



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Engineering, Built Environment and
Information Technology

Exploratory Study on the Drivers and Barriers to Adoption of an Integrated Library System in Kyambogo University Library Service

Mini-dissertation by

Robert Stalone Buwule
(13369670)

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF INFORMATION TECHNOLOGY
in the

SCHOOL OF INFORMATION TECHNOLOGY
of the

FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY
UNIVERSITY OF PRETORIA

November 2014

Supervisor: Dr S. R. Poneis

Declaration

This thesis is the original work of the researcher and has not been submitted in any other form to any other university. Where use was made of works of others, this has been duly acknowledged in the text and included in the list of references.



Robert Stalone Buwule

28 November 2014

Acknowledgements

First and foremost, I wish to express my deepest gratitude to the Almighty God the creator of heavens and earth for enabling me to reach this far with this research project. He has continually blessed me with wisdom, knowledge and understanding in all my academic endeavours.

Secondly, I wish to appreciate my supervisor, Professor Shana Rachel Ponelis, who has been like a parent to me. Her time, guidance, support, encouragement, patience and a rich research experience in the adoption of information technologies in libraries have been so invaluable to me, I don't know whether I will ever thank her enough.

Thirdly, I want to thank my dearest wife, Priscillar and my sons Triumph and Nissi for being patient and supporting me during the period of this study. I almost became an absentee father, but they have been very understanding, for which I am forever grateful. In the same vein I wish to acknowledge my parents, brothers and sisters for their constant moral support and concern, it really kept me moving in trying times.

I can not forget to acknowledge the Carnegie Corporation of New York in conjunction with the University of Pretoria who not only sponsored me for the MIT Programme but exposed me to the global trends in Information technology and librarianship thorough this scholarship. It is not a secret that this was an opportunity of a lifetime. I also wish to acknowledge all my lecturers at Department of Information Science for the knowledge they imparted in me, the MIT Coordinators and my MIT Stream B (2013 Cohort) colleagues for their friendship, teamwork and brotherhood. Like someone said, this cohort is indeed the best MIT Class by far. Thanks goes to the reviewers and audience members for their valuable and constructive feedback on the preliminary research findings of this study that I presented at the SCECSAL XXI conference which took place in Lilongwe, Malawi from 28th July to 1st August 2014.

Finally I wish to thank the Kyambogo University Family more so the University Library Service, the Capacity Building Committee, Research and Publications Committee and the Directorate of Human Resources. Their participation in and support for this research has been very resourceful.

Abstract

The adoption of Integrated Library Systems (ILS) helps library staff to automate libraries' routine operations. While some libraries are coping well with automation, others most especially in Sub Saharan Africa face challenges and setbacks. The purpose of the study is to explore the adoption of an open source ILS, Koha, at Kyambogo University Library Service (KyULS). The study employs a qualitative approach where data is gathered using semi-structured interviews. Collected data was analysed using content analysis. The results of the study indicate that the drivers for adopting an ILS in KyULS are: qualified staff members, Koha being an open source software, training, and library automation trends in sister university libraries. The barriers to ILS adoption on the other hand included: lack of infrastructure, internet instability, insufficient funding, bureaucracy and the ILS's unsuitability to persons with visual impairment. This report further provides recommendations to alleviate or resolve the difficulties that are hampering KyULS specifically and potentially other libraries when adopting ILSs. They include having a well-planned process of adopting the ILS, provision of a centralised and stable campus-wide inter/intranet network, establishment of required ILS infrastructure, sourcing of external funding, carrying out wide spread sensitisation of the ILS, continuously training the library staff members in the use of the ILS and collaboration with ILS adoption champions in other academic libraries. This study may be of value to academic librarians, LIS schools and ILS vendors globally as it helps them better understand the unique challenges faced by libraries in Sub-Saharan Africa.

Key words: adoption, integrated library systems, library automation, academic libraries, university libraries, Kyambogo University, Uganda, qualitative approach, semi-structured interviews, quantitative content analysis

Table of Contents

1. INTRODUCTION	13
1.1 Background to the Study	13
1.2 Research Question	16
1.3 Purpose of the Study	16
1.4 Objectives of the Study.....	17
1.5 Scope of the Study.....	17
1.6 Value and Contribution of the Study	17
1.7 Definition of Key Terms	18
1.8. Division of Chapters	18
1.9. Summary.....	19
2. LITERATURE REVIEW	20
2.1 What is an ILS?.....	20
2.2 ILS Adoption Theories	21
2.2.1 Global Perspectives of ILS Adoption	23
2.2.2 Sub-Saharan African Perspective on ILS Adoption.....	25
2.2.3 Critical Success Factors of ILS Adoption.....	27
2.3 ILSs in Academic Libraries	30
2.3.1 Open Source ILS	30
2.3.2 Koha Integrated Library System.....	30
2.4 Technological Innovation in Libraries	35
2.4.1 ILSs Opportunities.....	36
2.4.2 Qualities of a Good Systems Librarian	37
2.4.3 Challenges.....	38
3. RESEARCH METHODOLOGY	40
3.1 Research Paradigm	40
3.2 Research Design.....	41

3.2.1	Case Study.....	41
3.3	Data Collection Methods	42
3.3.1	Semi-structured Interviews	42
3.3.2	Document Review.....	45
3.3.3	Pretesting of instruments	45
3.4	Population.....	45
3.5	Sampling technique	46
3.6	Data Analysis.....	46
3.7	Limitations	48
3.8	Ethical considerations.....	48
3.9	Summary.....	49
4.	PRESENTATIONS AND DISCUSSIONS OF FINDINGS OF THE STUDY	50
4.1	Introduction	50
4.1.1	Description of the informants.....	51
4.1.2	Gender of Informants	51
4.1.3	Sections of KyU from which Informants were drawn	52
4.1.4	Academic Qualifications of the Informants	53
4.1.5	Professional Experience of Informants	54
4.2	KyULS Management’s decision to adopt the ILS.....	55
4.2.1	Consultation and Involvement of Stakeholders in ILS Adoption.....	56
4.2.2	Conduction of a Feasibility Study before ILS Adoption.....	57
4.2.3	Following of a Systematic Plan during the ILS Adoption.....	58
4.3	The Ease, User friendliness, Speed and General Management of the ILS	61
4.3.1	What Informants liked about Koha.....	62
4.3.2	Prior Experience in Library Automation.....	63
4.3.3	The Drivers to adopting the ILS.....	64
4.3.4	Attitudes of staff members towards Koha.....	65

4.4	What is KyULS’ capacity to develop and enhance Koha?.....	67
4.4.1	KyULS’ Response to International Emerging Library Trends	68
4.4.2	The Compliance of KyULS Staff Members with Library Emerging Trends.....	69
4.4.3	Relevance of Koha in KyULS	73
4.4.4	Relationship between the University’s Strategic plans and ILS Adoption	74
4.4.5	KyULS Priorities	77
4.4.6	KyULS’ Capacity of Customising Koha	78
4.4.7	Training of KyULS in Koha	84
4.4.8	Security of Koha and Associated Library Data	87
4.4.9	Maintenance of ILS Equipment.....	88
4.5	Challenges encountered in the process of adopting the ILS.....	89
4.5.1	Barriers to adopting Koha in KyUL	90
4.6	Suggestions for future best practice in ILS Adoption.....	95
4.7	Summary.....	98
5.	SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	100
5.1	Introduction	100
5.2	Summary.....	100
5.2.1	KyULS Management’s decision to adopt the ILS.....	100
5.2.2	The ease, user friendliness, speed and general management of the ILS	101
5.2.3	KyULS’ capacity to develop and enhance Koha	101
5.2.4	Drivers and Barriers to adopting an ILS for KyULS	101
5.2.5	Suggestions for future best practice in the adoption of ILSs	101
5.3	Conclusion.....	102
5.4	Recommendations	102
5.5	Further Research.....	103
6.	REFERENCES.....	104
7.	APPENDIX A: INTERVIEW GUIDE FOR TECHNICAL LIBRARY STAFF	111

8. APPENDIX B: INTERVIEW GUIDE FOR GENERAL UNIVERSITY STAFF AND STUDENTS 114

List of Tables

Table 1: Critical success factors for implementation of new technologies	27
Table 2: Farajpahlou’s 26-item-scale measure of ILS Successful adoption (Farajpahlou, 1999: 172)..	29
Table 3. Comparison of Koha with Millennium, Amlib and Symphony ILSs	32
Table 4: Total Number of Potential Research Subjects	46
Table 5: Sections KyU from which interview were carried out	52
Table 6 Academic Qualifications of Informants	53
Table 7: Experience of Informants at KyULS and Merged Libraries	55
Table 8: Reasons that Led KyULS to adopt an ILS.....	55
Table 9: The different stages of ILS adoption which the Informants were involved in.....	57
Table 10 How Automation Improves Library Operations	61
Table 11: Functionalities of Koha informants liked	62
Table 12: Places Informants got Library Automation Exposure	64
Table 13: Adoption of Koha in KyULS Drivers.....	64
Table 14: Indicators of Successful ILS Adoption	67
Table 15: How Informants Keep Abreast with Emerging Library Trends	70
Table 16: How Informants are engaged in Library Associations	71
Table 17: What Informants considered as Priorities for KyULS	77
Table 18: Informants' rating of the KyULS ICT Staff	80
Table 19: The Staff Establishment of KYUL ICT Unit.....	81
Table 20: Who Troubleshoots Koha?	83
Table 21: How KyULS Solicits External Help on Koha	83
Table 22: How the Security of Koha is enforced	87
Table 23: Informants views on KyULS’ Adherence to the ILS Equipment Maintenance Plan	88
Table 24: Informants' views on the causes of past ILS adoption failures.....	90
Table 25: Barriers to the Adoption of Koha in KyULS.....	91
Table 26 Respondent’s proposals for strengthening the drivers of ILS adoption process in KyULS	96

Table 27 Respondent's Views on how to mitigate the barriers to the adoption of the ILS in KyULS..97

Table 28 Respondent's views on what they wished to have been done differently98

List of Figures

Figure 1: Gender of Informants.....	52
Figure 2: Perception on whether KyULS followed a systematic plan when adopting an ILS.....	59
Figure 3: Informant's Prior Experience to Library Automation	63
Figure 4: Attitude of Staff Members towards Koha	66
Figure 5: The Forecasted Utilisation of Koha in KyULS.....	66
Figure 6: KyULS' Compliance with Emerging Library Trends	68
Figure 7: Informant's attendance of Library Associations' Workshops and Seminars	72
Figure 8: Relevance of Koha in KyULS	74
Figure 9 Informants views on the way Koha was customised.....	78
Figure 10: The Adequacy of Training in Koha.....	85
Figure 11: The ways IT acquired knowledge is shared	86
Figure 12: The laying of Internet Cables near the French Department (Photo by RSB).....	94
Figure 13: Optical fibre cables termination near the Faculty of Arts and Social Sciences (Photo by RSB)	94

List of Abbreviations

API	Application Programming Interfaces
BLIS	Bachelors of Library and Information Science
CD-RoM	Compact Disk Read-Only Memory
CSF	Critical Success Factors
CUUL	Consortium of Uganda University Libraries
FSN&RL	Faculty of Special Needs and Rehabilitation Library
ICT	Information Communication Technology
ILS	Integrated Library System
ISP	Internet Service Providers
IT	Information Technology
ITEK	Institute of Teacher Education Kyambogo
KyU	Kyambogo University
KyULS	Kyambogo University Library Service
MUBS	Makerere University Business School
MUK	Makerere University Kampala
OPAC	Online Public Access System
OS	Operating system
OSS	Open source software
SSA	Sub-Saharan Africa
UCU	Uganda Christian University
UNISE	Uganda National Institute of Special Education
UPK	Uganda Polytechnic Kyambogo

1. INTRODUCTION

*Any new technology tends to go through
a 25 year adoption cycle.*

— Marc Andreessen

Due to the rapid technological changes happening all over the world, libraries and information centres are trying to come to grips with what is happening so as to assess their past performance and thereafter make appropriate plans for the future (Sparks et al., 2013). The introduction of various information communication technology (ICT) trends has led to reorganisation, change in work patterns, and demand for new skills, job retraining and reclassification library positions (Kargbo, 2009). Adopting to technological advancement such as the electronic databases, online services, CD-ROMs and introduction of internet has radically transformed access to information in academic libraries (Krubu and Osawaru, 2011). Libraries like Kyambogo University Library Service (KyULS) and several other academic libraries in Sub-Saharan Africa (SSA) need to understand the historical context within which they were created and developed so as to prevent repetition of past mistakes but instead better plan their library automation initiatives (Rayward, 2002).

1.1 Background to the Study

Kyambogo University (KyU) is relatively a new university but at the same time an old one that has evolved through many stages. Kyambogo University (2013) is Uganda's third public university established in 2003. It was created as a result of merger of the former Uganda Polytechnic Kyambogo (UPK), the Institute of Teacher Education, Kyambogo (ITEK), and the Uganda National Institute of Special Education (UNISE). Following the merger of the three institutions, the three institutional libraries merged as well. Though UPK started in 1928, ITEK in 1948 and UNISE in 1988, and later became autonomous in 1998 (Kyambogo University, 2013), their libraries were constructed later. UPK and ITEK libraries were set up in 1963 as Barclays bank independence gift to Uganda. The technical education library was constructed in 1994 using a loan from the African Development Bank (Mpandey, 1998). UNISE library started as a department library in the department of Special needs in the former ITEK. In 1996 the library moved to newly established UNISE complex and evolved

into a service department under the information and documentation division (Ntege, 2008). These are the four libraries that merged to become Kyambogo University Library Service (KyULS). ITEK library became the main library also known as Barclays library and other libraries became branch libraries of Kyambogo university library. UPK library is currently called West end library, Technical education is Faculty of education library and UNISE is called Faculty of special needs and rehabilitation library but also sometimes called North end library.

There is hardly anything reported about the automation initiatives of all these libraries before the merger. Mutula (2000) briefly indicates that UPK library was accessing the African virtual university digital library which was searchable via internet. UNISE also in collaboration with the International Child Health University College established a Disability Resource Centre (DRC) in 1999 with a view of facilitating learning and research through multimedia modes. The Centre was equipped with different audio and visual materials (Ntege, 2008:3). In a bid to make the library service more inclusive, a centre for the visually impaired was established with assistive technologies like Closed Circuit Television (CCTV), JAWS computer software and Audio playbacks/recorders. Like in University of Malawi and some other sub-Saharan African academic libraries, there is a low level of computer technology replacement. A few computers and ICT equipment donated to support library automation initiatives in KyULS are almost obsolete while study programs and student intakes are increasing yearly (Mapulanga, 2013). Meanwhile, academic libraries are ideally supposed to support learning teaching and research in the university.

Attempts of automating the library catalogue were first initiated by the Faculty of Special Needs and Rehabilitation Library (FSN&RL) in 2009 using Microsoft Access. The software was customised in-house by the staff members basing on the local needs of the branch library. Other branches followed suit but the database was never integrated as each branch used a stand-alone computer. There was no network linking all the four serving centres of KyULS. This scenario led to KyULS to start nursing ideas of setting up an Integrated Library System (ILS) in 2011 as result of training organised on Koha by the Consortium of Uganda University Libraries (CUUL) for its member institutions, which includes KyU, in 2012. The staff member who was identified from KyU for this training was then supposed to train

others after this training. Subsequently one-week Koha Training was organised at KyU for a few key staff in April 2013. Koha software was later installed on the university server and customised in June 2013. Another Koha orientation for a selected number of library staff was carried out in August 2013 and thereafter Koha was launched. An *ad hoc* Koha core team was set up from the staff members who were trained to popularisation and operationalisation this new development. Migration of bibliographic records from Microsoft Access to Koha is ongoing on the Kyambogo University (2013) server. Currently Koha is not yet fully functional; it is only the cataloguing and Online Public Access Catalogue modules that are currently utilised. The circulation, acquisition and serials management modules are not yet entirely operational. This is not peculiar to KyULS only because Eneya (2008:73) reports of a similar scenario when the University of Malawi was automating its Library.

Successful adoption of an ILS would solve many of KyU's problems. For example KyU's current enrolment is over 20,000 students on campus and over 60,000 at affiliated institutions. The affiliated institutions are mainly Primary and Secondary Teacher Training Colleges (PTCs and TTCs). The arrangement is that they do most of the teaching but the examining and awarding of academic certificates is done by Kyambogo University. KyUL automatically has a supervisory role in the collection development of the affiliated institution's libraries. The physical library only has a total sitting capacity of 720. The rest of the 79, 280 students plus staff members and external users would be assumed to be able to access the library online. There are very many benefits of ILSs. Some of these benefits are enumerated by Ayankola and Ajala (2012) who state that ILSs are flexible, fast, easily updated and manipulated, and allow remote and multiple access.

Koha is predominantly a web-based ILS yet the university library has a limited internet connection. Internet connection in the other three library branches other than Barclays is on and off as it depends on the subscription of sponsoring Faculty. The internet connection is often cut off when Faculties fail to pay for subscription due to shortage of funds. There is also no fibre optic network cable to connect all the branches. The wireless technologies are also proving to be expensive for the Library. In the recent years, Kyambogo University suffered other setbacks, which indirectly hampered library automation. There was a theft of computers in the library computer laboratory in 2012 and up to now the library is struggling to replace them. There has been a high staff turnover of ICT experts in this lab.

1.2 Research Question

As evidenced from above, technology has eased the access of information in libraries most especially in the western world but libraries in the developing world have been left behind and are struggling to join the super highway of technology (Sharma, 2008:13). There are many benefits and motivations of automating KyULS, but at the same time there are several barriers and problems frustrating this project of library automation (Krubu and Osawaru, 2011). This study therefore was based on one major research question which is *'How can the likelihood of the successful adoption of an ILS at KyULS be improved?'*

Farajpahlou (1999:172) designed a criteria of successfully measuring the adoption of an ILS. The criteria presents a twenty six (26) item scale of measuring the successfulness of automating library systems. The scale majorly examines eight (8) areas of managing Integrated Library Systems which are: planning, integration of automation, contractual commitment with the vendor(s), time saving, staff training, user training, qualified staff members and supply of management information. To be able to answer the above research question, five (5) sub-questions have been derived from these eight areas of this model. The sub questions are as follows:

- i) How did the Library Management planning body reach this decision to adopt Koha as an ILS?
- ii) What is the perception regarding the ease of use, user-friendliness, speed and general management of the Koha ILS at KyULS?
- iii) What is KyULS' capacity to develop and enhance Koha?
- iv) What problems have been encountered in the process of adopting Koha to date?
- v) What are the recommendations for future best practice at KyULS?

1.3 Purpose of the Study

The purpose of this study was to explore the drivers and barriers to the adoption of a reliable and efficient ILS for KyULS.

1.4 Objectives of the Study

Below are the objectives of the study:

- i) To establish the process the Library management planning body took to reach the decision of adopting Koha.
- ii) To determine the perception regarding the ease of use, user-friendliness, speed and general management of the Koha ILS at KyULS.
- iii) To investigate the libraries' capacity to develop and enhance Koha.
- iv) To ascertain the problems encountered in the process of adopting Koha.
- v) To suggest recommendations for ILS adoption future best practice.

1.5 Scope of the Study

This research focused on Kyambogo University Library Service as a case study. It targeted the managers and the users of ILS, KyULS is adopting. Since it was a case study, the geographical area covered only Kyambogo University campus. The research project took 12 months.

1.6 Value and Contribution of the Study

Kyambogo University is a science and technology based university. It is however appalling to note that the library which is supposed to be leading in the adoption of ICT cutting edge innovation, does not have a fully functional automated library system to ease the access, storage and retrieval of information. The university is still struggling to operationalise Koha, the installed ILS. The will to do this is there since there have been several attempts to this effect, however there have been equally many bottlenecks and setbacks to this dream. It is therefore only fair for to have a systematic, thorough, in-depth investigation into the adoption of an integrated library system for Kyambogo University. This survey provides recommendations to alleviate or resolve the difficulties that are hampering KyULS from adopting an ILS.

Furthermore, from the available literature, this kind of study has never been carried out in Uganda more so on academic libraries. It is therefore hoped that this study will not only contribute to the body of knowledge but will open up new doors of further research in this area of adoption of integrated library systems in Uganda and Sub Saharan Africa at large.

1.7 Definition of Key Terms

Integrated Library Systems (ILS): Bring together all the Library functions surrounding the creation and use of borrower items and bibliographic databases all to provide access to library resources in one single interface (Webber and Peters, 2010:100). In other words an ILS is a set of applications designed to perform the business and technical functions of a library which are acquisition, cataloguing, circulation and serials management (Reitz in Stilwell & Hoskins, 2012: 1).

Information Communication Technologies (ICT): Information Communication Technologies (ICTs) are devices and tools used to create, store, exchange and use information (Pearlson and Saunders, 2009:16).

1.8 Division of Chapters

This research report is divided into five chapters as summarised below:

Chapter 1: Introduction

Chapter 1 introduces the research report highlighting the background of the study and research problem. This is later followed by the research question and sub-questions. Furthermore, the justification and value of the study is discussed highlighted.

Chapter 2: Literature Review

Chapter 2 reviews of literature on adoption and application of Integrated Library Systems (ILSs) in academic libraries. This chapter discusses the theories of adoption of technologies in libraries, opportunities and challenges encountered at the global level and in SSA.

Chapter 3: Research Methodology

Chapter 3 presents a detailed description on the research methodology and design used in the research study. Under this chapter are data collection methods used, data analyses, data interpretation, the sampling methods and the sample size are discussed in detail.

Chapter 4: Data Analysis and Findings

Chapter 4 reports and discusses the research findings.

Chapter 5: Recommendations and Conclusion

Chapter 5 provides a research summary of the study together with recommendations and a befitting conclusion of the research project.

1.9. Summary

This has been an overview of this study with details of the background to the study and research question. Furthermore, the value of the study, scope and objectives of the study have been mentioned and discussed broadly in this chapter.

2. LITERATURE REVIEW

*What new technology does, it creates new opportunities
of doing jobs that customers want.*

— Tim O'Reilly

The academic landscape in the world is changing dramatically, it is shifting from a mere teaching and learning environment to a research, technological and innovation intensive environment. Academic institutions like Kyambogo University are now finding themselves challenged in ways they had never expected because of the rapid technological changes. In the same way academic libraries face obstacles such as tighter budgets, reduced access to print information and the technology landscape has become more complex than ever (Raseroka, 2006:127). Many academic libraries are therefore quickly responding to the constant changes in the academic world. They are adopting integrated library systems that can receive, process, store, retrieve and disseminate information efficiently in order to support patrons' information needs so as to support human development and contribute to the nation's research and innovation.

This chapter discusses literature relating to the adoption of ILSs identifying the gaps that this study can cover. The discussion starts with the definition of ILS then it flows to the adoption theories, global perspectives of ILSs, Sub-Saharan African perspectives on ILS, critical success factors of ILS adoption, ILSs in academic libraries, open source ILS versus proprietary, Koha ILS, technological innovation, ILS opportunities and qualities of a good subject librarian.

2.1 What is an ILS?

A number of scholars have come up with different definitions of an ILS. Reitz (2004) defines an ILS as an information retrieval system that allows users to search for books, periodical articles, electronic resources, computer files and websites. The searching is in one operation using a single interface. A good ILS can seamlessly search online catalogues and bibliographic databases all at a go. Webber and Peters (2010) concur with Reitz that ILS

affect every aspect of the library's operation right from circulation to cataloguing to the library's ability to deliver information resources and services via the web and on the Online Public Access Catalogue (OPAC). From the above definitions, an ILS is basically an information resource planning systems that eases the routine library operations of acquiring, processing, storing, retrieving and disseminating the libraries' information resources.

