment which means that they tend to lack funds for training employees and this in the end affects implementation and usage of FIS. Avgerou (2008) additionally, argues that others would prefer low cost equipment which might be less efficient in information transmission and acquisition. If the cost of acquiring and maintaining the facilities would go down, then it would boost training and FIS implementation in organizations especially smaller ones.

In further observation Bagozzi, Davis, and Warshaw (1992) indicate that the organization's management or government policy in regard to use of certain information systems in certain areas should call for training and education of employees if the implementation and use of information systems is to improve.

This discussion on influence of capacity building on implementation of FIS in Uganda induced through training reveals that the importance of on-job training in meliorating usage of FIS cannot be overemphasized. However, what remains to be demystified by this research is the structuring of the on-the-job training in order to achieve its intended purpose. A major problem to be overcome with on-job training in the Ugandan universities is that many times such training occurs in an unstructured form that is; without training plans and without an actively involved trainer. This study found this as a major gap to be investigated upon.

#### **4.8.3 Organisation facilitation and FISs implementations**

Dwivedi et al. (2015), argue that an organization undertaking implementation of an information system must ensure that it has communication systems, an IT unit, and staff evaluation systems. Hove and Wynne (2010) further posit that one of the reasons that led to failure of FIS implementation in Rwanda Revenue Authority (RRA) was due to RRA as an organization not being supportive of the system. Hove and Wynne (2010) say that despite the fact that RRA had an effective IT unit, it did not endeavor to communicate favorably to all concerned parties, and performance of users towards usage of the system was rarely evaluated. For three years that the project ran, staff evaluation was done only twice. Hove and Wynne (2010) therefore argue that organizations must support FIS implementation by effectively communicating everything involved to its staff members, it must have a strong and effective IT unit, and they must on a regular basis evaluate staff performance towards the usage of the system. Therefore, this became a basis of using the aspects of effective communication, effective IT unit and regular staff performance when measuring

organization IT support in this study. A discussion on each of these is given below beginning with effective communication:

### ***Effective communication***

Communication in respect to FISs and other information systems includes formal promotion of project teams and advertisement of the project progress in the rest of the organization (Gerdin, 2005). Employees and all other stakeholders should be told in advance about the scope, objectives, activities and updates, and they should admit that change would occur (Sajady, Dastgir, & Nejad, 2012). To get all this information to the employees, it is critical that communication has to be effective. It is often said that “Project Management is communication”. A study by Fui-Hoon Nah et al. (2001) showed that in organizations regarded to be having “effective communicators”, 80 of the projects met their goals - vs. only 52 in organizations regarded to be having “minimal effective communicators”. Similarly, in organizations that communicate effectively, 71 of projects finished on time, and 76 within budget (Gerdin, 2005). Compared to 37 and 48 respectively, in organizations with poor communication.

According to Lester (1998), effective communication is one of the most important factors that can account for the success of a project. Lester further says that the effectiveness of project communication depends on the quality of the communication flows. The quality of communication all through the project life cycle can be described as the degree to which appropriate information reaches the intended information sources/receivers in an apt time (Rogers & Agarwala-Rogers, 1976). This calls for need to learn the way of life of those societies that the citizenship projects impact on, so as to derive the appropriate channel and message design which most times are overlooked. According to Burt (2000), the most appropriate project communications take place where; during the encoding process, the sender captures the receiver’s interests. Ray (1999) argues that such interests could be drawn from culture, past experience, religion, economic and or relations among others. As projects grow larger and more complicated, communication and coordination both within and without the project becomes more and more difficult, yet more vital to the success of the project. In line with Lievens and Moenaert (2000), project communication was conceptualized as extra-project communication (communication with the external project

environment) and intra-project communication (communication flows within the project).

According to Carrière and Bourque (2009), a project's internal communication practices consists of the full spectrum of communication activities, both formal and informal, undertaken by the project members for the purpose of disseminating information to one or more audiences within the project. Internal communication practices may be undertaken for the purpose of downward, horizontal, or upward communication and may be initiated by anyone within the project. Mintzberg (2013) argues though, that the primary onus of ensuring effective internal communication lies with project managers. Therefore, it is still the responsibility of management to ensure that an effective and efficient internal communication system is in place so as to ensure that all project staff are provided with timely, important, and relevant information (Carrière & Bourque, 2009). According to Ruuska (2006), Intra-project communication has two emphases in a project, that is; the steering committee and the project team. The common official ways of communication are the regular project team meetings, memos and follow-up reports (Rasberry & Lemoine, 1986). Effective Intra-project communication is based on effectiveness of project leaders who spend over 75 of their work day making communications (Mintzberg, 2013).

Effective communication as described by different scholars in the above discussion seemed to be limited to a general frontier of analysis and hence the researcher thought that it was relevant to universities in Uganda since no literature had a clue on what was happening. This study thus aimed at determining how the organization's facilitation propagated through effective communication during FIS implementation impacts the use of FISs.

### ***Effective IT unit***

Literally, an IT unit is a department in an organization that is mandated with managing information systems. Judge, Jackson, Shaw, Scott, and Rich (2007) argue that one of the biggest challenges of implementation of information systems especially in developing worlds is lack of IT units in organizations. Their work is complemented by what Neufeld, Dong, and Higgins (2007) found out while arguing that an IT unit in most institutions is usually backlogged with senior management experience and knowledge in information technology. Upadhyay, Jahanyan, and Dan (2011)

consolidate this by indicating that such attribute involves the background of managers, their experience and awareness in IT/IS activities, their recognition towards IT/IS potentials, as well as their ability to plan strategically, which usually enables the success of implementation of FIS. Upadhyay, Jahanyan, and Dan (2011) further show that executives with relevant skills and knowledge background tend to be more productive, more proactive, become more participative in IT/IS projects, and have more favorable views of IT but these are basically lacking in developing worlds since their units are often ignored and the work is done by semi-skilled or portfolio staffs. Noey (2008) further argues that some organizations in the developing world do have IT units but they are not effective. Mishra, Boynton, and Mishra (2014) investigated the influence of IT units on IT use in large organizations; they asserted that IT units and knowledge directly and positively influence an organization's extent of IT use. They used managerial IT knowledge construct to reflect the knowledge IT managers have on strategic business issues, and the knowledge line managers have on potential opportunities of IT/IS to improve the firm's productivity. Their findings showed that managerial IT knowledge was important in promoting high levels of IT use within the business units. Thus, it was anticipated that public managers too must have sufficient and adequate knowledge and skills on IT/IS to ensure its success (Robbins & Coulter, 2012).

The idea that managerial IT knowledge is important in promoting high levels of IT use within business units as argued by Robbins and Coulter (2012) is conversely related to what (Fry, 2003) reported. Fry asserts that IT units act as leaders of implementing information system and this kind of leadership becomes instrumental to change management. Fry (2003) further ascertained leadership as a use of leading strategy to offer inspiring motive and to enhance the staff's potential for growth and development. Teece, Pisano, and Shuen (1997) also further suggested that effective leadership in the IT unit can facilitate the improvement of performance as leadership not only inspires subordinate's potential to enhance efficiency but also meets their requirements in the process of achieving the successful implementation of IT projects. To plan and implement accounting information systems in organizations requires strong leadership in influencing and directing the organization's members (Limayem & Hirt, 2003).

IT units and leadership of the unit are very important in the effectiveness of information technology adoption (Waldman L, 2011). Vision, attitudes and behaviors affect employee perceptions in innovation and adoption of information technology (Ayyagari, Grover, & Purvis, 2011). Leadership style is the most important factor that can lead to successful implementation of information systems (Salehi, Rostami, & Mogadam, 2010). Laudon and Laudon (2011) state that one of the factors to consider in organizations implementing information systems is the leadership style of the IT unit in place and that without the IT unit and leadership, it becomes a big challenge to see the system implemented successfully.

In a more improved observation, McShane and Von Glinow (2008) look at IT units as forming the process of influencing, motivating and enabling others to contribute towards effectiveness and success of information systems in organizations of which they are members. Leaders apply various forms of influence to ensure that members have motivation and clarity of roles to achieve certain goals. Leaders also arrange the work environment, such as allocating resources and altering patterns of communication, so that employees can successfully participate in implementation of the new systems underway.

Despite the fact that this discussion shows the influence of effective IT units in implementation of the finance information systems, it becomes a factor of further investigation in this study to understand how such units are applicable in the Ugandan universities.

### ***Evaluation of staff performance***

Regular evaluation of staff performance has come a long way for betterment of organizations and employees (Buckley, Carraher, Carraher, Ferris, & Carraher, 2008). In further elaboration of the above statement, Dhillon (2007) ascertains that regular evaluation of staff performance today should be used as a vital tool to identify the work potential of an employee, instead of choosing the best individual in the organization. In line with successful implementation and usage of FIS, Easttom II (2011) argues that it is important that the performance of employees in using FIS is continually assessed. Performance appraisal is the most commonly used mechanism of evaluation of staff performance but this would need to be made more regularly, especially in information system to improve usage (Buckley et al., 2008).



Similarly, Barlow, Hersen, Barlow, Nock, and Hersen (2009) ascertained that regular evaluation of staff performance is regarded widely as a necessary attribute of improving usage of information systems and as part of an over-riding value set of efficiency. Congruently, Qureshi and Hassan (2013) support the above view while arguing that regular evaluation of staff performance forms a baseline for setting the objectives and helps in giving a clear picture to employees and clearly explains, what is expected from them.

In a further confirmation of this linkage, Dhillon (2007) argues that there is a need to question whether evaluation of staff performance is meant only for completing the organizations objectives without considering implementation success of an Information System. Performance appraisal therefore is known as a powerful tool for implementing Information Systems and in accomplishing its post-implementation stages (Qureshi & Hassan, 2013). Therefore, regular evaluation of staff performance forms an important Aspect in the organizational structure.

Armstrong and Baron (2000) further consolidate the above views while arguing that the most known purpose of evaluation of staff performance is to improve the implementation of organizational programs including Information Systems. Edwards and Cooper (2013) argue that performance appraisal as a tool for evaluating performance of employees that needs to be done for basically two important purposes, from an organizational point of view: first, the maintenance of organizational control and second, the measurement of the efficiency with which the organization's human resources are being utilized (Redman & Wilkinson, 2008). But there are also a variety of other declared purposes and desired benefits for appraisal, including; improving motivation and morale of the employees, clarifying the expectations and reducing the ambiguity about performance, determining rewards, identifying training and development opportunities, improving communication, selecting people for promotion, managing career growths, counseling, discipline, planning remedial actions and setting goals and targets (Hofmans, De Gieter, & Pepermans, 2013). However, according to Armstrong and Baron (2000), there is rise in more harder and judgmental forms of performance appraisal than in softer and developmental approaches.

The evaluation of staff performance as described by different scholars in the above discussion seemed to be limited to general frontiers and hence the researcher thought that a specific evaluation is necessary for the unique financial information systems

used in developing countries such as in the Ugandan universities. This study thus aimed at investigating how evaluation of staff performance was being done during a task of implementing a FIS.

#### **4 8.4 System support initiatives and FISs implementations**

According to Dwivedi et al. (2015), organizations must have three main system support characteristics during FIS implementation and these include; a technical wing, a coordination wing and a consultancy wing. In addition, Hove and Wynne (2010) asserted that although RRA had in place an adequate number of vendors and consultants who were flexible enough, they lacked the required number of technical experts to support the system and the overall project process was abused whereby system implementation monitoring was not adhered to as planned. It was thus, established that success of FIS implementation depends on prevalence of flexible consultants or vendors, technical experts, and abiding to the whole project implementation process. Therefore, this became a basis of including aspects of project management, technical support, and flexibility of consultants when studying system support in this study.

##### ***Technical Support***

Technical expertise refers to the extent at which internal and external mediating entities such as vendors and consultants provide knowledge, training, maintenance, and other technical support to adopting organization (McShane & Von Glinow, 2008). For the purpose of this study, vendors and consultants were classified under technical external expertise. It has to be noted that sometimes, some FIS vendors perform the consulting role as well (Poston & Grabski, 2001). It is true that vendors and consultants are critically important for ERP/FIS initiatives as in many cases the adopting organizations often do not have the necessary expertise and personnel for implementing such systems (Markus and Tanis (2000); Davenport (1998)). According to Markus and Tanis (2000), and Wang and Chen (2006), competent providers of FIS systems (external expertise) do not only train clients during systems implementations, but also possess a wealth of experience used in guiding and nurturing the adopting organization. Markus and Tanis (2000) add that during FIS initiatives, organizations do not only expect knowledge to be transferred and support provided, they are also keen on having cooperative, trustworthy and credible partners.

Even though according to Attewell (1992), conventional wisdom suggests that technical expertise is important for organizations when implementing or adopting new technologies, a study by Bajwa et al. (1998) suggested the contrary, which the researchers aptly noted might have resulted from contextual influences. Notwithstanding, the majority of studies in the IS literature, including those by Thong et al. (2006) have shown that when the level of external expertise is high, the success level of the adopted IT systems tends to be high. Regarding FIS systems, Sedera, Gable, and Chan (2004) found out that external expertise is strongly related to FIS success, a result that was also affirmed in Wang and Chen (2006). Overall, the impacts of FIS system on individuals, sub-units, and the entire organization is reported to be positive when quality vendors/consultants having favorable attributes, i.e., credibility, cooperative, etc. are engaged (Gefen (2004); Ridings, Gefen, and Arinze (2002); Ko, Kirsch, and King (2005)). Conversely, the adopting organization and its members may not be able to obtain the necessary support when a low quality external expertise is engaged.

Despite the fact that the above discussion has shown system support induced through technical support as having positive influence on the use of information systems, it becomes a factor for further investigation in this study in order to understand how it is applicable in Uganda universities.

### ***Project management***

Project management according to Rosario (2000) is about minding about the scope and overall engineering process of an organization programs. In addition Fui-Hoon Nah et al. (2001) argue that the scope must be clearly defined and be limited, and should include the amount of systems to be implemented, the involvement of business units and amount of business process reengineering that is needed. Howard (2001) in extension of the above views asserts that information system projects are the provision of a service to implement systems and solutions, including a variety of hardware and software products. Mullins (2003) argues that project planning is the first stage in project management and implementation since it is important in the process of determining the project needs of an entity and the timing of their acquisition and their funding such that the entity operations are met as required in an efficient way. Livingstone and Charlton (2001) add that as a function, project management endeavors to answer the following questions: (a) what do you want to do?, (b) when

do you want to do it?, (c) when are you to procure and when will you use the procured goods or services?, (d) when will resources be available?, (e) which methods of project will you use?, (f) how will timely project or failure affect the user of the item,(s) and what is the public procuring and assets disposal entity?, (g) how can you be more efficient in the project process?, and (h) who will be involved in the project?. These are the basis of project success especially in software industry.

Bondarouk (2006); Kerzner (2013) further assert that the complex environment in which software organizations operate causes most software projects not to be completed according to the desired specifications, within the specified budget and the promised time schedule. Van Genuchten (1991) supports the above literature while indicating that 70 per cent of projects in the software sector are completed over budget and 30 per cent over schedule. According to Whittaker (1999), 31 per cent of these projects are cancelled before completion. Problems derived from unsuccessful software projects cost US companies and government agencies an estimated US\$ 145 billion annually (Jiang, 2004).

In a further elaboration of the above arguments, Johnson, Scholes, and Whittington (2009) indicate that software implementation project success results have been reported by the Standish Group every second year since 1994 and are known as the “Chaos Report”. Recent data from this survey has shown that 18 per cent of projects executed in the software industry are cancelled without achieving any product, while 53 per cent end up with cost and schedule overruns. However, a major critique, related to the 1994 Standish group data collection, is presented by Grimstad, Jørgensen, and Moløkken-Østvold (2006), who also claim that the average cost overrun in projects executed in the software industry is “only” 33 per cent. Whatever the exact numbers are, it is clear that too many projects in the software industry achieve poor results. Many studies have investigated the major reasons for this poor phenomenon. For example, Whittaker (1999) found that the three most common reasons for projects executed in the software industry to fail are: Poor project planning, a weak business case; and lack of top management involvement and support.

There was general lack of knowledge, whether supervisory checklists or records management had been employed in Ugandan universities and how they would influence the finance information implementation. It was thus important for this study to be undertaken to ensure that it puts project management in scope and fill this gap.

### *Flexibility of consultants*

Consultants are very important in the process of implementing and using FIS in an organization (Poston & Grabski, 2001). Paston & Grabski further indicate that the most commonly-cited impact of flexibility in consultation towards success of FIS has been that of more effective organizational change management. According to Hussein, Selamat, Mamat, and Abdul (2005), this is based on a number of reasons. First, according to consultation, it means that those better, more informed decisions are made about the organization's future direction and this can ably lead to success of implementation of FISs. Second, where restructuring has taken place, information and consultation can lead to better management or fewer numbers of workforce redundancies towards implementation of FIS. Third, better workforce understanding of the business and financial pressures for change leads to improved management-employee trust, and decreased resistance to the implementation of information systems.

The views of Hussein et al. (2005) are conversely related to what Sedera et al. (2004) argued. They indicate that sometimes, organizations can succeed even when there is no flexibility in consultancies. To them, there is no need of keeping alternating consultants but rather it is the strong will from top to bottom that makes things move. They add that lack of adequate consultations between line management and the workforce may not have a big impact on successful implementation of FIS.

Stefanou (2001) on the other hand seemed to agree with what Hussein et al. (2005) and Poston and Grabski (2001) presented. Stefanou (2001) notes that, much flexibility of consultants is very important in successfully implementation of FIS, however, he adds that organizations need to hold employee workshops which can identify problems and develop solutions towards the FIS use. He adds that solutions need to be focused on providing the workforce with a much fuller awareness of the implementation by supplying information on what is required. Poston and Grabski (2001) supplement by saying that the benefits of information-sharing and consulting representatives at an early stage in the decision-making process is paramount in successful usage of FIS. He adds that this can be done by coaching employees in terms of promoting joint and simultaneous understanding of key issues, which again has the effect of leading to faster change management.

Soh (2010) argues that consultation on critical and change-related issues can heighten levels of trust between managers and employees. As one advisor put it, “If you trust the person who is telling you the need to change, you therefore trust their reasons”. Hence consistent with research by Ashton (2012) trust is built up and managers provide information about business conditions, employee representatives and the workforce tend to be much more open to change, and the company is able to change direction quickly.

Despite the fact that this discussion has shown flexibility of consultants induced through systems support having positive influence on use of information systems, it becomes a factor for further investigation in this study to understand how it is applicable in the Ugandan universities.

#### **4.9. Derived hypotheses and conceptual framework for the quantitative study**

This study was premised on the fact that implementation of FISs is a complex exercise and more research was needed to identify challenges, good practice and solutions for successful implementation. The study analyses and synthesises all information gathered to develop a framework that can be used in Ugandan universities and other related organizations to achieve successful implementation and usage of FIS.

In this case thus, four categorised factors that influence implementation of FIS have been mentioned and discussed. It is important to mention that system implementation completion does not necessarily return successful systems use. The question therefore is what can be the cause of this dichotomy? This will be investigated by finding out the impact of each of these factors on FIS use and the circumstances in which this happens. Holland and Light (1999) note that there is need to develop a framework specifically focusing on creating a set of quantitative measures for assessing the impact of each of the four categorised factors on the implementation outcome for a large sample of companies. Therefore, a framework for assessing the impact on the implementation outcome will have to be developed.

