AN ASSESSMENT OF HUMAN RESOURCE INFORMATION SYSTEMS ON SERVICE DELIVERY IN KENYAN UNIVERSITIES: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE UNIVERSITIES

BY

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DECLARATION

Declaration by the Candidate

This Thesis is my original work and has not been presented for the award of a degree in any other institution. No Part of this thesis may be reproduced without permission of the author and/ or Moi University

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DEDICATION

I dedicate this work to my husband Henry Kirimi and my daughters Lisa and Laureen who are my inspiration in everything I do and every choice I make. Thank you for allowing me to fulfil my passion without a sense of guilt. Your patience and understanding are inspiring. I also dedicate this to my Dad and Mum who always supported me in every endeavour. They are the reason I am here and have made me who I am today.

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ABSTRACT

Service Delivery is one of the key functions of any organization that is involved in Human Resource Management activities. This is clearly illustrated by the numerous strategies that organisations are putting in place in order to satisfy demands of their customers. One such strategy that has gained popularity in many organisations is the entry of Human Resource Information Systems. Even though most of these strategies have propelled organisations in fulfilling their objectives, little information exists on HRIS in Kenya. This study therefore examined the effects of HRIS on Service Delivery in Kenyan Public and Private Universities. The study objectives were to: examine the HRIS used in the Universities; assess the effects of HRIS on Service Delivery; establish the challenges associated with the usage of HRIS and explore appropriate strategies for sustained usage of HRIS on Service Delivery. The study used sequential explanatory Research Design. The targeted population was drawn from Departments of Human Resource, ICT and Finance from the two Universities totaling to 88 employees. These three departments were purposively selected since they are involved with HR matters. Since the target population was small the entire population selected using census technique. Questionnaires and interview schedule developed by the researcher were used as data collection instruments and techniques respectively. Collected data was subjected to SPSS computer package and then analyzed descriptively and presented in terms of tables, charts and graphs. Arising from research findings from the two institutions, HRIS was found to be commonly used for payroll and record management. The findings revealed that there were a number of benefits associated with adoption of HRIS which included easy access of staff information, improved data management, and improved data input process among others. It was also noted that application of HRIS was hampered by numerous challenges although with appropriate strategies these could be mitigated upon. Despite the investment of HRIS in the surveyed universities, there is tremendous amount of unrealized HRIS potential in services delivery. Therefore, there is need to diversify the use of HRIS in the universities. This will enable the Universities to efficiently and effectively run Human Resource Management matters.

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ABBREVIATIONS

E-HRM	Electronic Human Resource Management
HR	Human Resource

HRIS	Human Resource Information Systems
HRM	Human Resource Management
ICT	Information Communication Technology
IT	Information Technology
MIS	Management Information Systems
NACOSTI	National commission for science technology and innovation
SPSS	Statistical Package for Social Sciences
VLIR-UOS	Vlaamse Interuniversitaire Raad University Development Cooperation

OPERATIONALIZATION OF TERMS

Human Resource Information Systems: Systems used to collect, record, store, analyze, and retrieve data concerning an organization's human resources.

Human Resource Service Delivery: A service that deals with management of people within the organization. It is responsible for organization of people in the entire company and plans for future ventures and objectives involving people in the company.

Information: Data that have been organized so that they have meaning and value to the Recipient.

Information System: A process that collects, processes, stores, analyses, and disseminates information for a specific purpose; most ISs are computerized.

Information Technology: Refers to all technologies that collectively facilitate construction and maintenance of information system

Information Technology Infrastructure: Consists of the physical facilities, IT components, IT services, and IT personnel that support the entire organization

Network: Is a connecting system (wireless) that permits different computers to share resources

People: Those individuals who use the hardware and software interface with it, or use its output.

Procedures: These are a set of instructions about how to combine the hardware, software, database, and network in order to process information and generate the desired output.

Software: This is a program or collection of programs that enable the hardware to process data.

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter discusses key issues that lay the foundation to the study. They include; background of the study, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, justification of the study, limitation and delimitation of the study.

1.2 Background to the study

Service Delivery is one of the key functions of any organization that is involved in HRM activities such as human resource planning, records management, recruitment and selection, training and development, performance management and industrial relations among others. Studies undertaken in developed countries indicate that HR department has not been left behind in embracing the current trends in technology. This trend however has been lagging behind as noticed in the1990's but also as recent as 2000 and beyond but according to Gobler and Warnich (2006) perhaps later than many other business functions, technology has recently come into HRM in a major way.

Human resource information system is one of the most important management information systems which contribute to human resource service delivery of an

organization. Human resource information system is described by (Hendrickson, 2003), as a computer system used to acquire, store, manipulate, analyze, retrieve, and distribute information related to human resources. Human Resource Information System helps organizations by automating most of the human resource planning functions. The system has become an important strategic tool since it collects, manages and reports information for decision-making. Fully integrated HRIS ought to interface with other systems to enhance the communication between departments such as payroll system with accounting system. Since the system deals with employees' personal data, which are sensitive, it should ensure data security while transferring information from one place to another. HRIS enhances communication between employers and employees and builds strong relationship with unions and management committees (Armstrong, 2006). Therefore, the use of a HRIS would reduce HR costs by automating information and reducing the need for large numbers of HR employees; by helping employees to control their own personal information; and by allowing managers to access relevant information and data, conduct analysis, make decisions, and communicate with others without consulting an HR professional (Awazu & Desouza, 2003; Ball, 2001).

Most public and private institutions have weaknesses in human resource service delivery because of the continued use of manual human resource systems. This explains the limitations faced during acquiring, storing, manipulating, analyzing, retrieval and distribution of critical human resource information. Although HRIS helps constitute activities involved in human resource management, not all organizations consider investing in it. For some managers and or employees the response and efficiency of the

HRIS would be of greatest importance, for others the security and privacy issues might be more important, and still for others what matters most may be the system design and ease of use.

Despite the widespread application of HRIS over the years, the implementation of human resource information systems continues to be faces with problems. As noted by (Strohmeier, 2001), the main factors that cause failure of information technology systems are mainly human as opposed to materialistic or malfunction of the actual systems. Ngai and Wat (2006) in a study on human resource information system implementation found out that many organizations have problems when implementing new technologies including human resource information system due to many barriers. These barriers include lack of sufficient capital and skills, cost of setting up and maintaining the system, lack top management support and commitment, lack of human resource knowledge by system designers and lack of applications for human resource users (Kovach & Cathcart, 1999).

Audit report of the public service payroll has revealed that Kenyan taxpayers are losing more than Sh1.8 billion annually in salary payments to ghost workers in the Civil Service, President Uhuru Kenyatta unveiled the shocking findings that the government flushes Sh150 million monthly, (Annual report of 2013). This is due to the poor payroll management systems. Newly recruited staffs were not paid to close to 3 or 4 months; in a few extreme cases staff were not paid for a year. Some retired staff died without receiving their pension. Also the process of identifying ghost worker- workers who remained on the payroll but were no longer active in the workforce due to termination, retirement and

death and stopping their salaries almost took an average of 6 months with some cases taking nearly two years. This is a replica of what is happening in our Kenyan Universities. For some of the Institutions which have taken the step to implement HRIS, they have been met with a lot of resistance and fear by both the members of staff and the HR professionals.

By the very nature, HR collects and stores a wealth of information about employees along with their associated costs. A solid human resources information system (HRIS) can be an invaluable tool to help administration effectively responds to economic challenges and to comply with the many reporting requirements from outside agencies. For example, there is an increasing demand from governmental agencies to supply information on organizational efforts in the areas of affirmative action, veteran status of employees, and equal employment opportunity compliance. In additional to federal and state reporting requirements, organizations responsible for accrediting a university and its programs have their own types of data that they want to be able to review.

In order to meet these needs, it is now more important than ever for Human Resources departments to maintain an efficient information system. Although the initial design of a good system that works well within a university's organizational structure can be challenging to establish, once in place, a well-run HRIS can be effectively used in almost every specialty area of Human Resources. From Compensation to Employee Relations to Benefits and beyond, HR managers in higher education should learn to make the most of their information systems.

Many studies have focused on the status of HRIS and its uses, benefit, implementation and barriers in most parts of the world. However, there is paucity of literature concerning the utilization of HRIS in Kenya. This study therefore combines some of the factors observed by the other scholars to assess the impact of Human Resource Information Systems on Service Delivery in Kenyan Universities.

1.3 Statement of the problem

Universities in Kenya are facing many challenges due to lack of policy frameworks, to guide the adoption of this technology to realize its full potential benefits. Human Resource Information Systems implementation procedures appear to be disjointed and disorganized. This is due to the manner in which information and communication technology was introduced in Kenyan universities was initially piecemeal, uncoordinated, and in most cases haphazard. Problems associated with introduction of the technology, include low computer literacy, difficult in changing organizational culture, poor infrastructure and lack of resources.

Absence of a well-established human resource information system to serve human resource has led to poor record keeping, delayed personal data aggregation, poor talent management and poor staff files management which in turn has continued to hinder human resource service delivery in the Universities. The undependable HR manual systems may explain why significant decisions are not based on accurate and timely information which compromises performance of these institutions. This has also led to

tantamount loss of personnel information as well as loss of millions of money in paying non existing employees.

Even though, numerous studies in this area have provided substantial contributions to the field of HRIS this area of investigation is still in its initial stages. HRIS utility as a strategic tool has not been fully recognized, and this is preventing the system to be used to its fullest potential. Interestingly, little however is known about the role of HRIS in Service Delivery in Kenyan Universities. As the pressure to shift from HRM to SHRM keeps on mounting, coupling with severe global competition, and in conjunction with the ever-increasing demand for HRIS, further research is still needed in this field.

1.4 Purpose of the study

To assess the effect of Human Resource Information Systems on human resource service delivery in Kenyan Universities.

1.5 Research Objectives

The specific objectives of the study are:

i. To find out the Human Resource Information Systems used Private and Public Universities.

ii. To assess the effect of Human Resource Information Systems on Service Delivery

in Public and Private Universities.

iii. To establish the challenges associated with the usage of HRIS on Service Delivery in Public and Private Universities.

iv. To explore appropriate strategies for sustained usage of HRIS on Service Delivery in Public and Private Universities.

1.6 Research Questions

i. Which Human Resources Information Systems are used within the Universities?

ii. What are the effects of human resource information systems on service delivery in the Universities?

iii. What challenges are associated with the usage of HRIS on service delivery?

iv. What are the appropriate strategies for sustained usage of HRIS on service delivery?

1.7 Significance of the Study

There is a vast knowledge gap within Kenyan research studies as to how HRIS could contribute to HR Service Delivery. Therefore, finding the role of HRIS in Service Delivery in Kenyan Universities would be very important, and would contribute to the body of knowledge. HR Service Delivery is one of the most crucial aspects of any organisation, which can be facilitated by HRIS functionalities. This study would not only fill the existing knowledge gap in research studies, it would also encourage organisations to review their Information System policies and HRIS utilisation in HR Service Delivery. This study will also be a basis for further research in the fields of human resource information systems on human resource management function and related issues.

HR Service Delivery is one of the most crucial aspects of an organisation, which can be facilitated by HRIS functionalities. A number of vendors supply HRIS software to the market under different names and prices. Organisations spend substantial amounts to acquire HRIS software. After a while, they suffer when they try to align the available HRIS functionalities with HR Service Delivery. Sometime though organisational HRIS support for HR planning features, organisations do not use all the functionalities due to poor response from the users. The findings of this study will help developers of the HRIS to develop customized dependable HR systems which can address the records management and decision making concerns of universities.