According to Ayankola and Ajala (2012), all these library routine activities would be impossible to be automated without the software that drives the computer to perform its operations. The software are programs fed into the computer to control these library activities. The ILS is primarily made up of two types of software, the application and the network software. In SSA there a number of applications and network software which were developed either indigenously or elsewhere. Vendors most especially in the western world are always inventing new and modernised software that attempt to ease librarians' work.

Today scientific research has broken through and software developers are designing ILS that integrates various specialised functions like content-based retrieval in image, audio, video, and 3D collections. A combination of any of these media types can also be used as keyword queries. Modern ILS can further support users with disabilities like visual impairment who interact with the ILS using a speech interface (Binding et al., 2009).

2.2 ILS Adoption Theories

Pedesen in Manuelli et al., (2007) claims that studies on adoption of Integrated Library Systems (ILS) have broadly taken three approaches: a diffusion approach, a domestication approach and an adoption approach. The Diffusion of Innovation (DOI) was coined by Rogers in 1962 and the theory is primarily concerned with the determinants of the rate, pattern and extent of adopting technologies in libraries. The media and interpersonal contacts provide information that influences a member of staff's opinion and judgment to adopt a new technology. The theory is comprised of four elements: invention, diffusion through the social networks, time and consequences. Therefore the adoption or rejection of the new technology depends on the nature of the ICT networks and the roles of its opinion

leaders. This theory generally represents a tiny fraction of the ICT adoption literature (Manueli et al., 2007:176).

Pedesen in Manueli et al., (2007) further alludes to the domestication approach which focuses on the process in which technology becomes an integral part of the library. According to this approach, there are three important distinctions that determine the adoption of a new library technology and these are: work and leisure context: end-users that belong or do not belong to a demographic group; and the private and the public. This view is dominated by sociologist researchers and it is often characterised by demographic variables such as age and gender (Manueli et al., 2007).

The third approach is what Pedesen in Manueli et al., (2007) describes and explains as the adoption decision of users applying different individual and social decision making theory. Under this approach, there is a multiplicity of models though only three are widely used. These are the Technology Acceptance Model (TAM), the Theory of Reasoned Action (TRA), and the extension of TRA into a Theory of Planned Behaviour (TPB) The TAM was developed by Davis in 1989 and suggests that when a library staff is presented with a new technology, a number of factors influence the staff's decision regarding how and when they will use it. TAM does not account for the influence and personal control factors on behaviour. This limitation gave birth to TRA which includes four general concepts namely: behavioural attitudes; subjective norms; intention to use; and actual use. Meanwhile the TPB is an extension of the TRA and deals with conditions where the staff member has no control of their behaviour (Manueli et al., 2007:176).

Though Pedesen consider TAM, TRA and TPB as the basic adoption theories, current literature has modified them to five. TAM has been modified to TAM2 and TAM 3. Meanwhile there is also Technology Organisation Environment (TOE) and Unified Theory of Acceptance and Use of Technology (UTAUT) which are steadily gaining popularity. According to Dwivedi et al. (2008) a review of 345 technology adoption articles in peer reviewed journals between 1985 to 2007 indicated four popularly used theories. The count showed that between that period TAM was the most used with 88 times, followed by DOI with 49 times then TPB with 17 times and the fourth was TRA with 8 times.

Parka et al. (2009:196) are some of the scholars who carried out an interesting study using TAM. The study examined the factors that influence people's adoption and use of ILS in the context of 16 developing countries from Africa, Asia, and South America. Like already observed earlier, this study revealed that perceived ease of use of ILS had a significant impact on perceived usefulness, which ultimately led to behavioural intentional use of the ILS. This investigation further recommended that external variables affect perceived ease of use of ILSs and such variables should be put into consideration when developing and designing ILS for developing countries in order to increase successful adoption of ILSs. TAM indeed seems to be the most popular technology adoption theory. This therefore means that even though TAM is criticised, it has kept on being used and modified. This study intends to use the same theory on Kyambogo University library case.

TAM is further reflected in Farajpahlou's model because TAM studies the behaviours of the ILS adopters where ease of use is used as a parameter of measuring the success of adopting an ILS. The ease of use of the ILS plus other criteria in TAM theory and Farajpahlou's model are reflected in the study's data collection method and instrument.

2.2.1 Global Perspectives of ILS Adoption

On a global level, this twenty first century has witnessed a technology revolution occurring mainly in ICTs. But the question to ask here is what has been the contribution of this revolution on the achievement of eight Millennium Development Goals (MDGs) whose deadline is fast approaching. The United Nations (2013:15) is worried that the revolution may have contributed less to the achievement of these MDGs. This view is contrary to other scholars who think that this is the century where the development of technological tools has facilitated information exchange and resource sharing which has greatly shaped the development trends on the planet. Librarians everywhere are working together to develop strategies ranging from preservation of information materials and expanding technology to allow resource sharing and advocacy (Craig, 2008:1).

The global library technology industry continues to see modest growth. Vendors which are able to develop compelling new ILSs, meet current needs and anticipate ongoing trends, are

attracting new clients in a variety of global regions at the expense of local incumbents who are not able to revitalise the legacy of their ILSs. A new genre of automating library systems designed to manage electronic and print collections is inherent in integrated library systems. These genres necessitate large-scale projects involving shared automation initiatives and infrastructure for academic libraries. This trend is consequently resulting into lucrative winner-take-all scenarios, often displacing multiple incumbent providers. The sharing of infrastructure is causing increased growth of national library consortia, and other cooperative projects (Breeding, 2014).

Globalisation provides opportunities for ILSs with proven scalability to handle complex academic library operations. These complexities however also come along with challenges. From a global perspective, academic libraries are faced with the challenge of managing the potential impact of external drivers of adopting ILSs. This is like a race of coping with Information Communication Technologies (ICTs) changes and to some libraries it is considered as an external driver of adopting ILSs. According to Sparks et al. (2013) the major external drivers of adoption of ILSs on the global scene are:

- Global economic trends,
- Better quality,
- Cross-disciplinary and collaborative research,
- Competitive advantage,
- Data curation,
- Faster access,
- Mass storage and
- Information inclusion.

Modern academic libraries no longer put a lot of emphasis on the physical place but on the online resources that can be accessed by anyone, anytime and from anywhere. Learners in higher education institutions of learning are now trading textbooks for smart phones and tablets packed with all the electronic resources they need. The advent of technology is propelling academic libraries into the new digital era. ILSs are providing a plenty of alternatives to address social economic challenges facing libraries more so in improving

access to information. Verkade (2013) mentions a scenario in South Africa where teachers no longer borrow books from the library but instead use Android tablets to access all the information in the library using WI-FI access ports. This is not supposed to mean that adoption of ILS is smooth everywhere, Siddike et al. (2011) lament how the automation of the library field has been facing negligence from the very beginning of library movement in Bangladesh, Asia.

Global studies on adoption of ILS in libraries in respect to gender show that males are more computer savvy than their female counterparts (Kim and Abbas, 2010:217). If an academic library has more male staff members, it is likely to adopt and utilise technology more compared if it has more ladies. More studies have proved that adding Library 2.0 technology further encourages male staff than female ones. This study has attempted to verify this in KyULS.

2.2.2 Sub-Saharan African Perspective on ILS Adoption

ICT has been cited as one of the key drivers transforming the Sub Saharan African Region. For example in Uganda, it has been identified as the primary growth sectors alongside traditional sectors like agriculture, industry and energy. There has been an increase use of integrated information systems in government such as the integrated Financial Management System, Integrated payroll and personnel system, Local Government Communication System, and a multiplicity of automated systems in customs, health, business registration bureau and not forgetting the Libraries (Bahingwire, 2013:I). All this is geared to promoting the use of e-services

Though South Africa is in the Sub-Saharan African region, sometimes it experiences different situations more so in respect technology adoption compared to the rest of the SSA countries. De-Wee (2013:27) reported that over twenty two libraries surveyed in South Africa use ILSs with developed mobile functionality which can search, retrieve information, locating books using goggle maps, place holds on unavailable items and accessing users' personal information. This is not to mention the normal functions of facilitating users' access to the Online Public Address Catalogue (OPAC).

Governments in SSA are beginning to appreciate the role ICTs can play in providing competitive advantage of their economy through teaching, learning, and application of research outcomes from the Library and information services industry (Baguma, 2013). At the University of Malawi, their new Strategic Plan has finally recognised the need to strengthen and acquire more up-to-date library ICT resources like equipping the libraries with computers; creating electronic local databases in relevant subjects and digitizing Malawian materials (Mapulanga, 2013). This was not the case before many sub Saharan academic libraries have been existing in a highly unstable economic environment making it difficult to acquire or adopt Integrated Library Management Software (Mapulanga, 2013).

Academic libraries in this region most especially university libraries are exploring avenues where they can install viable and enduring ILSs. Ayankola and Ajala (2012) state that quite a number of different ILSs are making in-roads into the African market. Koha one of the open source ILS is one of the popular ILS being adopted in a number of African University Libraries (Otunla and Akanmu-Adeyemo, 2010). Consortia¹ are playing a big role in supporting this move and it is hoped that the challenges and frustrations which engendered this initiative in the previous attempts of adopting ILS will this time around strengthen these libraries to strive for success. The ultimate in this respect is for the ILSs to live up to their expectation (Ayankola and Ajala, 2012).

ILS must be able to handle many library information formats, accommodating searches on the internet, providing a variety of functions including manipulating electronic data, working with graphics and expediting resource sharing (Sani, 2006). Now a review of ILSs in South Africa and their sustainability was done. Stilwell and Hoskins (2012) reviewed three models and these are Farajpahlou's (1999), Sani's (2006) model and Taole's (2008). Of these three Sani's (2006) stood out because this model integrates all library operations modules that offers users access through several interfaces such as OPAC, users services, reference services, bibliographic services, current awareness services, Document delivery, interlibrary loan, audio visual services and customer relations.

¹ Consortia play a role of advising, identifying, acquiring, training, maintaining and upgrading ILSs for member libraries.

Though KyULS has not yet gone very far with ILS, the short distance KyULS has gone with ILSs has changed the librarians from intermediaries to facilitators. KyULS is being exposed to new tools for dissemination of information, a shift from physical to virtual services, extinction of conventional information services, emergence of new and innovational web-based library services (Krubu and Osawaru, 2011). It should be noted here that there has not been a similar empirical study on adoption of ILS in Uganda. This study therefore uses the same criteria since it incorporates all the library's major modules and it is on this very modular structure that Koha was built which KyULS is adopting.

2.2.3 Critical Success Factors of ILS Adoption

Ngai, Law and Wat (2008:548) carried out a review of the Critical Success Factors (CSFs) in the implementation of new technologies across 10 different countries and regions. The review covered journals, conference proceedings, doctoral dissertation, and textbooks. The review identified, 18 CSFs, as indicated in Table 1, with more than 80 sub-factors, for the successful implementation of new technologies.

Table 1: Critical success factors for implementation of new technologies

1. Appropriate business and IT legacy systems	7. Monitoring and evaluation of performance	13. Strategy and implementation methodology
2. Business plan/vision/goals/justification	8. Project champion	14. Vendor
3. Business process reengineering	9. Project management	15. Organisational characteristics
4. Change management culture and programme	10. Software/system development, testing and troubleshooting	16. Fit business/process
5. Communication	11. Top management support	17. National culture
6. Teamwork and composition	12. Data management	18. Country-related functional requirement

(Source: Ngai et al., 2008:548)

This study compares these factors to determine whether there are critical success factors or barriers to adopting an ILS in KyULS.

Another CSF worth noting was highlighted by Lavagino (1997) who showed a historical perspective of successful adoption of library technology. He summarised the process in four

stages which are: Pre-Computer Technology, Main frame and Micro Computer technology, Turnkey library Systems and Personal Computer and Client Service Technology. Ross and Marmion (2000) further added a fifth stage which is Web and widespread technology. What comes to one's mind immediately is, does following these phases affect in any way the success or failure of adopting the ILS? This study definitely puts all this in consideration in the course of the investigation.

As already mentioned earlier, the sub questions of this study are based on the criteria of Farajpahlou (1999:178) of measuring the successful adoption of an ILS. According to his study out of the 26 measures suggested in the scale, 23 received approval while 3 were rejected. Below is a Table 2 showing these CSFs categorised in five groups which are: Management of ILSs, Technicalities of ILSs, Usage of ILSs, Boundary issues (Political and Cost) and Rejected measures.

From Table 2 it is evident that the 26-item scale of Farajpahlou (1999:178) for measuring the success of ILS adoption is valid and reliable because out of the 26 Item scales only three were rejected. When you compare these CSFs with those of Ngai et al, there are a number of similarities only that different terminologies are used but meaning the same concept. Farajpahlou's request to apply these scales in other studies was responded to in KyULs so that there is more confirmation of the applicability of the scale and test of its validity and reliability.

In yet another related study Selim (2007:409-410) categorises e-learning CSFs based on students perceptions which included: instructor characteristics (attitude towards and control of the technology), student characteristics (computer competency, interactive collaboration, and design), technology (ease of access and infrastructure), and support. These CSFs categories were already mentioned earlier by other scholars confirming how they highly impact the decision to adopt new technology.

Table 2: Farajpahlou's 26-item-scale measure of ILS Successful adoption (Farajpahlou, 1999: 172)

S/No.	Main Criteria	Item on scale measure
1	Management of ILS	Careful planning
		Integration of automation planning into library activities
		Contractual commitment with the vendor(s)
		Time saving
		Need for less staff training (this measure was just approved)
		Need for less user training
		Need for less qualified staff
		Supplying management information
2	Technicalities of ILSs	Having a fast response rate
		Capability of continued development and enhancement
		Having the minimum down time
		Compatibility with the existing automated processes in the library
		Facilitating increase in the quantity of library services
		Facilitating increase in the quality of library services
		Systems' life-time
3	Usage of ILS	Ease of use of the system
		User-friendliness
		Self-instruction
		Number of installations of the system
4	Boundary issues (Political and Costing issues)	Increase in the library's influence in getting resources.
		Impact of the success of the ILS on getting status from other departments in the university
		Impact of the success of ILS on the library's status in the profession
		Costing of the system
5	Rejected areas of Measurements	Compatibility with existing work procedures*
		Performance of the library in demonstrating political advantages for ILS*
		Length of time of the vendor(s) is in business*

** The three factors were rejected mainly because they don't have a definite format of measure and they have a fairly wide scope which may cause some degree of bias.*

Several scholars (Bradley, 2008:175; Cosgun and Dogerlioghu, 2012:1664;Umble et al., 2003) have lists of CSFs according to their studies but it is interesting to note that they all agree on factors like: infrastructure, software selection, Training, top management and staff attitude. Why do these specific CSFs keep being repeated in all these studies? In this study, CSFs affecting the adoption of ILS from a KyULS perspective are investigated and compared to the above studies.

2.3 ILSs in Academic Libraries

There are many ILSs in the market that academic libraries are using both open source and commercial. Some of the good quality commercial ILS include: Millennium, Virtua, TLC, LS2, Library Solution, SirsiDynix – Dynix, Symphony, Unicorn, Ex Libris, while some open source ILS include: BiblioteQ, Koha, NewGenLib, OpenBiblio and PMB (Zico, 2009:9-10)

As already seen earlier, an ILS must be able to handle many library information formats, accommodating searches on the internet, providing a variety of functions including manipulating electronic data, working with graphics and expediting resource sharing (Sani, 2006). Now a review of ILSs in South Africa and their sustainability was done. The ILS adoption models show how they offer convenient time, place, cost effectiveness, faster and most-up-to-date dissemination and end users involvement in the library and information services process. According to Liu and Luo (2011:235) many studies have proved that library users widely enjoy unique features of ILSs that are absent in the traditional environment, such as remote access, 24-hour access, faster access. It is because of these very reasons that a majority of library users have a positive attitude towards ILSs. The perceived ease of use and usefulness of these tools should play a critical role in their adoption.

2.3.1 Open Source ILS

Open source ILS are free alternative to costly commercial ILS (Vimal and Abraham, 2009:1). Open Source ILSs are increasingly becoming popular in developing countries. They are helping to automate library functions and give a tremendous savings on library automation expenses. Even though these ILSs are free, there other costs to meet before fully using them like; customizing them before use which requires technical expertise (Breeding, 2002), the library has to train its staff members on how to use the ILS, stable internet and dependable infrastructure.

2.3.2 Koha Integrated Library System

Koha was first developed in New Zealand in 1999 by Katipo Communications whose source codes were written by Chris Cormack (Koha Community, 2013). It is a web-based interface with offline capabilities. It also employs Web 2.0 technologies such as Library Thing, RSS

feeds. Though it is an open source software for the general community, it also has a commercial version called LibLime (2013). Koha is an open source integrated library system with required models for small to very large academic library (Kumar et al., 2012:61). According to Breeding (2014:24) ByWater Solutions is one of Koha ILS agents and it has signed 68 agreements for support services, representing 150 libraries. This is a direct reflection a continued interest in open source products.

Though Koha is an open source software, Chang and Tsai (2009:8) argue that academic libraries which have sufficient technical support should not opt for it because it does not have all the default linking fields and therefore not suitable for multi-scripts like CMARC which need special programming. This may mean developing countries with lower information technology development, enormous and complex library system technical work will require computer expertise to customise Koha to the required library needs. This expertise is definitely scarce in these countries like Uganda.

This view is however slightly contested by Zico (2009:40-41) because he has managed to integrate Koha with Dspace, he is adding e-resources, e-Journals, videos, provide URL links, personalised rating, 24 x 7 live help service from the available librarian through the chat option. Some of these functions are only found on commercial ILSs. Could it be that the ball entirely depends on the competency of the systems librarian? If s/he is well versed with programming skills, then all those functions in commercial ILS can also be customised into Koha.

Koha is a useful package for the creation of an academic Library database which eases bibliographic information storage and retrieval. Koha approximately offers the same core modules like all other commercial ILS like: online catalogue, circulation, serials control, OPAC, Reports management and Acquisition (Kumar et al., 2012:74). Zico (2009:15-16) carried out a systematic analysis of Koha and raised nine advantages of this ILS which are:

- i) Koha can be used in any kind of library whether big or small.
- ii) Koha uses two database designs thus making it more stable & standard.
- iii) Koha is capable of the interoperability between Koha and other systems and technologies, while at the same time supporting existing work flows and tools.

- iv) Koha has a very user friendly web based interface using cutting edge web technologies like XHTML, CSS & Javascript.
- v) Koha has no vendor lock thus any one can develop modify it to suit their needs.
- vi) Koha's front end is robust and sufficiently stable with minimal need for debugging
- vii) Koha's OPAC is very simple for any walk in patron.
- viii) Koha's basic performance is average, it can quickly handle queries.
- ix) Koha's downtime is minimised.
- x) Koha uses marc format which makes it easy to migrate to another ILS in future.

Reflecting on Zico's analysis above, below in Table 3 is a comparison of Koha with three popular ILS randomly selected (Millennium, Amlib and Sirsidynix Symphony). The comparison uses the usual parameters of evaluating ILS which are: features/functionality, availability of complete modules, a native discovery interface, basic system's requirements, conformance to important international standards, security, interoperability with other products, level and type of vendor support, vendor stability/growth, customer base and other related services/systems enhancements.

Table 3. Comparison of Koha with Millennium, Amlib and Symphony ILSs

S/No.	Parameter	Koha	Millennium	Amlib	Symphony
1	Functionality of the ILS (availability of the key functions of Acquisition, Serials control, Patron Management, Administration, OPAC, Circulation, Report generation)	√	√	√	√
2	Availability of special components in modules (Document status inquiry, reservation, holds of documents through OPAC, import and export of MARC data)	√	√	√	√

3	Key ILS features (Management of online and off-line resources together: RSS feeds, emailing and texting notices to patrons; printing barcodes; updating of multiple modules simultaneously)	√	√	√	√
4	System requirements	Basic Client Server, Linux / Unix-like operating system, Windows, Apache web server and MySQL database	Multi-tier, client-server, Web-based, operating systems is Windows 2000/XP, Mac Linux, uses MySQL or Postgress relational database	Requires: Microsoft Windows Server 2000, IIS Web Server, Web Client Browser: Internet Explorer 7	Requires: OS including UNIX, Microsoft Windows and Linux, it is Web based
5	Cost of Maintenance	Open Source	Commercial	Commercial	Commercial
6	Availability of technical documentation	Average	Adequate	Adequate	Adequate
7	Training	Online	Customised	Customised and Online	Customised
8	Conformance to international and other important standards	Conforms to MARC21, UNIMARC, XHTML, CSS, SIP2, Z39.50 and URL searching	Conforms to NISO CORE, EDI, NCIP, Z39.50, MARC, RDA, ISO 10160 (ILL), RSS, SIP2	Conforms to MARC21, MARCXML, Z39.50, SIP2, NCIP and RFID, ODBC, OLE, SQL, SMTP, MAPI, XML and HTML	Conforms to MARC 21, XML Unicode, SIP2 , NCIP and NISO Z39.50

9	Security	User authentication with username and password, Full and scheduled incremental backups, Release of timely security patches by developers, Koha Community security measures and editions	Unique passwords, for each module, tape back-up & powerwatch (with supported UPS), with Compiler and Debugger	Has a SQL Relational Database Management System (RDBMS), !!Support for fault-tolerant hardware, Continuous monitoring of system performance	Uses Passwords, supports RFID and Administrative permissions
10	Interoperability with other ILSs	√	√	√	√
11	Customizability	√	√	√	√
12	Level and type of vendor support	Community	Vendor	Vendor and Community	Vendor
13	Vendor stability and growth	Stable and growing since 1999	Stable and growing since 1978	Stable and growing since 1994	Stable and growing since 1986
14	Customer base	1169 Libraries	1,425 installations in 50 Countries	Used in 700 Libraries worldwide	2555 Libraries world wide
15	Other general enhancements				
i	Multilingual	√	-	-	√
ii	Integration of Web 2.0	-	√	√	-
iii	Supports ILL	-	√	√	-
iv	Full text searching	-	√	-	-
v	Supporting of Mobile devices	-	√	√	√
vi	Creation of reading lists	√	-	-	-
vii	Spell Checker functionality	-	√	-	√
viii	Self Check out	√	√	√	√

ix	Automatic Data Recovery	-	-	√	-
x	Online System Back up	-	-	√	-
16	General Limitations	Its OPAC is not searchable by mobile devices and its lack of vendor support may lead to no focused direction of improvement.	Modules sold separately, not as a package, Not a fully unified staff client workflow interface, allows users little access to the back-end of system	Very costly for low budget libraries, Lack of cooperation (occurrence of un-coordinated activities) amongst the OCLC members	Demands bureaucratic Contractual obligations, has no offline modules for Acquisition, Reports and ILL

From the table above, it is clearly visible that Koha has most of the basic functions of a modern ILS. It is only missing the sophisticated functions, which can also be incorporated since it can be improved and modified to suit the local needs of any library. This study investigates the suitability of Koha compared to other commercial ILS and also assesses how far the library programmers have modified Koha to suit KyULS's unique needs.

2.4 Technological Innovation in Libraries

Many scholars continue to be baffled as to why great library technological innovations like several ILS ideas are not routinely implemented in academic libraries or why they don't easily get quick and high levels of acceptance from the targeted user community. Researchers like Jantz (2012:17) argue that the understanding of the complexity of technological innovation requires a more multi-faceted approach because it has many dimensions like leadership, organisational structure, professional values, risk taking behaviour and the characteristics of the innovation itself. Although this paper sheds light on important aspects of innovation in academic libraries, it didn't tackle the critical leadership profiles which might facilitate or inhibit technological innovation in academic libraries. This study delves into the leadership models, and triggers or motivators of adopting technological innovation in academic libraries and how this knowledge can be developed?