The construct of USE as given by DeLone and McLean (2003) and the factors that influence FIS implementation are brought together into a framework that would help to explain the impact of the factors that influence implementation on usage of the

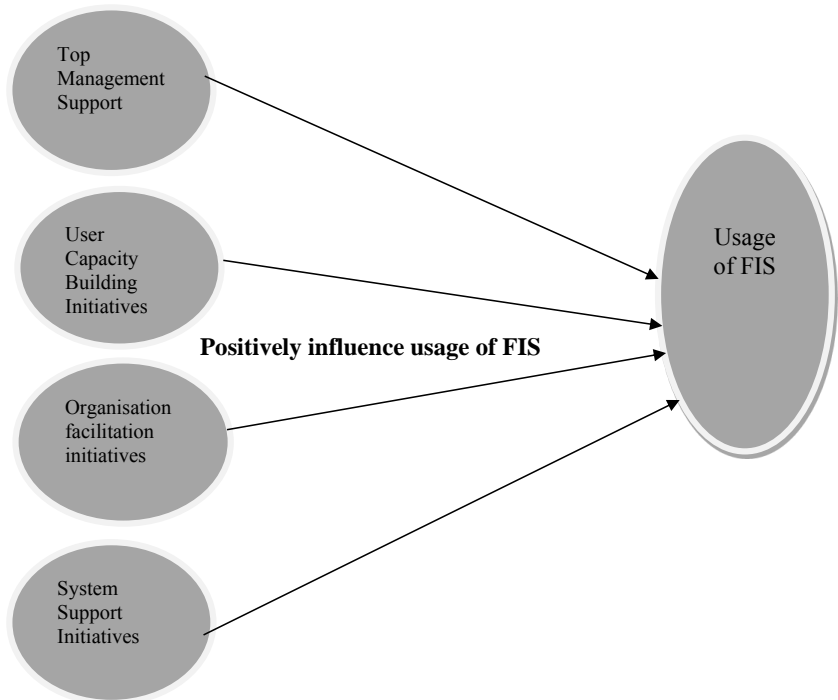
FISs. The framework is represented in figure 4. The intention is to find out how the factors that influence implementation of FISs impact its usage.

This study focuses on top management support, capacity building initiatives (that include education together with training and change management program), organization facilitation initiatives (that include effective communication, effective IT unit and regular staff performance evaluation) and system support initiatives (that include technical support, project management and flexibility of consultants) as key success factors explaining implementation and use of FISs in the Ugandan universities. These factors are not addressed by any other researcher in the context of higher institutions of learning in developing economies like Uganda.

It was therefore hypothesized that the four categorised factors that influence the implementation of FISs impact positively the eventual usage of FISs. The impact is assumed to be in terms of amount of use, frequency of use, nature of use, dependency on use. The hypotheses are as follows:

These relationships (R1) are therefore articulated in the following statements H1, H2, H3, and H4 as hypotheses.

- 1) **H1:** Top management support during implementation influences positively the use of FIS systems.
- 2) **H2:** Capacity building (that includes education and training together with change management) within the organization during implementation influence positively the use of FIS systems.
- 3) **H3:** Organization facilitation (that includes effective communication, effective IT Unit and Regular staff performance evaluation) during implementation influence positively the use of FIS systems.
- 4) **H4:** System support (that includes technical support, project management and flexibility of consultants) during implementation influence positively the use of FIS systems.



**Figure 4: Conceptual model for relationship between factors perceived to influence implementation of FIS and its eventual usage**

Figure 4 indicates that the four factors namely; top management support, user capacity building initiatives, organization facilitation initiatives and system support initiatives that influence implementation of FIS have a relationship with FIS use. The aim of the study was to find out how the factors impact FIS use.

- Top management support was measured using variables that would capture; top management’s participation in meetings, top management’s quick decision making, top managements demand for reports on performance.
- User capacity building initiatives was measured using variables that were based on inception training, change management, and refresher training
- Organistion facilitation initiatives was measured using variables that would capture; effective communication, effective IT Unit, and Evaluation of regular staff performance.
- Systems support initiatives was measured using variables that would capture; technical support, project management and flexibility of consultants.



- Usage of FIS use was measured using variables that would capture; amount of use, frequency of use, nature of use and dependency (DeLone & McLean, 2003)

# Chapter Five

## The Quantitative Study

This chapter presents findings from the quantitative field investigation which was the second phase of the study. Background data on each university is given followed by presentation of descriptive statistics and the structural model analysis that explains the relationships between the factors that influence implementation and usage of the FISs.

### **5.1 Background information on the universities that were used in the study**

#### ***Makerere University***

Makerere University is a public university in Uganda. It had a students' enrolment of about 40,000 and 5,000 members of staff by the time of the study. The university procured an integrated enterprise system called Integrated Tertiary Software (ITS) in 2004 that was to be used for finance management, students' administration and human resource management. The finance sub system which was the main focus of this study had 8 modules that included: general ledger, students' debtors, account receivables, accounts payables, cash books, income & expenditure budgeting, procurement fixed assets register.

#### ***Kyambogo University***

Kyambogo University (KYA) is a University of Science, Technology and Education. It had a students' population of about 20,000 and a staff enrolment of about 2,000. KYA procured a finance system called Navision in 2010 for finance and accounts management and they effectively started using it in 2012. The system had six modules that included; General ledger, Accounts Receivable, Accounts Payable, Fixed Assets, Cash Books, and Budgeting.

#### ***Uganda Management Institute***

Uganda Management Institute (UMI) is a semi-autonomous body corporate under the Universities and other tertiary Institutions Act. The Institute had a students' population of about 5,000 and staff enrolment of about 800. It is the national center for training, research and consultancy in the field of management and administration.

They procured and started using Navision in 2009. The system had seven modules that included; General ledger, Accounts Receivable, Accounts Payable, Fixed Assets, Cash Books, Students Debtors and Budgeting.

### ***Mbarara University***

Mbarara University of Science and Technology is a university of Science and Technology located in the western part of the country. The university had a students' population of about 10,000 and a staff enrollment of about 1,500. The Institution started using Pastel Accounting Software in 2008, and the system had ten modules that included; General ledger, Accounts Receivable, Accounts Payable, Fixed Assets, Cash Books, Students Debtors, Procurement, Cash Flows and Budgeting.

### **Makerere University Business School**

Makerere University Business School (MUBS) is a public tertiary institution affiliated to Makerere University with administrative and financial autonomy. The School is mandated to organize and develop business and commercial training in the country at the different levels. It had a students' population of about 3,500 and a staff enrolment of about 200. MUBS was found out to be using Sage Accounting System and the system had ten modules that included; General ledger, Accounts Receivable, Accounts Payable, Fixed Assets, Cash Books, Students Debtors, Procurement, Cash Flows and Budgeting.

### ***Busitema University***

Busitema University is located in eastern Uganda with a multi campus model. They had a students' population of about 900 and a staff enrollment of about 150. The University were was found out using Pastel Accounting Software, and the system had ten modules that included; General ledger, Accounts Receivable, Accounts Payable, Fixed Assets, Cash Books, Students Debtors, Procurement, Cash flows and budgeting.

### ***Uganda Christian University***

Uganda Christian University is a private university and was founded in 1997. UCU had a students' population of about 10,000 and a staff enrolment of about 1,000. It

had Sage Accounting System and the system had eight modules that included; General ledger, Accounts Receivable, Accounts Payable, Fixed Assets, Cash Books, Students Debtors, Bank Reconciliation and Payroll.

Table 9 below shows summarized information about the above mentioned universities

**Table 9 : Universities from where Data was collected**

University	Short Name	System being used	Staff Enrollment	Students' Population
Makerere University	Mak	Integrated Tertiary System (ITS)	5000	40000
Kyambogo University	KYA	Navision and e-campus for foes collection	2000	20000
Makerere University Business School	MUBS	Sage Accounting plus other internally developed system	1000	15000
Uganda Management Institute	UMI	Navision	800	12000
Mbarara University	MUST	Patel	1500	10000
Busitema University	BUSI	Pastel	900	11000
Uganda Christian University	UCU	Focus and SAP	1000	13000

## **5.2. Empirical findings on factors influencing implementation of FISs**

In this section, research findings are presented as per the study constructs which were essentially three and these were; (1) a construct for measuring importance of factors perceived to influence FIS implementation, (2) a construct for evaluation of performance of universities in administering factors perceived to influence FIS implementation, and (3) a construct for measuring usage of FISs. The first construct was used for understanding the respondents' views on the importance of the factors perceived to influence the FIS implementation. The second construct was aimed at understanding the respondents' evaluations of performances of the universities in administering the factors perceived to influence the implementation. In order to capture the views of respondents, different statements were presented in each of the constructs (see Appendix V Section G). The aspects that were included in each of the constructs were: Top management support, Effective Communication, Evaluations of Staff Performance, Education and Training, Technical Support, Project Management,

Change Management Program, Effective IT Unit and Flexible consultants. For purpose of analysing the data, factors were collapsed into four broad factors and as indicated in 1.5, and these were; *Top management support*, *Capacity building initiatives* (education/training and change management), *Organisation facilitation initiatives* (effective communication, effective IT unit, and regular staff performance evaluation) and lastly *System support initiatives* (technical support, project management and flexibility of consultants).

The third construct was aimed at understanding how the respondents assess the rate of use of the FISs in their universities. Below in Table 10 are the findings;

**Table 10: description of Respondents**

<b>University</b>	<b>No of Respondents</b>	<b>Percentage</b>
Mak	23	18.0
KYA	21	16.4
MUBS	21	16.4
Busi	20	15.6
MUST	17	13.3
UMI	11	8.6
UCU	15	11.7
<b>Total</b>	<b>128</b>	<b>100.0</b>

The results are given and described below in sections 5.2.1 and 5.2.2. The details are in appendix.

### **5.2.1 Ratings for the importance of the factors perceived to influence FISs**

To understand the views of the respondents on importance of the factors perceived to influence implementation of the FISs, the questions asked were based on a 5 point Likert scale (1=Not Important, 2=Little Important, 3=Averagely Important, 4=Very Important and 5=Extremely). Table 11 has details of the counts of the scores out of 128 respondents presented in percentage scores:

**Table 11: Rating for importance of Factors perceived to implementation of FISs presented in percentages scores**

	Not important	Little important	Averagely important	Very important	Extremely important	Total (100)
<b>Top management support</b>						
Through participation in the implementation process. E.g. attending implementation meetings	0.8	2.3	8.6	80.5	7.8	100
Through swift decisions making	0.0	3.2	73.4	20.3	3.1	100
Through demand for regular implementation progress reports	0.0	2.3	21.9	64.8	11.0	100
<b>Capacity building initiatives</b>						
<i>Education and training</i> Adequate training on FIS use	0.0	9.4	50	36.7	3.9	100
Refresher training on FIS use	2.3	7.0	47.7	39.8	3.2	100
<i>Change management program</i> I was taken through a change management/sensitisation program before using the system	0.0	0.8	18.8	76.6	3.8	100
<b>Organisation facilitation initiatives</b>						
<i>Effective communication</i> Clear communication channel within finance department	0.	3.9	24.2	30.3	41.6	100
<i>Effective IT unit</i> The institution has an IT unit responsible for supporting the IT system operations that include the FIS	0.0	0.8	18.8	70.3	10.1	100
<i>Evaluation of staff performance</i> Regular Staff performance evaluations	2.4	0.8	19.5	69.5	7.8	100
<b>System support initiatives</b>						
<i>Technical support</i> Well packaged training and Quick support service is provided	1.6	9.4	22.7	57	9.3	100
<i>Flexibility of consultants</i> The suppliers/consultants are always willing to incorporate desired new changes into the system without much difficulty	0.8	5.5	13.3	34.4	46.0	100
<i>Project management</i> There is a clear mechanism of addressing all issues and	3.1	1.6	21.1	71.9	2.3	100

problems that pertain to the FIS implementation and use						
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### 5.2.2 Ratings for performances of universities in administering factors perceived to influence FISs implementation

To understand the measurements of performance of the universities in administering the factors perceived to influence the implementation of the FISs, responses were based on a 5 point Likert scale: (1=Poor, 2=Fair, 3=Good, 4=Very Good and 5=Excellent). Table 12 has details of the results presented in percentage scores:

**Table 12: Rating of Universities in administering factors perceived to influence implementation of FIS presented in percentage scores**

Rating Performance	Poor	Fair	Good	V good	Excellent	Total
<b>Top management support</b>						
Through participation in implementation process. e.g. attending implementation meetings	3.1	5.5	12.5	76.6	2.3	100
Through swift decisions making	1.6	10.9	76.6	7.8	3.1	100
Through demand for regular implementation progress reports	3.1	7.8	25	60.9	3.1	100
<b>Capacity building initiatives</b>						
<i>Education and Training</i>						
Adequate training on FIS use	1.6	12.5	60.2	25	0.8	100
Refresher Training	0.8	14.1	56.2	25.8	3.1	100
<i>Change Management Program</i> I was taken through a change management/sensitisation program before using the system	0.0	7.8	33.6	54.7	3.9	100
<b>Organisation facilitation initiatives</b>						
<i>Effective communication</i> Clear communication channel	0,0	3.1	19.5	38.3	39.1	1000
<i>Effective IT Unit</i> The institution has an IT unit responsible for supporting the IT system operations that include the FIS	1.6	3.1	29.7	63.3	2.3	100
<i>Evaluation of staff performance</i>	0.0	3.1	35.9	53.9	7.1	100

Regular staff performance evaluations						
<b>System support initiatives</b>						
<b>Technical support</b> Well packaged training and Quick support service is provided	2.3	7.0	30.5	45.4	14.8	100
<b>Flexibility of consultants</b> The suppliers/consultants are always willing to incorporate desired new changes into the system without much difficulty	0.0	1.6	7.8	31.2	59.4	100
<b>Project management</b> There is a clear mechanism of addressing all issues and problems that pertain to the FIS implementation and use	0.0	10.9	31.2	49.3	8.6	100

### Summary of descriptive statistics for ratings of importance and performance

For purpose of presenting and discussing the results in a manner that would be easier to understand, in Table 11, the scores in the column labeled “Little Important” were merged with the scores in the column labeled “Averagely Important”. Also scores in the column labeled “Excellent” were merged with scores in the column labeled “Very Important”. The table therefore remained with only three columns namely: “Not Important”, “Average Important” and “Very important”. In a similar way for results in Table 12, the scores in the columns of “Fair” and “Good” were merged and placed into a new column called “Fairly Good” and the scores in the column of “Excellent” were merged with scores in the column “Very Good”. Table 13 below shows these results presented together in one table.



**Table 13: Combined summary of Results for measurement of importance and performance**

	Measure of Importance			Measure of Performance		
	Not Important	Average Important	Very Important	Poor	Fairly Good	Very Good
<b>Top management support</b>						
Participating in implementation meetings	0.8	10.9	88.3	3.1	18	78.9
Decision Making	0.0	76.6	23.4	1.6	87.5	10.9
Demand for Implementation Reports	0.0	24.2	75.8	3.2	32.8	64
<b>Capacity building initiatives</b>						
<b>Education and training</b>						
Adequate Training	0.0	59.4	40.6	1.6	72.7	25.8
Refresher Training	2.3	54.7	42.9	0.8	70.3	28.9
<b>Change management program</b>	0.0	19.6	80.4	0	41.4	58.6
I was taken through a change management						
<b>Organisation facilitation initiatives</b>						
<b>Effective communication</b>	0.0	28.1	71.9	0	22.6	77.4
Clear communication channel						
<b>Effective IT unit</b>	0.0	19.6	80.4	1.6	32.8	65.6
The Institution has an effective IT unit						
<b>Evaluation of staff performance</b>						
Regular staff performance	2.4	20.3	77.3	0	39	61
<b>System support initiatives</b>						
<b>Technical support</b>	1.6	32.1	66.3	2.3	37.5	60.2
Well packaged training and Quick support service is provided						
<b>Flexibility of consultant</b>	0.8	18.8	80.4	0	9.4	90.6
The suppliers/Consultants are always willing to incorporate desired new changes into the system without much difficulty						
<b>Project management</b>	3.1	22.7	74.2	0	42.1	57.9
There is a clear mechanism of addressing all issues that pertain to the FIS implementation and use						

**Top management support and FISs implementation:**

The percentage of respondents who chose that for top management to directly participate in implementation processes like attending implementation meetings is very important was 88.3 while 78.9 chose that the performance of top management in participating in the implementation processes was very good. Considering these scores, it can be said that top management's participation in implementation meetings is perceived to be very important in Ugandan universities.

The percentage of respondents who chose that top management's participation in decision making in FIS implementation is very important was 23.4 while 10.9 chose that top management's performance in decision making was very good; 76.6 chose that top management's participation in decision making is averagely important while 87.5 chose that top management's performance was good. No one said that top management's participation in decision making is not important while only 1.6 chose that top management's performance was poor/fair. Considering these scores, it can be said that top management's participation in decision making is averagely important in Ugandan universities.

The percentage of respondents who chose that top management's effort in demanding for reports produced from the system is important was 75.8, while 64 chose that top management's performance in demanding for reports produced from the system was very good; 24.2 chose that top management's effort in demanding for reports produced from the system was averagely important while 32.8 chose that top management's performance in demanding for reports produced from the system was good. No respondents said top management's effort in demanding for implementation is not important, while 3.2 said top management's performance in demanding for reports produced from the system was poor. From these results, it is very clear that top management's involvement in implementation by demanding outputs from the system is a very important factor in achieving FIS implementation success in the Ugandan universities.

Since two variables (participation in implementation meetings and demand for reports produced from the system) out of the three variables that were used to measure top management's support returned a result of 'very important', it can be said that top management support is very important in achieving FIS implementation success in the Ugandan universities.

### ***Capacity building initiatives and FISs implementation***

As indicated in 1.5, capacity building initiatives in this study constitutes two factors; education/training and change management. Results based on each of these factors are discussed separately below beginning with Education/Training:

### ***Education and Training***

In respect to education/training, the percentage of respondents who chose that having adequate training during FIS implementation is very important was 40.6% and 25.8% chose that the performance by the universities in administering adequate training during FIS implementation was very good; 59.4% chose that having adequate training during FIS implementation was averagely important and 72.7% chose that the performance by the universities in administering training during the FIS implementation was averagely good. Considering these scores, it can be said that adequate training is averagely important.

On the provision of refresher training, 42.9% of the respondents chose that it was very important to provide refresher training during FIS implementation, and 28.9% chose that the performance by the universities in regard to the provision of refresher training during FIS implementation was very good; 54.7% chose that providing refresher training was averagely important, and 70.3% chose that the performance of the universities in regard to the provision of refresher training was fairly good. Considering these scores, it can be said that refresher training is averagely important. Since the two variables (adequate training during implementation and refresher training) that were used to measure training and education returned a result of averagely important, we conclude that training and education is averagely important in FIS implementation in the Ugandan universities.

### ***Change management***

In respect to change management, the percentage of respondents who chose that Change Management is very important for FIS implementation success was 80.4% and 58.6% chose that the performance of the universities in administering change management was very good. No respondents said that sensitization program was not important and also no respondent said that performance of sensitization program was poor. Considering these results, it can be said that having a change management is very important in FIS implementation success in the Ugandan universities.

### ***Organisation facilitation initiatives and FISs implementation***

As indicated in 1.5, Organisation facilitation in this study constitutes three factors; effective communication, effective IT unit and regular staff performance evaluation.

Results for each of these factors are discussed separately below beginning with effective communication:

### ***Effective communication***

In respect to effective communication, the percentage of respondents who chose that it is very important to have a clear communication channel was 71.9%, while 77.4% chose that the performance of the universities in providing effective communication was very good. No one said that Effective Communication was not important. As per these results, it can be said that having a clear communication channel is very important in FIS implementation in the Ugandan universities.