1.8 Justification of the Study

Human Resource Information System being relatively new field of study a lot of research is required to enhance proper understanding of the field which will enhance its adoption and proper utilization. Despite many years of research on IT innovations, organizational use of HRIS remains scarce and our understanding of HRIS use is still limited. Worse still recent studies on critical factors in adoption of HRIS have been undertaken in other countries neither of these studies has been done in the Kenyan universities.

The study is important to Kenyan universities policy formulators as managers in the universities will benefit from the study as it will indicate to them the true picture regarding HRIS uses, effects, challenges associated with implementation and devise ways of improvement. The level of employee preparedness for adoption of HRIS by gaining insight into level of computer literacy among employees working in the human resource departments and their perception towards Human Resource Information Systems adoption.

1.9 Scope of the Study

Subject Scope: The study focused on assessing of human resource information systems on service delivery in public and private universities in Kenya. Due to the large number of factors considered to influence the adoption of Human Resource Information Systems, the study focused only on HRIS systems used, the effects, challenges associated with usage of HRIS and strategies to mitigate these challenges.

Area Scope: The study focused on selected public and private universities which included; Egerton and Kabarak University in Kenya where employees within the human resource, Finance and ICT were picked as the target population for the study.

1.10 Limitations and Delimitations

The research would have been carried out in many universities but due to limited resources the researcher settled for Egerton and Kabarak Universities which are located in Nakuru county.

Since two universities were involved in the study it was not easy for the researcher to collect data on her own and therefore sought the assistance of one research assistants to enable the researcher collect data on time for the study. The other challenge that was witnessed during this study was that these two universities were at different stages of adoption of Human Resource Information Systems. There was little research done on human resource information systems in public and private universities in Kenya, therefore obtaining local literature was quite difficult. However, the researcher endeavored to use the little literature available and supplement it with the one from developed countries. This challenge was overcome by ensuring that the instruments used for collecting data were valid and reliable.

1.11 HRIS MODEL –McLeod and Schell

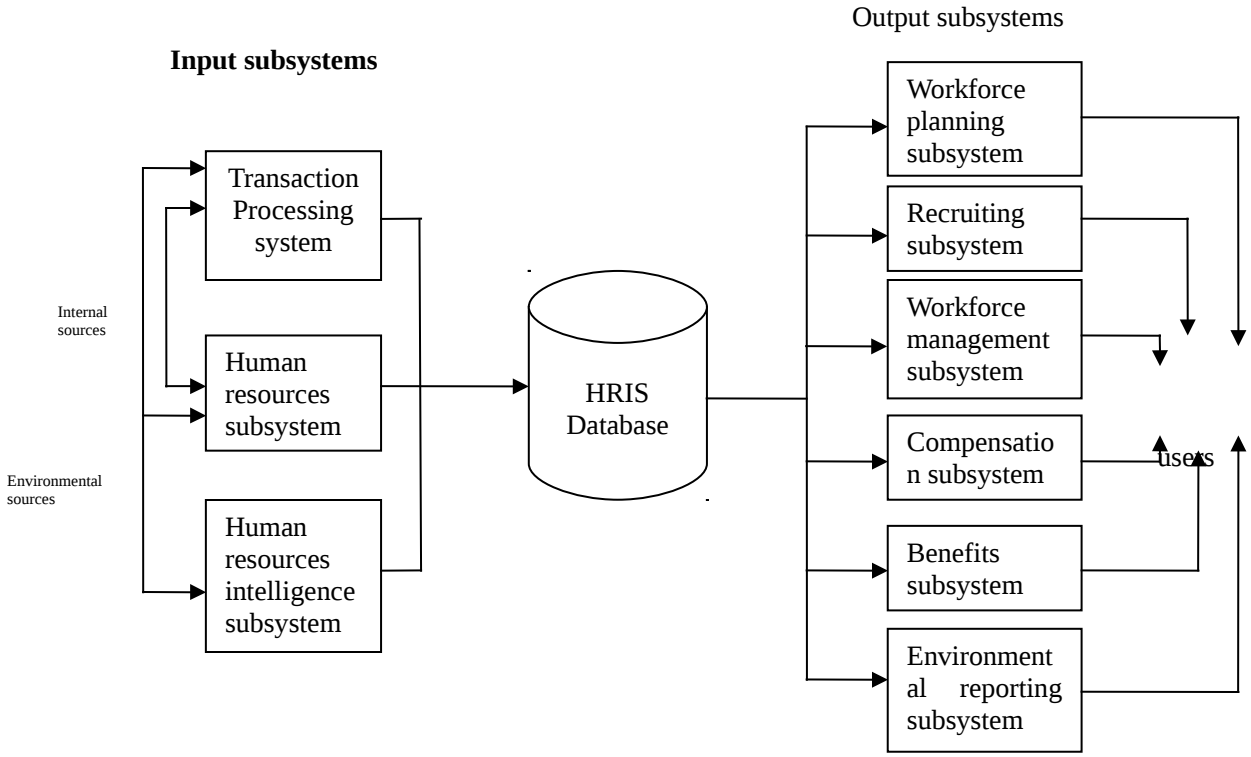


Figure 1.1 A model of a Human Resource Information System

Source: McLeod and Anctis, 1995

The resource-flow model illustrated in Figure 2.2 consists of three subsystems devoted to data input, a HRIS database, and six subsystems devoted to transforming the data into information and making it available to users. The input data obtained from both internal and environmental sources, and the users consist of individuals and organizations both inside and outside the firm. This model was presented by HRSP (Human Resource Systems Professionals) and McLeod & Anctis in 1995.

Input subsystems

Three input subsystems enter data into the database. They are data processing, human resources research, and human resources intelligence. In certain gasps, the input subsystems also include software that transforms input data into the required format for storage (McLeod & Anctis, 1995). HRIS input subsystems consist of data processing subsystem, human resource research subsystem and human resource intelligence subsystem. Human resource research subsystem can generate new data for the job analyses purposes and use existing information for succession planning. Human resource intelligence subsystem is responsible for interfacing with the environmental elements of any functional area such as government, suppliers, labour unions, local community, competitors, financial community, etc.

Data processing subsystem

This subsystem consists of those systems residing both in the accounting department and HR, which process data relating to human resources (Hannon, Jelf, & Brandes, 1996). The data consists of personnel data describing human resources transactions that occur during the resource flow, and also payroll data. The data processing subsystem gathers the data both from internal and environmental sources (McLeod & Anctis, 1995).

Human resources research subsystem

This subsystem has the responsibility for conducting special studies to provide data on the firm's human resource-related activities (Beadles II, Lower, & Johns, 2005). The human resources research subsystem is the introspective view taken by HR of its own

operations (McLeod and Anctis, 1995). As with the data processing subsystem, input data can come from both inside and outside the firm.

This subsystem has the responsibility for keeping current on environmental activities that are especially important to human resource activities (Hendrickson, 2003). Data and information are gathered describing activities of the government, labour unions, suppliers, the local and financial communities, and even competitors (McLeod & Anctis, 1995). Employment firms function as suppliers, funnelling applicants to the firm. Applicants can also come from the local community and from competitors (McLeod & Anctis, 1995). The financial community provides data and information concerning the economic climate, which influences the human resource plans (McLeod & Anctis, 1995). Much of the intelligence data can be obtained from commercial databases.

The HRIS database

All of the data and information provided by the input subsystems is held in computer storage (McLeod and Anctis, 1995). The storage units can reside in IS, HR, or other locations (McLeod and Anctis, 1995). The data relates primarily to the firm's employees, but also can describe the environmental elements with which HR interfaces (McLeod & Anctis, 1995). Database management system (DBMS) software performs the maintenance processes (McLeod & Anctis, 1995). HRIS Database consists of number of databases such as employee database, executive search firm databases, university databases, employment agency databases, public access databases, corporate job banks etc.

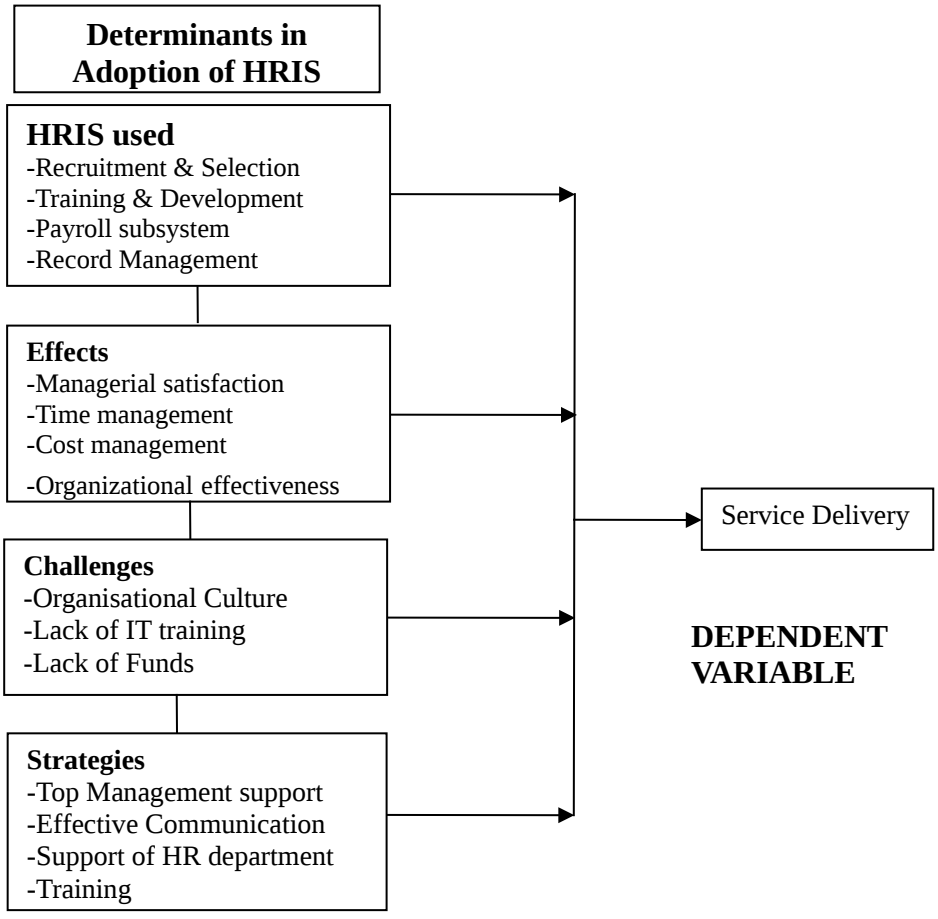
Output subsystems

The output subsystems consist of various types of software that transform data in the database into information outputs. The software can include report writers, mathematical models, office automation packages such as e-mail and desktop publishing, and applications of artificial intelligence such as expert systems. According to the model, the output subsystems represent the six groups of HRSP applications.