2.4.1 ILSs Opportunities

In the midst of academic libraries tackling the challenge of helping library users to discover relevant resources across many types of library technological tools, such as the Open Public Access Catalogs (OPAC), institutional repositories and article databases, there are some opportunities that libraries can take advantage of. Jeffryes et al. (2011:20) report of how the University of Minnesota, Twin Cities efficiently integrated library resources with existing course technologies on the ILS which enhanced the University libraries' presence into the course environment of instructors and students. They combined the existing library collections with Web 2.0 technology to create a tool that provides a framework for delivering course related content and services to the library users. This innovation did not only support the mission of teaching and learning at the University but also increased the visibility of the ILS in crowd of so many web based applications. Little (2012:124) suggests some more keys that academic librarians can use to increase the visibility of their ILSs:-

- There is need for strong support from the institution's administrators as their lack of support may lead to an absence of interest or a lack of technical understanding of the ILS.
- There is need to ponder on the ILS user input or feedback.
- Maximum attention should be paid on the design, packaging, and marketing of the ILS.
- Avoiding the use of old and rigid proprietary tools and indexes as access links of the ILS
- Incorporate social media on the ILS as already mentioned above.

The urgent need to develop dynamic ILSs incorporated with relevant Web 2.0 is also alluded to by Madhusudhan and Nagabhushanam (2010:569). They suggest that ILSs should also have web forms for remote users, adopt next-generation internet (IPv6) and provide multi-language support content.

Kiran and Diljit (2012:194) continue to assert that an academic service should ensure that it maintains a high quality of its ILS through using a user-centred approach. As the library concentrates on the technical development of ILS, it should not neglect basic library services such as reference and bibliographic instruction in a web environment. The subject librarian

should facilitate this intellectual discourse since ILSs have a tendency of reducing the face-to-face interaction between the library users and the library management. It is therefore through good customer service and care that a bond will be created between the library users and managers with a quest of maintaining high quality library services. This study investigates how KyULS balances the ILS technical advancement (social media, multiple language content, dynamic links) with face to face customer care.

2.4.2 Qualities of a Good Systems Librarian

One cannot talk about adoption of ILS without mentioning the minimum or basic requirements of the librarians who are going to manage the ILS. The success or failure to adopt an ILS is partly contributed to by the Systems Librarian and his or her team in the library. Thompson (2008:74) basically defines a systems librarian as a library staff member who takes care of the library's technology. They generally are a jack-of-all-trades, managing the library's automated system. So their competencies differ from library to library as they range from desk top support, networking, web site maintenance, programming, project planning, marketing to mention but a few.

Mathews and Pardue (2009:257) argue that system librarians continue to look more like Information Technology (IT) professionals in academic libraries. This implies that for libraries to successfully adopt ILS, they have to ensure that Librarians have skills set like those of those of IT professionals. The challenge that is posed to the library and the library training schools is to examine what skills are necessary in this technology revolution?

Thompson (2008:96) suggested a long list of qualities of a good system librarian if a library is to have a successful adoption of an ILS, the qualities are categorised into eight categories which are: planning, coordination, leadership, interpersonal skills, communication, collaboration, liaison and training skills. Partridge et al. (2010:265) also agrees with Thompson and on that list he adds on complimentary, information management, adaptable/flexible, active learner, project management and community engaging skills. This study endeavoured to establish whether the Koha core team of KyULS has some of these skills.

2.4.3 Challenges

University libraries invest massively in providing ILSs yet there are threats and challenges like minimal utilisation of these investments where library patrons prefer other content providers such as Google (Kim, 2011:9). Information managers are always grappling with this challenge of enhancing the utilisation of university library ILS in order to justify their big investment. Though it is difficult to dispute that Google is a central search tool in society as it commands 71% of the search market while Yahoo is only commanding 14%, (Swanson and Green, 2011:222), they don't return relevant academic information sources like searching with an ILS. Little (2012:123) puts it into more perspective where he reveals that 89% of the users of academic libraries start their search using Internet search engines compared to just 2% who begin their information searching on the academic library ILS. Librarians of academic libraries have to work tooth and nail to compete with the internet search engines or learn from them. This study undertook an insightful investigation on information seeking behaviours of KyUL users and how best to guide them to utilise the ILS. Special focus was put on how to customise information services for them, the ease of using commercial search engines and websites compared to KyU ILS.

2.5 Summary

Academic Libraries face enormous pressures in attempting to maintain the competitive advantage through adopting the ever-emerging library technologies. University libraries by virtue of being subordinate and sometimes marginalised departments need to strategically position themselves to tap into the parent organisation's competitive position. To ignite this strategic positioning is to faucet into the available IT assets available in the organisation and to effectively use them in improving library services. This positioning will also involve establishing what are the available IT assets, where they reside and the value that they may offer to the library.

The adoption of ILSs and other related technologies has undeniably played an essential part in providing the platforms or mechanisms of making libraries more visible in the world today. The extent of adoption of the technology and particularly the ILSs employed are important deciding factors that confirm that libraries are hearts of universities. The above is detailed literature survey on the adoption of ILS in libraries, right from the global level to

the Sub Sahara African case. Other issues of ILS adoption have also been put into context like critical success factors, the use of ILSs and general technological innovations in academic libraries. There were indeed some research gaps that were identified like: determining a conducive environment for adoption, the organisational knowledge sharing culture, the technological infrastructure, financial and human resources to mention but a few. Addressing these gaps justifies the need for this study as proving and answering these gaps is the key purpose and essence of this investigation.

3. RESEARCH METHODOLOGY

*Creative people are notoriously the
slowest to adopt new technology.*
— Robert Rodriguez

In order to have a successful outcome of this research activity, a special emphasis was directed on the research design. Not only was it an evidence based study but focus was put on how data was gathered and interpreted in respect to the key research questions investigated (Easterby-Smith et al., 2008). The study used an interpretivist approach which assumes that there are true answers and the job of the researcher was to confirm or disconfirm them. In this study, the researcher used an in-depth case study methodology to confirm or disconfirm the drivers and barriers of adopting ILS in KyULS. This chapter further explains other parameters used in this study like the data collections methods, population, data analysis and other methodologies of the research.

3.1 Research Paradigm

The terminology ‘research paradigm’ is quite wide and has different sets of views depending on the discipline of study and scholar. Cooper (2012:8) describes it as research theoretical frameworks, perspectives or simply sociological theories that are guided by action. Silverman (2010:109) does not differ much from this view because according to him, a research paradigms tell us reality, basic elements, nature and status of knowledge. Punch (2012:134) sums it all by saying that paradigm debates within research continue and they have not yet arrived at a final picture.

This study uses an interpretivist research paradigm to point out or portray the image that there are many truths and many realities in adopting ILSs in KyULS and thus the focus is on understanding the holistic approach of the Library staff, key users and the general library technological environment (Weaver & Olson, 2006:36). This research paradigm is relevant to the study because it is important to establish the meaning of the perspectives and experiences of the Kyambogo University IT staff and librarians in relation to their work environment (Ponelis, 2011:71-74).

In addition, qualitative research is more concerned about unveiling knowledge about how people feel and think in the circumstances in which they find themselves, instead of judging the validity of their thoughts and feelings (Gilbert, 2012:509). This is a clear reflection of the interpretivist paradigm. The argument is therefore, that an interpretivist paradigm is more suited to research and seek to understand the adoption of ILS from the perspective of the top library manager, middle manager, IT staff, support staff and the user. This view does not only reveal enabling strategies but also uncovers the attitudes to problem-solving and stereotypes of the different parties engaging the ILS.

Finally an interpretive research paradigm is characterised by a need to understand the world as it is from a subjective point of view. It explains the frame of reference of the participant's view rather than from the objective observers view (Orlikowski and Baroudi, 2002:55). As a result of this approach, valuable data was obtained because the researcher used preconceptions of the ILS managers and users to guide the research process. Needless to mention is the fact that the researcher directly interacted with the research subjects, thereby gathering the perceptions of parties involved.

3.2 Research Design

Weaver and Olson (2006:460), define a research design as a research guide or pattern of beliefs and practices that are used by researchers to regulate inquiry within a discipline. The regulation of the investigation is done by providing lenses, frames and processes. Good research should be organised in such a way that it achieves the research aims and purposes. Adoption studies predominantly use mixed research designs, survey and case studies (Dwivedi et al, 2008; Manuelli et al., 2007, Mapulanga, 2013). Even this study uses a mixed (Quantitative and Qualitative) case study research design. According to Easterby-Smith et al. (2008) case studies are extensively used in academic research as they generate a lot of data on a specific area of study which is enough to draw conclusions from.

3.2.1 Case Study

The case study methodology focuses on small number of people and specifically studies them to obtain thorough understanding of the phenomenon related patterns (De Vos et al.,

2011:321). In other words, Leedy and Ormrod (2013:8) explain that case study methodology is where a scenario or situation is poorly understood and a conscious move is made to identify which features are common, not common or unique to the specific case. So the researcher used Kyambogo University Library Service case to study the adoption of ILS in academic libraries. Case study methodology is the most qualitative method that suits research on information systems like ILSs (Myers and Avison, 2002:8).

3.3 Data Collection Methods

The main aim of data collection is to understand how the managers and users of the ILS obtain insight into the use of systems and how it influences the general operations of the library. Clearly explaining how data sources contribute to the research findings is very important in making the study reliable and valid. The study mainly used semi structured interview and document review methods. According to Benbasat et al. (2002:95) about half of case study researches on information systems solely relied on interview as the main data collection method.

3.3.1 Semi-structured Interviews

The Semi Structured interview is an established data collection method and a primary source of information in qualitative research (King and Horrocks, 2010; Kvale and Brinkmann, 2009) and since this study uses an in-depth case study of KyULS, the semi structured interview was an appropriate data collection method (Yin, 2009). Although structured interviews improve the consistency of data gathering across interviews they limit the ability of the researcher to explore additional topics throughout the interview. So to bridge this gap, semi-structured interview method was chosen to maintain consistency but also allow some room of flexibility using an interview guide.

Semi-structured interviews further allowed adjusting questions to the participant's level of knowledge of the issue. Questions already answered in a previous question needed not to be posed again. Emerging questions not listed in the interview guide were asked to explore answers for clarification or to elicit more detail with respect to an answer but were guided strictly within the scope of the research objectives. Generally, the semi-structured

interviews were more of a guided conversation than a structured enquiry (Yin, 2009:106). They would take 30-40 minutes.

3.3.1.1. Advantages of Interviews

Some advantages of semi-structured interviews as described by Leedy and Ormrod (2013) are:-

- Semi-structured interviews are versatile and flexible for both the researcher and the participant.
- The researcher has control over the response rate.
- The researcher is able to follow up on interesting avenues presented by the participants.
- With the interview schedule the researcher is able to ask participants the same questions.
- The interview is guided by the interview schedule but not dictated to by the schedule.

In this research study, the researcher endeavoured to explain all the unclear and unknown terminology to participants and prompt participants when interesting avenues were mentioned so as to generate accurate data. The interview schedule made it easy for the researcher to ably control the discussions.

3.3.1.2. Disadvantages of Interviews

Never the less, this method has a handful of disadvantages according to Leedy and Ormrod (2013) like:

- Interviews consume a lot of time as the researcher could only interview one participant at a ago.
- Some participants may be reluctant to answer or feel insecure to directly answer the questions.
- When recordings, sometimes the electronics may mal function.

The researcher anticipated the above voids and devised means of solving them. In order to avoid wasting time, a timetable was designed to interview informants at specific times. This timetable created a strict discipline in the researcher thus avoiding overshooting of interview sessions. Through this arrangement all interviews were allocated enough time according to the time table.. Before commencing the interview, informants were briefed on the anonymity and confidentiality of their information so as to allay any of their fears of insecurity. The recording gadgets were always charged and tested each time before starting the interview sessions. Notes were also taken as back up just in case the unforeseen happens.

In this study, the interviewees were broken down into two classes and each class was administered a slightly different interview tailored to get appropriate information from them. The first category was the library technical staff which included the library management team, library ICT unit staff members, knowledgeable senior and long serving library staff members. The tool administered to this category is attached to this report on Appendix A.

The second category of interviewees was the general library staff members, other university staff members who were involved in ILS adoption process and the Student's Guild. The tool used on this group is also attached on Appendix B.

The questions were derived from the sub research questions based on Farajpahlou (1999:172)'s criteria as already mentioned earlier. They were designed essentially to measure the attitudes of the research subjects on the adoption of an ILS for KyULS. Open questions were asked to allow informants to give their original ideas (Simmons, 2012:192). In order to improve the response rate the researcher endeavoured to make the instruments easy and short, clearly explaining the purpose of the study to the informants, giving assurance of confidentiality and anonymity and sending out reminders (Easterby-Smith et al., 2008).

3.3.2 Document Review

The researcher did a documentary review of most of the existing literature and available documentation related to the adoption of ILS at KyULS to compare it with the research findings.

3.3.3 Pretesting of instruments

Pretesting research instruments or carrying out a pilot study is like a small-scale implementation done prior to the main planned investigation. A pilot study is carried out to determine and test the feasibility of the research study (De Vos *et al.*, 2011: 73). No matter how carefully constructed research instruments can be, there is often room for error (Babbie, 2013:242). It is therefore advised to pre-test instruments in order to identify and correct such errors. The research instruments of this study were pretested at Uganda Christian University (UCU) Library, a sister university of Kyambogo found in Mukono District. A pilot study engaged a small group of students and staff members of Uganda Christian University, Mukono. A selected number of students were interviewed from the Kampala and Mukono campus. Through this pilot study, the researcher was able to establish whether the semi-structured interview had appropriate questions. It was confirmed that most questions were appropriate apart from a few that required rephrasing in order to bring out the meaning of the questions better. UCU Library was chosen because they adopted the same Integrated Library System (Koha) earlier than KyU so the informants were expected to be knowledgeable and able to offer suggestions that could improve the research instruments better.

3.4 Population

The population of this study includes KyULS top and middle management team composed of professional librarians and paraprofessionals, the KyU ICT Unit, KyU Library Committee members, some key KyU top managers and the Students Guild. All these people compose a set from which evidence was gathered and helped in drawing a realistic conclusion on the drivers and barriers to the adoption of an ILS for KyULS. The total number of the population is ninety one (91) as indicated in Table 4 below:-

Table 4: Total Number of Potential Research Subjects

S/No.	KyU Section/Unit	No. of Staff Members
1	KyU Top Managers	8
2	KyULS	47
3	KyU ICT Unit (e-Kampus)	5
4	KyU Library Committee members	13
5	The Students Guild	18
	Total	91

3.5 Sampling technique

This study used a sampling technique that is representative and had precision. Since the study employed one major method of interview, the researcher used both Stratified random sampling and purposive sampling techniques. Stratified random sampling was used to break up the population into strata and take simple random samples within each stratum (Sturgis, 2012:175-176). The Stratum in this study was the different sections of the populations which were: professional librarians, paraprofessionals, the KyU ICT Unit, KyU Library Committee members, key KyU Top Managers and the Students Guild.

This technique ensured that ideas of each stratum were captured during the data collection exercise. Where the random sampling missed some key informants, the researcher employed the purposive sampling technique to approach potential informants with the valuable information needed by the research. Purposive sampling is also known as non-probability sampling where the probability of a population member being chosen for the sample is known as the researcher is able to determine that a specific member of the population will be included in the sample (Leedy & Ormrod, 2010: 211).

3.6 Data Analysis

Data analysis organises data in order to present and interpret the findings of the study, and bring meaning to large amounts of data (Bloomberg and Volpe, 2012:109). A considerable amount of the data generated was qualitative in nature. This was a result of using semi-structured interviews. One of the easiest ways of analysing natural language is to use

content analysis. Here the researcher examined the data for constructs and ideas of the drivers and barriers of adopting ILS in KyULS (Easterby-Smith et al., 2008). In order to examine frequencies within qualitative data, the data was coded and turned into numeric form and thereafter entered into computer data analysis software. For the other tools that generated quantitative data, since it was already pre-coded, it was directly entered into the software for analysis.

Practically data analysis followed seven steps as suggested by Easterby-Smith et al. (2008) below:-

- a) Familiarisation- This was the process where the researcher linked the data to the focus of the study.
- b) Reflection- Data was evaluated to ascertain whether it supports existing knowledge and answers the research questions.
- c) Conceptualisation- This is where the variables mentioned by the informants were articulated and to easily qualify to be coded (Struwig and Stead, 2011:169).
- d) Cataloguing – This is where the concepts were coded and entered into the computer data analysis software.
- e) Re-coding- Not all data was coded. At this point there was need to identify particular properties to be compared with the original incidents. Some were unique and could not be clustered with others. All in all, these cases were handled at this stage of recoding.
- f) Linking- It is at this stage that analytical frameworks and explanations started becoming clearer from the emerging patterns of the data concepts. Substantive codes were related with each other. Here the researcher started linking the emerging variables with the existing knowledge and focusing on how the informants' data could support the existing theoretical concepts.
- g) Re-evaluation- This was the final stage of data analysis and it entailed cleaning all the omitted facts, addressing the chaotic and messy areas.

Qualitative data normally consumes a lot of time to analyse. The researcher ensured that field notes were well written or the verbatim was clear and all the necessary standards were adhered to (Easterby-Smith et al., 2008). With this, it was hoped that the data was very rich

and was able to be used to draw major conclusions that could be used to develop KyULS.

3.7 Limitations

Although the flexibility of semi-structured interview method offers many advantages, there are disadvantages to it. Some of the limitations expected by this method were: weak leading questions, poor listening skills, failure to ask probing questions, not judging the answers or asking questions that interviewees don't understand.

The data collection process was however critically dependent upon the competence of the researcher. The researcher took the trouble to ask well-structured and relevant questions and was able to listen and interpret the answers (Rowley, 2002). The researcher has also acquired extensive experience in interviewing from previous engagements with institutional and private research consultancy work.

In-depth case study research methods are sometimes criticised for not being able to allow generalisation of specific cases and also producing huge amounts of data which is prone to abuse (Easterby-Smith et al., 2008). The researcher however has a clear framework of collecting and analysing this data to ensure that the data has the same level of validity like any other data that can be used for logical comparison.

3.8 Ethical considerations

This study followed the recommended ethical standards of internationally recognised research. Below are some of the ethical dimensions that were respected in this study. This is based on the premise that observing ethical issues is beneficial and improves reliability of the entire research process (Ponelis, 2011:87).

- Obtained prior permission before proceeding with data collection from University of Pretoria's ethics committee.
- Research subjects were informed fully about the purpose, methods, and intended possible use of the research, what their participation entails which was voluntary and free from any coercion (Bulmer, 2012:158-159).

- In order to have valid and reliable data, the research instruments were first tested at a sister university which had undergone the process of adopting an ILS.
- Used research data anonymously to avoid revealing respondent's identity.
- Respected intellectual properties through proper citation and referencing.
- During the interviews, the informants were encouraged to speak freely and express their views. The interviewer avoided interrupting the flow of the interviewee's response regardless of the relevance of the point, asking non-directive questions and posing questions to avoid bias in response and evading undue prompting. (Myers, 2009).
- Recognised and acknowledged all outstanding contributions to the research (Easterby-Smith et al., 2008).
- Tried to remain detached but receptive and maintained eye contact (Ponelis, 2010).
- Followed a laid out work plan and budget for the entire research process.

3.9 Summary

This chapter has discussed the research design, approach, primary and secondary data collection methods and the general methodology of the research project. Further still the Pilot study, evaluation of the research instruments, time needed to collect data, sampling technique were described. It wrapped it up with outlining the process of data analysis, interpretation and finally explained the ethical concerns of the study.

4. PRESENTATIONS AND DISCUSSIONS OF FINDINGS OF THE STUDY

Integrated library systems must make ambitious improvements in functionality to meet library expectations.
— Marshall Breeding

4.1 Introduction

This chapter is a presentation and discussion of key findings of this empirical study. It should be noted here that this chapter is twofold since it integrates two parts. The first part consists of findings obtained from the study while the second part comprises the discussion of findings in relation to the reviewed literature on the adoption of ILSs (De-Wee, 2013, p. 63). The purpose of this chapter is to describe and explain the data collected. The data analysis was done by grouping data into related themes and sections, as described in chapter 3.

Advanced Technology and innovation has resulted into several ways of carrying out scholarly activities from one desk top computer to the worldwide internet network. A bird's overview of the results of this study relates in some aspects with other several technological innovations being implemented in university libraries in Uganda and the Sub Sahara African region. The uptake of technological innovations is not so encouraging despite the several advantages they offer that relate to convenience and time saving. Mugabe (2014:17) argues that the reasons for this discouraging trend ranges from the inability to do multiple tasks in one place, fear, limited information and fewer options for utilizing the adopted technologies. This may be partly true in KyULS as some of these factors are evident in results of this study.

As already alluded to in chapter three, the findings of the study were obtained by use of a qualitative research approach employing semi-structured interviews and document review. The findings are generally presented and discussed in the order of the research sub-problems as identified in chapter one. After presenting the findings, the discussions follow

immediately after each major theme. Below is a detailed presentation of the data that was collected using the semi-structured interviews.

4.1.1 Description of the informants

Before discussing the ILS adoption in KyULS in detail, the researcher felt it imperative to study the structure of the informants in terms of gender, the sections of the university they came from, their qualifications and experience in the library. The importance of describing the informants is to provide an understanding of their characteristics. This in turn provides an overall picture of the kind of informants that took part in the different stages of the study (Twinoburyo, 2013:60).

According to Stangor (2011:109) response rate is the percentage of all the informants who successfully take part in the study. In this study, basing on a total population of 91 the expected number of informants for the interviews was thirty (30) being largely a qualitative study. The researcher however managed to interview twenty six (26) subjects giving this study an 86% response rate. The researcher managed to have a fairly good response rate mainly because most informants were interviewed at their work places from 08:00am to 05:00pm. Scheduling of appointments and time keeping was highly observed to avoid unnecessary interruptions during the interview sessions.

4.1.2 Gender of Informants

As shown in Figure 1 below, slightly more males were included in the sample, 57.7% of the sample was males compared to 42.3% who were females.

Scholars have attempted to research on whether gender of library staff members has any effect on adoption of an ILS. Venkatesh and Morris (2000) argue that male staff members utilise technology more than female staff members. Further still global studies on adoption of ILS in libraries in respect to gender show that males are more computer savvy than their female counterparts (Kim and Abbas, 2010:217). This revelation may suppose that, if an

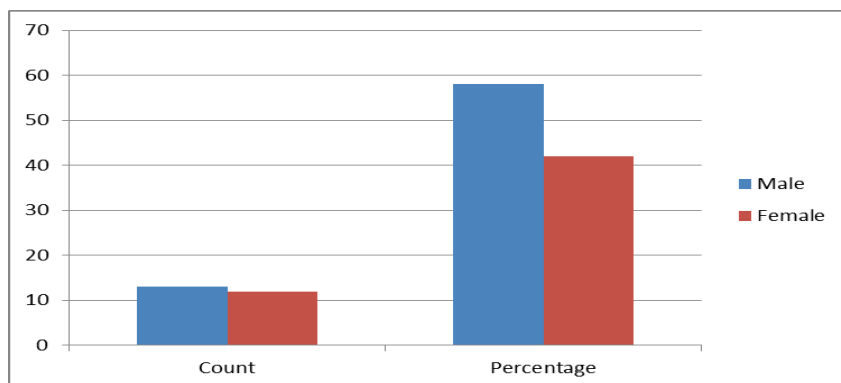


Figure 1: Gender of Informants

academic library has more male staff members compared to the female, that library is likely to adopt and utilise technology more compared if it has more ladies. When tested with the Kyambogo case, it can be partially proved because, the records KyULS's staff establishment indicate that the establishment currently stands at 47 staff members of which 23 are male and 24 are female. This assertion is however contestable because adoption of technology is too broad and multi-faceted to be reduced to gender alone.