### ***Effective IT unit***

In respect to effective IT unit, the percentage of respondents who chose that an effective IT unit is very important during FIS implementation was 80.4% and 65.6% chose that the universities' performance in administering the effective IT units is very good. No respondents said that effective IT unit was not important and only 1.6% said that the performance of the IT unit was poor. Considering these results, it can be said that having an effective IT unit is very important in FIS implementation success in the Ugandan universities.

### ***Evaluation of staff performance***

In respect to evaluation of staff performance, the percentage of respondents who chose that having regular staff performance evaluation is very important was 77.3% and 61% of the respondents chose that the performance by the universities in regard to evaluation of staff performance during implementation was very good. 20.3% chose that having regular staff performance evaluation was averagely important and 39% chose that the performance by the universities on staff evaluation was fairly good. Lastly, 2.4% of the respondents chose that it was not important to have staff performance evaluations, while 0% of the respondents said performance on evaluation of staff performance was poor. It is therefore clear that evaluation of staff performance is very important in FIS implementation in the Ugandan universities.

### ***System support initiatives and FIS implementation***

As indicated in 1.5, system support initiatives in this study constitute three factors; technical support, flexibility of consultants, and project management. Results based

on each of these factors are discussed separately below beginning with technical support:

### ***Technical support***

In respect to technical support, the percentage of respondents who chose that it is very important to have technical support was 66.3% and 60.2% chose that the performance of the universities in technical support was very good. No one said that Technical Support was not important. Considering these results, it can be said that provision of technical support is very important in FIS implementation in the Ugandan universities.

### ***Project management***

In respect to project management, the percentage of respondents who chose that project management in FIS implementation is very important was 74.2%, at the same time, 57.9% chose that the performance of the universities in administering project management was very good. These results indicate that project management is a very important factor for FISs implementation success in the Ugandan universities.

### ***Flexibility of consultants***

In respect to flexibility of consultants, the percentage of respondents who chose that consultant's willingness to incorporate new desired changes into the system without difficulty was very important was 80.4% and at the same time, 90.4% chose that the performance of the universities in ensuring that the consultants are flexible was very good. Basing on these scores, it can be said that having flexible consultants is a very important factor for FIS implementation success in the Ugandan universities.

### **Summary of descriptive statistics results about factors that influence FISs use**

From all results presented above, it is clear that; Top management support, Capacity building initiatives that include *education/training and change management*, Organisation facilitation initiatives that include *effective communication, effective IT unit, evaluation of staff performance*, system support initiatives that include; *technical support, flexible consultants, and project management* are important factors for FIS implementation success. ***This therefore answers the first research question.***

### **Combined summary of results for measurement of importance and performance presented separately for each of the seven universities**

In addition to presenting the combined summary results as presented in Table 13 above, a combined summary results for each university was also generated. Details of these results are in the Appendix.

### 5.2.3 The Use Construct

To understand the level of usage of FISs in the Uganda universities, the respondents were introduced to different items for them to have their say. Four items were used in the investigation and these were; Dependency on the system, Frequency of use, Amount of use, and Nature of use of the system. To understand the measure of the level of usage of the FIS by the respondents, responses were based on a 5 point Likert scale (1=Strongly Disagree, 2=Disagree, 3=uncertain, 4=Agree and 5=Strongly Agree). The following Table 14 gives details of the results based on percentages scores:

**Table 14: Results for construct Use**

	Strongly Agree ( )	Agree ( )	Uncertain ( )	Disagree ( )	Strongly Disagree ( )	Total 100
<b>A. Use of the system</b>						
<b>Dependency:</b> My work fully depends on the system	4.7	18.0	3.1	61.7	12.5	100
<b>Frequency of use:</b> I use the system all the time	1.6	11.7	1.6	56.2	28.9	100
<b>Amount of use:</b> I generate and prepare all my financial reports form the system	5.3	3.9	3.9	71.1	18.8	100
<b>Nature of use.</b> The system is used by almost everybody in the accounts department	6.5	9.7	7.2	55.6	21	100

#### Summary of descriptive statistics on Use construct

For purpose of explaining the results in table 14, the scores in the column of “Strongly Agree” were added to the scores in the column of “Agree”. And also the scores in the column of “Strongly Disagree” were added to the scores in the column of “Disagree”. The table therefore remained only three columns namely: “Agree”, “Uncertain” and “Disagree”, as in Table 15.

**Table 15: Summary of Results for Construct Use**

	Agree ( )	Uncertain ( )	Disagree ( )	Total 100
<b>B. Use of the system</b>				
<b>Dependency:</b> My work fully depends on the system	22.7	3.1	74.2	100
<b>Frequency of use:</b> I use the system all the time	13.3	1.6	85.1	100
<b>Amount of use:</b> I generate and prepare all my financial reports form the system	9.2	3.9	89.9	100
<b>Nature of use.</b> The system is used by almost everybody in the accounts department	16.2	7.2	76.6	100

Table 15 shows scores in terms of percentages of how the respondents made judgment of their usage of the systems based on four variables namely: Dependency on the system, Frequency of Use, Amount of use and Nature of use of the system.

The results in table 14 indicate that there was low level of usage of FIS in the selected universities in Uganda.

### **Dependency**

As Table 15 indicates, 22.7% of the respondents chose that their work fully depends on the system. This is as opposed to 74.2% who disagreed, and 3.1 who were uncertain.

### **Frequency of Use of the system**

As Table 15 shows 13.3% of the respondents chose that they use the system all the time. This is as opposed to 85.1% who disagreed, and 1.6% who were uncertain.

**Amount of use of the system**

The percentages of respondents who disagreed that they would generate all reports from the system were 89.9% while those who agreed were 3.9% respectively. This is as opposed to 9.2% who were uncertain.

**Nature of use of the system**

The percentages of respondents who chose that the system was being used by almost everybody in the accounts department was 16.2%, as opposed to 76.6% who disagreed and 7.2% who were uncertain.



### 5.3 Structural model analysis results

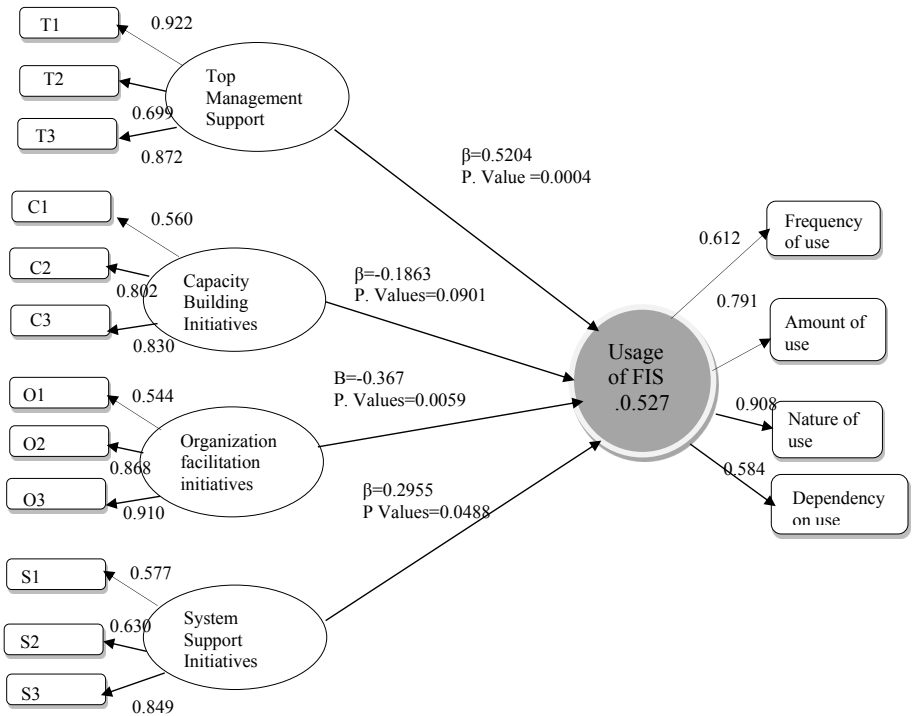
The structural model and hypotheses were tested by computing path coefficients and probability analysis (P values) with four dependent variables and one independent variable. The dependent variables were; Top management support, System Support Initiatives, capacity building initiatives, and organization facilitation initiatives. The independent variable was usage of FIS with predictors that included; Nature of use, Amount of use, Frequency of use and Dependency on use. Based on the results from the study, at 95% confidence interval, the following factors; Top management ( $\beta=0.5204$ , P values=0.0004) and system support initiatives ( $\beta=0.2955$ , P Value=0.0488) revealed a positive and significant impact on the use of FIS. The factor institution facilitation initiatives ( $\beta=-0.367$ , P value=0.0059) revealed a negative and significant impact on use of FIS and the factor capacity building initiatives ( $\beta=-0.1863$ , P Value=0.0901) revealed to be insignificant. These results are also tabulated in table 16 below, and also Fig 4 below presents the path model diagram that also shows the variable relationships. The variables that are represented in as circles or ovals (Top Management support, Capacity building, Organization facilitation initiatives and Usage of FIS).

The indicators, also called items or manifests variables are the directly measured proxy variables that contain the raw data. They are represented as rectangles and their narrations are given in table 16 below.

Also Fig 5 shows the adjusted R squared of 0.527, meaning that the factors influencing use of FIS predicted 52.7% of the variance in usage of FIS in the Ugandan universities. The remaining 47.3% was predicted by other factors outside the study.

**Table 16: Regression Results**

<b>Factor</b>		<b>Predictors (internal Variables)</b>	<b>T-statistics</b>	<b>Impact</b>	<b>Significance Level (P Value) sig=0.05/ CI=95%</b>
Top management support	T1	<i>Participation in meetings</i>	7.2001	Positive (0.5204)	Significant 0.0004
	T2	<i>Demand for Report</i>			
	T3	<i>Quick Decision Making</i>			
Capacity building initiatives	C1	<b>Education &amp; training</b> <i>There was adequate training on FIS use</i>	1.5572	Negative (-0.1863)	Not Significant 0.0901
	C2	<i>Refresher training on FIS use is provided from time to time</i>			
	C3	<b>Change management</b> <i>I was taken through a change management/sensitisation program before using the system</i>			
Organization facilitation initiatives	O1	<b>Effective communication</b> <i>Availability of clear communication channels on all issues</i>	3.8619	Negative (-0.367)	Significant 0.0059
	O2	<b>Effective IT unit</b> <i>responsible to support IT system operations</i>			
	O3	<b>Regular staff performance</b> <i>Existence of Regular Staff Performance</i>			
System support initiatives	S1	<b>Flexibility of consultants</b> <i>The suppliers/consultants are always willing to incorporate desired new changes into the system without much difficulty</i>	2.0341	Positive (0.2995)	Significant 0.0488
	S2	<b>Project management</b> <i>There is a clear mechanism of addressing issues and problems that arise</i>			
	S3	<b>Technical Support</b> <i>Quick support service is provided</i>			



**Figure 5: Model for relationship between factors perceived to influence implementation and usage of financial information systems**

## Chapter Six

### The Validation Study

This chapter presents findings from the validation study. As indicated in 3.6, the objective of this phase of the study was to validate results that were obtained in the quantitative study as well as determining the circumstances in which the factors that were found to influence FIS implementation impact the usage. The presentations are given and described per individual factor.

#### 6.1. Top Management Support:

It was gathered from informants at Kyambogo University (KYA) that to a great extent, top management showed willingness to support the use of the FIS especially for generating reports. It was gathered however that, top management was not very keen at providing necessary financial facilitation.

*“At times the need arises to fund training but management is usually sluggish”,* said an Accounts Assistant.

*“Management has been pushing for using of the system but they are a bit disorganized. For example the bursar always wants reports but when it comes to financing the necessary requirements, he pulls out”,* said a Revenue Collection Assistant.

*“The bursar can ask the accountants how much has been collected in terms of students’ fees and at times one of the accountants would just get a statement from the bank and simply type the data into Excel to prepare the report”,* said an Administrative Assistant.

This means that the bursar would not be caring about the source of data, all he would be caring for was that a report of some sort is produced.

Findings from Makerere University Business School (MUBS) indicated that top management supported the implementation of their FIS.

*“Top management supported the system implementation and they would pay the consultants”* said one of the Assistant Directors of Finance.

*“Top management always wanted accurate reports especially for revenue collection and therefore, they were always willing to support the system”* said another Assistant Director of Finance.

Findings from Uganda Christian University (UCU) indicated that top management support was significant during the implementation of the FIS at UCU. One of the Administrative Assistants said;

*“Top management fully participated in identifying the needs of the system and they also participated in sourcing for the suppliers”*. Another informant said *“Top management emphasizes the adoption of the system in all departments and they participate in coordinating the consultants whenever they come on ground”*. Also another Administrative Assistant said; *“top management participated in the system implementation meetings and they would demand for weekly reports like cash flows, and budget performances”*.

In a further confirmation, it was noted from the key informants at Uganda Management Institute (UMI) that top management support was a significant factor in the implementation of the FIS at UMI. The informants said that top management would participate in ensuring that the controls in the system are effectively instituted such that no any other system could be used. When asked how top management would ensure that final reports were being generated directly from the system, the informants said that the internal audit department would take control of all the reports to ensure that indeed what is submitted would come only from the system.

### ***Summary of findings on top management support***

It was found out that in all the four universities that were visited, top management would support the implementation processes of the FISs by for example; participating in needs identification, sourcing for consultants, coordinating the development of system updates with the consultants, pushing the adoption of the FISs across all departments, and ensuring the effectiveness of controls in the system such that for example, no other system could be used. On the other hand, it was also found that while top management would care about getting outputs from the system, they were not keen at providing financial support towards the implementation task.

### ***Circumstances in which top management during implementation support impacts usage***

In virtue to explain circumstances under which the influence of top management support on implementation impacts the usage of FISs, it is clear that the role of top management lies more in initiating the idea and supporting the implementation in

primary stages, sourcing for consultants, coordinating the development of system updates with the consultants, pushing the adoption of the FISs across all departments, ensuring the effectiveness of controls in the system such that for example no other system could be used.

However, their support tends to shrink especially in terms of finance as the period passes, whereas there should not be laxity at all. Therefore, it is quite notable in the validation findings that top management support needs to exist at all times if successful FIS usage is to be realized.

## **6.2. Capacity Building Initiatives**

As indicated in 1.5, capacity building in this study constitutes two factors namely; Training/Education and Change management. Each of these factors is discussed separately.

In respect to Training and Education, the validation study findings indicated that overall training was not adequately done in most of Ugandan universities and this negatively affected the usage of FIS. In KYA for instance, it was found out that after training of users, a lot of time elapsed before starting to use the system. It was also found out that the training was conducted while the trainees were off their work stations (all the trainees would be gathered together in one room), so they were not adequately empowered. On this, the Revenue Collection Assistant said;

*“Yes, we do get training but most of our training and education have been in other areas not FIS. The only training we had was conducted off desk, and I do not think, it really empowered us fully perhaps, you can also verify this because ever since the system was implemented, we have had no serious refresher training”*

Additionally, the findings from UCU indicated that the more the members would be trained in using the system, the more they would discover inadequacies in it and hence the less they would rely on it.

However, on the side of MUBS, it was found out that the system they were using at the time of the interview had been developed internally so people were being trained progressively as the system was being developed. The informants also said that new staff would be trained by old staff and all problems would be solved within the department through knowledge sharing. One of the Accounts Assistants said:

*“For us, we developed our own system so training about the operation of the system has not been very hard and continuously the old staff train the new ones.”*

All the informants at UMI together said that training boosted the use of the system significantly at their institution. They also said that they would get refresher training and that new appointees would always be trained.

In respect to change management at KYA, it was reported that for any activity that would be organized, change management would be expected to be done, but that would never happen.

*“People are just invited to train on the program without being taken through what the system is supposed to do”* said Accounts Assistant.

Another Accounts Assistant said that

*“It is like waking up on a Friday and then being told that on Monday there will be training. Change management comes at a time when no one is aware, some people do not attend, and management is never concerned about who attends”.*

The Revenue Collection Assistant said that in most cases people equate systems implementation with loss of jobs, thus generating a negative impact.

Findings at MUBS showed that sensitization meetings had been conducted within various departments and always all top managers would be invited. However, change management had not been conducted.

On the other hand, the findings from UCU indicated that change management affected the use of the system negatively.

*“Since most of the people would not be well acquainted with what the system would be able to do, many would be fearful of the results that would come out after implementation”* said one of the Accounts Assistant.

Another Accounts Assistant said that;

*“some users take long to adopt a new system due to fear that a new system would affect their job performance”.*

The informants said that this is because at UCU, they use two systems and staff appraisals were being based on only one system which a staff member would happen to be most comfortable with.

Findings from UMI showed that before the FIS installation, the IT people arranged various meetings in which the expected new changes were discussed and explained.

The informants also said that at UMI regardless of change management, a person has to deliver otherwise he/she would risk losing the job. The Senior Accounts Assistant said;

*“One thing at UMI is that you have to deliver otherwise you risk losing your job, so there is no way you can say that you developed fear for the system”.*

***Summary of findings and circumstances under which Capacity Building Initiatives during implementation impact usage***

In respect to Training and Education, it was discovered that in one of the universities, users took too long to start using the FIS after doing training and this affected their abilities to use the systems. It was also found out that in one of the universities, training was done while users were away from their work stations which turned out to be counterproductive to users because with this method, users were trained on examples as opposed to doing actual work. Also in one of the universities, it was found out that the more users would be trained, the more they would discover short comings in the system, and as a consequence, the less they would want to rely on the system.

In regard to the circumstances in which education/training during implementation of FISs impacts usage it was deduced that in some universities, there were prolonged delays between the time when people were trained and the time when they actually started using the system. This would negatively affect the use rate because people would forget what they had been trained to do. Secondly, training that is done when people are not doing actual work and when they are off their work stations does not benefit much because at the end of training people get difficulties to relate what they do with functionalities in the system. Thirdly, if the system is not thoroughly tested before installation, faults can surface when people are doing training or when they are using it. If the faults persist, people can get disgusted and the use rate can get affected negatively.

In respect to change management at KYA and UCU, informants said that the problem they had with a change management program was that in many cases people would equate the new system to loss of jobs. Also at UMI, the informants said that with or without a change management program, people had to use the FIS otherwise they would risk losing their jobs. In respect to the circumstances in which the factor of



change management impacts usage, it can be deduced from the study that the idea of change management itself would reduce the use rate of the FIS because some people equate a new system with job loss. On the other hand, respondents at KYA said that if the university administration is strict on evaluation of people's performance then with or without change management the use rate of the FIS would not be affected.

### **6.3. Organization Facilitation Initiatives**

As indicated in 1.5, organisation facilitation in this study constitutes three factors; Effective communication, Effective IT unit and Regular staff performance evaluation. Each of these factors is discussed separately.

#### ***Effective communication***

In respect to effective communication, findings from KYA indicated that there was no effective communication in regard to the implementation of the FIS. One of the Revenue Collection Assistants said that:

*“Communication was not there, everybody would find his or her own way around the issues. At times you would report to your boss but he would not respond, so in most cases everyone would be forced to find his or her own way of doing the work”.*

Findings from MUBS indicated that they had clear communication channels. While talking about this, one of the Revenue Collection Assistant said that

*“When meetings for demonstrations would be called, everybody would turn up meaning that everybody would have received the communication”.*

However, the informants also said that while they had clear communication channels between the top and the bottom, each person could use what he or she felt was most comfortable with because the FIS could not produce all reports.

The informants at UCU said that effective communication would enhance FIS use. However, when considered in relation with functionalities like generating accounts reports, effective communication would retard FIS use. This was because the system at UCU was not fully customized to produce all desired reports. Therefore, people would decide to download data and then use other tools like excel to prepare the desired reports. This was found to be an undermining practice to the usage of the FIS.