Workforce planning subsystem is one of the output subsystems in HRIS model, which enables the manager to identify future personal needs (Figure 2.2). It facilitates organisation charting, salary forecasting, job analysis or evaluation, planning and work force modelling. Recruiting output subsystem enables applicant tracking and internal search. Workforce Management output subsystem work on performance appraisal, training, position control that ensures headcount does not exceed budgeted limits, relocation, skills or competency measuring, succession planning and disciplinary. Compensation output subsystem works on merit increases, payroll, executive compensation, bonus incentives and attendance. Benefits output subsystem defined contribution, benefits and claims processing. Environmental reporting output subsystem work on reporting firm‘s personnel policies and practices to the government. Reports like union increases, health records and toxic substance produce through this system. The model (Figure 1.1) provided a good framework of HRIS components. It followed the three main concepts of system: inputs, processes, and outputs addressing the wide variety of HRIS applications as well. According to (Brown, 2013) the HRIS has provided strong support in the compensation and benefits areas, but other activities that occur during employment demand greater attention. For example, little attention has been directed at

activities relating to organizational exit, or termination. Many firms have neglected applications for workforce management and recruiting. They further emphasised, if HRIS resources were aimed at building strong planning systems, up-to-date HRIS databases, and responsive information output systems, then the HRIS would support management in each of its workforce-related activities.

1.12 Conceptual Framework



INDEPENDENT VARIABLE

F **Framework**

1.12.1 Operationalization of Variables

Independent Variables

HRIS uses

In proper Human Resource Information System adoption several subsystems have to be put in place such as Payroll, Records Management, Training and Development and Recruitment and Selection subsystems. Implementation procedures encompasses all the processes involved in getting new software or hardware operating properly in its environment, including installation, configuration, running, testing, and making necessary changes.

HRIS Effects

A set of Information System resources and organizational capabilities that are shared across the organization and that provide the foundation on which IS applications are developed and business processes are supported. This therefore brings many benefits to the organization.

Challenges associated with usage of HRIS

Implementation of HRIS comes with many challenges such as Resistance to change, lack of IT literacy and lack of enough funds to implements HRIS.

Strategies for sustained HRIS

For any organization to have an up to date HRIS some strategies have to be set. This can be prioritizing training in the organization, good communication and encouraging staff on the benefits of using HRIS.

Dependent Variable

The improvements in the HR Service Delivery if Information technology is successfully adopted

in an organization such as saving an organization from a future increase in costs, lead to prospects of increased sales through offering new services, delivery channels, reduction of errors, enhancing communications and connectivity, promotional activities, or Competitive Advantage and among others.

1.13 Summary

HRIS is one of the Information Systems that facilitates HR service delivery. Even though HRIS facilitates HR service deliver, some organisations are unable to make use of it due to various problems such as lack of support through the existing system, lack of knowledge or because of dependence on the manual. In this chapter, the basis of the current study has been explained. The introduction and the background of the current study, the aim, the objectives and the significance of the study were highlighted. The literature related to the current study has been documented in chapter two.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter presents an analysis of relevant literature in relation to the study. The study looks into the assessment of human resource information system globally, regionally and locally. Further, literature expounds on the literature based on the stated objectives.

2.2 Human Resource Service Delivery

The business world is becoming more and more demanding due to the increasing competition and globalization in the world business. This requires organisations to ensure that HR service delivery within the organisation is accurate, efficient, timely and cost effective and that HR data is managed professionaly. This therefore requires organisations to develop capability for long-term survival to gain market share. Such demands have propelled the organizations to rethink how they can keep or attain their competitive advantage in the continuous changing market environment through making the best use of their people (Appelbaum & Wohl, 2000; Stockport, 2000; Sagie & Weisberg, 2001; Knapp, 2004). Furthermore, there are other driving forces pushing organizations to reconsider their HR Service Delivery to meet the strategic business demands and the future corporate success, such as business environmental change, customer satisfaction, management diversification, and development of knowledge and

technology (Yeung, Brockbank & Ulrich, 1994; Robertson, 2000; Appelbaum & Wohl, 2000; Aston, 2002). These driving forces press the HR function to evolve under the pressure of environment and to avoid the downside of existing systems.

2.2.1 Business environmental change

The fundamental changes in business world have forced the HR function to shift and put the HR Service Delivery into an important status (Schuler, 1990). These changes include the uncertainty of personnel management caused by the rapid business change. They also include the increasing competitive pressure on profit. These forces the organizations to reduce the cost from various aspects including personnel management cost. The last but not the least change is the complex situation on employee management when there are more organizations running global business: such as managing employees on different business function, or with different culture background, etc. All these changes demand flexible and effective management style.

2.2.2 Service improvement

A basic function of HRM is to deliver its services to both internal and external customers, and it should ensure that the services are effectively delivered (Yeung, Brockbank & Ulrich, 1994). However, the traditional HR function only concerns the basic services such as selecting the right people for organizations, managing the database of employees, or assessing the employees. Now, the increasing demands from the customers force the HR Service Delivery to be more valuable on its tasks. The value-creating activities, such as standardizing the work process and coordinating the tasks, can be done by HR professionals to help to resist the pressure from business environment (Robertson, 2000).

2.2.3 Diversity of workforce

People are always the first priority of the business success. With the international business development, the workforce can be divided based on universal variables as gender, socio-economic status, geography, and generation gaps (Sagie & Weisberg, 2001). For example, the increasing number of aging people in the developed countries and changing values of the young generation in the developing countries require fundamental change of the tasks of the personnel management (Selmer, 2001). The multi-classifications of employees lead to diverse value and multi-cultural working environment, which asks the HR professionals to create harmonious organization culture and widely acceptable work values.

2.2.4 Development of technology

The last driving force for HR Service Delivery transformation is the technology advancement. Technology enables organizations to improve their business competence through various aspects. For example, technology changes the management of information, and releases the burden of publishing information of HR department. The rapid technology changes also ask for HR professionals to get new skills through education, or sourcing HR professionals who have certain IT ability. Yeung *et al.,* (1994) report that more than half of the companies which they interviewed have used the HRIS to integrate their databases, and their information system provide better information access for managers and employees. Moreover, Sagie and Weisberg (2001) performed research about HR function in companies in Israel and found out that the technology levels have divided the HR department into two parts: the high-tech and low-tech sectors.

The high-tech sector focuses on the strategic issues while the low-tech sector deals with traditional tasks. The HR Service Delivery needs to be adjusted in order to maximize the benefit of using HRIS.

2.3 Human Resource Information Systems used within the University

HRIS is an enterprise-wide system that enable integration of organisational information about human resources with the major functions, such as finance and production (Tansley & Newell, 2006). In a similar manner HRIS become a major MIS sub-function within the personnel areas of many large corporations (DeSanctis, 2003). The MIS area plays an advisory role in HRIS and must coordinate planning of systems design and enhancements across all functional areas (DeSanctis, 2003). DeSanctis, (2003) indicates that 33% of firms did not coordinate personnel department plans with corporate strategic plans. Lack of planning from the overall organisational level to the department level made coordination of plans between MIS and the HRIS area difficult to achieve. DeSanctis, (2003) study shows that still some organisations struggle to integrate HRIS with overall IS. The management issues associated with HRIS may also be encountered in other functional areas of the organisation where information systems are developing independence from the corporate MIS area (DeSanctis, 2003). Wang (2005) described the need for technology innovation and HRM integration. Once integration is achieved, security and privacy issues rise. Few researches have addressed this aspect as well.

In an organisational context, the Internet makes it possible for an organization to automate HR processes. Various existing HR functions, applications or services can

virtually be transformed to Web-based ones (Ngai *et al.*, 2006). More and more HRM systems today are being changed to e-HRM systems, mainly due to the advent of Internet technology and the emerging concept of business intelligence (Zhang & Wang, 2006). Reddic, (2009) addressed the effectiveness of HRIS and the use of web-based self-service in HR. He concluded that most of the web based HR is currently providing information rather than more advanced self-service based applications. The most pronounced method is using the Web for recruitment. The Internet has dramatically changed the ways of both job seekers and organizations in employment practices (Ngai *et al.*, 2006). CVs sent through the Internet can be scanned for keywords identifying the required knowledge, skills, competencies and experience (Ngai *et al.*, 2006). This information can then be stored in the information system for immediate or future use (Ngai *et al.*, 2006). Ngai *et al.* (2006) pointed out that the Cisco Corporation has achieved a 45% reduction in recruitment costs since using the web as its core channel for recruitment.

Web-based training and performance evaluation are two other functions supported by e-HR, which was studied by Ngai *et al.* (2006). The proliferation of the Web has enabled HR to train employees in city government virtually from home or at work. Web was mostly being used to provide information on benefits information (Reddic, 2009). Web-based training is a popular approach to distance learning using the technology of the Web, the Internet, intranets and Extranets. Individuals use the commonly available Web browsers of Internet Explorer (IE) and Netscape to access different types of information – text, pictures, audio and videos – over the Internet (Ngai *et al*., 2006). The Internet plays an important role in reducing the effort and agony of managing performance evaluation

as well. Typically, individuals have their performance evaluated at regular intervals. Performance evaluations can easily be tracked online by one or more sources such as supervisors, peers, customers or subordinates (Ngai *et al.*, 2006). The current e-HRM literature distinguishes three types of e-HRM: operational e-HRM, relational e-HRM and transformational e-HRM (Rue¨l *et al.*, 2007). For the operational type of HRM, this issue amounts to a choice between asking employees to keep their own personal data up-to-date through an HR web site or to have an administrative force in place to do this for them. In terms of relational HRM, there is a choice between supporting recruitment and selection through a web-based application or use a paper-based approach (through advertisements, paper-based application forms and letters etc.). Finally, in terms of transformational HRM, it is possible to create a change-ready workforce through an integrated set of web-based tools that enables the workforce to develop in line with the company‘s strategic choices, or to use paper-based materials (Rue¨l *et al.*, 2007). The literature on e-HRM suggests that, overall, the three goals of e-HRM are cost reduction, improving HR services, and improving strategic orientation (Rue¨l *et al.*, 2007). In many organisations, e-HRM has led to a radical redistribution of the work that HR managers used to do. Many of the reporting-type activities, previously performed by HR professionals, can now be performed on-line by managers and employees (Rue¨l *et al.*, 2004). On their own desktops, line managers nowadays perform appraisals, evaluate employee costs, generate HR reports (turnover, absenteeism), process training requests and oversee competence management (Rue¨l *et al.*, 2007).

Therefore, it is important to integrate HRIS with other information systems in the organisation along with applications of HRIS in implementing HR policies and practices that support business strategy of organization that make use of HRIS (McNurnin & Sprague, 2006). The major goal of introducing HRIS systems is to replace systems used in finance, manufacturing, and administration with a single platform of interconnected modules that serve the previously listed functions (McNurnin & Sprague, 2006).