4.1.3 Sections of KyU from which Informants were drawn

As already observed earlier, a total of 26 subjects were interviewed spread across the different sections of the university that were either directly or indirectly involved in the process of adopting the ILS for KyUL (see Table 5). The majority comprised library staff who are directly involved in implementing the ILS.

Table 5: Sections KyU from which interview were carried out

S/No.	Library and KU sections of the informants	Count	Percentage (%)
1	Kyambogo University Top Management	1	3.85
2	Kyambogo University Library Committee	2	7.69
3	KyU Library Management Team	3	11.54
4	Library ICT Unit	5	19.23
5	General Library Staff	12	46.15
6	KyU ICT Directorate	1	3.85
7	Students Guild	2	7.69
Total		26	100

From the table above, it is very evident that the study tried to be as representative as possible. Views right from the top university management concerning the adoption of the ILS in KyULS right to the lowest staff member in the library were all captured and analysed during this study.

4.1.4 Academic Qualifications of the Informants

The library staff qualifications are fairly distributed across all levels with the majority of the staff members 50% with Diplomas in Library and Information Science (DLIS) as indicated in Table 6 below. Incidentally five informants were upgrading two of which were pursuing Master's degrees in information Science and Information Technology, while the other three were pursuing Bachelor of Library and Information Science.

Table 6 Academic Qualifications of Informants

S/No.	Academic qualifications of informants	Count	Percentage
1	PhD	1	3.85
2	Masters	3	11.54
3	Bachelor's Degree	7	26.92
4	Diploma	13	50.00
5	Certificate	2	7.69
	Total	26	100

While in many studies, ILS adoption failures are attributed to use of unqualified library staff members, here in the case of KyULS, it is far different. There is already enough capacity in this library to initiate and sustain an ILS adoption exercise even if with only this sample team which has a PhD holder, 3 masters, several bachelors and diplomas yet still there are other members of staff who are upgrading. The cause of the partial success in the ILS adoption can now be attributed to other causes other than lack of qualified or professional librarians. Alternatively a further investigation can be carried out on the type of training offered at the library and information schools which may not be producing competent professionals who can comply with modern technological changes.

A closer scrutiny of this composition which is a direct representation of the entire KyULS organisational structure shows that the KyULS is still operating like a traditional library. According to Johnson (1991:27) traditional libraries are made up of professional librarians and support staff. Professional librarians constitute a small group of employees with masters and doctorates and are responsible for the general management of the library and administration of technology. The support staff members on the other hand constitute the largest group and they perform a variety of tasks right from clerical to paraprofessional. This scenario is not far from KyULS because the majority of the staff members don't have advanced degrees and they hold positions at the lower level of organisational hierarchy. This kind of structure may have a negative effect on ILS adoption because if they don't administer library technology then their involvement in the ILS adoption may also be very minimal.

4.1.5 Professional Experience of Informants

The highest portion of staff members sampled was still new as 38% of staff members experience ranges from 0 to 5 years according to Table 7 below. This may in one way indicate that there is a relatively high staff turnover rate in the university and the library in particular. This can be compared to the only 15.38 % who have stayed for over 16 years. This may affect adoption of an ILS in the sense that, new staff members always join the library, they are trained and attain necessary library automation skills, but shortly after they run off to greener pastures and then other fresh staff members are recruited and the cycle continues on and on. On the other hand, there is a growing debate that shows that staff members who over stay on jobs tend to resist technological change and thus become barriers to adoption. Could this therefore mean that a high staff turnover is a blessing in disguise to KyULS? This puzzle may need more investigation.

A further study needs to be carried out to ascertain exactly why there is a low library staff retention rate. Further still, the reasons that enabled the 15.38% to stay also need to be established and if they are good they could be shared with the rest to avert any future high staff turnover. High staff turnover directly impedes technology adoption and should be

immediately addressed if the library is to experience a change in the ILS adoption rate (Baron et al., 2001).

Table 7: Experience of Informants at KyULS and Merged Libraries

S/No.	Experience of informants in years	Count	Percentage
1	0 – 5	10	38.46
2	6 – 10	4	15.38
3	11 – 15	8	30.77
4	16 +	4	15.38
Total		26	100

4.2 KyULS Management's decision to adopt the ILS

The study sought to establish how KyULS came to decide on how to adopt an ILS. From the qualitative content analysis the informants raised several reasons that led to KyULS' adoption of an ILS in general and Koha in particular as listed in Table 8.

Table 8: Reasons that Led KyULS to adopt an ILS

S/No.	Reason for adopting an ILS for KyULS	Count	Percentage
1	Koha being open source software	24	18.32
2	Adapting to international library trends	21	16.03
3	Visits to modern automated libraries	20	15.27
4	A desire to move from manual to an automated system	18	13.74
5	Increased demand for library services	17	12.98
6	Increased number of users and library collection	14	10.69
7	Attempt to overcome past failures	10	7.63
8	Dictated by technological changes [The move from print to digital library technology]	7	5.34
Total		131	100

From the table above, it is very clear that the strongest reason that led KyULS to adopt an ILS were because Koha is a free system and copying international trends that were seen

from the library visits of the library staff members. Generally libraries have varying expectations when choosing to automate, many simply want the ILSs to basically function as documented (Breeding, 2009:6). 'That's why libraries are yet to make full use of the potential inherent in automation' (Johnson, 1991:106). Much as, these are good reasons for adopting an ILS, they are not resilient enough. For example the desire to automate the library which was incidentally a weak reason and appeared towards the end. Could this mean that KyULS could be adopting the ILS for the wrong reasons no wonder they are experiencing a partial success. If they were adopting for the right reasons, they would be more assertive and resilient to face and solve any set back or hardship until they achieve their dream of automation.

Johnson (1991:111) advises that before a decision to adopt an ILS is made, a library has to complete a feasibility study, evaluate all the received proposals of the potential ILSs assessing them on the following criteria: cost of the soft and hardware, availability and completeness of the application modules, previous experience, reputation of vendor, ease of use of ILS by staff members and patrons, need for local programming, training and documentation. There was no indication that this was done in KyULS ILS adoption process.

4.2.1 Consultation and Involvement of Stakeholders in ILS Adoption

The researcher wished to know whether the informants were in any way consulted or involved in the process of adopting Koha in KyULS. It was captivating to note that quite a number of informants were consulted and have been involved. To be precise 17 (66%) informants were consulted, while 9 (34%) informants were never consulted. Further still 15 (58%) informants were actively involved in the adoption of the ILS, while 5 (19%) informants were never involved. The remaining 4 (15%) were aloof of whatever was going on. According to Hiralaal (2013:183), the involvement of librarians in the adoption process is very key in determining whether the ILS adoption is to be successful or not. Even Hamdan (2013) concurs with the above that one way of counteracting a biased attitude towards a technology adoption process is to make the process inter-dependent and collaborative with the staff members.

The informants who indicated that they were involved in the ILS adoption process were further requested to show the different stages in which they were involved in the adoption of the ILS and in Table 9 below are the different stages in which the informants were involved.

Table 9: The different stages of ILS adoption which the Informants were involved in

S/No.	Involvement of Informants in the ILS adoption process	Count	Percentage
1	Data entry	12	32%
2	Attended Koha Training	8	21%
3	Advisory	6	16%
4	Planning	5	14%
5	Installation	4	11%
6	Trouble shooting	2	6%
	Total	37	100

From the Table above, it can be seen that a good number of informants were involved in the data entry and training and less in the installation and troubleshooting which is understandable because the technical work is more for the ILS administrator. The only surprising bit is the low involvement in planning process. Being a user based system: the planning was expected to be participatory so that when the implementation stage comes, it is easily embraced. Otherwise ambushing staff members with a system they don't know sometimes stirs up unnecessary resistance at implementation which should have been handled at the planning stage. Deeper involvement of staff members in IT planning, software development, hardware selection and training certainly improves the alignment and adoption of IT in any organisation (Saptadi et al., 2012:402).

4.2.2 Conduction of a Feasibility Study before ILS Adoption

When the informants were asked whether there was any form of a pilot or feasibility done before adopting Koha, the results show that 16 (62%) informants were negative while 2 (8%) informants were positive. The remaining 8 (30%) didn't have any idea. Adopting an ILS triggers a lot of fears and scepticisms in the minds of the library staff members. This is

therefore a very aggressive and laborious exercise which may require the library to adequately prepare for. This preparation can be done through doing pilot or feasibility tests to envisage what the library is likely to encounter at the real implementation. Jin and Li (2012:150) advise that firms which are deciding to adopt emerging technologies more so those that relate to marketing digital content, make complex decisions loaded with high uncertainty of the technological investment, market penetration and accruing profitability. Therefore, just adopting an ILS without a prior test then leaves the whole exercise to chance because depending on the reaction of the staff members and the prevailing circumstances, the adoption process is likely either to succeed if it is welcomed or miserably fail if it is rejected.

The Feasibility study should have helped KyULS to come up with an inventory of costs, level of skilled personnel, accuracy and quality of information required in the ILS adoption process. It would further establish the required current and future costs of the soft and hardware requirements (Johnson, 1991:107). If all this information is in place, there is no reason why a library can fail to plan for a successful ILS adoption.

4.2.3 Following of a Systematic Plan during the ILS Adoption

The study sought to establish whether the library followed any systematic plan when adopting the ILS for the library. The informants were first asked to indicate whether they think it is necessary to follow a laid up plan when adopting an ILS and all of them were unanimously in agreement that it is very necessary to follow a laid up plan for an organised and efficient ILS adoption process.

The informants were then asked to indicate whether the library followed any systematic work plan when adopting Koha and the Figure below shows it better.

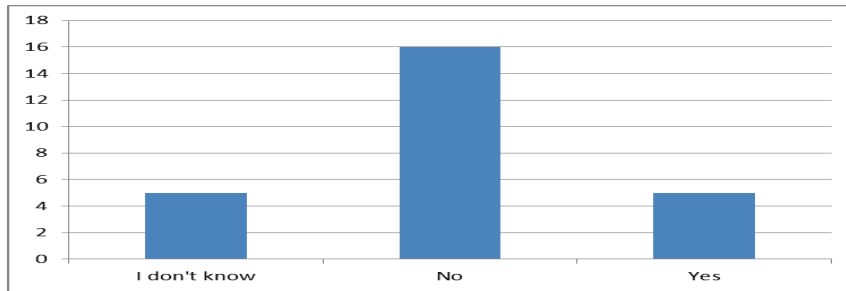


Figure 2: Perception on whether KyULS followed a systematic plan when adopting an ILS

Of all the 26 informants, 16 (62%) didn't see the library following any systematic plan when adopting Koha. There was though 5 (19%) who thought that the library followed a systematic plan. The researcher endeavoured to ask for a copy of this plan but efforts to retrieve it were futile. Since it was not possible to have a look at the plan, the position of the majority seems to be the truth. It is very dangerous to carry out an ILS adoption exercise without a laid out plan because this breeds confusion and disorganisation in the whole process. Successful ILS adoption always follow a systematic plan of implementation (Scot, 2008:151). The lack of a systematic plan could partly explain the seemingly struggling ILS adoption process in KyULS.

Since the researcher was unable to obtain any documented plan which was followed when adopting the ILS, the informants who indicated that the library followed a plan, were requested to describe it and below was the general plan KyULS followed when adopting Koha:

1. Library management discussed the need to adopt Koha
2. Contacted e-Kampus (KyU ICT Unit) about the need for an ILS
3. e-Kampus agreed and Koha was installed on the university server
4. Held training of some key staff in Koha
5. Embarked on populating and using the ILS

The above plan is a bit fair basing on the prevailing circumstances in KyULS; however it is not ideal because it is missing many pertinent aspects which partly explain why the library may be having a partial success as far as adopting an ILS is concerned. From the above plan,

there is no mention of a feasibility study or a user assessment, no benchmarking from other successful ILS adopters, assessment on the availability of an enabling environment for the ILS like internet, ILS administrators to mention but a few. This plan actually shows more of a band wagon effect where the library just wished to adopt and ILS like other modern academic libraries like already suggested in 4.2 above.

The informants were further requested to suggest an ideal plan that should have been followed for a successful adoption of an ILS KyULS and generally below was the plan suggested by most of the informants.

1. Start with benchmarking on the best ILS from successful ILS adopters
2. Identify key library staff to champion the project
3. Train key personnel in the usage of the ILS
4. Procure required equipment
5. Install ILS
6. Test the ILS
7. Train the rest of the library staff
8. Clean and import the already digitised data (bibliographic records)
9. Data capture/entry for fresh bibliographic records
10. Market the ILS to the library users
11. Continuously monitor and evaluate the ILS

When you compare this plan with other plans of successful ILS adoption, you notice that according to (Clayton, 1987:3) a standard plan of adopting a library system should have six broad stages which are:

1. Developing a comprehensive plan-Determining overall systems objectives and priorities.
2. Systems analysis- Conducting a feasibility study
3. Specification of requirements- Determining hard and software specifications
4. System evaluation – Exploring proposed systems and existing products
5. Implementation – Installation, testing and training of employees
6. Monitoring and Evaluation – Continuous revision for improvement

The above should have been the standard procedure to follow when adopting an ILS for KyULS. In real practice, there can be an overlap of one stage to another however it is very important to have a standard framework in which to operate when adopting an ILS (Clayton, 1987:4).

4.3 The Ease, User friendliness, Speed and General Management of the ILS

The study sought to establish the ease, user friendliness, speed and general management of Koha in KyUL. The informants were first asked to indicate whether library automation in anyway improves library operations. They all agreed and appreciated that indeed library automation greatly improves library operations. They provided the ways in which automation improves library operation in the Table 10 below:

Table 10 How Automation Improves Library Operations

S/No.	How automation improves library operations	Count	Percentage
1	Increases Efficiency	11	28%
2	Saves Time	10	26%
3	Eases Work	8	21%
4	Increases Productivity of Staff Members	4	10%
5	Improves Reliability	2	5%
6	Stream lines Accountability through harmonised tracking of user records	2	5%
7	Allows multiple and remote access.	2	5%
Total		39	100

From the table above, the three leading reasons of how automation improves library routine work are: increasing efficiency, saving time and easing work. These are very good observations and perfectly agree with Breeding (2009:5) who states that the current phase of library automation is seeing an emergence of open source ILSs which are giving libraries

more control, flexibility and interoperability. It is however surprising to note that the point of allowing remote and multiple access comes last. KyULS is indeed experiencing a lot of pressure using resources of 700 users to serve over 20,000 users. Remote and multiple accesses could have featured more in the list because it directly addresses this problem of shortage of space and information resources.

4.3.1 What Informants liked about Koha

Now focusing on Koha in particular, the informants were asked whether they support Koha as the best ILS for KyUL. All of them were affirmative (100%). The reasons for supporting Koha in particular are listed in Table 11 below.

Table 11: Functionalities of Koha informants liked

S/No.	Functions liked about Koha	Count	Percentage (%)
1	Integration of the five modules [Acquisition, Cataloguing, Circulation, OPAC and Serial Management] of library operations	23	24.2
2	User friendly	22	23.2
3	Koha being open source software	22	23.2
4	Remote access function	17	17.9
5	Customisability	11	11.5
Total		95	100

From the statistics in Table 11 above, it is very clear that most informants are happy with the general functionality of Koha. The above sentiments clearly reflect what Kumar et al. (2012:74) already stated that Koha offers almost the same functions like other commercial ILS. However when the researcher delved further to inquire whether they have ever taken the trouble to compare Koha with any other ILS on the market, 99% of the informants had never taken the trouble. It was only one respondent who stated that:

‘During my BLIS course, I compared Koha with Virtua and for sure Virtua is far better than Koha in functionality and handling of massive collections. The only problem is that Virtua is a commercial ILS where KyUL may not be in position to foot the costs of maintaining it.’ (A male Library Assistant).

This may partly prove the common saying that Koha suits small libraries (Breeding, 2009:28) and those with financial constraints because a deliberate effort was done by one respondent who could have done it as an assignment in class and for sure concluded that though Koha is free, other commercial ILS are far better than it in terms of functionality and handling huge collections.

4.3.2 Prior Experience in Library Automation

Informants were asked if any of them had any prior experience in library automation and the usage of Koha in particular. The results showed that over 50% already had prior experience library automation.

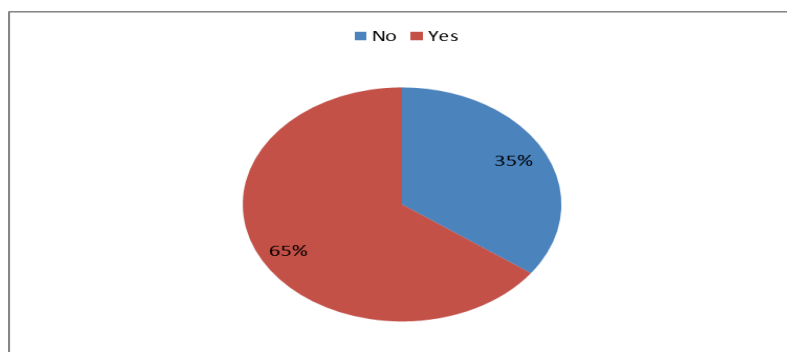


Figure 3: Informant's Prior Experience to Library Automation

This statistic brings in a new perspective because any difficulty in the Koha adoption in KyUL should not be associated to it being new to staff members because over half of the informants had at least ever had prior experience to an automated library system. Those who had prior experience were further requested to mention the places or venues they had that experience and below in Table 12 show the places.

Table 12: Places Informants got Library Automation Exposure

S/No.	Places where prior library automation was gained	Count	Percentage %
1	Makerere University Training	12	48
2	Koha training	4	16
3	Win ISIS	3	12
4	CDS ISIS	3	12
5	Cavendish University	2	8
6	Public Library	1	4
	Total	25	100

From the table above, it can be observed that Makerere University is playing a big role in supporting automation of libraries. Actually half of the training which was held in Makerere was facilitated by CUUL. A number of informants indicated that Koha was first introduced to them during their BLIS training at Makerere University. This observation further confirms that lack of skills of using Koha is not at all a barrier as more than half of the informants already have the basic exposure to Koha or some form of Library automation.

4.3.3 The Drivers to adopting the ILS

The study sought to establish the drivers of adopting Koha in KyUL. A handful of drivers were listed by the informants as indicated in Table 13 below.

Table 13: Adoption of Koha in KyULS Drivers

S/No.	Koha adoption drivers in KyULS	Count	Percentage (%)
1	Qualified staff	24	20.7
2	Open source software	23	19.8
3	Training available (initially)	22	19.0
4	General positive attitude towards Koha	19	16.4
5	KyU top management support	12	10.3
6	Library automation trend in sister universities	11	9.5
7	Demand from students for automated services	5	4.3
	Total	116	100

From Table 13 above, the leading drivers of Koha adoption in KyUL are suitably qualified staff, the positive attitude of library staff members towards Koha, the availability of training and again the issue of Koha being an open source ILS resurfaced again. Adoption of open source software like Koha is a big driver in sub-Saharan African academic libraries as it

translates into a long term cost saving strategy (Ledwaba and Tsebe, 2010). KyUL can allocate the saved resources on purchasing of more infrastructure and other library automation capacity building initiatives.

User demand was also highlighted as a driver of adoption because according to Nkomo et al. (2010:324) computer-driven systems like ILSs are increasingly becoming popular as they allow multiple consultation of information sources. The only surprising bit is that during adoption process there seems to be no significant impact on the utilisation of the traditional manual system; it takes long for patrons to completely abandon them. Nevertheless, it is now an undeniable fact that ICTs plays a key role in providing access to relevant and effective information and knowledge sharing mechanisms which have greatly increased the productivity of academic libraries (Lwoga et al., 2010).

When the researcher compared these drivers with Ngai et al's (2008:548) list of critical success factors of adopting technology, it was interesting to note that the drivers concurred with item 4, 6, 11 and 15 in Table 1. It can therefore be deduced that these four items played a big role in realizing the little ILS adoption in KyUL.

4.3.4 Attitudes of staff members towards Koha

The adoption of technology is to some extent linked to the attitudes and behaviours of the workers. Johnson (1991:30) asserts that organisational beliefs and attitudes underpin how staff members respond to events and actions. The researcher therefore wished to establish the attitudes of staff members towards Koha using the likert scale of best, good, fair, poor and very poor. In Figure 4 says it all.

Though 17 informants which is the majority (65%) have a good attitude towards Koha, it is disappointing that only one respondent (4%) had a very good attitude. This may partly explain why there is a partial adoption success because though the staff members have a good attitude but it is not enthusiastic enough to push for a one hundred percent success. The KyUL attitude towards the ILS is largely mediocre; no wonder the rate of adopting Koha is not any far different.

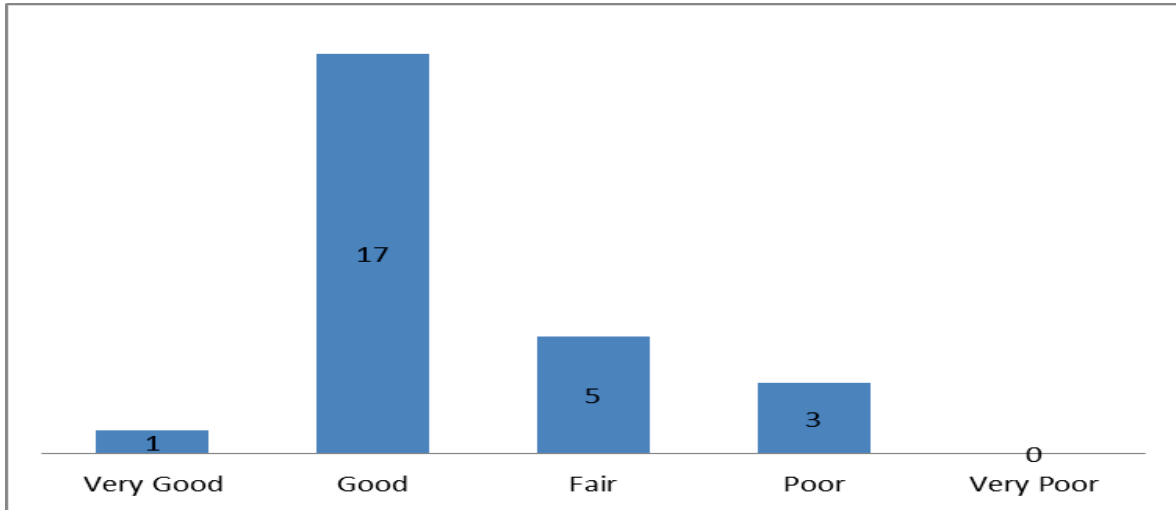


Figure 4: Attitude of Staff Members towards Koha

Introduction of new technologies in a workplace directly affects the employee behaviour and organisational structure. Scientific research shows that this behaviour is mediated by the staff attitudes towards the new technology. Whereas these technologies are generally viewed as systems that are to put staff members out of work and invade their privacy, incidentally the staff members were not hostile to the introduction of the ILS like it would have been expected. This attitude could be because the staff members focused on the benefits that could come out of the adoption of the new ILS (Johnson, 1991:91)

Having established the staff member's attitude towards Koha, it was only proper to ask them to assess how they envisage the future utilisation of Koha in the library and almost a similar trend like that of their attitude was interpolated in Fig. 5 below.