The informants at UCU also said that there was not supposed to be a direct contact between the users and the consultants. Communication between the two parties would have to go through the IT unit. In many cases, this would bring about problems because not being accounts professionals, people in the IT unit would fail to articulate quickly problems that would be faced by users. As a result, users would turn to other software tools or applications like excel that would quickly do what they want.

At UMI it was found that effective communication was there in regard to the FIS. The informants said that they could not do anything before receiving instructions to do so. For instance, a Senior Accountant said:

*“We cannot issue a voucher without receiving communication to that effect”.*

The findings from KYA indicated that they receive support from the IT unit but only on issues like internet break down. The informants at KYA also said that there was a conflict of interest within the people in the IT unit due to the fact that they were running two systems, where one had been internally developed and another had been outsourced.

### ***Effective IT Unit***

In respect to Effective IT Unit, findings from MUBS indicated that the IT unit participated in the implementation process. Informants also said that the consultants handed over most of the responsibility of supporting the system to the IT unit.

*“At one time it was the work of consultants to support the system until management decided that the IT unit people should take over the responsibility, and one of the IT people sits right in the accounts office”* said one of the Stores Assistant.

Findings from UCU indicated that the IT unit supported the system, however, the unit would fail to give solutions to problems related to accounts and the reason was that the people in the IT unit were not knowledgeable in the accounts discipline.

Findings from UMI indicated that the IT unit was very critical because the people there were trained to support the system and they had worked together with the consultants during implementation. The informants also said that the IT unit was always their first contact place before a problem would be referred to consultants.

### ***Regular Staff Performance Evaluation***

In respect to regular staff performance evaluation, findings from KYA indicated that staff performance evaluation was not critical to the use of the FIS. Informants specifically said that there was no way staff performance evaluation could impact USE because, staff performance appraisals were not being done at KYA. One of the Accounts Assistants said;

*“You only hear while at a party gathering that so and so was the best performer but without knowing the criteria that was used to do the selection”.*

At MUBS, it was found out that staff appraisals were optional. In other words, it would be at the discretion of the supervisors to appraise their subordinates. It was also discovered that during appraisals, people would get chance to speak out their challenges and whenever the solutions would be provided, the rate of system use would increase.

At UCU, it was found out that the staff performance appraisals were being conducted at department levels, but the results would always never be produced. The informants there also said that appraisals were always never related to the use of the system. Appraisals would usually focus on people’s ability to perform duties effectively irrespective of the system they would be using. It was also found out that the people were not being motivated to use the FIS fully because it would not produce all the required reports. This was being compounded by the fact that appraisals had not been tailored to the functionalities of one of the systems. One of the Revenue Collection Assistants remarked that;

*“People are told to work in both SAP and Focus RT and therefore each person ends up concentrating on the system that he or she is most familiar with”*

Therefore, this forces many of the people to use tools or applications that they are most comfortable with especially when generating reports.

At UMI, it was found out that staff appraisals were being done annually. Both the Accounts Assistant and the Payroll Officer said that they believed that it was the FIS itself that would evaluate users.

*“If you are given an assignment and you take many days to complete it, then the problem would be with you”,*

said the Senior Accounts Assistant.

*“The system automatically reports you because the supervisor can access to see what you are doing”*

remarked one of the Accounts Assistant. Asked whether some people could shy away from using the system, the informants said that that could not happen because everything was being done online.

### ***Summary of circumstances in which organisation facilitation initiatives during implementation impact usage***

In respect to Effective Communication, it was found out that in one of universities, there was no effective communication during the FIS implementation such that each person had to find his or her own way around the issues. But also in some universities where effective communication was said to have been practiced, it was found out that at times this turned out to affect the usage of the FISs. This was the case especially in places where users were experiencing difficulties in using the FISs. In such situations, it was found out that whenever users would receive instructions requiring them to generate certain reports, they would in some instances instead resort to using other software tools which they would find relatively simpler to use. This would therefore affect the usage of the main FIS. On the other hand, in some universities there were no direct connections between the users and the consultants.

Communication to either party would have to go through the IT unit and it was found out that in many cases, this would retard communication between the parties and ultimately the usage of the FIS would get affected. Regarding the circumstances in which the impact happens, two scenarios can be deduced from the findings; One is that where users are not very conversant with a system or when the system itself is not easy to use, effective communication can further reduce the usage rate of the FISs because users would instead look for simpler ways of producing whatever would be demanded from them within the set timelines. Another scenario is that communication between the users and the consultants that has to be routed through the IT unit can affect the usage rate of the FISs because distortions and delays in communication cannot be avoided.

In respect to effective IT unit in MUBS, the informants said that an Effective IT unit was very essential to them. This was exemplified by the fact that one of the IT staff was sitting right in the finance department. At UCU it was found out that the people in the IT unit were not very conversant with the user functions of the system (due to lack of adequate accounting knowledge). According to data that was gathered, this would frustrate the users and as a consequence they would keep on trying to get other systems instead. At KYA, Informants said that staff in the IT unit had a conflict of interest because the university was using two systems; One developed by the IT unit and another that had been outsourced. At UMI, informants said that the IT unit was essential because the people in the unit had been trained by the consultants during implementation. Regarding the circumstances in which the impact happens, it was deduced that the impact of the IT unit on FIS usage gets affected when staff in the unit are not conversant with the user functionalities in the system. The impact is also compromised when in addition to the FIS there are other parallel systems that the IT unit supports and more so if any of the parallel systems were developed by staff in the IT unit. And also stationing staff of the IT unit in close proximity with users increases the impact of the unit in system use.

In respect to regular staff performance evaluation, it was found out that at KYA, staff appraisals were never being conducted. At UCU staff appraisals were being conducted but results were always never produced. At MUBS, staff appraisals were optional, although according to informants, the exercise would give people opportunity to speak out and discuss their challenges which would help boost the use of the system. At UCU, they had two systems and the supervisors would focus more on the individual's ability to perform duties given to them irrespective of the system they would be using. People would therefore end up using only systems that they were most conversant with. At UMI, it was found that the appraisals were being conducted although the people there believed that it was the FIS itself that would evaluate the user depending on the extent or level at which that person would be using it. Regarding the circumstances in which the impact happens, two scenarios can be deduced from the above findings; One is that through the process of staff evaluation, users get opportunity to discuss and get solutions about issues regarding their system use and this helps increase the use rate. Then on the other hand, for universities that have more than one system performance evaluation could be based on a system that a user is

more conversant with. This means that for purpose of scoring high, a user ends up concentrating on a single particular system and ignoring the other thus, decreasing the use rate.

#### **6.4. Systems Support Initiatives**

As indicated in 1.5, system support in this study constitutes three factors namely; Technical support, Project management, and Flexibility of consultants. Each of these factors is discussed separately as follows beginning with technical support.

##### ***Technical Support***

In respect to Technical Support, findings from KYA indicated that when a technical problem would occur, they would contact their IT unit. They would never contact the consultants directly.

*“The consultants have never come to update the system; they just came back this year to train people on some new functions. You also find that some text labels in the system were misspelt and this was pointed out to them, but they have never come to correct the mistake, so there is no technical serious support”*, said one of the Accounts Assistant.

*“We have a person who has some good knowledge about the system and that person always assists other colleagues”* said another Accounts Assistant.

At MUBS, it was revealed that the consultants had never returned to the university to offer support. It was further revealed that within the finance department, there was a team of people that would help new staff. *“consultants are contacted only when there is a critical problem”*

remarked the Assistant Director of Finance.

Findings from UCU indicated that technical support had a positive impact on use of the FIS, but the accounts team would never communicate directly with the consultants. Whenever a problem would occur, the accounts people would inform the IT unit people who then communicate to the consultants.

Findings from UMI showed that technical support was so significant. Informants said that users with technical problems would start by contacting the IT unit people who would then communicate to the consultants if it becomes necessary.

### ***Project Management***

In respect to Project Management, findings from KYA indicated that they did not do project management during the implementation process of their FIS.

*“We never had project management during the implementation of our system; therefore things were being done in their own way”*, said one of the Accounts Assistants.

Informants at MUBS said that they did not have a formal project management function as well.

*“In each department there was at least one person equipped with skills required to fix most of the problematic issues in the department”*

said one of the Revenue Collection Officers. Anyhow, all the informants still said that the project management function was very important and that for the new system that they were implementing they would ensure that they do project management.

Findings from UCU indicated that project management had a positive impact on the use of the FIS at UCU, however, it was highlighted that some of the people that were trained had left the institution.

### ***Flexibility of Consultants***

In respect to Flexibility of Consultants, Informants at UMI together said that project management was very important and that it was done during implementation. However, to explain why the impact of project management on use was negative one, informant said that for example, as each project management training activity would be scheduled to take place at a certain time, in some cases they would later realize that some people were being absent. In many cases, the training would still go ahead when some people were absent which would cause problems for the department as a whole to use the system because there would be missing gaps.

Findings from KYA indicated that the consultants would always be willing to be flexible and work on problems given to them, but they would always get problems in getting their payments. One the Accounts Assistant said;

*“One of the consultants was always keen to work on the system to fix our requests, however his payment demands would usually be paid with difficulties”*.

Findings from MUBS showed that the consultants were always willing to support the system. They attributed this to a fact that MUBS had a support contract with consultants.

Findings from UCU indicated that the consultants were always responsive to the needs of the departments in coordination with the IT unit. However the task of updating or refining the system functionalities was always a problem because it was always not easy to get financial support from management.

Findings from UMI indicated that the factor of flexible consultants was significant and that they had not got problems with the consultants. The Payroll Officer said;

*“At one time I got a problem with the system, requested for help and the consultant willingly fixed the problem because their contract was running”.*

***Summary of findings and circumstances under which systems support initiatives during implementation impacts usage***

In respect to Technical Support, two universities that is; UMI and UCU had consultants who would be contacted only through their respective IT units. At KYA and MUBS, they had some skilled people who would help their colleagues on the technical issues. In MUBS, they had at least one person with such skills in each department. Regarding circumstances, it can be deduced that all universities had arrangements for technical support, and while some universities had consultants for this purpose, some had staff amongst themselves who would handle the technical issues in addition to their designated duties. This means that with or without the technical support that is ordinarily given by hired consultants, the usage rate could still be high.

In respect to project management, informants at KYA and MUBS reported that project management was not adequately done during their respective FIS implementations. It was also found out that because of project management, implementation teams would try to work within the set timelines but at times this would compromise the rate of using the system because, by trying to beat the set timelines, many times users would resort to using other tools that would be faster for them to use (especially when generating reports). This would happen especially in places where the supervisory function would happen to be quite low. At UMI, respondents mentioned that in some



cases, it was difficult to administer the project management function because some activities that would strictly need to be done when everybody is around would fail to take off because it would always not be easy to assemble all people around at the same time.

Regarding circumstances, it was deduced from the findings that in some universities, project management was not adequately done. And for universities where they attempted to do it, it would be difficult for people to work within the set schedules and timelines because of problems like frequent absenteeism by some users during the execution of the various critical activities and therefore, the use rate of the FISs would be affected negatively.

In respect to flexibility of consultants, informants at KYA, UCU and UMI said that the consultants were always willing and responsive to work on needs of the users in coordination with the IT units, although according to informants, consultants at KYA would always go through hard time to be paid again. Meanwhile at MUBS, the university had a contract with the consultants so they were never reluctant to work on any issues, the informants said. Regarding flexibility of consultants, what can be deduced from findings is that the consultants in the universities would be willing to offer the required service but they would find difficulties in getting their payments. And in situations where there was a signed contract between the consultants and the university, consultants were always very responsive.

# Chapter Seven

## Discussion of Results and Lessons Learnt

In this chapter the results of the validation study are discussed based on the four contingency factors, i.e., Top Management Support, Capacity Building Initiatives, Organization Facilitation Initiatives and Systems Support Initiatives.

### **7.1 Top management support during implementation and usage of FISs**

The exploratory study discovered top management support as a very important factor in influencing the implementation of FISs in Uganda universities. This is in line with Motwani et al. (2005) who indicated that there cannot be successful implementation of FISs without having top management's willingness. This is because top managers usually have both authority and finance to ignite processes. In further analysis, the quantitative study established that top management support positively impacted usage of FISs in Ugandan universities. This can be accepted since the relationship between top management support during implementation and usage was significant (with P value = 0.0004) and having a positive impact (with coefficient of determination = 0.5204). This meant that top management support during implementation has a positive impact on the use of FISs in Ugandan universities and it is significant. This was in line with the earlier hypothesis which was stated. As observed by (Kiwana & Johansson, 2017) this suggests that support, commitment, authority, and direction from top management for the system and for the various people affected by the system's implementation is necessary in ensuring the overall use of the system. In the context of this study, this result permits the suggestion that FISs use would continue to be enhanced not only at the implementation phase, but also at latter stages in the software's lifecycle as long as top management support and commitment is high during implementation.

This is in congruence with Hansen and Mowen (2007), who ascertained that FIS projects success or failure relies heavily on top management willingness and commitment. Furthermore, Motwani et al. (2005) in-line with the above scholars indicate that top management is very critical since it is the top managers who set the direction in which the organization runs, as well as controlling funds utilization. This

means that they would always have a decisive role on whether they support system implementation or not. The views of Motwani et al. (2005) are complemented by Wee (2000) who says that the role of top managers is fundamental since they have the duty to publicly and explicitly identify the project as a top priority. It can be added that top managers also have to go ahead and take the project as a shared vision of the organization, while communicating the role of the new system and structures to the employees. In relation to the above arguments, Fui-Hoon Nah et al. (2001) mentioned that an organisation that implements with a cautious, evolutionary and bureaucratic strategy registers greater success because this way, top management is able to develop a shared vision of the organisation and also be able to communicate the new system more effectively to the employees.

### **Conclusion on top management support**

From the researcher's point of view, it can be said that top management support was a very important factor for implementation of FISs in Ugandan universities and its impact on usage is positive and significant. This result was obtained by virtue of the fact that top management participates in activities that include; needs identification, sourcing for consultants, sourcing for funding, coordinating the development of system upgrades with the consultants, pushing for adoption of the FISs across all departments and ensuring effectiveness of controls in the FISs such that as much as possible people can stick to only one system. These are ground activities required to favorably implement and use FISs in the Ugandan universities since willingness and commitment of top officials is key to the success of most of the new programs that are introduced in organizations.

## **7.2. Capacity Building Initiatives during implementation and usage of FISs**

As indicated in 1.5 (definition of terms), capacity building initiatives in this study included; Training and Education, and Change management.

With respect to education and training, the exploratory study showed that having training during FIS implementation was important in FIS implementation and this was galvanised by results of the descriptive statistics. This finding is in line with Kumar and van Hillegersberg (2000), who asserts that without educating and continuously training staff in organisations who use the FIS, its implementation may be

unsuccessful and they recommended that organisations are strongly required to undertake training and education during system implementation. With respect to change management, the exploratory study and descriptive statistics showed that instituting change management at a fair rate during FIS implementation was important in FISs implementation. This was based on the fact that during the quantitative study, most of the respondents chose that sensitization undertaken in courtesy of change management was very important for FIS implementation success. This was also in congruence with what Bondarouk (2006) had earlier asserted. He had discovered based on his study conducted on “ influence of change management program on implementing an integrated financial management system (IFMS)” that the change management program sets the tone of implementation in an organization because it provides roles and functions that each department has to play. This therefore builds success of implementation of FISs.

However, the impact of capacity building initiatives during implementation on usage was found not to be significant with P-value 0.0901 which result was found to be contrary to many publications of earlier literature. With respect to training, Ridings et al., (2002) for example, ascertained that employees need training and reskilling to understand how a new system changes FISs adoption and use. Hall (2012) indicated that educating employees should be considered as top priority at the beginning of the project to ensure successful implementation of the new system. Kumar and van Hillegersberg (2000), says that job induction and on board training in software facilitate easy socialization of new employees in the organisation during FIS implementation, It prepares employees on how to use and implement FISs and in addition establishes work relations.

Aceituno (2005) in a further illustration asserts that training of employees in financial information systems used to provide receivable management solutions to financial service institutions both in government and private sector. This makes the implementation and usage of the FIS easy. On the other hand, picking from what was found during the validation study, training would become insignificant when the FISs being used develop deficiencies or when they fail to be fully compliant to the user requirements. It was found that such deficiencies would be as a result of there being gaps in the user requirements specifications or by failure to thoroughly test the system at the time of delivery. Secondly, it was also found out that when there is a prolonged period between time of implementation and time of actual using of the systems, then

the skills that the users would have acquired tend to dissolve away. Thirdly, it was found out that in some universities, training would be conducted while people were away from their work stations. This kind of training arrangement would not be very productive because people would be exposed only on sampled data instead of the full spectra of data if they were to be trained from their work stations and work on the data as it flows through their respective stations.

On the part of change management, the result of capacity building initiatives being insignificant also resonates very well with what was found during the validation study. The informants at Kyambogo University (KYA) for instance said that they never had a clear change management program. They said that the problem they had with a change management program was that in many cases, people would equate the new system with loss of jobs. At Uganda Management Institute (UMI), informants said it was an administrative policy such that with or without a change management program, people had to use the FIS otherwise they would risk losing their jobs. But then Fui-Hoon Nah et al. (2001) say that change management is an important starting point at the project phase and should continue throughout the entire life cycle.

Fui-Hoon Nah et al. (2001) further argue that a culture with shared values and common aims is conducive to success and organizations should have a strong corporate identity that is open to change. This argument brings out the fact that organizations should possess cultural values that are not static and do not promote resistance to change. Oliver et al. (2000) further argues that users must be trained, and concerns must be addressed through regular communication, working with change agents, leveraging corporate culture and identifying job aids for different users if the implementation of FISs is to be successful. Wallace et al. (2004) asserts also that the development of a new system must be carefully managed and orchestrated, and the way a project is executed is likely to be the most important factor influencing its outcome.

### **Conclusion drawn**

Capacity Building Initiatives which in this regard embody education/training and change management is very important in implementation of FIS in the Ugandan universities. However its impact on usage was found not to be significant (P-value was 0.0901). This result has been discussed in the text above. In respect to education and training, it was found out that in some universities, users take too long to start

using the FISs after training and this would affect their abilities to use the systems because they would forget the issues learnt as time passes. Secondly, in some universities training would be conducted when people were not at their work stations. This training arrangement failed to be productive because users would be exposed only on sampled data as opposed to full spectrums of data if they were to be trained from their working stations as they would easily understand how to deal with the data while in actual environment. Thirdly, in some universities it was found out that the more the users were trained, the more they would find deficiencies in the systems, and consequently the less they would rely on the systems. Such deficiencies were as a result of either gaps in the user requirements specifications right at the beginning, or failure to thoroughly test the system for full compliancy at the time of delivery.

With respect to change management, it was found out that some people usually equated new systems to job losses and with such mindsets, any push for change management would just drive people away from the system. On the other hand, some universities were found with entrenched codes of conduct for staff such that with or without change management, people would have to find ways by themselves of fitting into the new working environment brought up by the new FIS otherwise it would be for them to lose.

### **7.3. Organisation Facilitation Initiatives during implementation and usage of FISs**

As indicated in 1.5 (definition of terms), Organization Facilitation Initiatives under this consideration included; effective communication, effective IT unit and regular staff performance evaluation.