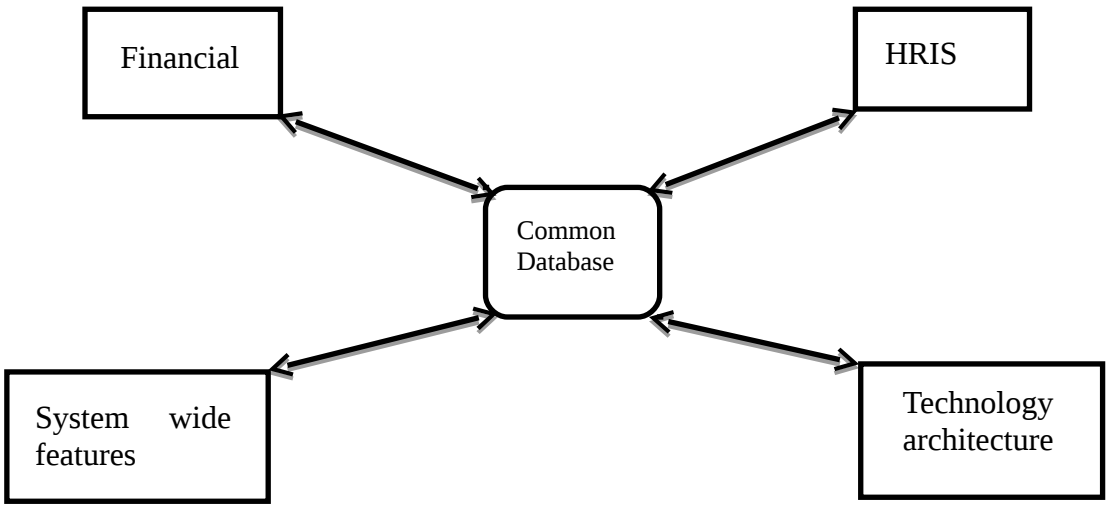


Figure 2.2 The ERP concept

Source: Ashbaugh & Miranda (2002)

Figure 2.1 illustrates how an HRIS becomes one of several integrated modules that connect a central or common database. By connecting the different functions into a central location, data redundancy becomes much easier to control and eliminate. Enterprise Resource Planning is a potential source for salvation for most organizations. The modularity allows managers not just from human resources but from the entire organization to have access to the same data which is transformed into information to suit

the user's needs. The typical common database at the center of an HRIS usually contains some sort of database management system (DBMS) that acts as a data scrubber as well as a means of storage (McNurnin *et al.*, 2006). An example of data scrubbing would be to eliminate multiple versions of the same data record such as having multiple addresses for the same person. Excess records are eliminated allowing for an increase in efficiency in the overall system (Haines & Lafleur, 2008). HRIS applications like employee record management and payroll still remains to be the most popular applications but there is an increase in use of HRIS in sophisticated activities and decision making.

The use of technology in HR has expanded spectacularly and is continuing to change HR management activities with executives, managers, and employees (Mathis and Jackson, 2010). Human resource management has become more complex due to the fast growth in specialized occupations, the need to train and promote highly skilled employees, and the growing variety of benefits programs. HRM can be classified into five main activities according to Oz (2009): (1) employee record management, (2) promotion and recruitment,(3) training, (4) evaluation, and (5) compensation and benefits management. The effectiveness and efficiency of HR department to undertake these critical activities are depended upon the adoption of HRIS.

Over the past two decades, a number of studies on HRIS have been carried out in developed countries. These studies have concentrated on the type of applications that predominate in HRIS (Martinsons, 1997; DeSanctis, 2003). Martinsons (1997) clarified the uses of HRIS as per the sophistication. He described the use of HRIS for

administrative purpose i.e. in employee record-keeping, payroll, payroll benefits etc. in HR as “unsophisticated” (Martinsons, 1997). Another study on UK companies (Kinnie & Arthurs, 1996) revealed that the most frequent uses of HRIS were in operational areas of employee records, payroll, pensions and employment contract administration. Further, another survey in UK (Ball, 2001) found that current employee details and organizational salary details were the most frequently applied areas. Later, Ngai and Wat (2006) found that in Hong Kong companies the two major applications of HRIS are providing general information and payroll service.

On the other hand, the use of HRIS in training and development, recruitment and selection, HR planning and performance appraisal was described as “sophisticated” (Ball, 2001). Another study carried out in India (Kundu & Kadian, 2012) found that most applications of HRIS are in technical and strategic HRM and performance and reward management.

However, many studies have shown that companies have started using sophisticated HRIS like training and development, performance management, compensation management and corporate communication (CedarCrestone, 2006; De Alwis, 2010; Saharan & Jafri, 2012). CedarCrestone (2006) in their surveys on US companies broadened the scope of HRIS applications: They found that administrative HRIS was the most popular application (62%), there was an increasing use of strategic applications i.e. talent acquisition services (61%), performance management (52%), or compensation management (49%). De Alwis (2010) in his study on Sri Lankan industry shows that the most commonly used modules in HR department are training and development,

recruitment and selection and performance appraisal and are being utilized by all the companies. Furthermore, HRIS can be used to support strategic decision making, to evaluate programs or polices, or to support daily operating concerns (Gardner, Lepak, & Bartol, 2003).

HRIS was quite in use in corporate communication (Saharan & Jafri, 2012). The most popular future applications of HRIS had been predicted as training and development, career development and performance appraisal/management (Teo *et al.,* 2001). It appears that there is emerging trend towards strategic applications of HRIS. The possible reason could be that most of the organizations which are using HRIS want to explore possibilities of strategic HRIS applications over the next few years (Teo *et al.,* 2001).

2.4 Effects of Human Resource Information Systems on Service Delivery

It has become clear to organizations that use manual based systems for keeping records are no longer efficient. Human resource is an extremely valuable resource and is the ultimate source of core competitive advantage (Wei & Feng, 2013). HRIS has the potential to transform HR and enable it to add value to the organization reducing amount of time spent at the administrative level and making sure that saved time is dedicated to the strategic level. A strategic HRIS provides important information about human resources' needs and capabilities; this information is imperative for management to establish the organizational mission and set and implement goals and objectives (Chauhan, Sharma & Tyagi, 2011).

Apart from its success, the survival of an organization depends on how effectively the right information is collected and used for taking the right decision in the right context (Nawaz, 2012). According to Hendrikson (2003, p. 382), “over the past two decades, firms have increasingly relied on the HR function to provide management solutions that increase the effectiveness of human capital”. HRIS systems have evolved into complex tools designed to manage a rich variety of information about the firm’s human capital as well as to provide analytical tools to assist in decision making about the management of those assets. A well designed HRIS can serve as the main management tool in the alignment or integration of the human resources department goals with the goals of long term corporate strategic planning (Carrell, Hatfield, Grobler, Marx, & Van de Schyf, 1999). HR data needs to be presented to managers to aid decision making in the organization. This overall concept is known as Decision Support System (DSS) (Carrell et al.,1999). With the increasing importance of HR issues as critical factors in strategic planning and decision making, the ability of the HRIS to quantify, analyze and model change becomes extremely important (Carrell et al.,1999). Effective HRIS capabilities can provide a company with competitive and strategic advantage while going through a change process. With the debut of large, competitive, dynamic and multinational industries, companies are now considering global HRIS implementation projects. There are numerous global HR systems available that can support the basic HR processes from employee recruitment to termination as well as benefits administration, total compensation, absence management, time tracking, payroll and talent management associated with learning, performance, career and succession planning modules (Carneiro, 2011).

However, a global HRIS enables more accurate planning and more transparent decisions. Global HRIS transcends beyond the ability to analyze and use employee data as the system supports geographically diverse operations to share ideas and innovations (Miller, 2004) and to create an ethos of cultural cohesion and closeness for employees.

Whether local or global, HRIS has the potential to bring about improved planning and program development, decreased administrative and HR costs, accuracy of information and enhanced communication at all levels, thereby adding competitive value to the organization.

Practically, organizations are hesitant to apply HRIS unless they are convinced of the benefits that this would bring to their organizations (Ngai & Wat, 2006). In the context of higher learning institutions, Rawat (2008) states that HRIS will enable learning institutions to format a profile of their staff their strengths and weaknesses, so they will know what they have in the personnel records. Accordingly, are able to structure appropriate development promotion, training and recruitment. Therefore, right people will be placed in the right place at right time and this will lead the universities to have quality human resource and personnel management.

Ideally, with appropriate HRIS, less people are needed to perform administrative tasks such as record keeping and more time would be made available for HR managers to assist by providing data on a strategic level to make strategic decisions. Therefore, literature shows that HRIS has been used in many organizations to support daily HRM operations (Ball, 2001; Hussain *et al.*, 2007; Ngai & Wat, 2006; Delorme & Arcand, 2010).

Rawat, (2008) also argues that nowadays higher learning institutions face a significant task; improving learning environments at the same time, reducing administrative operating cost. Therefore, with so many demands, higher education institutions need HRIS to help them to manage student, graduates and employment Information and financial data. Therefore, application of HRIS system in universities provides the utmost use of resources, speed, compatibility, accessibility, data integrity, privacy and security (Rawat, 2008).

Although HRIS offers a wide variety of advantages, a range of issues arising from the new system adopted in the organization and has an influence on managerial satisfaction with the system, time management, cost management, HR functions and organizational effectiveness. This study sets out to explore the effects HRIS on service delivery in each of these variables:

2.4.1 Managerial Satisfaction

An effective HRIS ultimately aims to make the HR process more efficient and faster thus, bringing about managerial satisfaction. However, if not properly implemented or effectively utilized, the HRIS can fail to bring about managerial satisfaction. Fundamental to a successful implementation of a HRIS is support from executive management and formalized cross-functional support teams (Dorel & Bradic-Martinovic, 2011). Managerial satisfaction with the HRIS is enhanced when the system's advantages for management are realized, this brings about, increase of overall decision-making efficiency, cost reduction and improved control of budget, business transparency, a clear business vision and a clear insight into the process of recruitment, selection and

termination of employees at the aggregate level (Dorel & Bradic-Martinovic, 2011). (Johnson & Gueutal, 2012) caution that although HR staff and line employees will have access to volumes of data to support decision -making, the latter does not improve measurably though time-to-decision is reduced. Satisfaction with the HRIS is also influenced by system quality; information quality and perceived ease of use (Bal, Bozkurt & Ertemsir, 2012).

2.4.2 Time management

HR personnel used to be overburdened with the administrative task of keeping records on staff using manual spreadsheets which were difficult and time consuming to capture and maintain. Hence, HR information systems were implemented to reduce the total time that employees spend on routine administrative functions. This enables HR staff to focus on more strategic tasks and become a strategic provider or professional consultant to the rest of the organization and business (Becker, Huselid, & Ulrich, 2001; Lawler & Mohrman, 2003).

However, researchers have found that although upgraded HRIS are being used to automate and devolve administrative tasks traditionally undertaken by the HR function, the system is not currently being used in ways that contribute to the strategic direction of the organization Dery, Grant and Wiblen,2009; Sadiq, Khan, Ikhlaq & Mujtaba, 2012). Dery et.al.,(2009) add that the extent to which the HRIS acts as an enabler to increased strategic focus for HR depends on organizational attention, understanding of the

technological responses to HRM complexity and the success of change management to facilitate user acceptance. An HRIS can process huge amounts of data with accuracy, thereby preventing employees from having to do such activities manually. Furthermore, many HRIS incorporate self-service options whereby employees can access and update their own personal records, change or enroll in employee benefit plans and respond timeously to employment opportunities in other areas thereby saving the employee time and the HR personnel effort in engaging in routine activities. When employees can log in and find information online it results in fewer calls to HR personnel, thereby even enabling the organization to maintain a lower HR to employee ratio. The added advantage is that HRIS can provide a single, safe repository for confidential HR information to be available 24/7 from any place with access to the internet. HRIS therefore, has the benefit of reducing redundancy within the organization due to its centrality of information and easy accessibility. It also enhances the ability to create reports and analyze information speedily and accurately, thereby making the workforce easier to manage (Lucerna, 2013).

Johnson and Gueutal, (2011) believe that providing employees with access to their information increases the transparency of HR processes, helps them to better understand the role of HR in the organization, and makes them feel they have control over their information which can lead to an enhanced sense of fairness and job satisfaction.