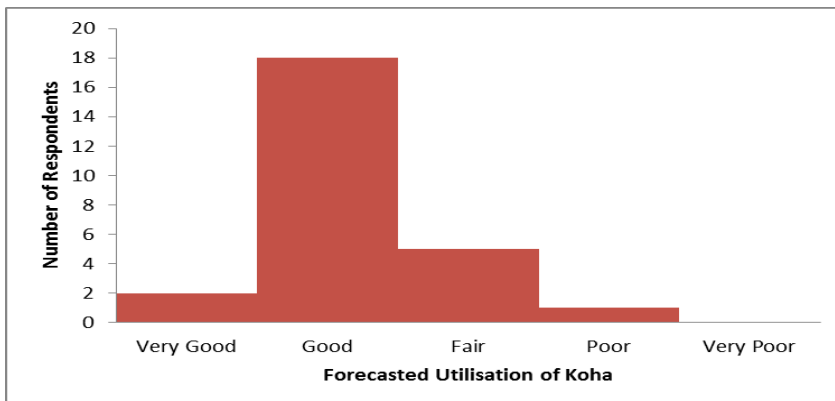


Figure 5: The Forecasted Utilisation of Koha in KyULS

Though some how similar to the staff members' attitude towards Koha, the envisaged utilisation atleast show a better trend. There were slightly more informants who had faith in Koha that will be greatly utilised by the library users. Even those who believe that the utilisation will be poor are also less compared to the staff members with a poor attitude. It will only remain to be seen when that time finally comes but atleast this is a good start. It should however be noted that research in usability studies and ILSs shows that the emerging technologies and culture bring tremendous opportunities as well as challenges to the use of ILSs (Chowdhury, 2012:174). KyULS should therefore harness the opportunities as well as mitigate the challenges.

4.4 *What is KyULS' capacity to develop and enhance Koha?*

To set the ball rolling, before establishing the capacity of KyULS of developing Koha, the researcher wished to know whether the respondent were aware of indicators that show a successful adoption of an ILS. Below in Table 14 were the indicators raised by the informants.

Table 14: Indicators of Successful ILS Adoption

S/No.	Indicators of successful ILS adoption	Count	Percentage (%)
1	A functional and operational OPAC on the World Wide Web	17	16
2	Getting full support from the staff members and students	16	14
3	General improvement in library routine services	16	14
4	All library sections automated and comfortably using the ILS	15	13
5	Setting a specific time frame of completing the adoption and achieving it	12	11
6	All library staff possessing the required skills to use and navigate around the ILS	12	11
7	Reduced breakdowns of the ILS	12	11
8	Increased statistics in the usage of the library	6	6
9	Ability to allow remote and multiple access	4	4
Total		110	100

When one analyses the above table the informants indeed gave the right indicators for a successful ILS adoption. Integrated Library Systems are created to facilitate access to information by local or remote Library users. They facilitate easy searching, retrieving and using this information to support teaching, learning, research and any other developmental activity (Chowdhury and Foo, 2012a:5). What is surprising though is that the issue of remote and multiple access which should have been one of the strong indicators appears last. This could indirectly mean that the library staff members are more interested to use an ILS to seek comfort or ease their work instead of minding more on how their library users can easily access the information resources in the library.

4.4.1 KyULS' Response to International Emerging Library Trends

According to Mutula (2008:107) libraries today are inundated with proliferation of information resources and stiff competition so much so that, they can only remain significant in a globalised economy if they leverage the emerging library trends. The informants were therefore asked to assess whether KyULS was in line with the emerging library trends. The Figure 6 below shows their responses.

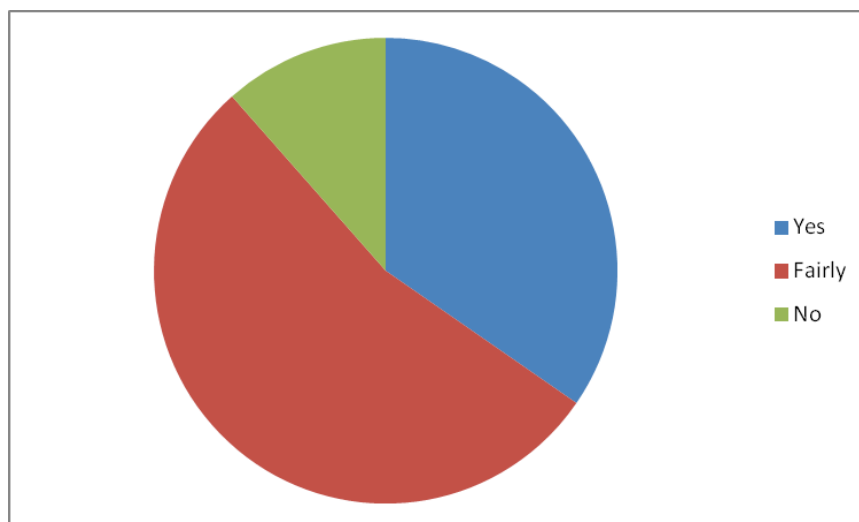


Figure 6: KyULS' Compliance with Emerging Library Trends

From the pie chart above, it is very evident that most of the informants considered KyULS to be fairly moving with the rest of world as far as adopting and embracing modern library trends. This is true because, from observation of the researcher, the fair compliance is not only on adopting an ILS but even other emerging library trends. The library is also fairly

embracing the modern technological library trend of digitisation, establishment of an institutional repository, open access, open education resources, use of social media in the library, cloud computing, gaming to mention but a few.

For the informants who indicated that KyULS was in line with the emerging library trends, they were further requested to give reasons why they think so and below were the reasons raised.

- KyULS is constantly building capacity
- The adoption of Koha
- The provision of e-resources
- The reflection of some library trends in the library's strategic plan 2012/13-17/18.

KyULS has to endeavour to march with the library emerging trends because library user behaviours are greatly influenced by the rapid developments of these trends like social networking technologies, social tagging, collaborative research, web enabled searching techniques (Chowdhury and Foo, 2012b:225). If the library does not comply with these user demands then it is likely to find challenges in supporting the access and use of its information.

Though the list above shows an attempt to conform to the library emerging trends, what appears on the ground is far different. It could be that the desire is there but the lack of the necessary resources has hampered fulfilment of this desire. The encouraging thing though is that when the researcher perused through the library's strategic plan 2012/13-2017/18, all these dreams of transforming the KyULS into a postmodern library with virtual capabilities were clearly stipulated. What remains is to harness the necessary resources to cause all these plans to come to pass.

4.4.2 The Compliance of KyULS Staff Members with Library Emerging Trends

Having established the positions of KyULS as a group, the focus was shifted to the individual library staff member. The study therefore sought to establish how library staff members keep up-to-date with emerging library trends. It was observed that almost a third of the

informants interviewed were unable to answer this question, however the ones who attempted to answer provided these avenues on how they seek and share knowledge on new trends in the library as indicated in Table 15 below.

Table 15: How Informants Keep Abreast with Emerging Library Trends

S/No.	Ways through which informants remain abreast with emerging library trends	Count	Percentage (%)
1	Interacting with professional colleagues	9	27
2	ULIA List-serve	8	25
3	Workshops and Conferences	6	18
4	Going for further studies	4	12
5	Carrying out personal research	4	12
6	From Social Media	2	6
Total		33	100

The avenues indicated above through which KyULS staff member use to keep in touch with library emerging trends are quite impressive. A deeper analysis of this list shows that the majority of the informants get their information informally through interacting with their fellow colleagues. This is not a bad incidence but there seems to be a weak drive of informants going out of their way to seek for this information. This can be evidenced by a third of the informants who didn't have any idea on the need to continually be abreast with library emerging trends. It can further be seen that very few informants take the initiative to do personal research (12%) or seek information through social media (6%) like LinkedIn which is rich with such information on emerging library trends.

The informants were further asked whether they belong or are members to any professional library body or association and only twenty two (22) responded to this question. Twelve of them (56%) said they were members while seven (30%) were not members to any library association. The remaining 3 (14%) were not librarians so there were not expected to be members to any library association. The researcher observed that the informants who declined to respond to this question knew the importance of belonging to a library association but could have felt embarrassed to indicate that they apparently don't belong to any. Library associations worldwide bring together library professionals and they spur them in engaging in a variety of emerging library initiatives. For example the American Library Association (2014) in partnership with San Jose State University organised

a Library 2.0 Virtual Conference which was held on October 8 - 9, 2014. Such activities foster collaboration and knowledge sharing among information professionals. They even endeavour to record the sessions and upload them on YouTube for those who might miss for one reason or another. Even Uganda library associations ought to organise and engage members in such initiatives so that the Ugandan information professionals don't lag behind.

These informants who indicated that they engage in library associations were further requested to mention the professional bodies they belonged to and are actively involved. Three bodies came out prominently which were Uganda Library and information Association (ULIA) – 11 (42%), Consortium of Uganda University Libraries (CUUL) – 4 (15%) and Uganda Community Libraries' Association (UCLA) – 2 (7%). As already alluded to earlier, it is true CUUL has played a pivotal role in supporting academic libraries in adopting ILSs in Uganda. The same applies to ULIA and other associations. They are not doing this on their own though, they often source for funding from development partners like: Carnegie, International Network of Availability of Scientific Publications (INASP), Eifel, NoRAD, SIDA, World bank (Sharma, 2008:17) to mention but a few.

The informants who indicated that they were actively involved in the professional library associations were requested to show how the associations engage them in any library technology adoption activity. Below in Table 16 are the different ways the members are engaged.

Table 16: How Informants are engaged in Library Associations

S/No.	Activity Professional Library bodies engage their members in	Count	Percentage (%)
1	Attending their workshops and seminars	10	59
2	Training in different Library automation initiatives	3	18
3	Actively debating library issues on the association list serve	3	18
4	Reading association publications	1	5
	Total	17	100

Actually one male Library Assistant was so impressed about these bodies and noted that:

“ ... Professional Library bodies facilitate members to join intellectual colleges like Librarything where they get opportunities of sharing catalogues and other library resources....”

It can be observed that workshops and seminars (59%) were the activities that are organised by these professional library bodies to engage their members. The informants were further tasked to indicate whether they regularly attend the workshops organised by these professional bodies. The results are shown below in Figure 7.

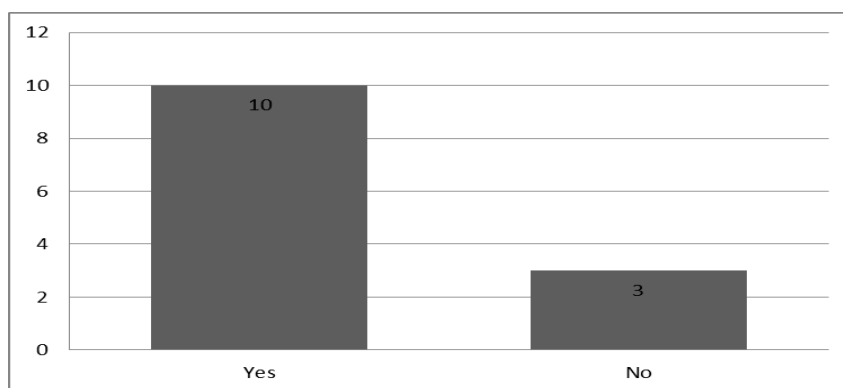


Figure 7: Informant’s attendance of Library Associations’ Workshops and Seminars

From the chart above, though a higher number of ten informants attend regularly, if this number is compared to the total number of informants, it is still far to small. So this statistic may be good for the individuals who are actively involved in library association activities but is not necessary good for KyULS ILS adoption process. This is so because, since very few staff members are involved, there is therefore very little support got from the associations.

When the researcher further delved to know whether some of the workshops and conferences organised relate to library automation, a female Assistant Librarian II revealed that:

“ ... I remember only attending a Koha training sometime in 2009 organised by CUUL then recently I attended Digitisation workshop in 2013 organised by ULIA....”

From the above statistics, though the library is fairly blamed for not being in line with the library emerging trends, the Library Associations too could not be organizing enough

training in library automation and other related emerging trends. This argument could also mean that, may be whatever the library professional bodies are doing, are not interesting enough for the librarians to join in because possibly they may not be in line with the library emerging trends.

But also the library staff members too have themselves to blame. They don't seem to be bothered about actively searching for this information from obvious sources like being members to International Professional Librarian's Associations which, as already seen above, they are trying to organise these trainings which are free as long as one has a good internet connection.

For example taking the quote above, in a span of five years, an average librarian working in KyULS has only attended two trainings which are connected to adoption of technologies. Could it be the issue of insufficient resources for organizing more regular trainings, or the overwhelming numbers of librarians to be trained or having other priorities other than adoption of library technology? To answer these questions may require another independent study on Ugandan Library Associations.

4.4.3 Relevance of Koha in KyULS

Having assessed the library's responsiveness to emerging trends, it was also imperative to critically analyse whether the routine services done in the library require Koha or not. Overwhelmingly 21 (81 %) of the informants indicated that their services required Koha to improve their productivity as seen in the Figure 8 below.

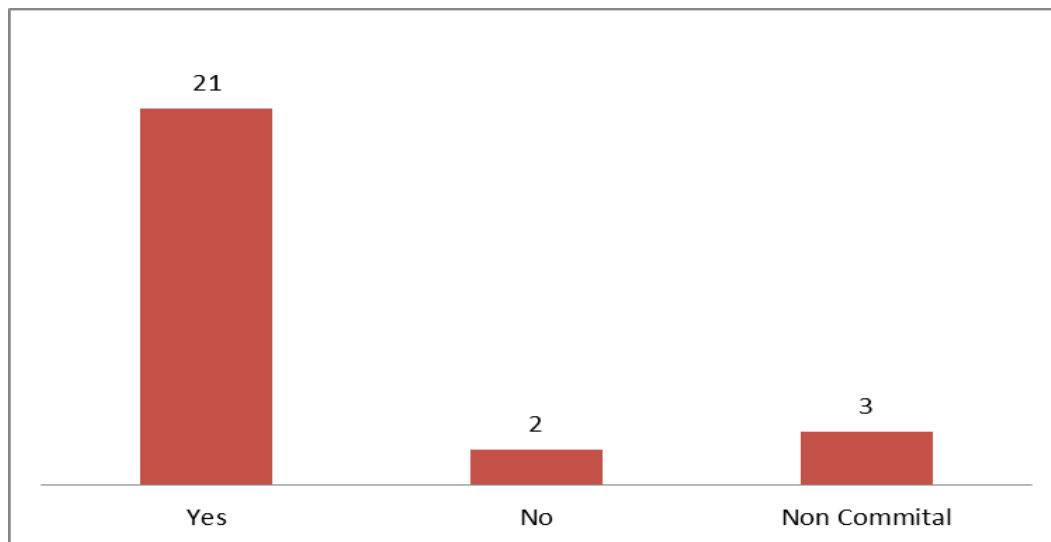


Figure 8: Relevance of Koha in KyULS

The figure above continues to prove that Koha is relevant to a bigger section of KyULS. This is truly a good observation because even elsewhere in the world, there is enough evidence gathered that there is an ongoing advancement of openness in library automation (Breeding, 2009:41). The only worry that remains is whether KyULS will finish the huge mass of work that remains. Open source software (OSS) automation goes along with local involvement in programming and extending the OSS ILS. There is indeed a great deal of functionality and momentum of doing much more through Koha.

Surprisingly, only 2 (8%) informants felt that Koha was not needed while 3 (11 %) were non-committal. When probed further, these informants felt that the university had enough money to purchase a better ILS only that the university administration does not prioritise the issues of the library. If this is true then the library has to work extra hard, change its image so that the library may start to be seen as a priority in the research, teaching and learning process of the university.

4.4.4 Relationship between the University's Strategic plans and ILS Adoption

Since the library's strategic plan had just been reviewed, the researcher had already noted that the library's plans of automating it were clearly stipulated in it, the researcher was now interested to know whether there were specific plans of automating the library the Kyambogo University's Strategic Plan 2012/13-2022/23. Indeed like noted in the library's plan, library automation is very prominent in Kyambogo University Strategic Plan. It was

however surprising to note that there was no evidence to show that this plan was not consulted when adopting Koha. This could be partly because the strategic plan is not specific on what to adopt when. So this leaves room for the library managers to take up anything they feel will satisfy their need at that time.

Having established the state of the University Strategic Plan vis-à-vis the adoption of an ILS in KyUL, the informants were requested to assess whether the adoption of Koha was in line with the aspiration of the University and Library strategic plans. The majority 88% (23 informants) overwhelmingly stated that it was in line with the plans. Only 1 respondent (4%) felt that the library missed it by adopting Koha while the remaining 2 (8%) were non-committal. The informants who felt that Koha was in line with the vision and goal of the University and the library's strategic plan were further asked to justify why they felt so and below are the reasons they raised:

- Koha promotes excellence since the library should be the centre of excellence
- Koha quickens service delivery
- Koha eases access to service delivery more so for persons with physical disabilities
- Koha brings order in the library thus aligning the strategic vision of the library of serving its patron.

The vision of Kyambogo University (2014) is 'To be a centre of academic and professional excellence' while the mission is 'To advance and promote knowledge and development of skills in Science, Technology and Education, and in such other fields having regards for quality, equity, progress and transformation of society.' The 10 year strategic plan focuses on five key areas which are: Promoting Teaching & Learning, Research & Publication, Innovation, Marketing the University and Community Service. When you analyse how the adoption of Koha enhances any of these outputs, indeed it can contribute to achieving academic excellence through easing the access of information on teaching, learning, research and innovation. Koha further contributes to community service since it is accessed by the whole world and not only surrounding community of Kyambogo. The worldwide community can now access and browse through the KyULS OPAC.

The one respondent who disagreed that adopting Koha was not in the best interest of the University, when prompted further, he gave this reason:

“The library adopted Koha as a result of being frustrated with a miserable budget. But the university has enough money to buy a commercial ILS, systematically install it, train the library workers and users and ultimately provide a quality service which the library dreams of.”

Though this is one off sentiment but it could have some water. This is not only unique to Kyambogo, many SSA libraries are grappling with miserable budgets and this is greatly hampering the contribution of the libraries to the goals, visions and missions of the parent institutions (Sharma, 2008:17). The question that remains to be asked is, how will the libraries in SSA ever convince their top managers to accord them a fair share of the budget?

The informants were further asked to indicate whether they think that library automation improves the reputation of the library in any way. The effect of the ILS should not be felt by the university alone but by the nation, region and the whole world at large, 21(81%) informants were in affirmative that library automation improves the reputation. They were no informants who were negative but the remaining 5 (19%) where non-committal. The informants were further asked to elucidate their views and below are the reasons they gave.

- ILSs show that the library is compliant with innovations and technological changes
- Library automation increases the visibility of the library through its OPAC
- It allows remote access of the library by off campus students and other library users
- It increases the prestige of the library
- It can support the library to offer quality services.

The point on how library automation can increase the library’s visibility is not any far from the truth. Without academic libraries adopting modern and versatile ILS, they will continue to lament and wallow in oblivion. Librarians in SSA should wake up and undergo a paradigm shift by exploring creative ways which can increase the visibility of their academic libraries through working with different faculties to promote the use of ILSs (Liu and Luo, 2011:235).

4.4.5 KyULS Priorities

The informants were asked to indicate what they thought the library considered as priorities. The findings are in the Table 17 below.

Table 17: What Informants considered as Priorities for KyULS

S/No.	Priorities of KyULS	Count	Percentage (%)
1	Boosting of the library information collection	15	41
2	Acquiring of modern Library ICTs	9	25
3	Acquisition of Library information materials	5	13
4	Installation of Library Infrastructure	3	9
5	Encouraging lifelong learning	3	9
6	Increasing library space for readers and storage	1	3
	Total	36	

It is very evident while the library may have good priorities, library automation does not appear anywhere. According to the informants, the closest library automation got was under the point of acquiring and developing ICT equipment which was at 25%. Though acquiring ICTs normally shunned as a very expensive priority, if a library like KyULS pursues it vigorously and pays the full price, most of its assumedly current priorities like collection development, space will directly or indirectly be solved because of its multiplier effect.

Well the informants also were put on spot to clearly indicate whether they themselves considered library automation a priority. Amazingly 19 (73%) felt that it was a priority while only 2 (7%) felt it was not a priority and the rest of the 5 (19%) informants were non-committal. This is a very good indication, with such a team, the managers of the ILS adoption don't struggle however one still wonders why in this day, age and era, there are still professionals who are still sceptical about library automation and technology.

4.4.6 KyULS' Capacity of Customising Koha

Having captured the general capacity of informants on their attitude towards ILS adoption, change and technological innovation, the researcher wished to know KyULS' real capacity of customizing Koha to suit the library's local needs. Odongo (2012:116) cautions academic libraries intending to adopt open source ILSs that they must consider the fact that customisation is a critical challenge which if overcome by assigning a specific staff member, such staff become a critical asset to the library so much that their exit can bring difficulties in sustaining the whole ILS.

The researcher therefore asked informants whether they were happy with the way Koha was customised to suit KyULS' local needs. Below in Figure 9 says it all:

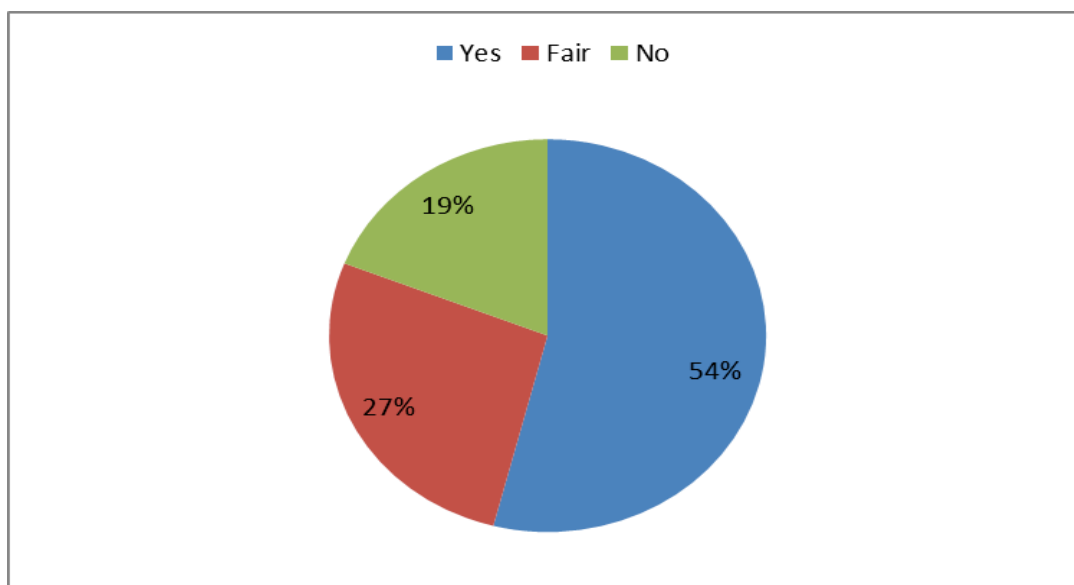


Figure 9 Informants views on the way Koha was customised

Slightly more than half of the informants (54%) were comfortable with the way Koha was customised and they believed that Koha ably suits the local needs of the library. According to Breeding (2009:13) :

‘Open Source ILS products benefit from customers facing APIs as much as proprietary ones. Libraries using an open source system should not have to be constrained by the functionality of the delivered interfaces any more than those relying on proprietary systems. Nor should they have to become involved with advanced application programming involved in the core of the application in order to gain access to data not addressed in the user interfaces.’

This in other words, means that indeed Koha follows the open source licensing model since KyULS was able to customise it to be able to inherently communicate with other library and non-library infrastructure components.

The 54% of informants who indicated that they were comfortable with the way Koha was customised were further asked to give reasons why they thought so. They mentioned that the library has a technician who ably handled all the aspects of editing the code. Then these other issues of changing specifications which don't need coding were also easily handled by the ILS administrator. Incidentally one Male Senior Assistant Librarian commented that:

‘The Kyambogo ICT Unit did most of the work of installing and customizing the modules and later even the trainers customised the ILS further. They also imparted some basic skills in the KyULS Koha core team on how to customise the ILS further.’