The exploratory study and descriptive statistics showed effective communication as a very important in the implementation of FISs in Ugandan universities. This was based on the fact that the biggest portion of respondents in the quantitative study chose that it was important to have a clear communication channel and that the universities' performance in providing effective communication was very good. This is depicted also in the views of Addae and Wang (2006). They had earlier indicated that effective communication was an epitome of successful implementation of FISs in organizations because it provides a basis of sharing ideas among different stakeholders and such, ideas are used to build successful systems that can be welcomed by all people in an

organization. Fui-Hoon Nah et al. (2001) also indicated that FIS project success is 80% with effective communication. This was confirmed in a study they conducted in 2001 in Florida, United States of America which showed that, in organizations regarded to be having “effective communicators”, 80% of projects met their goals - vs. only 52% in organizations regarded to be having “minimal effective communicators”. Similarly, in organizations that communicate effectively, 71% of projects finished on time, and 76% within budget Gerdin (2005), compared to 37% and 48% respectively, in organizations with poor communication. Supplementing the above, Addae and Wang (2006) conversely argued that ineffective communication was to blame for more than half of projects that fail to meet business goals. Addae and Wang (2006) further argued that effective communication builds commitment and committed project members more often than not have no intentions to quit which saves the project costs of recruiting and orienting new members both in form of time and money. In a similar argument, Lester (1998) asserted that effective communication is one of the critical factors that account for success of any project. To Lester, the effectiveness of project communication depends on the quality of the communication flows. Burt (2000) in a related argument, confirms that most appropriate project communications take place where, during the encoding process, the sender captures the receiver’s interests. Further, Baker (2007) had earlier argued that ineffective communication contributes up to 95% of many project failures. With respect to Effective IT unit, the exploratory study and the descriptive statistics showed this also as being very important for FIS implementation success in Ugandan universities. According to the descriptive statistics results, a big percentage of respondents admitted that an effective IT unit is very important during FIS implementation and no respondents said that effective IT unit was not important. This was in congruence with what Upadhyay et al. (2011) found out that implementation and performance of FISs in organizations relies very much on effective IT unit because it is the center of demonstration and control. They added that an effective IT unit gives direction and ways to have a good fit of FISs in organization cultural and system.

In regard to evaluation of staff performance, the study found this to be very important also in the implementation of FISs in Ugandan universities. This was based on the fact that the biggest number of respondents chose that having regular staff performance evaluation is very important for success of FIS implementation and most

of the universities had adopted the idea of staff evaluation. In confirmation of this, Hall (2012) asserts that evaluation of staff performance needs to be part of the whole process of implementing FISs in organizations because it is a mechanism that instills discipline and respect from staff members. If members of staff are not evaluated during implementation, it can render them to act indifferent and less submissive to the system (Hall, 2012).

Contrary to the above discussion, it was found that the Organisation Facilitation Initiatives had a negative impact on usage with path coefficient -0.367 and significant with P-value 0.0059. This was also contrary to what the hypothesis had assumed meaning that the alternative hypothesis was taken. The implication of this is that, success of FIS usage gets diminished in Ugandan universities by increase in Organization Facilitation Initiatives that include effective communication, effective IT unit and evaluation of staff performance are given.

With respect to effective communication, it was found out during the validation study that this would be as a result of either users not being fully conversant in using the FISs, or the FISs themselves not being fully accommodative of the user requirements such that users would find difficult time to use the systems in their entirety. Therefore if communication within the university is very efficient such that people can easily reach to each other for example that supervisors can easily send job requests to users with expectation of getting quick response, users who get hard time to use the FISs and as a consequence cannot cope with the efficiency created by the effective communication, would get attracted to other tools or applications that would be easier for them to use in order to be able to do the required work within the timelines given. This was found to be common when for example, users were generating final accounts reports so that instead of using only the main application, a user exported data to another application like a spreadsheet and used that to generate the required reports. The implication of this was that the more effective communication became, the more the users got attracted to other applications/tools that were easier for them to use to accomplish the tasks given to them. For this reason, the usage rate of the FISs would go down. Contrary to this, Burt (2000) believed that effective communication is key and is a basis for realizing success of any IT project because it lies in the powers of communication or message that flows from top down to the implementers, to have the job well-done in time, efficiency and effectively. Mintzberg (2013) also shares the same opinion with Burt (2000) that the primary onus of ensuring effective internal



communication lies with the project's managers. Therefore, it is still the responsibility of management to ensure that an effective and efficient internal communication system is in place, so as to ensure that all project staff are provided with timely, important, and relevant information (Carrière & Bourque, 2009).

Also in some universities, it was found out that users were not supposed to communicate directly to the consultants. They communicated through the IT unit and this was found to be problematic because many times there were delays in getting the problems solved.

With respect to effective IT unit and basing on what was found during the validation study, there are two reasons that can be used to explain the result that was obtained that the impact of the Organisation Facilitation Initiatives during implementation impact usage negatively. The first reason is based on the fact that, some universities have more than one finance management applications and this becomes even more critical when the IT units have preferences amongst those applications. In this kind of situation, the IT unit could decide to favor and promote some particular applications at the detriment of others which also included the main FIS. This became more pronounced when some of the applications were developed by staff in the IT unit as the issue of conflict of interest strongly set in.

The second reason that explains the result and was also picked from the validation study comes from the fact that many users have a perception that IT units by themselves can solve all IT problems including application user problems which is not necessarily true, because application user problems usually are issues for the software vendors. So, when a user with such a perception contacts the IT unit for help on a user problem and the unit fails to handle, the user would get frustrated and even lose confidence in the entire system. In order to deter this, it is necessary to write down clearly the role and mandate of the IT unit and circulate it to all people. But even then, the universities must not completely relax on building internal capacities for their staff in the IT units so that they are able to handle at least the fundamentals of the user problems. An addition strategy would be to put staff in the IT unit in close proximity with the users. For example; some of the IT staff could sit right in the finance department as was found to be the case in some of the universities that were visited. Contrary to this discussion, Robbins and Coulter (2012) indicate that IT units act as leaders of implementing information system and this kind of leadership becomes instrumental and accountability to change management. Kwena (2013) on

the other hand, agitates that some organizations in the developing world do have IT units but they are not effective and this has had a negative effect on FIS usage.

With respect to regular Staff Performance Evaluation, the result obtained can be explained by basing on what was found during the validation study which was that, some universities have more than one system being used and at the same time users are at liberty to choose by themselves their preferred system to be evaluated on performance. As a consequence, users decide to ignore the systems they do not use thus affecting their usage rates. Therefore, for the exercise of evaluation of staff performance on FIS implementation to be effective, users should not be given liberty to choose for themselves the systems to be evaluated on. This result however is in incongruence with what earlier studies indicate. Barlow et al. (2009) for example, ascertains that regular evaluation of staff performance is regarded widely as a necessary attribute for improving the usage of information systems, and part of an over-riding value set of efficiency. Congruently, Qureshi and Hassan (2013) support the above view while arguing that regular evaluation of staff performance forms a baseline for setting the objectives and helps in giving a clear picture to employees and clearly explains, what is expected from them.

### **Conclusion drawn**

The Organization Facilitation Initiatives factor which includes effective communication, effective IT unit and regular staff evaluation was found to be an important factor in implementation of FISs in Ugandan universities. However, its impact on eventual use was found to be negative. A discussion of this result has been given in the above text based on various factors. With respect to effective communication, it was deduced that if communication within the university is very efficient, then users who get difficulties in using the FISs and thus cannot cope with the efficiency created by the effective communication would look for alternative applications that would be easier for them to use and do the required work within the clearly set timelines. And therefore, it was found out that the more effective communication as a facilitation became, the more the users got attracted to the other applications/tools that were seemingly easier for them to use. For this reason, the usage rate of the FISs went down.

With respect to effective IT unit, the result could be attributed to the fact that some universities have other systems that people use alongside the main FIS and for which staff in the IT unit would be preferring to use. Universities could nevertheless deter this by putting in place clear IT use policies that would be used to regulate the operations of the IT units. Another reason to which the result could be attributed arises from the fact that many users have a perception that IT units by themselves can solve all IT problems including application user problems, which is not true at all. So, when users with such perceptions fail to get help from the IT unit, they then lose confidence in the entire system. This can be deterred by ensuring that people in the universities are clearly educated about the scope of the IT unit.

With respect to regular staff Performance evaluation, it was found out that for universities that had more than one system, the performance evaluation function was based on the system that a user was most conversant with. This meant that for purpose of aiming to get high scores, users concentrated on a single particular system and ignored others which also include the main FIS. On the other hand, it was deduced that through the process of staff evaluation, users got the opportunity to discuss and get solutions about issues regarding their system use which helped improve the usage.

#### **7.4. System support during implementation and usage of FISs**

As indicated in 1.5, system support initiatives in this study included collectively technical support, project management and flexibility of consultants.

With respect to Technical Support, the exploratory study and descriptive statistics showed provision of technical support as a very important factor for FIS implementation. This rimes well with what earlier literature had indicated. Ridings et al. (2002) in their study conducted in North Carolina for instance asserted that with presence of technical support in an organization, FISs implementation becomes much more easier to manage. They recommended that implementation of FISs needs to be guided by technical personnel. With respect to project management, the exploratory and quantitative studies showed that having a clear mechanism of managing FIS projects is a very important factor for FIS implementation success. This is what was chosen by the biggest portion of respondents who consistently said that the performance of their respective universities in administering project management was very good. This is in congruence with Fui-Hoon Nah et al. (2001) who asserted that project management forms a clear basis of planning, controlling, monitoring,

evaluating and implementing FIS projects and to be sure of success. With respect to Flexibility of Consultants, the exploratory and quantitative studies showed that flexibility of consultants was a very important factor for FISs implementation success. This was based on the fact that over 80% of the respondents chose that consultants' willingness to incorporate desired new changes into the system without difficulty was a very important factor and at the same time chose that the performance of the universities in ensuring that the consultants are flexible was very good. This position is in congruence with Poston and Grabski (2001) who ascertained that implementation success of FIS highly depends on having in place flexibility in consultants because these are expected to be central in knowing how the system must run in case it has faced any kind of defaults in functioning.

The above discussion is in congruence with the result that was obtained for the impact of System Support Initiatives during implementation on usage. This is because the result returned was significant with P-value 0.0488 and with positive impact of path coefficient of determination = 0.2955. This was in line with earlier hypothesis that was stated.

With respect to Technical Support, the validation study showed that all universities had arrangements for technical support and in one of the universities (Kyambogo), it was mentioned that even some staff members would offer technical support to their own other colleagues. This affirms that the systems' benefits tend to be highly realized when quality vendors/consultants are engaged (Ridings et al. (2002); Gefen (2004)). This information can be interpreted to mean that engagement of quality external sources of expertise i.e., vendors/consultants for FIS acquisitions can compensate for an organization's inability to fully understand how the system supports its business vision in terms of organizational goals and mission and where top managers show low support of the system. Two possible explanations can be put forward in support of the foregoing proposition: 1) By Attewell (1992) who says that the diffusion and subsequent success of complex IT systems hinges upon elimination of knowledge barriers between adopting organization and providers of the software. It is logical to expect that organizational members would want to attach more importance to the external sources of expertise that are capable of providing them with knowledge and support needed for getting most out of the acquired systems, 2) Vendors and consultants of specialized, complex systems such as FISs are usually well versed about how their products can be used to support business objectives across

the vast number of industries and may provide such information to organizational members, including top managers who may in turn use it for organizational planning purposes (Davenport, 1998).

With respect to project management, earlier literature had showed that project management during implementation has a big potential and significantly influences usage of FIS projects. For instance, Mullins (2003) had earlier argued that project management is a critical component in determining success of FIS projects. He ascertained that there must be enough consideration of project plans, controls, monitoring and evaluation. These must be adhered to, if success of such projects is to be realized. Howard (2001) adds that projects executed in the software industry are characterized by high uncertainty, need to use state-of-the-art system, rapid changes, a high need for interpersonal skills; high importance of organizational structure, large number of request changes during the project life cycle, high use of virtual teams, high importance of group learning and high influence of matrix organizational structure if they are to succeed. Bondarouk (2006) concludes by confirming that project stakeholders must be consulted in the project management process to ensure that the quality of a project is enhanced.

Contrary to this discussion, findings from the validation study had shown that it would not be easy for FISs implementation to be done with an embodiment of project management and achieve a positive impact on usage. This was found to be emanating from the fact that it would not be easy to mobilize people and to ensure that they would work according to planned schedules. For example, there would usually be tasks that would have to be carried out by a group of people collectively (for example preparing, passing and approving payments). If some of the people decided not to do their parts at the designated times, then things would fail to move and the system would consequently collapse. This can only be deterred by ensuring that people are quick to work on assignments given to them.

With respect to flexibility of consultants, there are two arguments picked from the validation study that could be used to explain the result that was obtained that System Support Initiatives during implementation impact FIS usage positively. The first argument is that the experience that many actors have in implementing and using FIS systems in the Ugandan universities is still relatively low because most of these technologies are new to many people and at the same time most of the universities are new as well. Therefore, it is not easy for many of the decision makers and IT managers

in these institutions to develop complete and comprehensive FISs requirements specifications at a single time. Many times, it is only at the time of using the systems that people discover deviations and missing gaps that have to be sorted out first before the systems becomes usable. Also because of limited experience, most people are unable to understand and fully comprehend the capabilities of the new systems before they themselves actually use them. This therefore means that the need to adjust systems from time to time while in use is inevitable. And this is what exactly requires to have consultants who are easy to work with, who are flexible and who are committed to their work otherwise the implementation and usage can fail.

The second argument is that considering how the business of IT items is conducted in many developing countries including Uganda where almost all items have to come from outside the country and with a lot of bureaucracies involved, many times the procurement processes of items like FISs take too long to be concluded. In many cases, this occurs only when some of the supporting technologies like the hardware and operating systems have changed already. This in many cases require that adjustments are made on the items before they are installed. With such challenges, if the consultants are not flexible enough and willing to cooperate then the entire project can fail. Therefore, it is very important for universities in Uganda to take seriously into consideration the issue of flexibility when soliciting for suppliers and consultants for FISs. These observations are also in congruence with Hussein et al. (2005) who argue that the most commonly-cited benefit being derived from flexibility in consultation mechanisms has been that of more effective organizational change management and implementation of financial information systems. This is based on the fact that organizations need to hold employee workshops which can identify problems and develop solutions focused on providing the workforce with a much fuller awareness of the implementation of FISs by supplying information on what is required (Sedera et al., 2003).

### **Conclusion drawn**

System Support Initiatives which in this study was defined to include technical support, project management and flexible consultants were found to be very important for FISs implementation and the impact on usage was positive and significant.

With respect to Technical Support, its identified importance is exemplified by the fact that all universities that were visited during the validation study were found to have

well established arrangements for technical support. In addition, some healthy trends were found in some of the universities. For example, some staff members would handle some of the technical issues by themselves. And also in some of the universities, a person from the IT unit would be given a permanent seat in the finance office to serve as the first line of support on any technical issue.

With respect to Project management, it can be deduced that on the contrary, this was not being adequately done. In universities where they attempted to do it, it would become difficult for people to work within the set schedules and timelines because of problems like frequent absenteeism from duty by some users during the execution of the various critical activities. This happened especially in places where supervisors had laxities.

With respect to Flexibility of Consultants, two scenarios have been mentioned that could attribute to the result. The first one is attributed to the fact that IT experience in the country especially in systems implementations is still relatively low and therefore it is not easy for many of the decision makers in these institutions to develop complete and comprehensive FISs requirements specifications at a single time. And being dependent on imported technologies, many imported items arrive for installation when already some of the supporting technologies like operating systems are already changed. These kind of situations requires a lot of flexibility on the part of consultants to resolve.

# Chapter Eight

## Conclusion and Recommended Areas for further Research

This chapter provides conclusions which also serve as contributions of the study. The chapter also gives recommendations for future research in the area of the study.

### 8.1. Final conclusion

The study found out that factors that influence FIS implementation in universities in Uganda include: 1). Top Management Support, 2). Capacity Building Initiatives comprised of education/training and change management, 3) Organisation Facilitation Initiatives comprised of effective communication, effective IT unit and evaluation of staff performance and finally 4) System Support Initiatives comprised of technical support, project management and flexibility of consultants.

Further, in terms of impact on usage by the influence of the factors during FIS implementation, the study found Top Management Support and Systems Support Initiatives to be facilitators to usage with P-Values of 0.5204 and 0.2955 respectively. Organisation Facilitation Initiatives was found to be an inhibitor with P-Value -0.367 and Capacity Building Initiatives was found not to be significant with P.value 0.0901. Conclusions drawn from these results in regard to each factor can be described as follows:

#### *Top Management Support*

The study found the influence of Top Management Support on FIS implementation to be a facilitator to FIS usage. Top managers in universities should therefore not relent on activities that foster this facilitation which includes; initiation of ideas for FIS implementations, supporting of implementations in primary stages, sourcing for consultants, coordinating development of system updates with consultants, pushing for adoption of FISs across all departments within the organisation, enforcing the effectiveness of controls in the systems such that no other systems can be used.

#### *Capacity Building Initiatives*

As already described Capacity building initiatives include education/training and change management. As indicated above, the impact of this factor on usage was found not to be significant.



In regard to Education and Training, the study found some three factors upon which this result would be attributed. First factor was that training would become insignificant when the FISs being used are not fully compliant to the user requirements or when the FISs have some deficiencies. Such deficiencies would be as a result of having in place user requirements specifications with missing gaps and this was as a result of a poor systems study design. As a result of this, a trend was discovered in some universities whereby the more the people were trained on the FISs, the more they would find deficiencies in the systems and consequently the less they would be willing to rely on the system.

It is therefore very important for universities to ensure that training starts only when the system has been thoroughly tested and verified to be fully compliant to the user requirements. This helps to avoid interruptions that would otherwise happen during training. The second aspect was that in some universities there were prolonged delays between the times when people do training and the times when they actually start using the system. Prolonged delays make people forget whatever they are trained on and therefore must as much as possible be avoided. The third aspect was that in some universities training was conducted when people are not at their work stations. Training conducted in this way fails to be as productive as expected because users get exposed only on sampled data as opposed to the full spectrum of data if they were trained at their work stations and get full understanding of how to deal with real situations while at work stations. It is therefore suggested that people should as much possible train while doing actual work so that they can very quickly relate the functionalities in the system to what they do.

In order to achieve this training benefits, the program should as much as possible be designed to follow the pattern or sequence in which work is done in the institution. This means that an item on the training program should be introduced to the users only at the time when the related activity is up and being done. For example, if budgeting (a function in finance management for the institution) is done at the beginning of the financial year then the module for budgeting should be taught at the beginning of the financial year as well. If the preparation of final accounts reports (which is also a function in finance management) is done when a financial year is ending, then the modules for final accounts should be taught at that time. This way, it

becomes a lot easier for trainees to relate what they do with the relevant functionalities in the system and then get good practical understanding as to how the system actually works. In addition, the user interests would likely increase further as the system would be doing things that are actually relevant for them at that point in time. Otherwise, if a university cannot do training as has been described, then it is suggested that trainers would have to prepare to give aggressive follow-up support to the people on a one to one basis after the general training.

In regard to change management, two aspects were found that would be attributed to the result for Capacity Building Initiatives not to be significant. First, in some universities it was found out that some people would equate change management to job losses. This would mean that on the onset, the idea of change management would just instill fear into people's minds and therefore they (the people) would view FIS usage with a lot of skepticism. Therefore, if change management is to be instituted, people must first be sensitized about its purpose and its benefits in order to deter any possible fears. And change management itself must be conducted in such a way that it does not cause more harm than good. The second aspect was that culture had been developed in some universities such that with or without a change management, people would have to use the FIS otherwise they would risk losing their jobs. With this kind of situation much more emphasis would be put on discipline such that people would just have to adapt to new changes as they unfold without questioning in the organization.

### ***Organisation Facilitation Initiatives***

As already described, organisation facilitation initiatives include; effective communication, effective IT unit and regular staff performance evaluation and as indicated in 5.3, this was found to be an inhibitor to FIS usage.