2.4.3 Cost management

Whilst it could be a large investment into acquiring a HRIS, many organizations view it as a long term investment. Costs are decreased when a HRIS is implemented due to less paper been used, less space being taken up, and due to the system being faster and more accurate. Therefore, the excessive costs of a HRIS can be justified and an organization will begin to experience its return on investment. For example, IBM has a paperless online plan for all its employees, which has not only saved the company $1.2 million a year in terms of printing and mailing costs, but the employees enjoy working with the online plan (Brown, 2013). Being a computerized system, HRIS should provide the capability to more effectively plan, control and manage HR costs such as labour and recruitment costs (Khera & Gulati, 2012).

2.4.4 Impact on various HR functions

HRIS has a spillover effect to almost all HR functions such as application tracking in recruitment and selection, personnel information and identification, salary planning, absenteeism analysis, turnover analysis, work scheduling, training and development, performance management, succession planning, compensation, conflict resolution and manpower planning. When the system is not performing well or a glitch occurs, all the relevant HR divisions are affected and will suffer as a result. Thus, an organization has to be extremely cautious when choosing a HRIS to ensure that it positively impacts on various other HR functions. In most situations, a HRIS leads to greater efficiency with regards to making decisions in HR. The HRIS enables the organization to achieve

improved efficiency and quality in HR decision-making and improve employee and managerial productivity and effectiveness (Dresser & Associates, 2013).

Khera and Gulati (2012) maintain that while HRIS helps in the strategic activities of HR managers, it is dominant in identifying occupied and unoccupied positions in an organization very effectively and accurately and therefore, assists in planning the organization's human resources both qualitatively and quantitatively. The latter benefit was also emphasized by Dessler (2005). Similarly, Shiri (2012) found that HRIS produces more effective and faster outcomes, has brought about an improvement in the overall HR functions and has assisted in aligning HR practices with the organizational strategy, identifying improvement areas and keeping ahead of current practices thereby enhancing the efficiency of the HR function.

2.4.5 Organizational effectiveness

A HRIS brings about organizational effectiveness in the sense that the HR department is more efficient and employees and management can access any of their records online whenever they need too. It removes the burden of HR to carry out mundane requests from employees thus, giving HR staff more time to spend on strategic tasks. Modern HRISs have such extensive features that employees have everything they need at their fingertips. Lengnick-Hall & Moritz (2003) believe that HRIS will bring about informational efficiencies and time and cost savings that will enable HR departments to turn their attention to providing better and accurate analysis of current data upon which strategic

business decisions may be made. Similarly, Shiri (2012) found that HRIS provides HR professional with opportunities to enhance their contribution to the strategic direction of the firm.

However, Beadles II, Lowery & Johns (2005) found that HRIS has not yet accomplished this or reached its full potential in the HR environment. In their study, they found that whilst directors overall are satisfied with the system, they have not yet realized the benefits beyond its effect on information and information sharing as the full capabilities of the system were being underutilized. Kumar (2012) emphasizes that whilst HRIS is an important tool for HRM as it has the potential to provide better information for decision-making; its effectiveness depends on the challenges of its implementation and its effective integration within the organization.

It can be summarized that HRIS, is a device which is designed to fulfill the manpower information needs of the organization. Thus, the importance of HRIS is multifaceted, ranging from operational assistance in collecting, storing and preparing data for reports, simplifying and accelerating the processes and controlling the available data, reducing labor costs for human resource departments, and providing timely and diverse information to the management of the company, based on which it is possible to make quality strategic decisions related to human resource.

2.5 Challenges associated with usage of HRIS on Service Delivery in Universities

Masum, Bhuiyan, and Kabir (2013) in an exploratory study in Bagladesh found that there is a gap between the expected and the actual application of HRIS. The authors further found that these gaps were attributed to poor infrastructure and high cost and insufficient training (Masum, Bhuiyan, & Kabir, 2013). A similar study done in Jordanian university further revealed that universities faced varied challenges due to lack of expertise in IT, inadequate knowledge in implementing the system, lack of commitment from top managers, lack of suitable HRIS software and resistance in changing organization's culture among others (Strohmeier, 2006). On the contrary, (Beadles II, Lower, & Johns, 2005) in another study showed that HR are usually satisfied with the system, but do not see many benefits from its usage outside of its effect on information and information sharing. These authors further assert that Part of the problem may be contributed from the type of organizations that were sampled.

Risk and security management is another crucial challenge facing HR and IT professionals considering that Human Resources by its very nature deals with very confidential, private and highly sensitive data. This therefore requires security aspects to be taken into consideration (Hevner, March, Park, & Ram, 2004). This might have been contributed by resistance to change because employees like the feeling of safety in the old paper system (Ostermann *et al.*, 2009). Security and privacy concerns associated with employee record keeping, interfacing with information systems in other functional areas, career path for HRIS employees, and lack of cooperative relationships between human resource and MIS staff are additional problems confronting the organisations (DeSanctis,

2003). Security and privacy concerns do not exist only in HRIS; it is affected by e-HRM as well. As Ngai *et al.* (2006) argue, security and privacy of information is another concern in Internet-supported HRM and that is necessary to have a secure way of transferring sensitive data via the Internet.

Usability of HIRS brings about lower effort expectancy in users and therefore increases user acceptance of information systems with easiness and speed for completion of a task (Fisher & Howell, 2004). On the contrary, this cause users to have high level of frustration and anger regarding technology and therefore universal usability becomes the goal in order to ensure highest use of technology (Shneiderman, 2000) while it is difficult to design an easy-to-use HIRS. Schramm, 2006; Shirivastava & Shaw, (2003) stated that past usage of HIRS determines usability perception and the intention to use the system again, which are both among the success criteria for HIRS implementations.

Kossek *et al.*, (1994) state that perceptions of potential users of a new technology have a critical impact on the success of the implementation. Employees have a tendency to perceive the new system as something bad and stay at the distance as much as possible. This thus leads to loss of “personal touch” in the interaction in employees as automation and employee self-service portals brings the depersonalization of transactions that used to be managed more directly between two or more parties. In many cases firms achieve automations of excising HR processes but fail to progress to a more advance stage of an information culture (Torrington *et al.*, 2008). Human resources professional have a tendency to worry that the new human resources information system will result in their replacement or they will have critics for not already doing good enough job (Hannon *et*

al., 1996). As Fisher and Howell (2004) states, people with less information are more likely to participate in sense making or signalling processes. According to them, these interpretations may receive confirmation or not the resulting impression takes an aura of truth, whether or not the impressions matches reality. These resulting impressions can influence emotional reactions and behaviours and accordingly the success of organizational systems and interventions. Therefore organizations should be ready to address possible interpretations at all stages of an organizational change (Fisher & Howell, 2004). Organizations face several challenges to make of an HRIS a key enabler, in order to become high performance organization. One of the challenges is how to progress from an “informatics” to an” informating” culture, which would increase the likelihood to improve the quality of information and use it as a competitive advantage to make better decisions and to achieve organizational goals. Claver *et al.* (2001) identified two organization positions towards IT: a first more simple, where IT is important to a firm and it is used to improve operational effectiveness (informatics culture); a second more sophisticated, which visualizes IT as a foundational enabler to make correct decisions through an HIRS (informational culture).

Another perspective of HRIS implementation challenges is also presented by Lucey (2005) that the problems relate to HRIS implementation include the following: lack of management in the design phase of the HRIS, inappropriate emphasis of the computer system, undue focus on low level data processing applications particularly in the accounting area, lack of management knowledge of computers, poor appreciation by information specialists of management’s true information requirements and of organisational problems, and lack of top management support.

According to Wanyembi (2002) IT Implementation procedures in Kenyan Public Universities appear to be disjoined and disorganized and further notes the manner in which ICT was introduced was initially piecemeal, uncoordinated, and in most cases haphazard. Tusubira & Mulira (2005) say integration of ICT in an organizations function is a complex process which needs to be fully conceptualized and defined before implementation to avoid dissipation of resources through implementation of unrelated or uncoordinated projects.

Concerning IT Literacy there appears to be a consensus that there is inadequacy in the level of IT Literacy skills among HRIS end-users. Chacha (2005) notes, that there has been insufficient training and reskilling of end users as well as technical staff that support the systems in higher educational institutions in Kenya. Wheelen and Hunger (2008) noted that implementation of any form of Technology is abandoned mainly because of inadequate technological knowledge and skills. The ICT Plans of the ministry of Higher Education in Kenya acknowledged a current deficit in terms of HR capacity to lead and support the implementation of the plan. Wanyembi (2002) notes that training needs of the various categories of ICT users are yet to be established.

In this study, the categorization of HRIS challenges is represented in Table 2.1 by Beaumaster (2002).

Table 2.1 Categorization of Information System Challenges

Leadership issues	**Management process issues**	**Organization Environment issues**	**Technical System issues**	**Personnel issues**
Interdepartmental coordination	Strategic planning	Organisational culture	Existing system	Organisational expertise
Individual support	Budgeting	Internal & External politics	Standardisation	Individual expertise
Organisational support	Organisational directives	Contracts	Compatibility	Internal leadership
Timeframes and Scheduling	Written guidelines	Changing technologies		Staffing
		External Consultants		Resistant to Change
				Training

Source: Beaumaster, 2002

2.6 Strategies to be put in place for effective utilization of Human Resource Information Systems

Implementation of human resources information system is an organizational change. For any change, resistance is expected. To ensure successful human resource information system implementation, context issues need to be assessed (McElroy, 1991) Successful human resource information system implementation relies on the support of top management, the support of the information department, the involvement of human resource leaders, support of human resource staff, computer knowledge of human resource staff and human resource information system training .These six influencing factors are discussed as follows:

2.6.1 Top Management Support

The management has the main responsibility to ensure the organization, groups and individuals accept and adopt the implementation of a new information system. HRIS implementation focuses on installing and delivering the new built or purchased information system and delivers it for the organization. Choosing the correct way of implementation has a vast impact on the project to be successful or failure (wickramaratna, 2009).

According to (Altarawneh & Al-Shqairat, 2010), for system acceptance the most needed support comes from top management. Top management support is needed throughout the implementation. The project must receive approval from top management (Broderick & Boudreau, 1992) and align with strategic business goals (Delorme & Arcand, 2010). This can be achieved by tying management bonuses to project success (Harris & Desimone, 1995). Top management needs to publicly and explicitly identify the project as a top priority (Kovach, Hughes, Fagan, & Maggitti, 2002). They must be committed with its own involvement and willingness to allocate valuable resources to the implementation effort (Holland *et al.*, 1999). Top management takes primary responsibility for providing sufficient financial support and adequate resources for building a successful human resource information system This involves providing the needed people for the implementation and giving appropriate amount of time and resources to get the job done (Roberts and Barrar, 1992). The lack of financial support and adequate resources will inevitably lead to failure. A comprehensive human resource information system requires a

sizeable budget to implement and maintain. If top management does not understand how the human resource information system brings the benefits to the organization, they will not be willing to allocate valuable resources, time and efforts of implementation (Ngai and Wat, 2006). Managers should legitimize new goals and objectives. A shared vision of the organization and the role of the new system and structures should be communicated to employees. New organizational structures, roles and responsibilities should be established and approved. Policies should be set by top management to establish new systems in the company. In times of conflict, managers should mediate between parties (Wilson, 2002).