This is the view of half of the informants. Why is it that almost half of the informants are not in agreement with this view? Failing to adequately customise an ILS to meet most of the local needs of the library can tantamount to the ILS dying on arrival. Rogers (2003:16) who is the father of the theory of diffusion of innovation ably explains that if a library innovation is compatible with the library's local needs, then the uncertainty will decrease thus increasing the rate of adopting the innovation. Unfortunately the reverse is also true. So if KyULS is finding difficulties in customizing the ILS then that creates a complex problem for them. The researcher was therefore very interested to know the view of the other half. When prompted, the informants who said no raised these reasons:

- The Koha opening platform has never been changed to suit KyULS,
- The Koha core team were not trained enough to handle the task,
- There is a lot of missing infrastructure to allow the full customisation process
- There is Lack of a substantial orientation of the ILS to all the library staff.

From the issues raised above, it can be deduced that the customisation process could have been rushed, it was done by mainly the KyU ICT Unit and the trainers and ever since they left, nothing much has been added on or improved. Libraries elsewhere which adopt open source ILS products like Koha, rely on specialised support firms for technical services like customisation or configuration, data conversion, ongoing support and hosting (Breeding, 2014:31). If KyULS had a similar arrangement may be it would not be necessarily to require any additional local technical expertise.

Since some informants were seemingly questioning the skills of staff members managing the Koha adoption process in KyUL. The researcher requested the informants to rate the Library ICT staff members using a Likert scale of excellent, good, fair, basic, poor and I don't know (for those who didn't have any Idea). Below in Table 18 are the findings.

Table 18: Informants' rating of the KyULS ICT Staff

S/No.	Possession of required skills by library ICT staff members for managing Koha	Count	Percentage (%)
1	Excellent	0	0
2	Good	4	15
3	Fair	16	62
4	Basic	3	12
5	Poor	1	4
6	I don't know	2	7
Total		26	100

From the Table above it can be seen that the informants think that none of staff members have excellent skills in customizing Koha. A miserable 15% of them think they are good and

the majority (62%) think they are just fair. This may presuppose that there is no expert in KyULS who can ably manipulate Koha and give it a Kyambogo face. The best they can do is changing the basic specifications but when it comes to real writing codes to change the interface, it is a big challenge. KyULS needs to urgently look into this Lacuna otherwise it is very dangerous for the Koha platform to remain stagnant like that.

When you bring into close scrutiny the staff establishment of the Library ICT section, it is made up of six (6) library staff members as shown in the Table 19 below.

Table 19: The Staff Establishment of KYUL ICT Unit

S/No.	Designation	Qualification	No	Key roles
1	Assistant Librarian II	BLIS, Upgrading with Masters	1	Heads unit, Systems administrator
2	Assistant Librarian II	BLIS	2	Serving library computer lab clients, offering basic user support (Day Shift)
3	Library Assistant	DLIS, Upgrading to with BLIS	1	Serving library computer lab clients, offering basic user support (Night Shift)
4	Library ICT Technician	DCS	1	Computer Hardware repair and maintenance
5	Data Entrant	UCE	1	Data capturing
	Total		6	

From the outlook of the establishment, the unit has three graduates with BLIS with one upgrading with a Masters, two diplomas where one is in Computer Science. Why do the informants think that this team only has fair skills worse still the 4% who think they have poor skills? Are they looking beyond the qualifications and focusing on the results or outputs? According to Johnson (1991:77) automation requires new procedures of handling the new processes and therefore changes the way employees approach their work. One

female Assistant Librarian II had this to comment on the staff establishment of the Library ICT unit and its capacity to customise Koha.

‘... The way the staff establishment was at the time of installing Koha and the way it is now is far different. Koha was installed at a time when the unit was understaffed with only three staff members, a graduate and two diploma holders. It is only recent that they have been staff transfers coupled with upgrading that the capacity is being built slowly but steadily...’

Still trying to figure out this puzzle, the researcher asked the informants who thought that the skills of library staff who manage Koha were lacking, to mention some of the skills which they lacked. The prominent ones mentioned were programming skills and Setting systems parameters. Breeding (2009:28) already had observed that a large number of libraries using Koha rely on a support company for all their technical work required during implementation. KyULS is relying on no company otherwise It would be taking advantage of such a hosting service to do its programming and highly specialised setting of specifications.

The researcher investigated deeper on the ability of the KyUL ICT Unit to troubleshoot in case of a problem. Several ideas were presented on how the trouble shooting is done such as:

- Most of the basic trouble shooting is done by the administrator.
- The computer technician handles issues that concern changing codes
- Sometime consultation is done with the facilitators who installed Koha
- The presence of a Koha core team comes in handy.

The researcher delved further to ascertain who does the trouble shooting. In Table 20 below show the officers or bodies responsible for the trouble shooting of the ILS and its supporting systems.

Table 20: Who Troubleshoots Koha?

S/No.	ILS Trouble Shooting responsibility	Count	Percentage
1.	Head of Library ICT Unit	14	31
2.	Library Technician	10	24
3.	Library systems administrators	8	17
4.	KyULS Koha core team	7	16
5.	KyU ICT Unit	3	6
6.	I don't know	3	6
Total		45	100

Koha being open source software, there is no assured user support so sometimes the administrators seek assistance from the international user communities. The researcher was interested to know whether such an arrangement existed in KyUL. In Table 21 below shows how KyUL solicits for external assistance in case of a challenge with Koha which they cannot handle.

Table 21: How KyULS Solicits External Help on Koha

S/No.	Sources of External assistance on Koha	Count	Percentage
1.	Assistance from Sister University Libraries like UCU, MUK, MUBS	11	69
2.	From the Facilitators of the Koha training	3	19
3.	Attending Webinars	2	12
Total		16	100

Having observed that some Librarians were interested in attending webinars to gain knowledge on ILS, the researcher wished to know whether they also employ the different social media tool for the same. It was interesting to note that 6 (23%) informants do while the rest of the 20 (77%) don't. Of those who do, the researcher requested them to share their experience and also site some example. One respondent shared a captivating example as follows:-

“.. We didn’t quite get well how to import data into Koha from access so we had got stuck somehow. We however challenged ourselves to search for information on the internet because our trainers had told us that it is very possible. In the process of searching we landed on a video on YouTube showing step by step how one can import bibliographic data from MS-access to Koha. We also applied the knowledge and eventually we were able to smoothly import data from access to Koha.” A male Library Assistant.

It was noted that very few informants (8%) had ever obtained technical assistance via social media or attended Koha webinars. There is need for greater engagement among computer scientists, librarians, library users, faculty members and administrators of higher education institutions when adopting Koha. Actually Kramer (2013:226) experimented it by enabling the searching of the catalogue using Twitter and it facilitated more participation such as sharing promotional information resources, event announcements and direct interaction with stakeholders.

It should however also be noted that though workers of the knowledge society prefer working in teams other than as individuals, Varghese (2011:144) discovered that participation in work teams is not necessarily unconditional. The relationships created are not actually collectivistic but rather work place attachment solely motivated by individualistic motives. In other words the knowledge society is creating neo-collectivism where workers work together to seek individualistic motives. With such an attitude it may prove difficult for a library to sustain a library team with one similar interest of successfully adopting a new technology.

4.4.7 Training of KyULS in Koha

It was further observed that the library has so far carried out three trainings in Koha but none of them involved all the library staff members. In fact when the informants were asked whether the trainings in Koha were adequate, below in Figure 10 is the chart showing their responses.

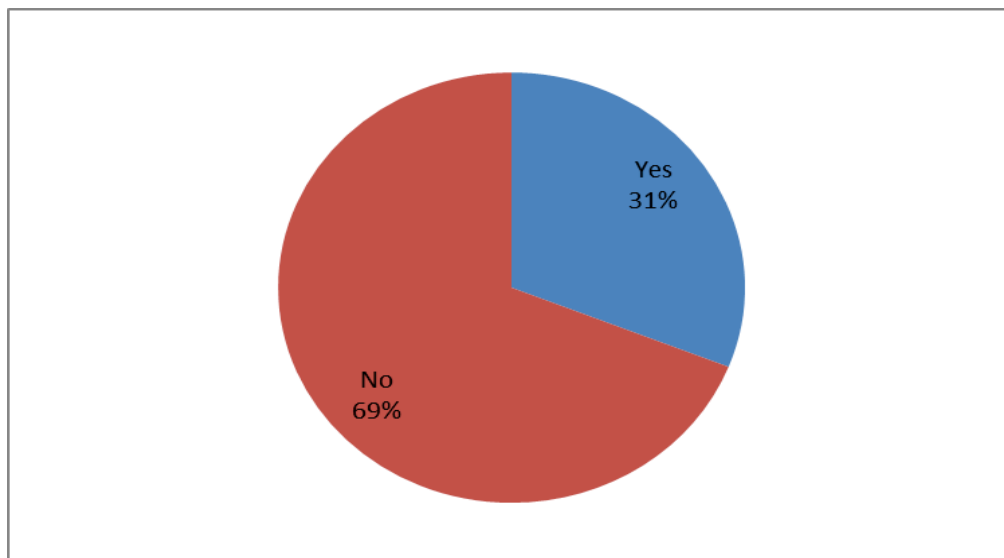


Figure 10: The Adequacy of Training in Koha

Most informants (69%) believe that the training left a lot to be desired. So the informants were asked to indicate ways of how the training could be improved and below are the opinions of the informants:-

- Conduct trainings with more practicals
- Involve all library staff members
- Send key library staff for a long external course on ILS
- Carry out the Koha trainings more regularly at least on an annual basis.
- Conduct exchange programs with other libraries using Koha
- Adequately budget for IT training in advance

It was further observed that some Library ICT staff underwent both internal and external training in Koha. The need for training when adopting new technologies cannot be over emphasised. Namaganda and Sekikome (2013:403) put it better that greater emphasis should be put on re-skilling librarians, imparting in them modern access and retrieval skills of the newly adopted technologies.

The informants were asked whether there was a mechanism in KyULS of sharing information and knowledge, more especially, when a staff member comes back from a

formal training. Over 19 (73%) informants indicated yes and rest of the informants 7 (27%) were not sure or non-committal. The informants were further asked to indicate the different ways they share the IT related knowledge and below were their responses in Figure 11

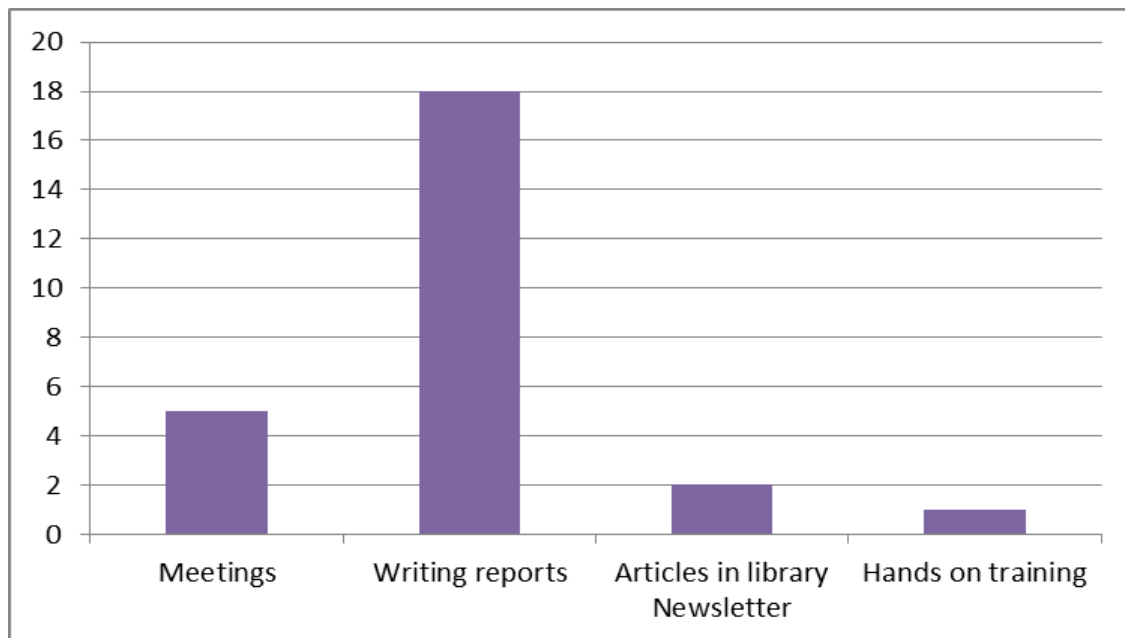


Figure 11: The ways IT acquired knowledge is shared

It can be seen that writing reports is the most preferred way of sharing knowledge. One wonders after the addressee reads the report and it is filed, how many other staff members get a chance of accessing this report and benefiting from that knowledge. Secondly there is hardly any use of IT tool in sharing knowledge even a simple one like creating a list serve for KyULS staff members which can provide a cheap and easy platform of sharing information on Library automation and other related topics. Elsewhere in the world, many universities and research institutions recognise the necessity and the value of knowledge sharing or sometimes also called knowledge transfer (KT). Creating such a mechanism allows the sharing of knowledge, technology, ILS expertise and skills between the already trained staff members and the untrained thus leading to innovation, profiting, economic and social improvements in the institution (Palmer, 2011:81-82).

4.4.8 Security of Koha and Associated Library Data

The study sought to know the security of the library data on Koha. The informants were asked whether there were measures taken by KyULS to ensure the security of the ILS and its data. They all were in affirmative. They were later asked to indicate some of those measures and below in Table 22 were the findings.

Table 22: How the Security of Koha is enforced

S/No.	ILS Security measures	Count	Percentage (%)
1	Use of Passwords	15	36
2	Use of Antivirus	10	23
3	Mirror Backup	7	16
4	Secure location of Server	6	15
5	That's e-Kampus business	4	10
Total		42	100

From the table above, it is interesting to note that KyULS and the KyU ICT unit have taken appropriate measures to ensure that Koha is secured. ILS security is under immense attacks from hackers and the library has to be extra care to ensure that the ILS is safe and secure. Stoffle and Cuillier (2014:125) advise that successful technology adoption require having a good relationship with the IT unit, addressing security, bandwidth and network issues on a large scale. On a sad note is the 10% of the informants who think that ILS security is not their business but the e-Kampus.

When asked about the preparedness of the library in case of future migration to a better ILS, 14 (53%) informants indicated that since Koha is built on a MARC format and therefore migration is possible. The rest the 12 (47%) informants didn't have a slightest idea. Indeed Koha meets the basic international standards and it is easy to migrate from it to another LIS that meets international standards. Knutsen and Dahl (2008:58-59) noted that running a Koha installation in isolation is very challenging. The most efficient way of managing

installation and even future migration is joining Koha user groups or communities. These groups can offer IT support in forms of customisation, upgrading and maintaining the control of the software source code in case of any future migration.

4.4.9 Maintenance of ILS Equipment

Pertaining to maintenance of the ILS equipment, 7.69% informants were of the view that it was good, 15.38% considered it fair, however the majority (69.23%) responded that it was poor. The rest of the 7.69% were non-committal. This is very saddening because if the computers, networks and other associated equipment breakdown without an instant mechanism of repairing them then the ILS definitely cannot operate well. Sharma (2008:21) argues that libraries in developing countries were never prepared for the introduction of technology. The smart business world just dumped the technology on them that is why they find difficulties in keeping up with the rising prices of databases and maintaining the equipment and other hard and soft ware.

The study further wished to establish whether there was a laid out plan by the library to regularly maintain and repair the equipment used by the ILS. First of all it was observed that the plan was there and it was mainly coordinated by the Library ICT technician who was responsible for the maintenance and repairs of the computers and related accessories. When the informants were asked to indicate the level of adherence to this plan, below is what they indicated in Table 23 below.

Table 23: Informants views on KyULS' Adherence to the ILS Equipment Maintenance Plan

S/No.	Level of adherence to the ILS Equipment Maintenance Plan	Count	Percentage
1.	Good	2	8%
2.	Fair	4	15%
3.	Poor	18	69%
4.	Non-Committal	2	8%
Total		26	100

Proper maintenance and repair frameworks should be fed by a systematic monitoring and evaluation systems. When the researcher inquired whether there were regular monitoring and evaluation exercises done, 18 (69%) informants indicated no while the rest (31%) were not sure. This could be partly because the system has just been installed so since it was still in its initial stages, no one had planned for the same. That notwithstanding, a plan for the same should have been in place. A post implementation evaluation ensures a future successful ILS adoption because it is forward looking in identifying problems, assessing staff attitudes, patterns and structures. The adequacy of the hard and software thus ultimately providing the impetus for performance improvement.

4.5 Challenges encountered in the process of adopting the ILS

It was observed that this was not the first time for the library to attempt to automate the library. One long serving Library assistant had this to say:

“... in the late 90s’ there was a move of automating library catalogues, ITEK and UPK libraries tried to adopt a program called Card Master. All the required machines were procured but this project failed to take off. After the merger, the library was now under new management and the card master project was revived. The project progressed up to the level of automatically printing catalogue cards from the developed database but somehow this revival later failed. Out of personal initiatives, individual librarians started creating library bibliographic databases in MS-Access which were used till the coming of Koha. However before the coming of Koha sometime in 2010, a Korean Professor designed for the library an ILS with over 30,000 titles of e-books. The discussions and negotiations went up to the Senate where the University’s Procurement and Disposal Unit (PDU) had issues with that mode of procurement and still the university failed to pay for that system which was costing only a shear 8 million Uganda Shillings (\$ 3200). Even that opportunity of adopting an ILS also went begging.”

There were very many negative sentiment and frustrations from the informants concerning the several failed attempts of adopting an ILS for the library. The researcher therefore asked

the informants to raise the causes they felt lead to all these failed attempts. Below in Table 24 were the causes raised.

Table 24: Informants' views on the causes of past ILS adoption failures

S/No.	Causes of past ILS adoption failures	Count	Percentage
1	Lack of internet	24	20.51
2	Lack of a conducive environment for adopting ILS	22	18.80
3	KyU Merger	15	12.82
4	Adopting un-integrated library software	13	11.11
5	Theft of Computers and other hardware	13	11.11
6	Difficulties in customizing the ILS to meet KyULS local needs	13	11.11
7	Lack of top Management support	7	5.98
8	Low library funding	5	4.27
9	Presence of non-flexible administrative structures in the university that always frustrate library initiatives	4	3.42
10	Shortage of Software development skill among library staff	1	0.87
Total		117	100

From the table above, it can be noticed that past causes of ILS adoption rotate mainly around lack of infrastructure, administrative issues and funding. It was not clear whether the library has ever taken the trouble to identify these challenges and devise means of solving them before embarking on this Koha project. Failure to learn from ones past mistakes causes one to keep repeating the same mistakes time and again. Like Brown (1983:68)says 'insanity is doing the same thing over and over again but expect different results.'

4.5.1 Barriers to adopting Koha in KyUL

The study sought to establish the barriers that curtailed the successive adoption of Koha in KyULS. First of all, it was noted by several informants that they were not happy with Koha's speed mainly because the internet network was sometimes down or weak. Other reasons they advanced were that the entry of data is so laborious and complicated. One respondent stated that:

‘Koha is a good ILS but it bores me when it comes to registration of periodicals. The databases provided in the ILS don’t have Ugandan or East African Universities from which to copy from and it therefore becomes too laborious entering everything manually.’ (A female Library Assistant).

She was not alone; some other informants also showed that they were not happy with other sections of Koha. The researcher therefore asked them to raise areas which they were still not comfortable with and below are the complaints about Koha the informants had:-

- The Koha interface is too textual, needs to be more graphical
- Laborious registration of library patrons and importing of bibliographic records
- Use of barcode as accession number
- Koha is not compatible with the Uganda Public Procurement and Disposal of Assets (PPDU) Act so it is difficult to use to acquire or procure library information materials
- The structuring of departmental and section libraries is somehow confusing.

From the list of the complaints above, it can be noted that though the informants are happy with the installation and adoption of Koha, there are pockets of difficulties they are facing. While some complaints can be addressed like the changing of the interface to become more graphical, others are beyond like making it compliant with the PPDU Act. Therefore the difficulty in changing some of these specifications to suit KyULS local needs further proves that there is need to build the library’s capacity in software development skills.

Having responded to the complaints of Koha, the researcher felt it proper to dig deeper and ascertain the exact barriers to the successful adoption of this ILS. The ILS adoption barriers raised are enlisted in Table 25 below.

Table 25: Barriers to the Adoption of Koha in KyULS

S/No.	Koha adoption barriers in KyULS	Count	Percentage (%)
1	Shortage of Infrastructure	24	26.6

2	Shortage of funding	22	24.4
3	Internet Instability	17	18.8
4	Insufficient Training	12	13.4
5	Procurement bureaucracies	10	11.3
6	Unsuitable for Persons with visual Impairment	5	5.5
Total		90	100

The barriers at KyULS are not far different from the ones which are frequently highlighted in other SSA academic libraries. For example, Hoba et al. (2013:12) state that SSA universities have three major leadership and governance challenges, namely, shortage of funds, lack of infrastructure and inadequate qualified staff. Hoba et al is definitely not any further from the truth because the first two challenges directly apply to KyULS. Infrastructure and funding challenges are further attested by Sharma (2008:21) that the shortage of money to buy technology is one of the major problems of libraries in developing nations. It is only the third one of qualified staff that is questionable because as already seen above; the research findings indicated that KyULS staff establishment has well qualified staff members. If there is any gap, it was just that they didn't receive sufficient initial training in Koha.

KyUL by default has a passion to offer equal library services to both normal and persons with disabilities. The fact that Koha does not have functionalities which ease access for library users with visual impairment really leaves a lot to be desired. Technology is supposed to ease access to information for such groups, but still with the adoption of Koha makes them find difficulties of accessing information and indirectly makes them feel marginalised (Ratanya and Otenya, 2010).

Many academic libraries in SSA want to adopt to the most modern ILS but lack of necessary financial and physical resources which curtail the whole process (Kamusiime and Mukasa, 2012:29). Surprisingly development partners step in to intervene but are often scared away because of the enormous need. Poor Internet connections or low bandwidth is still a big challenge in Sub Saharan Africa and greatly contributes to ILS adoption failures. According

to (Moshu, 2010:274) if an ILS user faces a bad experience because of poor or slow internet then he or she will tend to shun the ILS or not use it effectively and creatively.

A study by Uganda Communication Commission comparing internet growth rates in the East African region was carried out and it was revealed that Kenya has the highest internet subscription followed by Uganda and later by Rwanda (Ntambi, 2014:V). This can explain why KyU is struggling with internet, it is not an isolated case but it is affecting the whole nation. Uganda's mediocre internet growth can be attributed to its strategies of growing the numbers of Internet Service Providers (ISPs) and providing an enabling environment of internet services. For example the East African sub marine optical fibre cable landed on the East African coast 2009. It is however surprising to note that five years down the road, Uganda's national optic fibre backbone infrastructure is not yet operational. Even private ISPs don't have dedicated routes for delivering internet most especially when it comes to universities and academic libraries in rural areas. Since they are profit driven, they compete for only markets in urban areas. Therefore high costs of internet indirectly affect inter/intra network, haulage costs and other associated infrastructure. Unless something is done urgently, KyULS and other similar academic libraries in the SSA will continue dreaming of lower internet prices.

SSA governments have also not done much to address this problem yet it keeps impeding many ILS adoption initiatives. It is as if access to information through ICTs is not a priority to SSA governments (Gikenye and Ocholla, 2012). It should be however noted that the Government of Uganda, through the Ministry of Finance, Planning and Economic Development intends to implement a program called Computerised Education Management and Accounting System (CEMAS). CEMAS aims to support automation of core business processes of all public universities and self-accounting tertiary institutions. KyU was chosen to be one of the institutions to pilot this system and according to the work plan, they hope to lay a campus-wide network by June 2014 (Accountant General, 2013).