In regard to effective communication, this result would be attributed to the users' failure to master how to use the FISs, and also, the FISs themselves not being fully accommodative of user requirements such that users would find hard time to use the systems in their entirety. In this situation, when communication within the university is very efficient such that people can easily communicate to each other and for example supervisors are able to very easily send job requests to users, then those users who get hard time to use the FISs find themselves failing to cope up with the

established efficiency. It was found out that consequently, such users would get attracted to other applications that would be easier for them to use. This would most commonly happen when users are generating final accounts reports. The users would do this by exporting data from the FISs to other applications like a spreadsheets and then generating the final required reports through those applications. The implication of this was that when users fail to gain good mastery in using the FIS, then the more effective the communication would become, the more the users would get attracted to other applications/tools that would be easier for them to use. For this reason, it can be claimed that the usage rate of the FISs would go down. Therefore, it is very important for institutions to ensure that everybody gets on well with the FISs otherwise people may not use the FISs as may be expected when the institution institutes effective communication.

With respect to effective IT unit, there are two arguments upon which the obtained result that organisation facilitation initiatives during implementation is an inhibitor to FIS usage could be attributed. The first argument is based on issue of universities having more than one FIS and more so when the IT units are biased to some particular applications. In this kind of situation, the IT unit can decide to favor some applications against others and this could include the main FIS. This may become even more serious when some of the applications were developed in the IT unit as the problem of conflict of interest would then strongly set in. Therefore universities must as much as possible avoid to use a multiplicity of applications alongside the main FIS. One of the ways to deter this would be for universities to develop and put in place clear IT use policies that can guide on this matter amongst other things.

The second aspect that explains the result arises from the fact that many users have a perception that IT units by themselves can solve all IT problems including application user problems which is not necessarily true because application user problems usually are issues for the software consultants. So, when users with such a perception contact the IT unit for help on some user problems and the unit fails to handle, the users get frustrated and even loses confidence in the entire system. In order to deter this, it is necessary to clearly write down the role and mandate of the IT unit. But even then, universities must not completely relax in building internal capacities for their staff in the IT units so that they are able to handle some of the user problems. An additional strategy would be to station staff in the IT unit in close proximity with the users. For

example, some of the IT staff may sit right in the finance department. This was found to be the case in some of the universities.

With respect to regular Staff performance evaluation, it was found out that for universities that had a multiplicity of systems that were being used alongside the main FIS, users were allowed to choose for themselves the systems or applications to be evaluated on. In this situation, the usage rate of the FIS would be affected depending on the preferences of the users. It is therefore suggested that users should not have liberty to choose for themselves applications to be evaluated on.

### ***System Support Initiatives***

Systems Support Initiatives include; technical support, projects management and flexibility of consultants. As indicated in 8.1, its influence during implementation was found to be a facilitator to FIS usage.

In regard to technical support, this result can be explained by the fact that all universities that were visited had arrangements for technical support. In KYA, they had a staff member in the finance department who had some technical skills and would help people in the department to fix some of the technical problems that would crop up. In MUBS, they had stationed a person from the IT unit right in the finance department and that person would attend to any technical issues that would crop up. In such circumstances, close physical linkage between the technical people and the users would be established and this helped to boost efficiency and effectiveness of technical support. It can therefore be concluded that, in order to boost effectiveness of technical support, universities should as much as possible station people with technical expertise right in the finance departments. This helps to bring the technical support service closer to people greatly helps to minimize the time and resources required to fix many of the problems.

In regard to Project management, it is suggested that before a university decides to institute project management as one of the functions to be done during an FIS implementation, it is very important for the university to ensure first; that staff are well disciplined and fully committed to their work so that there is assurance that all scheduled activities would be executed as planned, otherwise the usage of the system would fail.

In regard to Flexibility of Consultants, universities have to consider the need to have consultants who are not very rigid because IT expertise in the country in terms of systems implementations is still quite low and therefore, it is not easy for many of the decision makers in the institutions to develop complete and comprehensive FIS requirements specifications. And also dependency on imported technologies with procurement processes are not very efficient because of the many bureaucracies usually involved, the imported items arrive for installation when already some of the supporting technologies like operating systems are already changed. These kind of situations requires a lot of flexibility on the part of consultants to resolve.

## **8.2. Areas recommended for future research**

Future studies may replicate this effort with slight modifications. Other research approaches, including more case studies, may permit deeper insights and should be considered for future studies. Wherever possible, researchers should endeavor to investigate the use of homogeneous information systems. Research efforts could examine the effects of other contingency factors such as organizational culture and structure on information system success. A larger data sample should be sought, and would be better if it is even multi-national. In this study, the views of only top- and mid-level professionals were solicited; future research may consider lower level employees' viewpoints. Future studies could in addition investigate the themes here using several other enterprise systems. Such an exercise would increase knowledge about the impact of relevant contingency factors on complex IT systems and would serve the adopters of such systems well regarding the sort of factors to pay attention to in order to enhance the success or effectiveness levels of such systems. Given that the study underscores the relative importance of external expertise over the other factors, it would be useful for future studies to investigate what the qualities and attributes of a good provider of external expertise are. Also, efforts could aim at discussing the themes from the perspective of organizational size. Lastly, future endeavors could compare and contrast the impacts of the selected contingencies on information system success with the success of non- information systems; a comparative study of this nature would be enlightening.

## APPENDICES

**Table 17: Appendix I Details of informants interviewed**

<b>Informant</b>	<b>Role</b>	<b>Date of Interview</b>	<b>Time Duration</b>
University Bursar	Head of Finance Department	20 <sup>th</sup> March 2012	50 Minutes
Senior Assistant Bursar	Head of the user team	10 <sup>th</sup> June 2011	60 Minutes
Head IT Unit	Leader of the Project	21 <sup>st</sup> March 2012	55 Minutes
Accounts Assistant	User	23 <sup>rd</sup> March 2012	35 Minutes
Second Senior Assistant Bursar	User	26 <sup>th</sup> March 2012	40 Minutes
First Accounts Assistant	User	23 <sup>rd</sup> March 2012	40 Minutes
Second Accounts Assistant	User	11 <sup>th</sup> June 2011	30 Minutes
Second Accounts Assistant	User	13 <sup>th</sup> June 2011	40 Minutes
Systems Administrator	Systems Administrator from IT Unit	15 <sup>th</sup> June 2011	30 Minutes
Planning Officer	Coordinator of NORAD (the funding agency)	16 <sup>th</sup> June 2011	35 Minutes
Consultant		19 <sup>th</sup> June 2011	38 Minutes

## **Appendix II: Findings in charge of implementation of FIS**

Currently what are those things/services that cannot be done in the organisation without the system? (Can it be printing of invoices/ **Name of Organisation:**

**Makerere University**

**Respondent: team.**

### **General findings about the organisation and the financial operations**

1. What activities does your organisation do?
2. What is the number of employees (a) in the finance department only (b) in the entire organisation (You can give approximate numbers)?
3. How many clients do you have in the organisation (You may give an approximate number)?
4. What are the business processes in the finance department (e.g. budgeting, financial reporting salaries, e.t.c?)
5. What financial system do you use:
6. When was the system installed and when was it commissioned:
7. What functionalities were setup for the system to handle:
8. What are the departments that use the system? *Budgeting, Payments and Revenue*
9. Overall how many people use the system?
10. What functionalities do you use?
11. Are there functionalities available on the system but when they are not being used? If so why?
12. What constituted the rationale behind the decision for your organisation to purchase the system? In other words what was the problem that needed to be solved that triggered the initiation of the project, and who were the initiators:
13. customer bills, e.t.c.)
14. Do you have any strategies of motivating people to use the system? If Yes, give details?

15. Are there departments/people that used the opportunity of introduction of the system in the organisation to get the quality of tools they use in their work improved by for example procuring better tools that would optimise the performance of the system? If yes, give details, (a common example with such projects could the IT department have used the opportunity to interest management to upgrade the IT infrastructure?)
16. Are there organisations/departments that got opportunities to offer/supply services/goods to the organisation as a result of the initiation of the project? If yes, give details.
17. Are there units/departments that inevitably have to collaboratively work together as a result of how the system has to be used (such that the system can even fail to stabilise if the relations between those units/department are not well established)?

### **Findings about the organisation prepared for the implementation**

18. In your view did the organisation prepare adequately well before the implementation to ensure that the process succeeds? If yes how was this done? (You can also use the check list below in answering this)
  - i. Did the organisation ensure that all relevant staff had basic computer skills?
  - ii. Did the organisation carry out ICT awareness and sensitisation workshops for the relevant staff and stakeholders prior to implementation?
  - iii. Did the organisation ensure that there was adequate computer equipment for staff?
  - iv. Did the organisation take time to critically look at all the existing business processes and ensure that they would all be accommodated in the automated environment?
  - v. Did the organisation take time to review all the relevant organisation policies to ensure that they would all adequately be accommodated in the automated environment?
  - vi. Did the organisation take time to plan for the human resource requirements and what the implications would be after implementation?
  - vii. Did the organisation put in place mechanisms of handling discontent amongst staff during implementation and even after?
  - viii. Was there a systems study carried out prior to the procurement of the system?

### **Findings on how the implementation was conducted and how the system is being used**

19. How was the implementation conducted? (You may also use the checklist below in answering this)
  - i. Did you have an implementation team? If Yes what was its composition in terms of specialities?



- ii. Can you mention any strategies you may have used during implementation, and also explain how effective they were?  
(For example did you have to set milestones to be achieved within given timelines)?
- iii. How was training conducted? (e.g. were all people trained together, were they trained in groups, e.t.c. and how effective was it)?
- iv. Did you get any challenges during implementation (e.g. a need to ensure that the system functions in accordance with the already set company policies)?
- v. Do you currently have any problems (technical or social) with the system? If yes, name and give some details
- vi. Are there any things which you think were not done well or which should have been done differently during implementation (maybe that some milestones were not well set, or the methods that were used during training were not adequate) in order to achieve better results?
- vii. Can you name and give details of benefits/achievements you have so far realised in using the system?
- viii. Can you explain of how your working relationship with each of the following categories of people in regard to the implementation of the system was during implementation and also how it is presently?
  - The Top Executives:
  - The supplier:
  - The IT department:
  - Any others (please mention)

## Appendix II: Questions to the Supplier

Name:

Job Title:

### Questions for gathering facts

1. What does your company do:
2. How many people do you have that can support the system:
3. How did your company know about the supply?
4. Are there any other companies/service providers who also got business with the organisation courtesy of company as a result of the supply service contract you got?  
If yes, give details

### Finding out how the organisation prepared for the implementation

5. In your view did you find the organisation well prepared to implement the system?  
(You can base your response on the following checklist)
  - i. Was the ICT infrastructure adequate for the system? *Not adequate*
  - ii. Did you find well streamlined business processes? *Fair*

### Finding out how the implementation was done and how the system is being used

6. *How was the implementation done?*(You can base your response on the following checklist)
  - i. Are there strategies you can mention that you used during implementation?
  - ii. Are there any challenges you encountered during implementation? If yes explain
  - iii. Are there any things which you think were not done well or which should have been done differently during implementation in order to achieve better results?
  - iv. Do you know of any benefits/achievements that the organisation currently is enjoying from the system? If yes explain
    -
  - v. Can you explain how your working relationship with each of the following categories of people was and how it may have affected the implementation process?
    - The Top Executives in the organisation Head of finance
    - Staff in the organisation particularly those that use the system –The IT department –
    - Any others (please mention)
    -

## **Appendix III: Questions for the IT Department**

Name:

Job Title:

### **Questions for gathering facts**

1. What is the role of the IT Department in as far as the implementation of the IS is concerned?
2. Were you involved or consulted when the systems requirements specifications were being prepared? *Yes in all cases.*
3. Was the IT Department involved in choosing the system?
4. Are there departments/people that used the opportunity of the introduction of the system in the organisation to get the quality of tools they use in their work improved by for example procuring better tools that would optimise the performance of the system? If yes, give details.
5. Are there organisations/departments that got opportunities to offer/supply services/goods to the organisation as a result of the initiation of the project? If yes, give details?

### **Understanding relationship between implementation and using of the system**

#### **6. *How was the implementation done***

- i. Can you mention any challenges you encountered during implementation?
- ii. Do you currently have any problems/challenges/limitations on the system? If yes explain
- iii. Are there any things which you think were not done well or which should have been done differently during implementation (maybe that some milestones were not well set, or the methods that were used during training were not adequate) in order to achieve better results?

- iv. Do you know of any achievements the finance department has made in using the system? If yes please mention

***The finance department has reduced and consolidated its accounts such that the system can be used efficiently and effectively.***

- v. Can you explain how your working relationship with each of the following categories of people was and how it may have affected the implementation process?

- The Top Executives
  
- Head of finance
- Staff in the organisation particularly those that use the system
- Any others (please mention)

## **Appendix IV: Findings from staff in finance department**

**Names:**

Job Title:

### **General findings about the organisation and the financial operations**

1. What functionalities does the organisation use on the system? .....
2. What do you use on the system?
3. Currently what are those things/services that cannot be done in the organisation without the system?
4. Are there any strategies of motivating people to use the system? If Yes, give details?
5. Are there departments/people that used the opportunity of introduction of the system in the organisation to get the quality of tools they use in their work improved by for example procuring better tools that would optimise the performance of the system? If yes, give details.
6. Are there organisations/departments you know of that got opportunities to offer/supply services/goods to the organisation as a result of the initiation of the project? If yes, give details.
7. Are there units/departments that inevitably have to collaboratively work together as a result of how the system has to be used (such that the system can even fail to stabilise if the relations between those units/department are not well established)?

### **Findings about how the organisation prepared for the implementation**

8. In your view did the organisation prepare adequately well before the implementation to ensure that the process succeeds? If yes how was this done? (You can also use the check list below in answering this)
  - i. Did the organisation ensure that all relevant staff had basic computer skills?
  - ii. Did the organisation carry out ICT awareness and sensitisation workshops for the relevant staff and stakeholders prior to implementation?
  - iii. Did the organisation ensure that there was adequate computer equipment for staff?
  - iv. Did the organisation take time to critically look at all the existing business processes and ensure that they would all be accommodated in the automated environment?
  - v. Did the organisation take time to review all the relevant organisation policies to ensure that they would all adequately be accommodated in the automated environment?
  - vi. Did the organisation take time to plan for the human resource requirements and what the implications would be after implementation?
  - vii. Did the organisation put in place mechanisms of handling discontent amongst staff during implementation and even after?
  - viii. Was there a systems study carried out prior to the procurement of the system?

### **Findings about how the implementation was conducted and how the system is being used**

9. How was the implementation conducted? (You may also use the checklist below in answering this)
  - i. Can you mention any strategies you may have used during implementation, and also explain how effective they were?
  - j. Did you get any challenges during implementation (e.g. a need to ensure that the system functions in accordance with the already set company policies)?

- k. Do you currently have any problems (technical or social) with the system? If yes, name and give some details
- l. Are there any things which you think were not done well or which should have been done differently during implementation (maybe that some milestones were not well set, or the methods that were used during training were not adequate) in order to achieve better results?
- m. Can you name and give details of benefits/achievements you have so far realised in using the system?

## Appendix V: QUESTIONNAIRE FOR THE QUANTITATIVE STUDY

### FINANCE INFORMATION SYSTEMS IMPLEMENTATION AND USE IN THE UGANDAN ORGANISATIONS

#### Dear Respondent,

We use finance information systems (FIS) to accumulate and analyze financial data in order to provide decision makers with information they need to perform managerial functions. Despite the fact that knowledge about the benefits of the FISs is available in many different ways, and that many factors that are believed to be critical for successful implementation of the FISs have been suggested, many organizations still fail to attain the desired success during implementation.

This questionnaire is for study that examines the factors critical for successful implementation and use of Finance Information Systems in the Ugandan environment. You have been selected as one of the informants for the study and the information you will give will be treated with utmost confidentiality. The findings and recommendations from this study will benefit many organizations in finance information system management. Kindly please spare some of your valuable time to answer these questions.

Thank you,

**Kiwana David (PhD Candidate) 0712-813013**

**Lund University**

**Table 18: Section A: Organization Information**

Organization name:	
Organization type: (Circle the option that applies)	1= Public Organization 2= Private Organization 3= Others (Please specify):
Department:	
Respondent's Job title	
Email: (optional)	
Contact number: (optional)	
Name of the FIS being used	

#### SECTION B: FINANCE SYSTEM QUALITY DIMENSIONS

**System quality** refers to the technological or production quality of information systems and it specifically relates to accessibility, usability, flexibility and functionality.

Please indicate the extent at which you agree or disagree with the following statements that relate to the system quality of the FIS you are using by **TICKING** the box that most accurately indicates your response

No	<i>Rate the following statements with regard to the quality of the FIS you are using</i>	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
B.1	<b>Accessibility:</b> Easily accessible from anywhere without difficulty					
B.2	<b>System navigation:</b> Easy to navigate through without difficulty					
B.3	<b>Data capturing:</b> Captures data without difficulty					
B.4	<b>Reports generation:</b> Generates reports easily					
B.5	<b>Training:</b> Easy to learn					
B.6	<b>Flexibility/integration</b> – Easily adaptable to changing requirements					
B.7	<b>Functionality</b> – Does all the desired functionalities appropriately					

### SECTION C: FINANCE INFORMATION QUALITY DIMENSIONS

**Information quality** represents the desirable characteristics of the information systems outputs that include relevance, understandability, accuracy, completeness, timeliness and usability

Please indicate the extent at which you agree or disagree with the following statements in respect with the information quality of the FIS you are using by **TICKING** the box that most accurately indicates your response

No	<i>Rate the following statements with regard to the quality of information in your FIS</i>	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
C.1	<b>Accuracy:</b> The data in our FIS is always correct and truthful					
C.2	<b>Integrity:</b> The data in our FIS is Credible					
C.3	<b>Management Reports:</b> We can generate reports in our own desired formats with ease					



C.4	<b>Completeness:</b> The system can fully handle all the desired functionalities					
C.5	<b>Consistency:</b> Data value representations are the same throughout the system					

#### SECTION D: FINANCE SERVICE QUALITY DIMENSIONS

**Service quality** represents the quality of support for an information system and it relates to responsiveness, reliability, competence of the support team

Please indicate the extent at which you agree or disagree with the following statements in respect with the service quality of the FIS you are using by **TICKING** the box that most accurately indicates your response

No	<i>Rate the following statements with regard to the quality of service of your FIS</i>	Strongly agree	Agree	Uncertain	Disagree	Strongly Disagree
D.1.	<b>Responsiveness</b> – The support team responds to support calls with appropriate promptness					
D.2	<b>Reliability</b> – The support team is always available whenever needed					
D.3	<b>Technical competence:</b> The support team is technically competent					

#### SECTION E: THE USE OF THE FINANCE INFORMATION SYSTEM

The use of an information system can be measured in terms of amount of use, frequency of use, dependency, nature of use and pattern of use.

Please indicate the extent at which you agree or disagree with each of the following statements by **TICKING** the box that most accurately indicates your response.

No	<i>Rate the following statements with regard to the use of your FIS</i>	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree

E.1	<b>Dependency:</b> My work fully depends on the system					
E.2	<b>Frequency of use:</b> I use the system all the time					
E.3	<b>Amount of use:</b> I generate and prepare all my financial reports from the system					
E.4	<b>Nature of use:</b> The system is used almost by everybody in the accounts department					

**SECTION F: PERCEIVED NET BENEFITS FOR USING FINANCE INFORMATION SYSTEMS**

**Net benefits** measure the effectiveness and influence of the Finance information system.

*Please indicate the extent at which you agree or disagree with each of the following statements in respect with the net benefits derived from the FIS you are using by **TICKING** the box that most accurately indicates your response.*

No	<i>Rate the following statements with regard to the benefits of using your FIS</i>	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
F.1	Decision making improvement					
F.2	Productivity improvement					
F.3	Revenue base increment					
F.4	Reduction in costs/expenses e.g. stationery					
F.6	Improvement in job satisfaction					
F-7	Improved Profits					
F.8	Improved customer service					

**SECTION G: CRITICAL SUCCESS FACTORS FOR FINANCE INFORMATION SYSTEMS IMPLEMENTATION AND USE**

**IMPORTANCE:** please rate the importance of each factor in ensuring implementation and use of *Finance Information Systems (FIS)* from your perceptions and opinions.