The implementation of new information systems is a significant investment for organizations; since, information systems are socio technical systems, development involves the joint design of activity systems and ICT systems (Davies, 2009). It is important to define the key stages of the information system implementation process. Consequently, Davies (2009) presented Information system implementation stages which are concerned with a number of key activities in the process. In addition, this information system implementation process concept is similar to O'Brien (2004) who explained a five-step process called the information systems development cycle which includes the steps of: investigation; analysis; design; implementation; and maintenance (see Figure 2.2). The first phase of information system development process is *systems investigation* or system conception which is aimed to determine how, based on informatics planning and management, to develop a project management plan and obtain management approval. *Systems analysis* is focused on identifying the information needs and

developing the functional requirements of a needs and developing the functional requirement of a system. *Systems design* is the process of planning a technical artifact and developing specifications for hardware, software, data, people, and network. In addition, this phase involves building the information system to its specifications. *System implementation* involves delivery of systems, testing the system, training people to use the system, and converting to the new business system. Finally, *system maintenance* is the process of making necessary changes to the functionality of an information system (O'Brien, 2004; Davies, 2009).

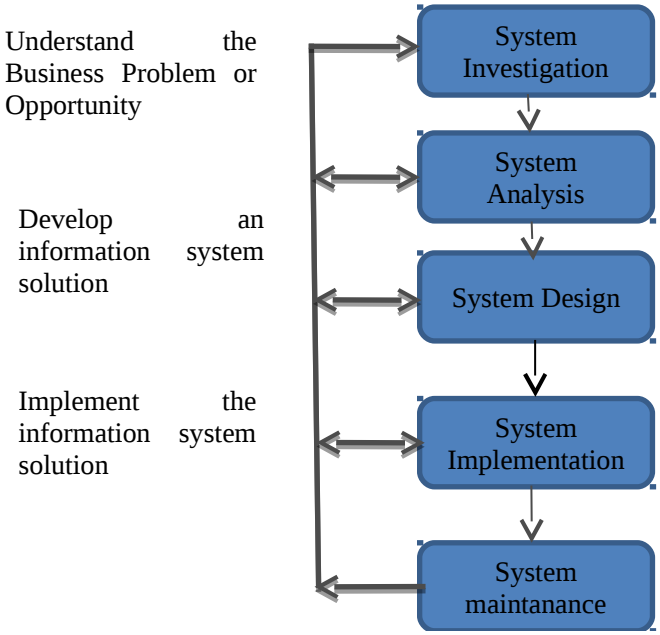


Figure 2.2 Information System Development Cycles

Source: O'Brien, 2004

When the hardware and software for all the component sub-systems have been installed and tested, the whole system including all computerized and manual procedures must be

tested to ensure it operates in an intergrated fashion. Before the new system can operate, the files of standing data used by the old system must be copied over to the new system.

Wherever possible a phased implementation should be adopted, with different subsystems brought on-line one at a time. Another way to reduce the risks is to use a period of parallel operation as a safeguard to check that the new system is functioning correctly, before switching off the old system (Wilson, 2002).

(Tannenbaum, 1990) presented a set of strategies for implementing HRIS in the organisation including technical characteristics, user involvement, communications, management support, project team characteristics, difference between technology provider and receiver, incentives, infrastructure support and obstacles, to identify their effects on external technology transfer project. Moreover, a list of strategies are also drawn up by Milis and Mercken (2002), who found a large number of possible strategies and also provided an overview of the possible strategies regarding IT project implementation. However, in conclusion, the strategies are grouped into four categories as follows. The first category integrates factors which influence goal congruency. The second category contains the components that relate to project team in order to improve the motivation and cooperation of the team. The third category concentrates on the acceptance of the project and the result. Finally, the fourth category is concerned with the implementation process which deals with implementation politics and planning.

2.6.2 Effective Communication

Effective communication is critical to system implementation (Falkowski *et al.*, 1998). Expectations at every level need to be communicated. Management of communication, education and expectations are critical throughout the organization (Wee, 2000). User input should be managed in acquiring their requirements, comments, reactions and approval (Rosario, 2000). Communication includes the formal promotion of project teams and the advertisement of project progress to the rest of the organization (Holland *et al.*, 1999).

Middle managers need to communicate the importance of HRIS (Wee, 2000). Employees should be told in advance the scope, objectives, activities and updates, and admit change will occur (Sumner, 1999). Communicating quickly and in an effective way across organizational, functional and cultural boundaries is crucial. Members of the project team need to be able to communicate with a common language (Koster, 2010). Communication between managers and employees within the organization is a vital way to get people motivated. Employees are more motivated by recognition and constructive feedback by their line manager. Two-way communication allows employees also to state desired outcomes to their manager.

Unfortunately many managers lack communication skills. (Brooks, 2003). Communication has to be well planned. Communication has to be planned for the right people at the right time via the right communication channel (Green, 2007).

2.6.3 Training

Implementing a new system can positively impact a business, providing a foundation for development and improvement. Training has a key role to play in delivering successful implementations, as the way people are introduced to any new system and how they learn to use it may be the main contact they have with the programme. Delivering training that engages people, motivates them to embrace change and encourages improvement is the key.

Education should be a priority from the beginning of the project, and money and time should be spent on various forms of education and training (Roberts and Barrar, 1992). Training, reskilling and professional development of the workforce is critical. Computer skills training for relevant employees help achieve optimal human resource information system effectiveness (O'Connell, 1994). Lack of computer knowledge has been attributed to slowness in applying information technology to human resources departments (Kavanagh et al., 1990). Kossek et al. (1994) also mentioned that user skill level may be strongly related to the variance in attitudes toward the value of human resource information system. (Denton, 1987) and DeSanctis (2003) described that one of the potential problems of human resource information system management is a lack of employee technical training and experience in information management. Kavanagh et al. (1990) also commented that for a successful human resource information system, appropriate training should go to all human resource staff, line managers, as well as other employees. User training should be emphasized, with heavy investment in training and reskilling of developers in software design and methodology (Sumner, 1999). Employees

need training to understand how the system will change business processes. There should be extra training and on-site support for staff as well as managers during implementation. A support organization (e.g. help desk, online user manual) is also critical to meet users' needs after installation (Wee, 2000).

2.6.4 Support of Information Communication and Technology Department

In the evolution of human resource information system, the information system department plays a major role in facilitating the computerization of human resource information (Kinnei & Arthurs, 1993). DeSanctis (1986) concluded from her survey that although the human resource information system has established independence from corporate management information system, it has not yet matured to be an independent entity within the personnel area in a large number of firms. Cholak & Simmons (1991) also mentioned that human resource information system still requires the anticipation of information technology department, particularly in the planning and developmental stages.

2.6.5 Support of Human Resource Department

Human Resource Department plays a big role in the implementation of human resource information system. As human resource computer use increase, Lederer (1984) reported that more and more firms formally housed the human resource computer systems within the human resource department. He also commented that the personnel department is in the best position to obtain and keep an organization's management commitment to human

resource information system. Human resource department should be responsible for advocating the project, providing justification for the human resource information system, and for resources acquisition. However, Kossek et al. (1994) found that in corporations, the higher the positions in the human resources department, the more negative they become toward the human resource information system. Their interviews revealed that human resource information system use is viewed as a clerical activity that does little to enhance human resource's reputation. In addition, a human resource information system may foster increased information sharing. Since information is power, the system has the potential to change the power dynamics (Kossek et al., 1994).

2.6.6 Change management

Involvement of human resource staff is very important. Resistance to change and computer phobia are impediments to human resource information system implementation. Pitman (1994) said that user participation is a critical factor to successful change. Since clerical staff have considerable responsibility in system operations, their support is crucial. Organizations should have a strong corporate identity that is open to change. An emphasis on quality, a strong computing ability, and a strong willingness to accept new technology would aid in implementation efforts. Management should also have a strong commitment to use the system for achieving business aims (Roberts and Barrar, 1992). Users must be trained, and concerns must be addressed through regular communication, working with change agents, leveraging corporate culture and identifying job aids for different users (Rosario, 2000). As part of the change

management efforts, users should be involved in design and implementation of business processes and the system, (Bingi *et al.*, 1999; Holland *et al.*,1999).

The list of strategies is presented based on the literature, and categorised along with its key factors. This summary of strategies in this study is not only obtained from ERP systems implementation literature, but also from information system (IS) and information technology (IT) project implementation.

Table 2.2 Summary of strategies to put in place for sustained HRIS

Category	**Key Factors**	**Sources**
Project Definition /Mission	• Clarify goals and general direction of the project • Proper project definition • Relate to organization needs and clearly stated • Goals and benefits should be identified and tracked	(Somers & Nelson, 2001) Mills & Mercken (2002) (Nah, Lau, & Kuang, 2001) (Motwani, Subramanian, & Gopalakrishna, 2005)
Training	• Competent & Experienced project manager • Project team members with complementary skills and consist of the best people in the organization • Mix of consultant and internal staff • The team must be familiar with organization functions • The team must be located together to	Mill & Mircken(2002) Somers & Nelson (2001) Nah *et al.*, (2001) Motwani *et al.*, (2005 (Gargeya & Brady, 2005)

	facilitate working together and support each other and work towards common goal	
Management involvement & support	• Top management support • Align with strategic organization goals • Identify the project as top priority • Communication with employees about vision role of new system its importance etc in advance	Somers & Nelson (2001) Nah *et al.*, (2001) Motwani *et al.*, (2005 Gargeya & Brady(2005)
Project management	• People should be given responsibilities to drive in project management • Should be disciplined with coordinated training and active human resource department involved • Excellent project management	Nah *et al.*, (2001) Motwani *et al.*, (2005
Client consultation	• Use consultant to facilitate the implementation	Gargeya & Brady(2005)
Technical tasks	• Start software development, testing and troubleshooting at the beginning in the project • Troubleshooting errors is critical so work well with vendors to resolve software problems	Nah *et al.*, (2001)
Change management	• Organizational culture and structure change should be managed • Users should be involved in design and	Mill & Mircken(2002) Somers & Nelson (2001) Nah *et al.*, (2001) Motwani *et al.*, (2005 Gargeya & Brady(2005)

	implementation of the project • User training should be emphasized • Commitment from the top management • The changes should be communicated • Managers and employees must be trained and understand the system	

2.8 Summary

Organizations use Information Systems in all three levels of information management: strategic, tactical and operational. HRIS is one of the information systems out which transforms the role of the HR department incorporating records for employee resource, rewards, training, etc. Many studies cited HRIS benefits, such as improvements in accuracy, cost saving, timely and quick access to information through HR reports, decision-making and increased competitiveness. Lack of top management support, funds, HR knowledge of system designers and HR solutions, are the main factors keeping organisations away from HRIS. According to literature, human resource planning, recruiting, and training are less frequent users within personnel perhaps reflecting greater use of the system for routine reporting than for decision support. HRIS is classified into two types according to their usage: unsophisticated and sophisticated. Payroll and benefits administration, employee absence records keeping electronically are listed as

unsophisticated. Use of IS in recruitment and selection, training and development, HR planning and performance appraisal, is classified as sophisticated.