In line with the above Research and Education Network for Uganda (RENU) is partnering with National Information Technology Authority of Uganda (NITA-U) to lay fibre optic cables

to all universities in Uganda. The fibre for Kyambogo University has already been laid but up to the main building east end. This took place in June 2014 as shown in the picture below.



Figure 12: The laying of Internet Cables near the French Department (Photo by RSB)

Some proactive faculties have taken the initiatives to also tap onto the cable as it was laid towards the main building. An example in point is the Faculty of Arts and Social Sciences in the picture below. This was done as they wait for the university to lay the campus wide network. Unfortunately the NITA-U cable didn't pass near the library so the library is still at the mercy of the university to lay the campus wide cable.



Figure 13: Optical fibre cables termination near the Faculty of Arts and Social Sciences (Photo by RSB)

On an individual perspective, currently in Uganda, there is an increase usage of mobile internet. Mobile internet is mostly delivered over a device that has broadband infrastructure like smart phones, tablets, ipads and laptops (Niyitegeka, 2014:IV). Actually smart phones have greatly enhanced the use of internet because of their functionality which is largely driven by internet. Hopefully smart phones may in turn increase the adoption of ILS in KyU as library users explore how to use them to access the KyULS OPAC.

When it comes to procurement bureaucracies, this is not only in KyUL but also a big challenge in other Sub Saharan Africa like Nigeria (Kathryn, 2012). Procurement exactitudes complicate the process of adopting ILSs and acquiring the accompanying soft and hard ware. It seems this is an old barrier to ILS adoption because Feng et al. (1983:315)reports of how procurement procedures of drafting requests for proposals were time consuming and arduous when the library of the University of Maryland was being automated. A lasting solution has to be found to modify the procurement procedures so that instead of being barriers to technology adoption, they become drivers.

Analysing the barriers to adoption of an ILS in KyULS in respect to the CSFs as presented Ngai et al. (2008:548) clearly shows that the absence of some of these factors also emerge in KyULS, as barriers. A closer scrutiny of the list in Table 1 above clearly shows that factors 1, 10, 13 and 14 negatively influenced the adoption process in KyULS. That notwithstanding, challenges encountered in adopting an ILS doesn't necessarily indicate that the ILS adoption process has been unsuccessful. Johnson (1991:123) encourages that any complex activity generates both expected and unexpected difficulties and it is upon that institution to address those difficulties as they arise. KyULS should also address these barriers as they arise in order to improve the likelihood successful adoption of its ILS.

4.6 Suggestions for future best practice in ILS Adoption

In section 4.3.4 and 4.5.2 are discussions of the drivers and barriers of adopting an ILS in KyULS respectively. Now the study further wished to know how best these drivers can be strengthened and how the barriers can be mitigated for future best practice. Actually one male technician advised that

“... the library management should vigorously sell the ILS idea to the entire university demonstrating to them that this is the modern and current trend of the academic library movement.”

Below are the other suggestions raised by the informants. Starting with suggestions of strengthening the drivers of adopting the ILS in KyULS, below is Table 26 showing the informants’ proposals.

Table 26 Respondent’s proposals for strengthening the drivers of ILS adoption process in KyULS

S/No.	Strengthening of Drivers of ILS adoption	Count	Percentage (%)
1	Carry out further and regular training	15	16.7
2	Invest more in the ILS equipment	14	15.4
3	Increase in top management support	12	13.3
4	Increase funding for ILS initiatives	10	10.3
5	Carry out more widespread sensitisation of the ILS	10	10.3
6	Empowering ILS adoption champions	10	10.3
7	Ensure internet stability and increase the bandwidth	9	9.7
8	Ensure availability of required infrastructure	8	8.6
9	Library users need to demand for quality ILS more assertively	5	5.4
Total		93	100

The suggestion of continuous training tops this list. It is intriguing to note that this issue of training appeared both as a driver and at the same time as a barrier. Continuous training in ILS is needed for successful ILS adoption. Smooth ILS adoption also comes along with increased communication. There is need for open discussion, information sharing, explanation of complex procedures, one to one counselling and provision of detailed procedure manuals (Johnson, 1991:127).

Widespread sensitisation for users is a sure way of speeding up the adoption process. This is very ideal for a university which year after year always gets new library users. Most especially in Kyambogo whose undergraduate students join the university when they are generally unfamiliar with digital libraries. It is therefore very important for the library to

offer targeted training to all its new users to demonstrate the tangible benefits and value of using the adopted ILS (Liu and Luo, 2011:235).

It is undeniable to note that internet stability also came out as a key concern because whenever there is no or low internet, the functionality of the ILS is directly hampered. Anguyo and Machocho (2014:5) is very optimistic that the laying of fibre optic cables will greatly enhance internet accessibility for both students and staff.

The researcher went ahead to balance the equation by inquiring on how best to mitigate the barriers to the adoption of the ILS in KyULS that are highlighted in section 4.5.1. In Table 27 are the suggestions raised by the informants.

Table 27 Respondent's Views on how to mitigate the barriers to the adoption of the ILS in KyULS

S/No.	Mitigation of ILS adoption Barriers	Count	%
1	Increase funding for ILS adoption through writing project proposal and seeking external funding	21	22.8
2	Carrying out regular ILS awareness for university community to appreciate technological changes	18	19.6
3	Lobby for more university top management support	14	15.2
4	Acquire in-depth skill in customizing and troubleshooting of Koha	13	14.1
5	Identify and collaborate with ILS champions outside the university.	13	14.1
6	Transform the library from a department to a semi-autonomous service unit so as to adequately execute and manage its priority functions	10	10.9
7	Step up lobbying and activism of the library users to demand for services which are due to them.	3	3.3
Total		92	100

The above were the suggestions of the informants on how to address the barriers to the adoption of an ILS in KyULS. Sourcing of external funding tops the list where 22% of them thought it was the way to go. Indeed the university library can no longer depend on locally generated funds if it is to aggressively adopt modern technologies. Modern libraries have a unit in the library which deals in writing proposals and looking for external funding after realizing that the share they get from the cake of the university would not be able to meet all their technology adoption needs.

On top of the above list Johnson (1991:127) offers the following guidelines for ensuring successful ILS adoption: staff member's active participation in problem solving, staff member's commitment and cooperation, effective leadership of library top management,

alignment of the library's goals with the automation process and offering of incentives to high flyers.

At the very end of the study, the informants were asked to indicate any thing they would have wished to have been done differently if the whole ILS adoption process would have been done all over again. In Table 28 are their responses.

Table 28 Respondent's views on what they wished to have been done differently

S/No.	Wishes of KyULS to be done differently in the ILS adoption process	Count
1	Invest more in ILS infrastructure	8
2	Increase Funding	7
3	Should have started with laying a campus wide network first	6
4	Install dedicated servers to ensure reliable internet	4
5	Follow a systematic plan	3
6	Carry out vigorous and universal training for all librarians	3
7	Acquire external Installation which allows Koha offline functionality	2
8	Motivate more the Library staff in charge of the ILS	2
9	Build the capacity of the Key staff in charge of Library ICTs	2
10	Should have first carried out a feasibility study	1
11	Should put more emphasis on entering the bibliographic records retrospectively instead of importing	1
12	Should have got more senior facilitators for the Koha training	1
13	Ensure stable electricity	1
Total		41

The list of ideas to be done differently is a mouthful as seen above but all in all it can be seen that they all rotate around development of infrastructure, increase funding and skilling of library staff members in both soft and hard skills. The process of adopting an ILS in KyULS was indeed a learning process and it is believed that the library has learnt its lesson and the situation is going to change for the better in the near future.

4.7 Summary

This chapter presents and discusses the findings of this empirical study in detail. As already mentioned earlier, the findings were generated mainly from carrying out semi-structured interviews, document review and observation. The research subjects included Kyambogo University library workers, student leaders and other university staff who were actively involved in the process of adopting the Koha ILS. Content analysis method was used to

analyse the data that enabled it to be presented both quantitatively and qualitatively as seen above.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Good, bad or indifferent, if you are not investing in new technology, you are going to be left behind.
Philip Green

5.1 Introduction

Kyambogo University like other universities elsewhere, is developing strategies to deal with the need to respond to rapid changes in technology so as to keep pace with the current demands in the knowledge economy (Gallimore, 1996) This is the very reason why this research project on adoption of ILS in KyULS is being championed. Through ILSs library users can have access to a variety of information available on computer networks, databases and online services across the globe. For any library to derive maximum benefit in this information age, it has to be through a versatile ILS (Siddike et al., 2011). It is hoped that this study will help in redesigning KyULS to meet the users' needs and provide modern information services facilitated by ILSs.

5.2 Summary

This study summarises the research findings into five themes as derived from the five sub research questions. As already alluded to earlier, the data collected was based on Farajpahlou's (1999:178) model of measuring ILS adoption. Below is the summary of the findings as par each theme.

5.2.1 KyULS Management's decision to adopt the ILS

KyULS adopted the ILS for the wrong reason as there is no drive to persevere through the hardships involved in the ILS adoption process. The planning for the ILS adoption was not participatory and therefore could have sparked off unnecessary resistance at implementation. There was no systematic plan followed when adopting an ILS in KyULS and this could have led to lack of direction, confusion and disorganisation.

5.2.2 The ease, user friendliness, speed and general management of the ILS

Koha as an ILS is generally liked about functionalities which are easy, user friendly and time saving. Koha is very relevant to KyULS routine operations. There is however no clear system of maintaining the ILS equipment and the staff member's attitude towards Koha is good though not good enough to push for a complete or successful ILS adoption putting the prevailing circumstances in KyU into consideration.

5.2.3 KyULS' capacity to develop and enhance Koha

The informants know very well the indicators of a successful ILS adoption. Koha fits well and directly contributes to the vision and mission of the Kyambogo University. However, KyULS seems not to consider library automation a priority. KyULS is not compliant with the library emerging trends and even the individual staff members are largely indifferent towards being abreast with information on emerging library trends. Owing to this indifference, even the capacity of KyULS to develop and enhance Koha is wanting mainly in the areas of software development and setting systems parameters. The trainings on Koha were inadequate. This capacity is however being developed steadily.

5.2.4 Drivers and Barriers to adopting an ILS for KyULS

The drivers for adopting an ILS in KyUL are: Qualified staff members, Koha being an Open source Software, Training, Top management support and Library automation trends in sister university Libraries. The barriers to ILS adoption on the other hand included lack of infrastructure, internet instability, insufficient funding, bureaucracy and the ILS's unsuitability to persons with visual impairment.

5.2.5 Suggestions for future best practice in the adoption of ILSs

Informants raised several suggestions for better ILS adoption in future but in summary they rotate around: provision of required ILS infrastructure, ensuring internet stability, sourcing of external funding, carrying out wide spread sensitisation of the ILS, continuously training the library staff members, collaboration with ILS adoption champions, lobbying, advocacy and turning the library from a department to a Faculty so as to manage its priorities better.

5.3 Conclusion

The likely adoption of an ILS in KyULS can chiefly be improved through: having a well-planned process of adopting the ILS, provision of a centralised and stable campus wide inter/intranet network, establishment of required ILS infrastructure, sourcing of external funding, carrying out wide spread sensitisation of the ILS, continuously training the library staff members in the use of the ILS and collaboration with ILS adoption champions in other academic libraries.

5.4 Recommendations

Based on the results and discussion of the study, the author proposes the following to KyULS in order to ensure successful adoption of Koha:

- a) Ensure a systematic plan for adoption of the ILS.
- b) Form strong linkages with ILS adoption champions. Fortunately, according to Hoba et al. (2013), the United States Agency for International Development (USAID) is currently supporting university partnerships geared towards ICT adoption.
- c) The funding of internet be centralised
- d) Substantial financial resources should be put aside for acquisition and installation of ILS adoption equipment. Sources of these funds should never be pegged on students tuition fees (Kinyanjui, 2010).
- e) Academic Libraries should continue to explore consortia arrangements of sharing costs of hardware, software and ILS expertise (Mutula, 2008:121).
- f) SSA Library Schools should review their curricular and incorporate in library automation courses with specific focus on programming, network administration and web designing (Mutula, 2008:121).
- g) Design ILS formats that meet the needs of Library users with disabilities.
- h) University administration should find a lasting solution to the procurement delays that hamper ILS adoption.
- i) Academic libraries should not just stop at training of key staff members to gain skills in customisation and administering ILS but also devise means of retaining them through motivating them as they become critical assets to the whole ILS adoption process.

5.5 Further Research

For Kyambogo University and other academic institutions in the SSA to improve on ILS adoption rates, the following research studies are being proposed:

1. Addressing the infrastructural challenge in adopting Integrated Library Systems in the Sub-Saharan Africa.
2. Provision of alternative strategies to internet access in academic libraries in Uganda
3. The impetus for locally developed Integrated Library Systems: A Nexus for building Software development skills.


6. References

- ACCOUNTANT GENERAL 2013. CEMAS: Implementation Strategy 2013-2016. In: MINISTRY OF FINANCE, P. A. E. D. (ed.). Kampala, Uganda: MoFPED.
- AMERICAN LIBRARY ASSOCIATION. 2014. *ALA at Library 2.014 Worldwide Virtual Conference* [Online]. Silicon Valley: LinkedIn. Available: https://www.linkedin.com/groupItem?view=&gid=40592&type=member&item=5907976244342829058&qid=ce1a3079-bc96-4e64-a6a5-6d2a472f5952&trk=groups_most_popular-0-b-ttl&goback=%2Egmp_40592 [Accessed 30/8/214].
- ANGUYO, I. & MACHOCHO, M. 2014. Varsity Lays High Speed Cable to Enhance Internet Accessibility. *Saturday Vision*, 7th June 2014.
- AYANKOLA, I. A. & AJALA, S. F. 2012. The Challenges and Frustration Of Software Adoption in Nigeria Libraries: A Survey of Some Selected Libraries. *Library Philosophy and Practice (e-journal)*, 1-17.
- BABBIE, E. R. 2013. *The practice of social research*, Belmont, Calif, Wadsworth Cengage Learning.
- BAGUMA, R. 2013. PM Mbabazi advises on broadband internet access. . *The New Vision* Apr 16, 2013.
- BAHINGWIRE, J. 2013. ICT Improving Uganda Standards. *Daily Monitor*, 17th April 2014.
- BARON, J. N., HANNAN, M. T. & BURTON, M. D. 2001. Labor Pains: Change in Organisational Models and Employee Turnover in Young, High-Tech Firms. *American Journal of Sociology*, 106, 960-1012.
- BENBASAT, I., GOLDSTEIN, D. K. & MEAD, M. 2002. The Case Research Strategy in Studies of Information Systems. In: MYERS, M. D. & AVISON, D. E. (eds.) *Qualitative Research in Information Systems*. London: Sage Publications Ltd.
- BINDING, C., BRETTLER, G., CATARCI, T., CHRISTODOULAKIS, S., CRECELIUS, T., GIOLDASIS, N., JETTER, H.-C., KACIMI, M., MILANO, D., RANALDI, P., REITERER, H., SANTUCCI, G., SCHEK, H.-J., SCHULTZ, H., TUDHOPE, D. & WEIKUM, G. 2009. DelosDLMS: Infrastructure and Services for Future Digital Library Systems. Switzerland: University of Basel.
- BLOOMBERG, L. D. & VOLPE, M. 2012. *Completing your qualitative dissertation: a road map from beginning to end*, USA, Sage Publications.
- BRADLEY, J. 2008. Management based critical success factors in the implementation of Enterprise Resource Planning systems. *International Journal of Accounting Information Systems*, 9, 175-200.
- BREEDING, M. 2002. An update on open source ILS: Marshall Breeding reviews three open source projects. *Information Today*, 19.
- BREEDING, M. 2009. Library Technology Reports: Expert Guides to Library Systems and Services. In: LAUBER, J. (ed.). Chicago: American Library Association.
- BREEDING, M. 2014. Library Systems Report 2014: Competition and strategic cooperation. *American Libraries Association Magazine*, 21-33.
- BROWN, R. M. 1983. *Sudden Death*, Toronto, Bantam Books.
- BULMER, M. 2012. The Ethics of Social Research. In: GILBERT, N. (ed.) *Researching Social Life*. 3rd ed. London: Sage.
- CHANG, N. & TSAI, Y. 2009. An Evaluation of Multi-language/multi-script Functions in KOHA. *WORLD LIBRARY AND INFORMATION CONGRESS: 75TH IFLA GENERAL CONFERENCE AND COUNCIL*. Milan, Italy: IFLA.
- CHOWDHURY, G. & FOO, S. 2012a. Digital Libraries and Information Access: Introduction. *Digital Libraries and Information Access: Research Perspectives*. Great Britain: Facet Publishing.
- CHOWDHURY, G. & FOO, S. 2012b. Digital Libraries and Information Access: Research Trends. *Digital Libraries and Information Access: Research Perspectives*. Great Britain: Facet Publishing.

- CHOWDHURY, S. 2012. The Usability of Digital Libraries. In: CHOWDHURY, G. G. & FOO, S. (eds.) *Digital Libraries and Information Access: Research Perspectives*. Great Britain: Facet Publishing.
- CLAYTON, M. 1987. *Managing Library Automation*, Aldershot, Gower Publishing Company Limited.
- COOPER, G. 2012. Conceptualising Social Life. In: GILBERT, N. (ed.) *Researching Social Life*. 3rd ed. London: Sage.
- COSGUN, V. & DOGERLIOGHU, O. 2012. Critical Success Factors Affecting e-Commerce Activities of Small and Medium Enterprises. *Information Technology Journal*, 11, 1664-1676.
- CRAIG, A. 2008. Open Arms, Open Borders. In: MORTENSON CENTER FOR INTERNATIONAL LIBRARY PROGRAMS (ed.) *Thinking outside the Borders: Library Leadership in a world Community: A Manual for Professional Development*. Urbana Campaign, Illinois: Institute of Museum and Library Services.
- DE-WEE, J. A. 2013. *An Investigation into how Mobile Technologies can Advance Service Delivery for Library Users at the University of Pretoria Library Service*. Masters of Information Technology, University of Pretoria.
- DE VOS, A. S., EVASO, M., TARAFDAR, M., BABBIE, E. R., JANTZ, R. C. & LAL, P. 2011. *Research at grass roots*, Hatfield, Pretoria., Van Schaik Publishers.
- DWIVEDI, Y., WILLIAMS, M. D., LAI, B. & SCHWARZ, A. Profiling Adoption, Acceptance and Diffusion Research in the Information Systems Discipline. Proceedings of the 16th European Conference on Information Systems, 9-11 June 2008 2008 Galway, Ireland
- EASTERBY-SMITH, M., THORPE, R. & JACKSON, P. R. 2008. *Management Research*, Los Angeles, Sage.
- ENEYA, D. D. 2008. A Long Walk to Automation: Experiences and Challenges of the University of Malawi Libraries. In: DIONE, B. & SAVARD, E. R. (eds.) *Managing Technologies in Developing Countries: Open Source vs Commercial Options*. Dakar: International Federation of Library Associations and Institutions.
- FARAJPAHLOU, A. H. 1999. Defining some criteria for the success of automated library systems. *Library Review*, 48, 169-180.
- FENG, C. C., FREIBURGER, G. & KNUDSEN, P. C. 1983. Implementation of the Integrated Library System: University of Maryland Health Sciences Library. *Bull Med Libr Assoc*, 71, 312-316.
- GALLIMORE, A. 1996. A public library IT strategy for the millennium. *Journal of Libraryship and Information Science*, 28, 149-157.
- GIKENYE, W. & OCHOLLA, D. N. 2012. An Overview of the Diffusion of Information and Communication Technology (ICTs) in the Formal Sector of Kenya. In: OMONDI, B. & ONYANGO, C. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries XX (SCECSAL)*. Laico Regency Hotel, : Kenya Library Association (KLA).
- GILBERT, N. 2012. *Researching Social Life*, London, Sage.
- HAMDAN, M. Z. An Inter-Dependent Collaborative Strategy for Sustainable Transnational Higher Education in the Info-Global Age: A New Science of e-learning in the Making In: 2013, I., ed. 8th International Conference on e-Learning, 2013 Durban University of Technology. Academic Conferences Limited., 165-173.
- HIRALAAL, A. ICT in Practice at the Durban University of Technology In: 2013, I., ed. 8th International Conference on e-Learning, 2013 Durban University of Technology. Academic Conferences Limited., 174-183.
- HOBA, P., MBA, J. & ALEMNEH, T. 2013. Sub-Saharan Africa Higher Education Leadership Development (SAHEL) : Study Report. *Higher Education for Development*. Accra, Ghana: Association of African Universities.
- JANTZ, R. C. 2012. Innovation in academic libraries: An analysis of university librarians' perspectives. *Library & Information Science Research*, 34, 3-12.
- JEFFRYES, J., PETERSON, K., CROWE, S., FINE, E. & CARRILLO, E. 2011. Integration Innovation: Launching the Library into a Course Management System. *Journal of Library Innovation*, 2, 20-34.

- JIN, B.-H. & LI, Y.-M. 2012. Analysis of emerging technology adoption for the digital content market. *Information Technology and Management*, 13, 149-165.
- JOHNSON, P. 1991. *Automation and Organisational Change in Libraries*, Boston, Massachusetts, G. K. Hall & Co.
- KAMUSIIME, N. & MUKASA, G. 2012. The Value of Managing Library Information Resources in a Digital Form in Uganda. In: OMONDI, B. & ONYANGO, C. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries XX (SCECSAL)*. Laico Regency Hotel, : Kenya Library Association (KLA).
- KARGBO, J. A. A. 2009. Automation: Whither Academic Libraries? View From Practice. *Information Technology for Development*, 15, 43-51.
- KATHRYN, P. N. 2012. Institutional Repository: The Challenges of Developing an Electronic Thesis and Dissertation (ETD) Abstract in a Southern Nigerian University Library. In: OMONDI, B. & ONYANGO, C. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries (SCECSAL) XX*. Laico Regency Hotel, : Kenya Library Association (KLA).
- KIM, Y.-M. 2011. Why Should I Use University Library Website Resources? Discipline Differences. *The Journal of Academic Librarianship*, 37, 9-18.
- KIM, Y.-M. & ABBAS, J. 2010. Adoption of Library 2.0 Functionalities by Academic Libraries and Users: A Knowledge Management Perspective. *The Journal of Academic Librarianship*, 36, 211-218.
- KING, N. & HOROCKS, C. 2010. *Interviews in Qualitative Research*, London, Sage.
- KINYANJUI, J. K. 2010. Challenges of Establishing an Academic Library for a Private University in Kenya: A case of Kabarak University Library In: JAIN, P. & NFILA, R. B. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries XIX*. University of Botswana, Multi - Disciplinary Conference Center: Botswana Library Association (BLA).
- KIRAN, K. & DILJIT, S. 2012. Modeling Web-based library service quality. *Library & Information Science Research*, 34, 184-196.
- KNUTSEN, U. & DAHL, T. A. 2008. Sustainable Library Service Built on Open Source Software: A Case Story from Kenya. In: DIONE, B. & SAVARD, E. R. (eds.) *Managing Technologies in Developing Countries: Open Source vs Commercial Options*. Dakar: International Federation of Library Associations and Institutions.
- KOHA COMMUNITY. 2013. *Official Website of Koha Library Software* [Online]. Available: <http://koha-community.org/about/> [Accessed 4/04/2014].
- KRAMER, B. 2013. Searching the Library Catalogue through Twitter. In: ALLY, M. & NEEDHAM, G. (eds.) *M-Libraries 4: From Margin to Mainstream Mobile Technologies Transforming Lives and Libraries*. London: Facet Publishing.
- KRUBU, D. E. & OSAWARU, K. E. 2011. The Impact of Information and Communication Technology (ICT) in Nigerian University Libraries. *Library Philosophy and Practice*, 1-19.
- KUMAR, L., SINGH, L. & LAL, P. 2012. Open Source Software Using Koha: A Case Study of L R Institute of Engineering and Technology. *International Journal of Digital Library Services*, 2, 61-75.
- KVALE, S. & BRINKMANN, S. 2009. *InterViews: Learning the Craft of Qualitative Research Interviewing*, Thousand Oaks, CA, Sage Publications.
- KYAMBOGO UNIVERSITY. 2014. *Vision and Mission of Kyambogo* [Online]. Kampala: Kyambogo University. Available: <http://www.kyu.ac.ug/index.php/vision-and-mission> [Accessed 20th August 2014].
- KYAMBOGO_UNIVERSITY1. 2013. *KOHA: Open Source Integrated Library System* [Online]. Available: <http://library.kyu.ac.ug:8080/> [Accessed 6th July 2013 2013].
- KYAMBOGO_UNIVERSITY. 2013. *Our History* [Online]. Available: <http://www.kyu.ac.ug/index.php/historical-background> [Accessed 6th July 2013 2013].
- LAVAGINO, M. B. 1997. Networking the Role of the Academic System Librarian: An Evolutionary Perspective. *College and Research Libraries News*, 58, 217-231.
- LEDWABA, L. S. & TSEBE, J. K. 2010. Open Source Software Deployment at the National Library of South Africa with Reference to Suse Linux Migration. In: JAIN, P. & NFILA, R. B. (eds.)