		<b>IMPORTANCE</b>				
<i>Rate the following factors based on their importance in ensuring implementation and use of the FIS in your institution</i>		<b>Not important</b>	<b>Less Important</b>	<b>Average Important</b>	<b>Very important</b>	<b>Extremely Important</b>
	<b>Top management support</b>					
G.1	Through participation in implementation process. e.g. attending implementation meetings					
G.2	Through Swift Decisions making					
G.3	Through Demand for regular implementation progress reports					
	<b>Effective Communication</b>					
G.4	There is a clear communication channel on all issues that pertain to the system					
	<b>Evaluations of staff performance</b>					
G.5	There are regular Staff performance evaluations on system use					
	<b>Education and training:</b>					
G.6	There was adequate training on FIS use					
G.7	Refresher training on FIS use is provided from time to time					
	<b>Technical Support</b>					
G.8	Quick support service is provided					
G.9	<b>Project Management</b>					
	There is a clear mechanism of addressing issues and problems that arise					
G10	<b>Change management program</b>					
	I was taken through a change management/sensitisation program before using the system					
G11	<b>Effective IT unit</b>					
	The institution has an IT unit responsible to support the IT system operations including the FIS					
G12	<b>Flexible consultants</b>					

	The suppliers/consultants are always willing to incorporate desired new changes into the system without much difficulty					
	<b>Suggest and rate any other important factors that have ensured continued implementation of Finance Information system in your Organization</b>					
A						
B						
C						
D						

**Performance Column:** please rate the actual performance (*achievement*) on each of those factors by your organization.

		<b>Level of Achievement</b>				
<i>Rate the following factors based on how they have been achieved</i>		<b>Poor</b>	<b>Fair</b>	<b>Good</b>	<b>Very Good</b>	<b>Excellent</b>
	<b>Top management support</b>					
G13	Through participation in implementation process. e.g. attending implementation meetings					
G14	Through Swift Decisions making					
G15	Through Demand for regular implementation progress reports					
	<b>Effective Communication</b>					
G16	There is a clear communication channel on all issues that pertain to the system					
	<b>Evaluations of staff performance</b>					
G17	There are regular Staff performance evaluations on system use					
	<b>Education and training:</b>					
G18	There was adequate training on FIS use					
G19	Refresher training on FIS use is provided from time to time					
	<b>Technical Support</b>					
G20	Quick support service is provided					
	<b>Project Management</b>					
G21	There is a clear mechanism of addressing issues and problems that arise					
	<b>Change management program</b>					

G22	I was taken through a change management/sensitisation program before using the system					
	<b>Effective IT unit</b>					
G23	The institution has an IT unit responsible to support the IT system operations including the FIS					
	<b>Flexible consultants</b>					
G24	The suppliers/consultants are always willing to incorporate desired new changes into the system without much difficulty					
	<b>Rate how implementation factors of Finance Information system suggested in your Organization have been achieved</b>					
A						
B						
C						
D						

**Table 19: Appendix VI Results for Descriptive Statistics for each of the seven Universities**

<b>Results for measurement of importance</b>						
<b>University</b>	<b>Not Important (%)</b>	<b>Little Important (%)</b>	<b>Average Importan t (%)</b>	<b>Very Important (%)</b>	<b>Extremely Important (%)</b>	<b>Total (100)</b>
<b>Makerere University</b>						
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	0.0	4.3	95.7	0.0	100.0
Top management support through demand for regular implementation	0.0	0.0	17.4	73.9	8.7	100.0
Top management support through swift decision making	0.0	0.0	82.6	17.4	0.0	100.0
<b>Capacity Building Initiatives</b>						
<b>Education &amp; Training</b>						
We have adequate training on FIS	0.0	13.0	47.8	39.1	0.0	100.0
We have refresher training on FIS USE	0.0	13.0	47.85	39.1	0.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	0.0	13.0	87.0	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
<b>Effective Communication</b>						
There is clear communication channel with in finance department	0.0	0.0	21.7	30.4	47.8	100.0
<b>Effective IT Unit</b>						
The institute has an IT unity responsible for supporting the IT system	0.0	0.0	13.0	69.6	17.4	100.0
<b>Evaluation of Staff Performance</b>						
There are regular staff performance evaluation	0.0	0.0	30.4	69.6	0.0	100.0
<b>System Support Initiatives</b>						
<b>Technical Support</b>						

Well packaged training and quick training and service is provided	0.0	0.0	34.8	60.9	4.3	100.0
<b>Project Management</b>						
There is clear mechanism of addressing all issues and problems	0.0	0.0	13.0	87.0	0.0	100.0
<b>Flexible Consultants</b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	4.3	17.4	21.7	56.5	100.0
<b>Kyambogo University</b>						
	<b>Not Important</b>	<b>Little Important</b>	<b>Average Importan t</b>	<b>Very Important</b>	<b>Extremely Important</b>	<b>Total (%)</b>
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	14.3	14.3	42.9	28.6	100.0
Top management support through demand for regular implementation	0.0	9.5	23.8	42.9	23.8	100.0
Top management support through swift decision making	0.0	4.8	66.7	28.6	0.0	100.0
<b>Capacity Building Initiatives</b>						
<b>Education &amp; training</b>						
We have adequate training on FIS	0.0	0.0	57.1	19.0	23.8	100.0
We have refresher training on FIS USE	9.5	0.0	57.1	19.0	14.3	100.0
<b>Change management</b>						
I was taken through a changed management program	0.0	0.0	14.3	66.7	19.0	100.0
<b>Organisation facilitation Initiatives</b>						
<b>Effective Communication</b>						
There is clear communication Channel within the	0.0	4.8	33.3	14.3	47.6	100.0

finance in the department						
<b><i>Effective IT Unit</i></b>						
The institute has an IT unit responsible for supporting the IT system	0.0	0.0	38.1	57.1	4.8	100.0
<b><i>Evaluation of Staff Performance</i></b>						
There are regular staff performance	14.3	0.0	9.5	57.1	19.0	100.0
<b>System support Initiatives</b>						
<b><i>Technical support</i></b>						
Well packed training and quick training and service is provided	9.5	14.3	14.3	47.6	14.3	100.0
<b><i>Project Management</i></b>						
There is clear mechanism of addressing all issues and problems	19.0	0.0	33.3	38.1	9.5	100.0
<b><i>Flexible Consultants</i></b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	4.8	9.5	9.5	42.9	33.3	100.0
<b>Makerere University Business School</b>						
	<b>Not Important</b>	<b>Little Important</b>	<b>Average Importan t</b>	<b>Very Important</b>	<b>Extremely Important</b>	<b>Total (%)</b>
<b>Top Management Support</b>						
Top management support through participation in implementation	4.8	0.0	9.5	85.7	0.0	100.0
Top management support through demand for regular implementation	0.0	0.0	28.6	66.7	4.8	100.0



Top management support through swift decision making	0.0	4.8	66.7	19.0	9.5	100.0
<b>Capacity building Initiatives</b>						
<i>Education &amp; training</i>						
We have adequate training on FIS	0.0	14.3	57.1	28.6	0.0	100.0
We have refresher training on FIS USE	0.0	0.0	22.2	14.8	25.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	0.0	28.6	71.4	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
<i>Effective Communication</i>						
There is clear communication of channel with in finance department	0.0	4.8	28.6	61.9	4.8	100.0
<i>Effective IT Unit</i>						
The institute has an IT unity responsible for supporting the IT system	0.0	0.0	23.8	61.9	14.3	100.0
<i>Evaluation of staff performance</i>						
There are regular performance evaluation	0.0	0.0	28.6	66.7	4.8	100.0
<b>System Support Initiatives</b>						
<i>Technical Support</i>						
Well packed training and quick training and service provided	0.0	9.5	23.8	47.6	19.0	100.0
<b>Project Management</b>						
There is clear mechanism of addressing all issues and problems	0.0	4.8	28.6	61.9	4.6	100.0
<i>Flexible Consultants</i>						
The suppliers/consultant are always willing to incorporate designed new changes into the system without much	0.0	9.5	23.8	23.8	42.9	100.0
<b>Busitema University</b>						

	Not Important	Little Important	Average Importan t	Very Important	Extremely Important	Total (%)
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	0.0	5.0	90.0	5.0	100.0
Top management support through regular demand for regular implementation	0.0	0.0	15.0	65.0	20.0	100.0
Top management support through swift decision making	0.0	0.0	75.0	25.0	0.0	100.0
<b>Capacity Building Initiatives</b>						
<b>Education &amp; Training</b>						
We have adequate training on FIS	0.0	10.0	35.0	55.0	0.0	100.0
We have refresher training on FIS USE	0.0	5.0	35.0	60.0	0.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	5.0	25.0	65.0	5.0	100.0
<b>Organisation facilitation Initiatives</b>						
<b>Effective Communication</b>						
There is clear communication channel within the finance department	0.0	0.0	25.0	50.0	25.0	100.0
<b>Effective Unit</b>						
The institute has an IT unity responsible for supporting the IT system	0.0	5.0	5.0	5.0	17.4	100.0
<b>Evaluation of staff Performance</b>						
There a regular staff performance evaluation	0.0	0.0	10.0	80.0	10.0	100.0
<b>System Support Initiatives</b>						
<b>Technical Support</b>						
Well packaged training and quick training and service provided	0.0	25.0	25.0	50.0	0.0	100.0
<b>Project Management</b>						

There is clear mechanism of addressing all issues and problems	0.0	0.0	25.0	75.0	0.0	100.0
<b>Flexible Consultants</b>						
The supply/consultants are always willing to incorporate designed new changes into the	0.0	10.05	15.0	30.0	45.0	100.0
<b>Mbarara University</b>						
	<b>Not Important</b>	<b>Little Important</b>	<b>Average Important</b>	<b>Very Important</b>	<b>Extremely Important</b>	<b>Total (%)</b>
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	0.0	11.8	82.4	5.9	100.0
Top management support through demand for regular implementation	0.0	5.9	29.4	58.8	5.9	100.0
Top management support through swift decision making	0.0	5.9	70.6	23.5	0.0	100.0
<b>Capacity Building Initiatives</b>						
<b>Education &amp; Training</b>						
We have adequate training on FIS	0.0	11.8	58.8	29.4	0.0	100.0
We have refresher training on FIS USE	5.9	5.9	64.7	23.5	0.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	0.0	17.6	82.4	0.0	100.0
<b>Organisation facilitation Initiative</b>						
<b>Effective Communication</b>						
There is clear communication channel with in finance department	0.0	5.9	17.6	29.4	47.1	100.0
<b>Effective IT Unit</b>						
The institute has an IT unity responsible for supporting the IT system	0.0	0.0	5.9	35.5	58.8	100.0

<b><i>Evaluation Of Staff Performance</i></b>						
There are regular staff performance evaluation	0.0	5.9	29.4	58.85	5.9	100.0
<b>System Support Initiatives</b>						
<b><i>Technical Support</i></b>						
Well packaged training and quick training sand service provided	0.0	0.0	11.8	76.5	11.8	100.0
<b><i>Project Management</i></b>						
There is clear Mechanism of addressing issues and problems	0.05	0.0	11.8	88.2	0.0	100.0 5
<b><i>Flexible Consultants</i></b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	5.9	35.3	8.8	100.0
<b>Uganda Management Institute</b>						
	<b>Not Important</b>	<b>Little Important</b>	<b>Average y Important</b>	<b>Very Important</b>	<b>Extremely Important</b>	<b>Total (%)</b>
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	0.0	9.1	81.8	9.1	100.0
Top management support through demand for regular implementation	0.0	0.0	18.2	72.7	9.1	100.0
Top management support through swift decision making	0.0	0.0	81.8	9.1	9.1	100.0
<b>Capacity Building Initiatives</b>						
<b><i>Education &amp; Training</i></b>						
We have adequate training on FIS	0.0	18.2	36.4	45.5	0.0	100.0
We have refresher training on FIS USE	0.0	18.2	45.5	36.4	0.0	100.0
<b><i>Change Management</i></b>						

I was taken through a change management program	0.0	0.0	9.1	90.9	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
<i>Effective Communication</i>						
There is clear communication channel with in the finance	0.0	0.0	27.3	45.5	0.0	100.0
<i>Effective IT Unit</i>						
The institute has an IT unity responsible for supporting the IT system	0.0	0.0	27.3	45.5	27.3	100.0
<i>Evaluation of Staff Performance</i>						
There are regular staff performance	0.0	0.0	27.3	72.7	0.0	100.0
<b>System Support Initiatives</b>						
<i>Technical Support</i>						
Well packaged training and quick training and service provided	0.0	0.0	36.4	63.6	0.0	100.0
<i>Project Management</i>						
There is clear mechanism of addressing all issues and problems	0.0	0.0	18.2	8.8	0.0	100.0
<i>Flexible Consultant</i>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	9.1	54.5	36.4	100.0
<b>Uganda Christian University</b>						
	<b>Not Important</b>	<b>Little Important</b>	<b>Average Importan t</b>	<b>Very Important</b>	<b>Extremely Important</b>	<b>Total (%)</b>
<b>Top Management Support</b>						
Top management support through participation in implementation process	0.0	0.0	6.7	86.7	6.7	100.0

Top management support through demand for regular implementation	0.0	0.0	20.0	80.0	0.0	100.0
Top management support through swift decision making	0.0	6.7	73.3	13.3	6.7	100.0
<b>Capacity Building Initiatives</b>						
<b>Education &amp; training</b>						
We have adequate training on FIS	0.0	0.0	53.3	46.7	0.0	100.0
We have refresher training on FIS USE	0.0	13.0	47.8	39.1	0.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	0.0	20.0	80.0	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
There is clear mechanism of addressing all issues and problems	0.0	0.0	7.4	9.8	0.0	100.0
<b>Effective IT Unit</b>						
The institute has an IT unity responsible for supporting the IT system	0.0	0.0	13.3	80.0	6.7	100.0
<b>Evaluation of Staff Performance</b>						
There are regular staff performance evaluation	0.0	0.0	0.0	86.7	013.3	100.0
<b>System support Initiatives</b>						
<b>Technical Support</b>						
Well packaged training and quick training and service is provided	0.0	13.3	13.3	60.0	13.3	100.0
<b>Project Management</b>						
There is clear mechanism of addressing all issues and problems	0.0	0.0	20.0	80.0	0.0	100.0
<b>Flexible Consultants</b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	6.7	46.7	46.7	100.0

**Table 20: Appendix VII Results for measurement of performance**

	Poor (0)	Fair (0)	Good (0)	V.Good (0)	Excellent (0)	Total (100)
<b>Makerere University</b>						
<b>Top Management Support</b>						
Top management support through participation in implementation process	0.0	4.3	13.0	82.6	0.0	100.0
Top management support through swift decisions making	0.0	4.3	87.0	8.7	0.0	100.0
Top management support through demand for regular implementation progress	0.0	4.3	21.7	69.6	4.3	100.0
<b>Capacity Building Initiatives</b>						
<b>Education &amp; Training</b>						
We have adequate training on FIS	0.0	8.7	69.6	21.7	0.0	100.0
We have refresher training on FIS USE	0.0	8.7	56.5	34.8	0.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	4.3	30.4	65.2	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
<b>Effective Communication</b>						
There is clear communication channel with in finance department	0.0	0.0	13.0	47.8	39.1	100.0
<b>Effective IT Unit</b>						
The institute has an IT unity responsible for supporting the IT system	0.0	4.3	30.4	65.2	0.0	100.0
<b>Evaluation Of Staff Performance</b>						
There is regular staff performance evaluation	0.0	4.3	56.5	39.1	0.0	100.0
<b>System Support Initiatives</b>						
<b>Technical Support</b>						
Well packaged training and quick training and service is provided	0.0	0.0	21.7	56.5	21.7	100.0

<b><i>Project Management</i></b>						
There is a clear mechanism of addressing all issues and problems	0.0	4.3	39.1	47.8	8.7	100.0
<b><i>Flexible Consultant</i></b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	13.0	3.4	56.5	100.0
<b>Kyambogo University</b>						
<b>Top Management support</b>						
Top management support through participation in implementation	19.0	9.5	0.0	66.7	4.8	100.0
Top management support through swift decision making	9.5	19.0	52.4	4.8	14.3	100.0
Top management support through demand for regular implementation progress	19.0	9.5	33.3	33.3	4.8	100.0
<b>Capacity Building Initiatives</b>						
<b><i>Education &amp; Training</i></b>						
We have adequate training on FIS	9.5	23.8	42.9	23.8	0.0	100.0
We have refresher training on FIS USE	0.0	38.1	33.3	19.0	9.5	100.0
<b><i>Change Management</i></b>						
I was taken through a change management program	0.0	9.5	38.1	38.1	14.3	100.0
<b>Organisation facilitation Initiatives</b>						
<b><i>Effective Communication</i></b>						
There is clear communication channel with in finance department	0.0	0.0	42.9	19.0	38.1	100.0
<b><i>Effective IT Unit</i></b>						
The institute has an IT unit responsible for supporting the IT system	0.0	0.0	33.3	57.1	9.5	100.0



<b><i>Evaluation Of Staff Performance</i></b>						
There is regular staff evaluation	0.0	0.0	28.6	52.4	19.0	100.0
<b>System Support Initiatives</b>						
<b><i>Technical Support</i></b>						
Well packaged training and quick training and service is provided	14.3	0.0	38.1	38.1	9.5	100.0
<b><i>Project Management</i></b>						
There is a clear mechanism of addressing all issues and problems	0.0	23.8	23.8	47.6	4.8	100.0
<b><i>Flexible Consultants</i></b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	4.8	42.9	52.4	100.0
<b>Makerere University Business School</b>						
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	4.87	23.8	71.4	0.0	100.0
Top management support through swift decision making	0.0	14.3	66.7	14.3	4.8	100.0
Top management support through demand for regular implementation progress	0.0	14.3	28.6	57.1	0.0	100.0
<b>Capacity Building Initiatives</b>						
<b><i>Education &amp; Training</i></b>						
We have adequate training on FIS	0.0	19.0	33.3	42.9	4.8	100.0
We have refresher training on FIS USE	0.0	19.0	23.8	47.6	9.5	100.0
<b><i>Change Management</i></b>						
I was taken through a change management program	0.0	14.3	9.5	71.4	4.8	100.0

<b>Organisation facilitation Initiatives</b>						
<b><i>Effective Communication</i></b>						
There is clear communication channel with in finance department	0.0	4.8	4.8	52.4	38.1	100.0
<b><i>Effective IT Unit</i></b>						
The institute has an IT unity responsible for supporting the IT system	4.8	0.0	33.3	57.1	4.8	100.0
<b><i>Evaluation Of Staff Performance</i></b>						
There is regular performance evaluation	0.0	4.8	38.1	42.95	14.3	100.0
<b>System Support Initiatives</b>						
<b><i>Technical Support</i></b>						
Well packaged training and quick training and service is provided	0.0	9.5	33.3	42.9	14.3	100.0
<b><i>Project Management</i></b>						
There is a clear mechanism of addressing all issues and problems	0.0	9.5	28.6	47.6	14.3	100.0
<b><i>Flexible Consultant</i></b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	4.8	4.8	38.1	52.4	100.0
<b>Busitema University</b>						
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	5.0	20.0	65.0	10.0	100.0
Top management support through swift decision making	0.0	10.0	85.0	5.0	0.0	100.0
Top management support through demand for regular implementation progress	0.0	0.0	40.0	55.0	5.0	100.0
<b>Capacity Building Initiatives</b>						