HRIS is therefore seen as a spine of the organisations and vital in meeting the needs of all stakeholders in the organisation. HRIS enables effectiveness, efficiency and promotes competitiveness among the firms. Hence, HRIS must be driven by strategic vision and it should be implemented as an open system, where information technology facilitates communication freely between integrated features. Therefore comprehensive and effective HRIS must be driven by organization vision, value and culture.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter provides the description of how the study was conducted. It highlights the research design, target population, sampling procedure and sample size, data collection instruments, data analysis, interpretation and limitations and ethical approval of the study.

3.2 Study Area

The research was conducted in Nakuru County, Kenya. Nakuru town is located 160 km North west of Nairobi and is the fourth largest urban centre in Kenya after Nairobi, Mombassa and Kisumu. It is situated at an altitude of 1859m above the sea level and it is within the region of the Great Rift Valley whose formation gave rise to a unique natural structure. Nakuru is also an important educational center. It is the home of Egerton University, a large public university, and Kabarak University, a private university

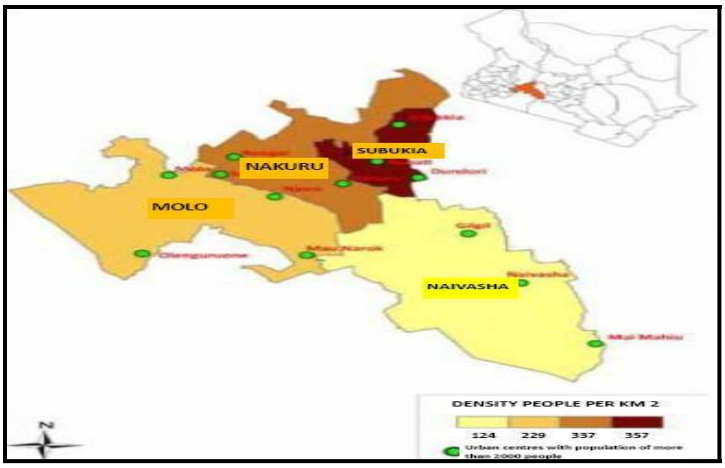


Figure 3.3 Map of Nakuru County

Source: Google maps

The study was conducted at Egerton and Kabarak Universities. Egerton University is one of the public universities in Kenya with its main campus located in Njoro, near Nakuru Town while Kabarak University is a private Chartered University located 20kms north of Nakuru town, along the Nakuru-Eldama Ravine highway. These two universities have earned a reputation as institutions of higher learning thanks to its dedicated staff, modern facilities, state-of-the-art technology and innovation, and role in educating future researchers. These two universities were selected because they were in the same geographical area which made comparison easier.

3.3 Research Design

This study used a mixed method design, incorporating a self-administered questionnaire and face to face interviews. According to Tashakkori and Teddlie (2011), mixed methods design provides a better and more credible understanding of the phenomena under study,

other than singly using the qualitative/quantitative approach. The specific approach used in this study was a sequential explanatory mixed method design in which one type of data i.e. quantitative provided a basis for the collection of another type of data that is qualitative data (Creswell, 2009).

3.4 Target Population

The study population included staff from the departments of Human resource, finance and ICT in Egerton and Kabarak Universities. The population constituted all general staff, Administrators and Secretaries. The target population was distributed as per the table 3.1 below.

Table 3.1 Target population

Department	**Universities**		**Total**
	Egerton	**Kabarak**	
HR	30	12	**42**
Finance and Accounts	10	16	**26**
ICT	10	10	**20**
Total	**50**	**38**	**88**

Source: Staff Establishment Document, 2013 (Egerton &Kabarak University)

3.5 Sampling Technique

The study adopted purposive sampling technique to select the seven (7) counties which had both public and private universities. According to Kombo and Tromp (2006) in this type of sampling, items for the sample are selected deliberately by researcher; her choice concerning the items remains for supreme.

A simple random sampling technique was used to select Nakuru County. This is where a subset of a statistical population in which each member of the subset has an equal probability of being chosen (Mugenda, 2008). A simple random sample was meant to be an unbiased representation of the Counties.

Purposive sampling technique was employed to select departments of HR, ICT and Finance since these are the departments which are involve in Human Resource matters. Patton (1990) highlighted that purposive sampling is based on the researcher's judgment. This researcher further indicates that the sample should be composed of elements that contain the most characteristic that represents a given population.

Since the target population was small the researcher used census technique to select all members of the three departments to participate in the study. According to (Kothari, 2004) A census study occurs if the entire population is very small or it is reasonable to include the entire population.

Similarly, the qualitative method was also used in this study to allow the participants to express their feelings beyond the structured questionnaires hence giving a detailed description and clarity on the situation (Kothari, 2004). This design was systematic and flexible and allowed the researcher to follow the leads that emerged during the interview (Fitzpatrick & Boulton, 1994). The qualitative research design assisted the researcher to obtain rich and thick information about the use, benefits and challenges of HRIS in Kabarak University as well as Egerton University. The study utilized purposive sampling method. In purposive sampling, the subjects were selected because of certain characteristic (Patton, 1990). According to Silverman (2000) purposive sampling demonstrates some features or processes that are of interest in a particular study. Its main aim was to gather wide and sufficient information regarding the participant's views on the topic of HRIS on Service Delivery. Purposive sampling was used in this study for participants who had answered in the questionnaire and were considered to be the key informants from departments of Human Resource, Finance and ICT were selected for the study. The researcher finally utilized convenient sampling to get the total of 12 participants for the interviews.

3.6 Sample size

All staff working in Egerton and Kabarak Universities Departments of HR, ICT and Finance were approached to participate in the study due to the small number of the population in the departments. This was considered adequate for further analysis since according to researchers such as Mugenda (2008) a response rate of over 60% is considered good adequate for analysis.

However, 79 out of the 88 staff participated in the study. Thus the overall response rate was 90%.

3.7 Data Collection Instruments

The study utilized both self-administered questionnaire and interview schedule for data collection. The self-administered questionnaires consisted of 2 sections (Appendix 1). The first section requested for demographic information such as gender, marital status, age, level of education and experience in specific departments. Section two used the Likert scale of rating, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). These sought to assess HRIS uses, to examine benefits of HRIS, to establish challenges associated with usage of HRIS and to explore appropriate strategies for sustained HRIS on service delivery. This enabled the researcher to collect all relevant information from the respondents.

The interview schedule was used because it is flexible in composition and gave the researcher the ability to ensure that the same general areas of information were collected from each interviewee (McNamara, 2009). It provided more focus than the conversational approach, but still allowed a degree of freedom and adaptability in getting information from the interviewee. The interview guide was developed from literature and based on the research aims and objectives.

3.8 Data collection Procedure

The researcher wrote and spoke to the management of the Egerton and Kabarak universities to be allowed to collect data and after seeking authority data was collected in two stages as follows. First, the researcher and research assistant administered questionnaires to Egerton University staff and collected the questionnaires within a period of two weeks.The questionnaires were administered to all the participants in the respective departments. Second, the researcher and research assistant administered questionnaires to Kabarak University and collected them on the agreed date within two weeks.

After collecting and analyzing the data collected using the questionnaires, the researcher went back to the field and administered face-to-face interviews to 12 participants. This helped to explain, or elaborate on, the quantitative results obtained in the first phase. The second, qualitative, phase builds on the first, quantitative, phase, and the two phases are connected in the intermediate stage in the study. The rationale for this approach is that the quantitative data and their subsequent analysis provide a general understanding of the research problem. The qualitative data and their analysis refine and explain those statistical results by exploring participants' views in more depth.

3.9 Validity and Reliability of the Data Collection Instruments

The data collection instruments were tested for their reliability and validity. The pilot study was conducted to test the questionnaire for the face validity. The questionnaires

were given to 26 members of staff of Moi University and 10 to Catholic University, Eldoret campus. This was to assess whether they clearly understood the questions and terminology used in the study. Changes were made following the pilot study.Validity of the instrument was also obtained by talking to expert's, academicians, practitioners, supervisors and consultants in the field of human resource management. These were required to comment on the relevance of the questions/items in the instrument using the Content Validity.

Researcher used field notes and member checking after the interview (Andrew, 2004). The participants answered several standardized interview questions and offered comments on whether or not they felt the HRIS was effective in the university in their own perceptions and experiences. To ensure transferability, the researcher collected sufficient and detailed descriptions of data and reported them with sufficient detail and precision to allow reader have a proper understanding.

Transferability was met through purposeful selection of specific informant who manages HR departments (Andrew, 2004). To address conformability; the researcher used data triangulation to reduce the researcher bias, as well as that extent to which the researcher admitted predisposition. The researcher ensured dependability through making open dialogue with the respondents. During the analysis process, code-recoding procedure and triangulation of the quantitative data also helped in increasing the consistency of the findings of this study.

3.10 Data analysis

Data analysis was done using the SPSS version 17.0 used for data capturing and analysis. Descriptive statistics was employed to summarize the demographic data and was presented as frequency distribution tables, graphs and pie charts. Inferential statistics using the chi-square and t-test was employed to compare association between HRIS uses, effects, challenges and strategies for sustained HRIS on service delivery in Public and Private Universities in Kenya. Alpha level was set at 0.05 for all tests.

Qualitative data was analysed by thematic content analysis (Richie & Spencer, 1993). Interviews were transcribed verbatim by the researcher. The researcher read the transcript several times to familiarize herself and compare with the field notes. The researcher assigned codes to each sentence to denote meaningful unit, group codes together and form themes. The researcher applied these themes to index systematically all data in textual form by use of code; the index was described by a short text. The researcher liaised with the supervisors for their opinions during coding process. The researcher then grouped quotations with same content together and assigned codes (or sub-theme) and organized codes within each theme together. Finally, the researcher created categories that were associated with themes and found explanations to findings. The interpretation was influenced by themes that emerged from the data.

3.11 Ethical Consideration

The researcher obtained ethical clearance from the Moi University, School of Human Resource Development. The researcher got research permit from National Commission for Science, Technology and Innovation (NACOSTI) (**Appendix V**. Permission was obtained from the DVC Research and Extension and Registrar Administration from Egerton University as well as from Registrar Human Resource from Kabarak University prior to the commencement of the study **(Appendix V, VI & VII)**. The researcher then sought the staff establishment from the Human Resources Department that was necessary for sampling the participants of the study. The aim of the study was explained to the relevant administrative bodies and to the potential participants. The participants were assured that all the information obtained would be confidential and anonymous and that the data collected would be kept confidential and used for examination purposes only. All the potential participants were informed that they could withdraw from the study at any time, without any consequences.

3.12 Summary

The research setting, study population, study design and sampling procedure were described in this chapter. Further methodological issues of the quantitative and qualitative study, that is the validity, reliability and trustworthiness of the study, were also described. The procedures of data collection and data analysis were outlined and the research findings have been finally presented in Chapter four.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Overview

This chapter contains findings of the study on the assessment of Human Resource Information on Service Delivery in Kenyan public and private universities. Descriptive statistics were used to analyze the data. On one hand, frequencies and percentages were used to analyze data descriptively.

4.2 Response Rate

A total of 88 respondents was drawn from the HR, ICT and Finance departments in the two universities using purposive sampling technique. Egerton (public) university had the highest response rate of 92%, while Kabarak University had a response rate of 87%. Table 4.1 below indicates that the questionnaires were reduced to 79 after 9 questionnaires were dropped from the analysis because they were not returned giving an overall response rate of 90%. This was considered adequate for further analysis since according to researchers such as Mugenda (2008) a response rate of over 60% is considered good and adequate for analysis.