- Standing Conference of Eastern, Central and Southern African Libraries XIX*. University of Botswana, Multi - Disciplinary Conference Center: Botswana Library Association (BLA).
- LEEDY, P. D. & ORMROD, J. E. 2013. *Practical research: Planning and design.*, USA., Pearson Education, Inc.
- LIBLIME. 2013. *Koha - Open Source ILS - Integrated Library System* [Online]. Available: <http://www.koha.org/> [Accessed 4/04/2014].
- LITTLE, G. 2012. MANAGING TECHNOLOGY: Where Are You Going, Where Have You Been? The Evolution of the Academic Library Web Site. *The Journal of Academic Librarianship*, 38, 123-125.
- LIU, Z. & LUO, L. 2011. A Comparative Study of Digital Library Use: Factors, Perceived Influences, and Satisfaction. *The Journal of Academic Librarianship*, 37, 230-236.
- LWOGA, E. T., STILWELL, C. & NGULUBE, P. 2010. Access to and use of Information and Knowledge for Agricultural Development in Tanzania. In: JAIN, P. & NFILA, R. B. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries (SCECSAL) XIX*. University of Botswana, Multi - Disciplinary Conference Center: Botswana Library Association (BLA).
- MADHUSUDHAN, M. & NAGABHUSHANAM, V. 2010. Web-based library services in university libraries in India: an analysis of librarians' perspective. *The Electronic Library*, 30, 569-588.
- MANUELI, K., LATU, S. & KOH, D. D. 2007. ICT Adoption Models. In: MANN, S. & BRIDGEMAN, N. (eds.) *20th Annual Conference of the National Advisory Committee on Computing Qualifications*. Nelson, New Zealand.
- MAPULANGA, P. 2013. SWOT Analysis in the planning of information services and systems in university libraries: The case of the University of Malawi Strategic Plans. *Emerald*, 1-27.
- MATHEWS, J. M. & PARDUE, H. 2009. The presence of IT skills sets in librarian position announcements. *College and Research Libraries*, 70, 252-257.
- MOSHA, N. F. 2010. A bridge between Information have and Information have not experiences in Kilimanjaro Region, Tanzania. In: JAIN, P. & NFILA, R. B. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries (SCECSAL) XIX*. University of Botswana, Multi - Disciplinary Conference Center: Botswana Library Association (BLA).
- MPANDEY, B. D. 1998. Uganda Polytechnic Kyambogo: Prospectus 1997/98. In: EDUCATION, T. (ed.). Kampala: Kampala Printing Services.
- MUGABE, D. 2014. Is Fear Hampering Deeper Use of New Technology? *New Vision*, 24th April 2014, p.17.
- MUTULA, S. M. 2000. IT Development in Eastern and Southern Africa: Implications for University Libraries. *Lib Hi Tech*, 18, 320-334.
- MUTULA, S. M. 2008. Emerging Technologies: A Paradigm Shift for Libraries in Developing Countries. In: DIONE, B. & SAVARD, E. R. (eds.) *Managing Technologies in Developing Countries: Open Source vs Commercial Options*. Dakar: International Federation of Library Associations and Institutions.
- MYERS, M. D. 2009. *Qualitative research in business and management*, London, UK, Sage Publications.
- MYERS, M. D. & AVISON, D. E. 2002. An Introduction to Qualitative Research in Information Systems. *Qualitative Research in Information Systems*. London: Sage Publications Ltd.
- NAMAGANDA, A. & SEKIKOME, P. 2013. Users' Perceptions of Makerere University Library Services. *Qualitative and Quantitative Methods in Libraries (QQML)*, 4, 403-410.
- NGAI, E. W. T., LAW, C. C. H. & WAT, F. K. T. 2008. Examining the critical success factors in the adoption of enterprise resource planning. *Computers in Industry*, 59, 548-564.
- NIYITEGEKA, M. 2014. How to Manage Mobile Phone Bundles. *Daily Monitor*, 25th July 2014.
- NKOMO, N., OCHOLLA, D. & JACOBS, D. 2010. A Comparative Analysis of the Web Information Seeking Behaviour of Students and Staff at the University of Zululand and Durban University of Technology. In: JAIN, P. & NFILA, R. B. (eds.) *Standing Conference of Eastern, Central and*

- Southern African Libraries (SCECSAL) XIX*. University of Botswana, Multi - Disciplinary Conference Center: Botswana Library Association (BLA).
- NTAMBI, B. 2014. Uganda Internet Rates High - Research. *Daily Monitor*, 25th July 2014.
- NTEGE, H. 2008. Annual Situational Report on the Faculty of Special Needs and Rehabilitation Library. Kampala: Kyambogo University.
- ODONGO, M. 2012. Adoption of Open Source and Open Standards in Academic Libraries in Kenya. In: OMONDI, B. & ONYANGO, C. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries (SCECSAL) XX*. Laico Regency Hotel, : Kenya Library Association (KLA).
- ORLIKWSKI, W. J. & BAROUDI, J. J. 2002. Studing Information Technology in Organizations: Research Approaches and Assumptions. In: MYERS, M. D. & AVISON, D. E. (eds.) *Qualitative Research in Information Systems*. London: Sage Publications Ltd.
- OTUNLA, A. O. & AKANMU-ADEYEMO, E. A. 2010. Library Automation in Nigeria: the Bowen University Experience. *African Journal of Library, Archives and Information Science*, 20, 93-102.
- PALMER, D. T. 2011. Knowledge exchange: A strategy for open access success at The University of Hong Kong v. 4 n. 1, p. 81-94. *Citation Chinese Journal of Library and Information Science*, 4, 81-94.
- PARKA, N., ROMANB, R., LEEC, S. & CHUNGD, J. E. 2009. User acceptance of a digital library system in developing countries:An application of the Technology Acceptance Model. *International Journal of Information Management*, 29, 196-209.
- PARTRIDGE, H., MENZIES, V., LEE, J. & MUNRO, C. 2010. The contemporary librarian: Skills, knowledge and attributes required in a world of emerging technologies Helen Partridge , Victoria Menzies, Julie Lee, Carrie Munro. *Library & Information Science Research*, 32 265-271.
- PEARLSON, K. E. & SAUNDERS, C. S. 2009. *Strategic Management of Information Systems*, Asia, John Wiley and Sons Inc.
- PONELIS, S. 2010. *The Adoption of Business Intelligence in South African Small and Medium Enterprises*. Ph. D Research, University of Pretoria.
- PONELIS, S. R. 2011. *An exploratory study of business intelligence in knowledge-based growth small, medium and microenterprises in South Africa*. Philosophiae Doctor (Information Technology), University of Pretoria.
- PUNCH, K. F. 2012. *Introduction to Social Research: Quantitative and Qualitative Approaches* London, Sage.
- RASEROKA, H. K. 2006. The Impact of Information Communication Technology on Academic Libraries in Sub Saharan Africa with Special Reference to Botswana. In: SHARMA, R. N. (ed.) *The Impact of Technology on Asian, African and Middle Eastern Library Collections*. Maryland: The Scarecrow Press Inc.
- RATANYA, F. C. & OTENYA, S. 2010. Barriers to use of ICT Services by the Disadvantaged Users: Case Study of Kenya National Library Services (Nakuru Branch). In: JAIN, P. & NFILA, R. B. (eds.) *Standing Conference of Eastern, Central and Southern African Libraries (SCECSAL) XIX*. University of Botswana, Multi - Disciplinary Conference Center: Botswana Library Association (BLA).
- RAYWARD, W. B. 2002. A History of Computer Applications in Lbraries: Prolegomena *IEEE Annals of the History of Computing*, 24, 4-15.
- REITZ, J. M. 2004. Dictionary for library and information sciences. *Boulder: Libraries Unlimited*.
- ROGERS, E. M. 2003. *Diffusion of innovations*, New York, Free Press.
- ROSS, M. & MARMION, D. 2000. Systems Librarians and the Client Service Environment. *Library Hi Tech*, 18, 151-157.
- ROWLEY, J. 2002. Using Case Studies in Research. *Management Research News*, 25, 16-27.

- SANI, C. M. 2006. *An Investigation and Evaluation of three integrated Library Systems for the Human Science Research Council Information Services*. MPhil Research, University of Stellenbosch.
- SAPTADI, S., SUDIRMAN, I., SAMADHI, T. M. A. & GOVINDARAJU, R. Business - IT alignment success framework for manufacturing SMEs (A conceptual model). *Management of Innovation and Technology (ICMIT)*, 2012 IEEE International Conference on, 11-13 June 2012 2012. 400-404.
- SCOT, A. 2008. Planning for Successful Digital Imaging Projects. *In: MORTENSON CENTER FOR INTERNATIONAL LIBRARY PROGRAMS (ed.) Thinking outside the Borders: Library Leadership in a world Community: A Manual for Professional Development*. Urbana Campaign, Illinois: Institute of Museum and Library Services.
- SELIM, H. M. 2007. Critical success factors for e-learning acceptance: ConWrmatory factor models. *Computers & Education*, 49, 396-413.
- SHARMA, R. N. 2008. Can Libraries Manage Technology in Developing Nations? A Library Administrative View. *In: DIONE, B. & SAVARD, E. R. (eds.) Managing Technologies in Developing Countries: Open Source vs Commercial Options*. Dakar: International Federation of Library Associations and Institutions.
- SIDDIKE, A. K., MUNSHI, M. N. & SAYEED, M. A. 2011. The Adoption of Information and Communication Technology (ICT) in the University Libraries of Bangladesh: An Exploratory Study. *International Seminar "Vision 2021: the role of libraries for building digital Bangladesh"* Bangladesh: Library Association of Bangladesh.
- SILVERMAN, D. 2010. *Doing Qualitative Research*, London, Sage.
- SIMMONS, R. 2012. Questionnaires. *In: GILBERT, N. (ed.) Researching Social Life*. 3rd ed. London: Sage.
- SPARKS, J., O'BRIEN, L., RICHARDSON, J., WOLSKI, M., TADIC, S. & MORRIS, J. 2013. Embedding innovation for scholarly information and research. *Library Management*, 34, 128-140.
- STANGOR, C. 2011. *2011*, Belmont, Wadsworth, Cengage Learning.
- STILWELL, C. & HOSKINS, R. 2012. Integrated library management systems: a review of choices made and their sustainability in South Africa. *Information Development*, 1-18.
- STOFFLE, C. J. & CUILLIER, C. 2014. Student-Centered Service and Support: A Case Study of the University of Arizona Libraries' Information Commons *Journal of Library*, 50, 117-134.
- STRUWIG, F. W. & STEAD, G. B. 2011. *Planning, designing and reporting research*, Cape Town, South Africa., Pearson Education.
- STURGIS, P. 2012. Designing Samples. *In: GILBERT, N. (ed.) Researching Social Life*. 3rd ed. London: Sage.
- SWANSON, T. A. & GREEN, J. 2011. Why We Are Not Google: Lessons from a Library Web site Usability Study. *The Journal of Academic Librarianship*, 37, 222-229.
- THOMPSON, S. M. 2008. Management and Technology Competencies for the Systems Librarian: A LITA Guide. *Core Technology Competencies for Librarians and Library Staff*. New York: Neal-Schuman.
- TWINOBURYO, D. K. 2013. *An Assessment of the Enabling Role of Information Technology in Knowledge Sharing and Retention in Academic Libraries: A Case Study of Makerere University Library*. Masters of Information Technology, University of Pretoria.
- UMBLE, E. J., HAFT, R. R. & UMBLE, M. M. 2003. Enterprise Resource Planning: Implementation Procedures and Critical Success Factors. *European Journal of Operational Research*, 146, 241-257.
- UNITED NATIONS 2013. A New Global Partnership: Eradicate Poverty and Ttransform Economies through Sustainable Development. *The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda*. New York: United Nations.
- VARGHESE, C. 2011. The Knowledge Workers in Information Technology. *Kerala Sociologist*, 39, 130-152.

- VENKATESH, V. & MORRIS, M. G. 2000. Why Don't Men Ever Stop to Ask for Direction? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior. *MIS Quarterly*, 21, 115-139.
- VERKADE, P. 2013. Digitization Will Change the Face of Education. *Daily Monitor*, 1/7/2013, p.1.
- VIMAL, K. V. & ABRAHAM, T. 2009. Eight Things you should Know about Open Source Integrated Library Systems. In *UGC Sponsered National Conference on Open Source Software in Libraries*. Technopark: Cochnin University of Science and Technology.
- WEAVER, K. & OLSON, J. K. 2006. Understanding paradigms used for nursing research. . *Journal of Advanced Nursing*, 53, 459-469.
- WEBBER, D. & PETERS, A. 2010. *Integrated Library Systems: Planning Selecting and Implementing*, Santa Barbara, Calif, Libraries Unlimited.
- YIN, R. K. 2009. *Case Study Research: Design and Methods.*, Thousand Oaks, Calif, SAGE Publications.
- ZICO, M. 2009. *Developing an Integrated Library System (ILS) using Open Source Software Koha*. 42, BRAC University.

7. Appendix A: Interview guide for technical library staff

[For technical library staff members only]

Exploratory Study on the Drivers and Barriers to Adoption of an Integrated Library System (ILS) in Kyambogo University Library Service (KyULS)

Interview Guide

Process of Interviewing:

- An informed consent form provided for signature before commencing the interview.
- The interviewer will explain the purpose of the study to the interviewee.
- All data gathered will be kept confidential and anonymous.
- The informant is free to withdraw at any point during in the interview.
- Permission shall be requested for audio recording of conversation that shall be used to transcribe conversation. Explanatory notes will be taken as back-up in case of equipment failure.
- The interviewee will be asked to verify data gathered once transcribed or written up. S/he is free to ask for a copy of the recording to verify accuracy, clarity and or correct any errors.

After concluding the interview:

- The interviewer will thank the interviewee for his/her time and interest in participating in the study.
- The audio recording will be stopped and the interview will end.
- Based on the interviewee's responses, the interviewer will ask if s/he is willing to provide copies of the documentation discussed.
- If s/he does, arrangements will be made to obtain the documentation.
- Interviewees will also be asked to suggest other persons to interview and for other possible sources of evidence.

Notes on the use of the interview guide:

- Text enclosed in square brackets '[]' is intended only for the interviewer to provide to the informant if s/he does asks for clarification on a question.
- Conditional questions depend on the informants answer to a question. Depending on the answer the follow-up questions are asked under the applicable heading, if 'yes' or if 'no'.

Personal background and general views on library automation and ILS

1. What is your highest educational qualification?
2. How did you come to work for the Kyambogo University Library Service (KyULS)?
3. How long have you worked for KyULS?
4. How do you see yourself in the future of KyULS [plans for expansion, growth, survival]?
5. How do you keep up-to-date on emerging library trends?
6. Do you think KyULS is in line with the emerging library trends?
7. Are you a member of any professional library associations?
 - a. If yes, how active are you in this association?
 - b. Does the association engage its members in new ideas or products of Library automation? [New ways of automating or adopting ILS]
8. Do you regularly attend any workshops, conferences or training in library automation?
9. Do you think automation improves library operations?
 - a. If yes, how? [in terms of productivity, efficiency and effectiveness]
10. Do you happen to have any prior experience or exposure to Koha or any related ILS?
 - a. If yes, describe the experience and from which institution did you acquire it from?

Role in KyULS

11. What services do you provide in KyULS?
12. Do your services require the use of Koha?
13. Do you have any strategic plan in respect to KyULS automation?
 - a. If yes, is it documented?
 - b. If yes, how often do you consult/review it?

Views on library automation at KyULS

14. What in your opinion are the highest priorities of KyULS?
15. Is the Library's automation one of the priorities of KyULS?
16. What are your views concerning KyULS automation? Do you think KyULS needs an ILS?
17. How involved are you in the library's automation initiatives?
18. Is library automation in sync with the library's mission, vision, goal and objectives?
19. Is library automation in sync with the Kyambogo University's mission, vision, goal and objectives?
20. Does the library's automation have any effect on the library's service, reputation?
21. What do you think are the drivers to implementing an ILS in KyULS? [infrastructure, funding, hardware, software, staff etc]
 - a. How best can the drivers be strengthened?
22. What do you think are the barriers of implementing an ILS in KyULS?
 - a. How best can the impact of these barriers be removed or reduced?
23. In your opinion, what would represent a successful implementation of Koha at KyULS?
24. What were the causes of past failures of library automation and ILS initiatives at KyULS?

Views on KOHA as an ILS at KyULS

25. Can you describe how KyULS came to adopt Koha as an ILS?
26. Were you, in any way, consulted before the library decided to adopt Koha?

27. To your knowledge was there any pilot or feasibility study done before adopting Koha?
28. Do you support the choice of Koha as the best ILS for KyULS?
29. Have you ever tested the effectiveness and efficiency of KOHA in meeting KyULS' information needs?
 - a. If yes, how do you rank it [current, consistent, accurate, reliable, relevant, complete and/or in the right format]
30. How easy, user-friendly and fast is Koha?
31. Was KOHA customised well to ably meet KyULS' local needs?
32. What is KyULS' capacity of improving Koha A? [availability of programmers in KyULS]
33. Are there areas that need to be improved?
34. From your observation, what has been the attitude of library staff members towards the adoption of Koha in KyULS?
35. How do you assess the utilisation of Koha generally by the library patrons?
36. To your knowledge was a plan or methodology followed in the process of adopting Koha?
 - a. If yes, can you please describe it?
37. Do you think it is necessary to follow any prescribed pattern or procedure when adopting or implementing an ILS?
 - a. If yes, what could be the best procedure of implementing an ILS in an academic library?
38. How many staff members are in charge of Koha administration and operation?
 - a. What are their skills set in relation to Library automation?
 - b. Are their skills marching with the required skills for library automation?
 - c. If no, what are the additional skills required for them to perform better?
39. Has the library ever organised any training of staff members before adopting this ILS?
 - a. If yes, was the training adequate to equip the staff members the required skills to manage Koha?
 - b. If no, how best can this training be improved in future?
40. Is there a mechanism in KyULS of sharing information if one staff member has attended any training session?
41. How secure is the library information and data on Koha in your opinion?
42. How prepared is KyULS for future data and software migration?
43. Is the general maintenance of the library automation equipment adequate?
44. Who handles the troubleshooting of the ILS?
45. Is there a framework for the regular evaluation of Koha in KyULS?
46. In case of a challenge in library automation, does KyULS solicit for any external advice or help?
47. Has KyULS employed social media to discuss or brainstorm on the adoption of the ILS?
48. What would you have done differently with respect to library automation in general and Koha in particular at KyULS, if anything?

8. Appendix B: Interview guide for general university staff and students

[For General Staff members and the Student's Guild]

Exploratory Study on the Drivers and Barriers to Adoption of an Integrated Library System (ILS) in Kyambogo University Library Service (KyULS)

Interview guide

Process of Interviewing:

- An informed consent form provided for signature before commencing the interview.
- The interviewer will explain the purpose of the study to the interviewee.
- All data gathered will be kept confidential and anonymous.
- The informant is free to withdraw at any point during in the interview.
- Permission shall be requested for audio recording of conversation that shall be used to transcribe conversation. Explanatory notes will be taken as back-up in case of equipment failure.
- The interviewee will be asked to verify data gathered once transcribed or written up. S/he is free to ask for a copy of the recording to verify accuracy, clarity and or correct any errors.

After concluding the interview:

- The interviewer will thank the interviewee for his/her time and interest in participating in the study.
- The audio recording will be stopped and the interview will end.
- Based on the interviewee's responses, the interviewer will ask if s/he is willing to provide copies of the documentation discussed.
- If s/he does, arrangements will be made to obtain the documentation.
- Interviewees will also be asked to suggest other persons to interview and for other possible sources of evidence.

Notes on the use of the interview guide:

- Text enclosed in square brackets '[]' is intended only for the interviewer to provide to the informant if s/he does asks for clarification on a question.

- Conditional questions depend on the informants answer to a question. Depending on the answer the follow-up questions are asked under the applicable heading, 'If yes' or 'If no'.

Personal background and general views on library automation and ILS

1. What is your highest educational qualification?
2. How did you come to join Kyambogo University (KyU)?
3. How long have you been in KyU?
4. How do you see the future of Kyambogo University Library Service (KyULS) [plans for expansion, growth, survival]?
5. How do you keep up-to-date with emerging library trends?
6. Do you think KyULS is in line with the emerging library trends?
7. Do you think automation improves library operations?
 - a. If yes, how? [in terms of productivity, efficiency and effectiveness]
8. Have you ever heard about Koha (Koha is an integrated Library System used to automate library services)
9. If yes, do you happen to have any prior experience or exposure to Koha or any related ILS?
 - a. Please describe the experience and from which institution did you acquire it from?

Role in KyULS

10. What services do you provide in KyU?
11. Do your services in anyway require the use of Koha?

Views on library automation at KyULS

12. What in your opinion are the highest priorities of KyULS?
13. Is the Library's automation one of the priorities of KyULS?
14. What are your views concerning KyULS automation? Do you think KyULS needs an ILS?
15. How involved are you in the library's automation initiatives?
16. Does the library's automation have any effect on the library's service, reputation?
17. What do you think are the drivers to implementing an ILS in KyULS? [Infrastructure, funding, hardware, software, staff etc.]
 - a. How best can the drivers be strengthened?
18. What do you think are the barriers of implementing an ILS in KyULS?
 - a. How best can the impact of these barriers be removed or reduced?
19. In your opinion, what would represent a successful implementation of Koha at KyULS?
20. What were the causes of past failures of library automation and ILS initiatives at KyULS?

Views on Koha as an ILS at KyULS

21. Were you, in any way, consulted before the library decided to adopt Koha?
22. Do you support the choice of Koha as the best ILS for KyULS?
23. Have you ever tested the effectiveness and efficiency of KOHA in meeting KyULS' information needs?
 - a. If yes, how do you rank it [current, consistent, accurate, reliable, relevant, complete and/or in the right format]

24. How easy, user-friendly and fast is Koha?
25. Was Koha customised well to ably meet KyULS' local needs?
26. What is KyULS' capacity of improving Koha? [availability of programmers in KyULS]
27. Are there areas that need to be improved?
28. From your observation, what has been the attitude of library staff members towards the adoption of KOHA in KyULS?
29. How do you assess the utilisation of Koha generally by the library patrons?
 - a. If yes, what could be the best procedure of implementing an ILS in an academic library?
30. What would you have done differently with respect to library automation in general and KOHA in particular at KyULS, if anything?