<b>Education &amp; Training</b>						
We have adequate training on FIS	0.0	10.0	75.0	15.0	0.0	100.0
We have refresher training on FIS USE	0.0	5.0	90.0	5.0	0.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	5.0	65.0	30.0	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
<b>Effective Communication</b>						
There is clear communication channel with in finance department	0.0	10.0	25.0	45.0	20.0	100.0
<b>Effective IT Unit</b>						
The institute has an IT unity responsible for supporting the IT system	0.0	5.0	30.0	65.0	0.0	100.0
<b>Evaluation Of Staff Performance</b>						
There are regular staff performance evaluation	0.0	0.0	35.0	65.5	0.0	100.0
<b>System Support Initiatives</b>						
<b>Technical support</b>						
Well packaged training and quick training and service is provided	0.0	66.7	12.8	15.5	0.0	100.0
<b>Project Management</b>						
There is a clear mechanism of addressing all issues and problems	0.0	20.0	40.0	30.0	0.0	100.0
<b>Flexible Consultants</b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	15.0	35.0	50.0	100.0
<b>Mbarara University</b>						
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	5.9	5.9	88.2	0.0	100.0

Top management support through swift decision making	0.0	11.8	82.4	5.9	0.0	100.0
Top management support through demand for regular implementation	0.0	11.8	17.6	70.6	0.0	100.0
<b>Capacity Building Initiatives</b>						
<i>Education &amp; Training</i>						
We have adequate training on FIS	0.0	5.9	70.6	23.5	0.0	100.0
We have refresher training on FIS USE	5.9	5.9	70.6	17.6	0.0	100.0
<i>Change Management</i>						
I was taken through a change management program	0.0	5.9	41.2	52.9	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
<i>Effective Communication</i>						
There is clear communication channel with in finance department	0.0	0.0	23.5	23.5	52.9	100.0
<i>Effective IT Unit</i>						
The institute has an IT unity responsible for supporting the IT system	0.0	5.9	17.6	76.5	0.0	100.0
<i>Evaluation Of Staff Performance</i>						
There are regular staff performance evaluation	0.0	0.0	29.4	64.7	5.9	100.0
<b>System Support Initiatives</b>						
<i>Technical Support</i>						
Well packaged training and quick training and service is provided	0.0	0.0	29.4	47.1	23.5	100.0
<i>Project Management</i>						
There is a clear mechanism of addressing all issues and problems	0.0	0.0	47.1	41.2	11.8	100.0
<i>Flexible Consultants</i>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	5.9	23.5	70.6	100.0

<b>Uganda Management Institute</b>						
<b>Top Management Support</b>						
Top management support through participation in implementation	0.0	0.0	9.1	90.9	0.0	100.0
Top management support through swift decision making	0.0	0.0	81.8	18.2	0.0	100.0
Top management support through demand for regular implementation progress	0.0	0.0	6.3	10.3	25.0	100.0
<b>Capacity Building Initiatives</b>						
<b>Education &amp; Training</b>						
We have adequate training on FIS	0.0					100.0
We have refresher training on FIS USE	0.0	0.0	72.7	27.3	0.0	100.0
<b>Change Management</b>						
I was taken through a change management program	0.0	0.0	27.3	72.7	0.0	100.0
<b>Organisation facilitation Initiatives</b>						
<b>Effective Communication</b>						
There is clear communication channel with in finance department	0.0	0.0	18.2	45.5	6.4	100.0
<b>Effective IT Unit</b>						
The institute has an IT unity responsible for supporting the IT system	0.0	9.1	36.4	54.5	0.0	100.0
<b>Evaluation Of Staff Performance</b>						
There are regular staff performance evaluation	0.0	9.1	45.5	45.5	0.0	100.0
<b>System Support Initiatives</b>						
<b>Technical Support</b>						
Well packaged training and quick training and service is provided	0.0	0.0	27.3	45.5	27.3	100.0
<b>Project Management</b>						

There is a clear mechanism of addressing all issues and problems	0.0	9.1	9.1	81.8	0.0	100.0
<b><i>Flexible Consultants</i></b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	0.0	9.1	18.2	72.7	100.0
<b>Uganda Christian University</b>						
<b>Top management support</b>						
Top management support through participation in implementation	0.0	6.7	13.3	80.0	0.0	100.0
Top management support through swift decision making	0.0	13.3	86.7	0.0	0.0	100.0
Top management support through demand for regular implementation	0.0	13.3	6.7	80.0	0.0	100.0
<b>Capacity Building Initiatives</b>						
<b><i>Education &amp; Training</i></b>						
We have adequate training on FIS	0.0	13.3	60.0	26.7	0.0	100.0
We have refresher training on FIS USE	0.0	13.3	60.0	26.7	0.0	100.0
<b><i>Change Management</i></b>						
I was taken through a change management program	0.0	13.3	20.0	60.0	6.7	100.0
<b>Organisation facilitation Initiatives</b>						
<b><i>Effective Communication</i></b>						
There is clear communication channel with in finance department	0.0	6.7	6.7	33.3	3.3	100.0
<b><i>Effective IT Unit</i></b>						
The institute has an IT unity responsible for supporting the IT system	6.7	0.0	10.5	12.3	0.0	100.0

<b><i>Evaluation Of Staff Performance</i></b>						
There are regular staff performance evaluation	0.0	6.7	13.3	73.3	6.7	100.0
<b>System Support Initiatives</b>						
<b><i>Technical support</i></b>						
Well packaged training and quick training and service is provided	0.0	6.7	40.0	40.0	13.3	100.0
<b><i>Project Management</i></b>						
There is a clear mechanism of addressing all issues and problems	0.0	6.7	20.0	66.7	6.7	100.0
<b><i>Flexible Consultants</i></b>						
The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.0	6.7	0.0	2.0	73.3	100.0

**Table 21: VIII Combined summary of results for measurement of importance and performance presented per University**

	Importance			Performance		
	Not important	Average important	Very important	Poor	Fairly Good	Very Good
<b>Makerere University</b>						
<b>Top management support</b>						
Top management support through participation in implementation	0.00	4.30	95.70	0.00	17.30	82.60
Top management support through demand for regular implementation	0.00	17.40	82.60	0.00	91.30	8.70
Top management support through swift decision making	0.00	82.60	17.40	0.00	26.00	73.90
<b>Capacity building initiatives</b>						
<b>Education &amp; training</b>						
We have adequate training on FIS	0.00	60.80	39.10	0.00	78.30	21.70
We have refresher training on FIS USE	0.00	60.85	39.10	0.00	65.20	34.80
<b>Change management</b> I was taken through a change management program	0.00	13.00	87.00	0.00	34.70	65.20
<b>Organisation facilitation initiatives</b>						
<b>Effective Communication</b> There is clear communication channel with in finance department	0.00	21.70	78.20	0.00	13.00	86.90
<b>Effective IT Unit</b> The institute has an IT unity responsible for supporting the IT system	0.00	13.00	87.00	0.00	34.70	65.20
<b>Evaluation of Staff Performance</b> There are regular staff performance evaluation	0.00	30.40	69.60	0.00	60.80	39.10
<b>System Support Initiatives</b>						
<b>Technical Support</b> Well packaged training and quick training and service is provided	0.00	34.80	65.20	0.00	21.70	78.20



<b>Project Management</b> There is clear mechanism of addressing all issues and problems	0.00	13.00	87.00		0.00	43.40	56.50
<b>Flexible Consultants</b> The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.00	21.70	78.20		0.00	13.00	59.90
<b>Kyambogo University</b>							
	<b>Not Important</b>	<b>Average Important</b>	<b>Very Important</b>		<b>Poor</b>	<b>Fairly Good</b>	<b>Very Good</b>
<b>Top Management Support</b>							
Top management support management through demand for regular implementation	0.00	28.60	71.50		19.00	9.50	71.50
Top management support through demand for regular implementation	0.00	33.30	66.70		9.50	71.40	19.10
Top management support through swift decision making	0.00	71.50	28.60		19.00	42.80	38.10
<b>Capacity Building Initiatives</b>							
<b>Education &amp; training</b>							
We have adequate training on FIS	0.00	57.10	42.80				
We have refresher training on FIS USE	9.50	57.10	33.30		9.50	66.70	23.80
<b>Change management</b> I was taken through a changed management program	0.00	14.30	85.70		0.00	47.60	52.40
<b>Organisation facilitation Initiatives</b>							
<b>Effective Communication</b> There is clear communication Channel within the finance in the department	0.00	38.10	61.90		0.00	33.30	66.60
<b>Effective IT Unit</b> The institute has an IT unity responsible for supporting the IT system	0.00	38.10	61.90		0.00	28.60	71.40

<b><i>Evaluation of staff performance</i></b> There are regular staff performance	14.30	9.10	76.10	0.00	33.30	66.60
<b>System Support Initiatives</b>						
<b><i>Technical support</i></b> Well packed training and quick training and service is provided	9.50	28.60	61.90	0.00	28.60	71.40
<b><i>Project Management</i></b> There is clear mechanism of addressing all issues and problems	19.00	33.30	47.60	0.00	47.60	52.40
<b><i>Flexible Consultants</i></b> The suppliers/consultants are always willing to incorporate desired new changes into the system without much	4.80	19.00	76.20	0.00	4.80	95.30
<b>Makerere University Business School</b>						
	<b>Not Important</b>	<b>Average Important</b>	<b>Very Important</b>	<b>Poor</b>	<b>Fairly Good</b>	<b>Very Good</b>
<b>Top Management Support</b>						
Top management support through participation in implementation	4.80	9.50	85.70	0.00	28.67	71.40
Top management support through demand for regular implementation	0.00	7.50	28.60	0.00	81.00	19.10
Top management support through swift decision making	0.00	71.50	28.50	0.00	42.90	57.10
<b>Capacity building Initiatives</b>						
<b><i>Education &amp; training</i></b>						
We have adequate training on FIS	0.00	22.20	39.80	0.00	52.30	47.70
We have refresher training on FIS USE	0.00	71.4	28.60	0.00	42.8	57.10

<b>Change Management</b> I was taken through a change management program	0.00	28.60	71.40		0.00	23.80	76.20
<b>Organisation facilitation initiatives</b>							
<b>Effective Communication</b> There is clear communication of channel with in finance department	0.00	33.40	66.70		0.00	9.60	90.50
<b>Effective IT Unit</b> The institute has an IT unity responsible for supporting the IT system	0.00	28.80	76.20		4.80	33.30	61.90
<b>Evaluation of staff performance</b> There are regular performance evaluation	0.00	28.60	71.50		0.00	42.90	57.25
<b>System Support Initiatives</b>							
<b>Technical Support</b> Well packed training and quick training and service provided	0.00	33.30	66.60		0.00	42.80	57.20
<b>Project Management</b> There is clear mechanism of addressing all issues and problems	0.00	33.60	66.50		0.00	38.10	6.90
<b>Flexible Consultants</b> The suppliers/consultant are always willing to incorporate designed new changes into the system without much	0.00	33.30	66.70		0.00	9.60	90.60
<b>Busitema University</b>							
	<b>Not Important</b>	<b>Average Important</b>	<b>Very Important</b>		<b>Poor</b>	<b>Fairly Good</b>	<b>Very Good</b>
<b>Top Management Support</b>							
Top management support through participation in implementation	0.00	5.00	95.00		0.00	25.00	75.00

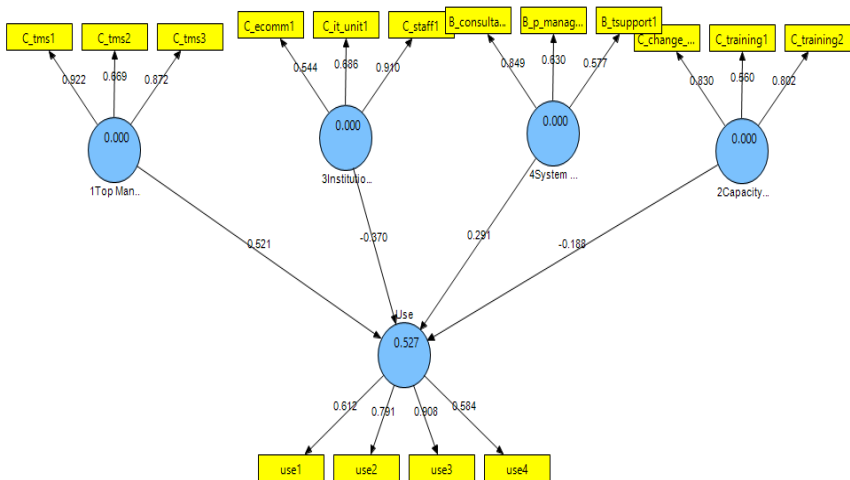
Top management support through demand for regular implementation	0.00	15.00	85.00	0.00	95.00	5.00
Top management support through swift decision making	0.00	75.00	25.00	0.00	40.00	60.00
<b>Capacity Building Initiatives</b>						
<i>Education &amp; training</i>						
We have adequate training on FIS	0.00	45.00	55.00	0.00	85.00	15.00
We have refresher training on FIS USE	0.00	40.00	60.00	0.00	95.00	5.00
<i>Change management</i> I was taken through a change management program	0.00	30.00	70.00	0.00	70.00	30.00
<b>Organisation facilitation Initiatives</b>						
<i>Effective Communication</i> There is clear communication channel within the finance department	0.00	25.00	75.00	0.00	35.00	65.00
<i>Effective Unit</i> The institute has an IT unity responsible for supporting the IT system	0.00	10	22.40	0.00	35.00	65.00
<i>Evaluation of staff Performance</i> There a regular staff performance evaluation	0.00	10.00	90.00	0.00	35.00	65.50
<b>System support initiatives</b>						
<i>Technical Support</i> Well packaged training and quick training and service provided	0.00	50.00	50.00	0.00	79.50	15.50
<i>Project management</i> There is clear mechanism of addressing all issues and problems	0.00	25.00	75.00	0.00	60.00	30.00
<i>Consultants flexibility</i> The supply/consultants are always willing to incorporate designed new changes into the	0.00	75.00	75.00	0.00	15.00	85.00
<b>Mbarara University</b>						

	<b>Not Important</b>	<b>Average Important</b>	<b>Very Important</b>	<b>Poor</b>	<b>Fairly Good</b>	<b>Very Good</b>
<b>Top management support</b>						
Top management support through participation in implementation	0.00	11.80	88.50	0.00	88.20	11.80
Top management support through demand for regular implementation	0.00	35.30	46.70	0.00	94.20	5.90
Top management support through swift decision making	0.00	76.50	23.00	0.00	29.40	70.60
<b>Capacity building initiatives</b>						
<b>Education &amp; training</b>						
We have adequate training on FIS	0.00	70.60	29.40	0.00	76.50	23.50
We have refresher training on FIS USE	5.90	70.60	23.50	5.90	76.50	17.60
<b>Change management</b> I was taken through a change management program	0.00	17.60	82.40	0.00	47.10	52.90
<b>Organisation facilitation initiative</b>						
<b>Effective Communication</b> There is clear communication channel with in finance department	0.00	23.50	76.50	0.00	23.50	76.40
<b>Effective IT unit</b> The institute has an IT unity responsible for supporting the IT system	0.00	5.90	94.30	0.00	23.50	76.50
<b>Evaluation of staff performance</b> There are regular staff performance evaluation	0.00	33.3	64.75	0.00	29.4	69.90
<b>System Support Initiatives</b>						
<b>Technical Support</b> Well packaged training and quick training sand service provided	0.00	11.80	88.30	0.00	29.40	69.90

<b>Project Management</b> There is clear Mechanism of addressing issues and problems	5.00	11.80	88.20	0.00	47.10	53.00
<b>Flexible Consultants</b> The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.00	5.90	44.1	0.00	5.90	93.9
<b>Uganda Management Institute</b>						
	<b>Not Important</b>	<b>Average Important</b>	<b>Very Important</b>	<b>Poor</b>	<b>Fairly Good</b>	<b>Very Good</b>
<b>Top Management Support</b>						
Top management support through participation in implementation	0.00	9.10	90.90	0.00	9.10	90.90
Top management support through demand for regular implementation	0.00	18.20	81.80	0.00	81.80	18.20
Top management support through swift decision making	0.00	81.80	18.20	0.00	6.30	35.50
<b>Capacity Building Initiatives</b>						
<b>Education &amp; training</b>						
We have adequate training on FIS	0.00	54.60	45.50	0.00	0.00	0.00
We have refresher training on FIS USE	0.00	63.70	36.40	0.00	72.70	27.30
<b>Change management</b> I was taken through a change management program	0.00	9.10	90.90	0.00	27.30	72.70
<b>Organisation facilitation initiatives</b>						
<b>Effective communication</b> There is clear communication channel with in the finance	0.00	27.30	45.50	0.00	18.20	51.90
<b>Effective IT unit</b> The institute has an IT unity responsible for supporting the IT system	0.00	27.30	72.80	0.00	45.50	54.50
<b>Evaluation of staff performance</b>	0.00	27.30	72.70	0.00	54.60	45.50

There are regular staff performance						
<b>System support initiatives</b>						
<b>Technical Support</b> Well packaged training and quick training and service provided	0.00	36.40	63.70	0.00	27.30	72.80
<b>Project Management</b> There is clear mechanism of addressing all issues and problems	0.00	18.20	8.80	0.00	9.10	90.90
<b>Flexible Consultant</b> The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.00	9.10	90.90	0.00	9.10	90.90
<b>Uganda Christian University</b>						
	<b>Not Important</b>	<b>Average Important</b>	<b>Very Important</b>	<b>Poor</b>	<b>Fairly Good</b>	<b>Very Good</b>
<b>Top management support</b>						
Top management support through participation in implementation process	0.00	67.00	93.40	0.00	20.00	80.00
Top management support through demand for regular implementation	0.00	20.00	80.00	0.00	100.00	0.00
Top management support through swift decision making	0.00	80.00	20.00	0.00	100.00	80.00
<b>Capacity building initiatives</b>						
<b>Education &amp; training</b>						
We have adequate training on FIS	0.00	53.30	46.70	0.00	73.30	26.70
We have refresher training on FIS USE	0.00	60.80	39.10	0.00	73.30	26.70
<b>Change Management</b> I was taken through a change management program	0.00	20.00	80.00	0.00	33.30	66.70
<b>Organisation facilitation Initiatives</b>						
<b>Effective Communication</b> There is clear mechanism of addressing all issues and problems	0.00	7.40	9.80	0.00	13.40	36.60

<b>Effective IT Unit</b> The institute has an IT unity responsible for supporting the IT system	0.00	13.30	86.70	6.70	10.50	12.30
<b>Evaluation of Staff Performance</b> There are regular staff performance evaluation	0.00	0.00	100.00	0.00	20.00	80.00
<b>System support Initiatives</b>						
<b>Technical Support</b> Well packaged training and quick training and service is provided	0.00	26.60	73.30	0.00	46.70	53.30
<b>Project Management</b> There is clear mechanism of addressing all issues and problems	0.00	20.00	80.00	0.00	26.70	73.40
<b>Flexible Consultants</b> The suppliers/consultants are always willing to incorporate desired new changes into the system without much	0.00	6.70	93.40	0.00	6.70	75.30



**Figure 6: Model of how factors perceived to influence implementation impact of usage of FISs**



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