Table 4.2 Response rate

UNIVERSITY	SAMPLE SIZE	RETURNED QUESTIONNAIRE	RESPONSE RATE %
Egerton University	50	46	92
Kabarak University	38	33	87
	88	79	90%

Out of the 88 respondents 12 Administrators who were incharge of the Departments participated in face to face interviews. The Researcher purposively selected 7 participants from Egerton University (Public University) to be interviewed. The distribution of the participants was as follows: 3 Administrative Assistants, 2 Senior Administrative Assistant, 1 Acting Senior Assistant Registrar and 1 ICT help desk Administrator. The respondents worked in the following departments/Units: HR 4, Finance & Account 1, Deputy Registrar Office 1, and ICT 1. Out of the seven respondents, 1 had worked for 3 years and also others had worked for 8 and 12 years in their department. Those who had worked for 7years and 10 years were 2.

The total number of interviewees in Kabarak University was 5, of which only 2 indicated their job titles as Administrative Assistant, 2 Senior Administrative Assistant and 1 Administrator. Two respondents were working in HR department, while 1 was working in ICT and one in finance department.

4.2.1 Presentation of Variables

As illustrated clearly in figure 4.1 shows that, slightly above half (58%) of the respondents were working in the Public University as compared to (42%) who were working in Private. As much as this was a comparative study in terms of staff distribution there was a limitation because public university had more respondents than the private university. This is contributed by level of investment in the universities.

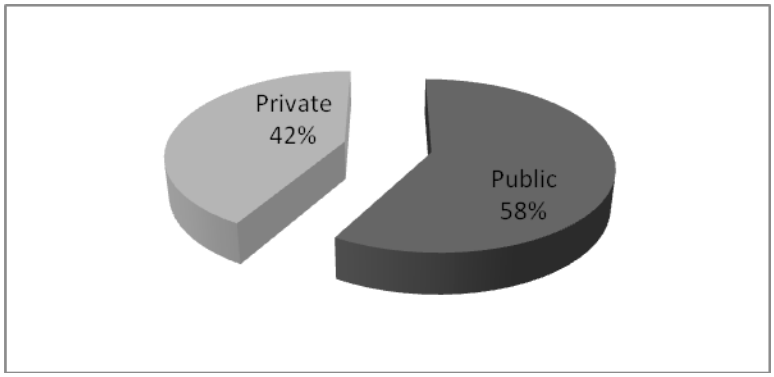


Figure 4.1 Respondents distribution in universities
Source: primary data, 2014

4.3 Demographic Characteristics of the Respondents

4.3.1 Age distribution

Majority of the respondents from public university were aged between 41-48 while in private university majority were aged between 26-32. Those aged 49 years and above contributed to 6.3% of the total respondent as indicated in Table 4.2 which indicates all age brackets were put into perspective therefore reducing levels of biasness in the study. The Private University had relatively younger work force as compared to the public

University. None of the respondents in the private University was aged above 49yrs. The association between the age groups and the category of the university was significant χ^2 (3) = 15.431, p=0.001. It is perceived that the older generations are rigid and slow in accepting technological change compared to the younger work force. The universities tend to employ younger and middle aged people because they tend to embrace change faster and are still stimulated and challenged to develop skills and new abilities and also the job may also seem attractive. Age of respondents was considered important for this study since the perceptions, thinking, experience and performance differ depending on age (Skirbekk, 2003).

Table 4.2 Demographic frequency table

Variable	Public Freq (%)	Private Freq (%)	Total Freq (%)
Age in categories			
26-32	8 (17.4)	17 (51.5)	25 (31.6)
32-40	13 (28.3)	11 (33.3)	24 (30.4)
41-48	20 (43.5)	5 (15.2)	25 (31.6)
>49	5 (10.9)	0 (0)	5 (6.3)
Gender			
Male	26 (57.8)	21 (63.6)	47 (60.3)
Female	19 (42.2)	12 (36.4)	31 (39.7)
Department			
HR	26 (56.5)	10 (30.3)	36 (45.6)
Finance	10 (21.7)	15 (45.5)	25 (31.6)
ICT	10 (21.7)	8 (24.2)	18 (22.8)
Education qualification			
Diploma	20 (44.4)	5 (15.2)	25 (32.1)
Undergraduate	22 (48.9)	16 (48.5)	38 (48.7)
Post graduate	3 (6.7)	12 (36.4)	15 (19.2)
Experience in HR			
<=5	11 (23.9)	15 (45.5)	26 (32.9)
6-10	21 (45.7)	12 (36.4)	33 (41.8)
11-15	4 (8.7)	6 (18.2)	10 (12.7)
16-20	5 (10.9)	0 (0)	5 (6.3)
>20	5 (10.9)	0 (0)	5 (6.3)
Grade			
1-4	7 (15.56)	7 (21.21)	14 (17.95)
5-11	34 (75.56)	24 (72.73)	58 (74.36)
>12	4 (8.89)	2 (6.06)	6 (7.69)

Source: Primary data 2014

4.3.2 Gender Distribution

Majority (60.3%) of respondents were males, females contributed to 39.7% of the total respondents. As shown in Table 4.2, more males were working in the public University as compared to the private University. There was however a fair representation of both gender among the respondents. This is in line with Kenyan constitution of 2010 which states that a third of employees should be of either gender. It can be observed that universities have paid attention to the requirements of the constitution of Kenya. Although female were more than male, the difference is not significant and therefore the study is not skewed towards any gender. This also for the study as will get to understand the opinion of both genders.

4.3.3 Distribution of labour force as per department

Majority (45%) of the respondents were working in the department of Human Resource, followed by those working in Finance (32%), while those working in ICT contributed to 23% of total respondents. Comparatively most (56.5%) of the respondents in the Public University were working in HR department while most (45.5%) of the respondents in the Private University were under the Finance department.

4.3.4 Education Qualifications

It was observed that there was high literacy level in both universities which is vital in IT utilization but with variant level of education. As illustrated in table 4.2 almost half (49%) of the respondents were under-graduates, post-graduate represented (19%) of the total respondents while Diploma holders constituted 32%. Undergraduate respondents

were almost equal in proportion on both the Private and Public Universities (48.5% and 48.9% respectively). But diploma holders were more in the Public University (44.4%) than those in the Private University (15.2%). In the contrary, post graduate were more (36.4%) in the Private University than in the Public University (6.7%). The association between the education level and type of University was significant χ^2 (2) = 13.772, p=0.001. The respondents had the requisite academic credentials to understand the area of HRIS. This also implies that the respondents had the capacity to give quality response for the purpose of this study.

4.3.5 Experience in HR

The respondents were requested to indicate the period under which they had worked at the university. This information aimed at testing the working experience appropriateness of the respondent in answering the questions regarding the perceived factors affecting the HRIS implementation at the University. It was expected that the longer the years of experience at the University is more likely to obtain reliable information on HRIS as they have interacted with the system longer. Also the more knowledgeable the respondent would be about University's systems and operations.

Majority (41.9%) of the respondents had 6-10 years of experience in their department, followed by those with ≤5 years and 11-15 years representing 32.9%, 12.7% of the total respondents respectively. Those with experience of 16-20 and >20 constituted 6.3% each. Most (45.5%) of the respondents in the Private University had worked for <5 years, none had worked for >15years in the Private University as indicated in figure 4.2. The

association between type of University and the work experience was significant χ^2 (4) = 11.176, p=0.018. Further, many years of experience enables respondents to provide accurate information of a given concept in the organization such as adoption of Information Technology in Human Resource Function.

4.3.6 Type of HR system used in the universities

It was observed that majority (68%) of the respondents said the institution they work for use both HRIS and paper-based systems while 32% said they use HRIS. This is illustrated in figure 4.2.

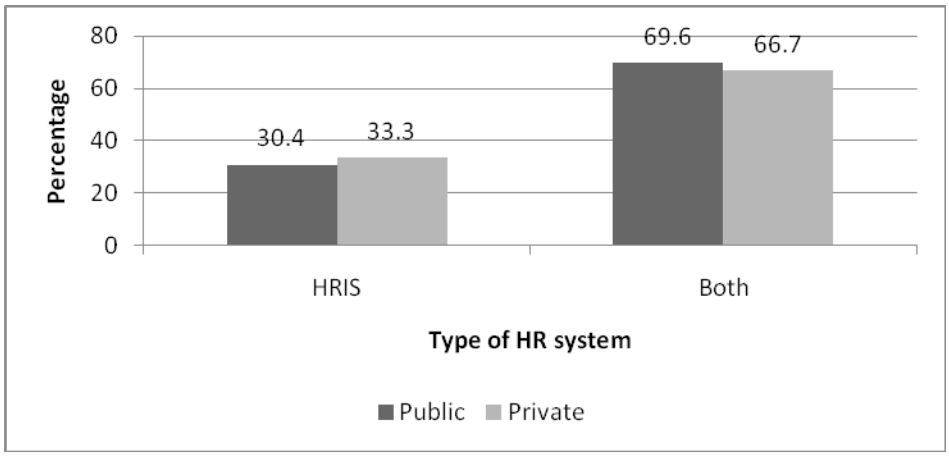


Figure 4.2 Type of HR systems

4.3.7 Organisational training

Respondents were asked if the university they work for provided training. Majority of the respondents 55% in private university stated that the institution did not provide training on HRIS, while 45% said the contrary as shown in figure 4.2. The percentage of those who said the organization did provide training were higher (63%) in the Public

University than in the Private University (45%). There was no association between the university affiliation and the institution offered training χ^2 (1) = 2.409, p=0.168.

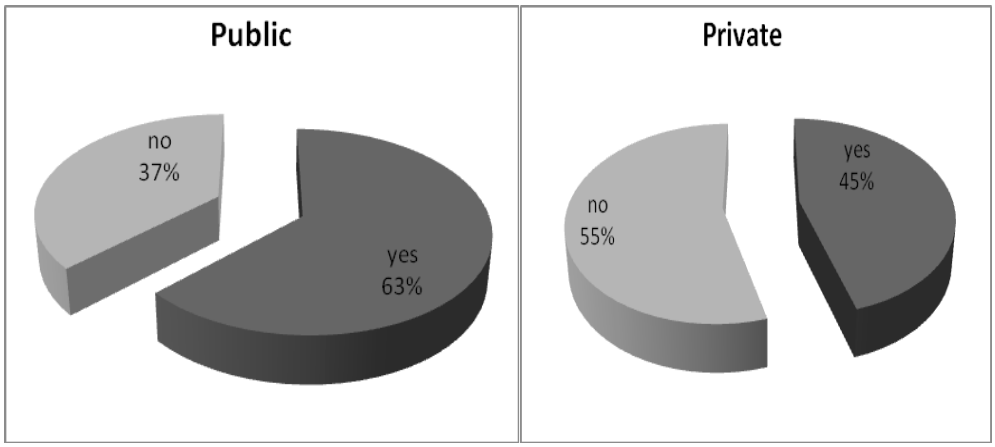


Figure 4.3 Organisational training

Source: primary data, 2014

4.3.8 Type of training expected

Those who said that the organization did not provide training in HRIS, 37% and 55% in Public and Private Universities respectively had expected the management to provide adequate training about HRIS. The type of training expected is shown in the figure 4.4. Majority (65.6%) expected that the organization would provide 'on job training' to their staff on HRIS system. The expected training type was almost equal in both institutions; this is shown in the table 4.4.

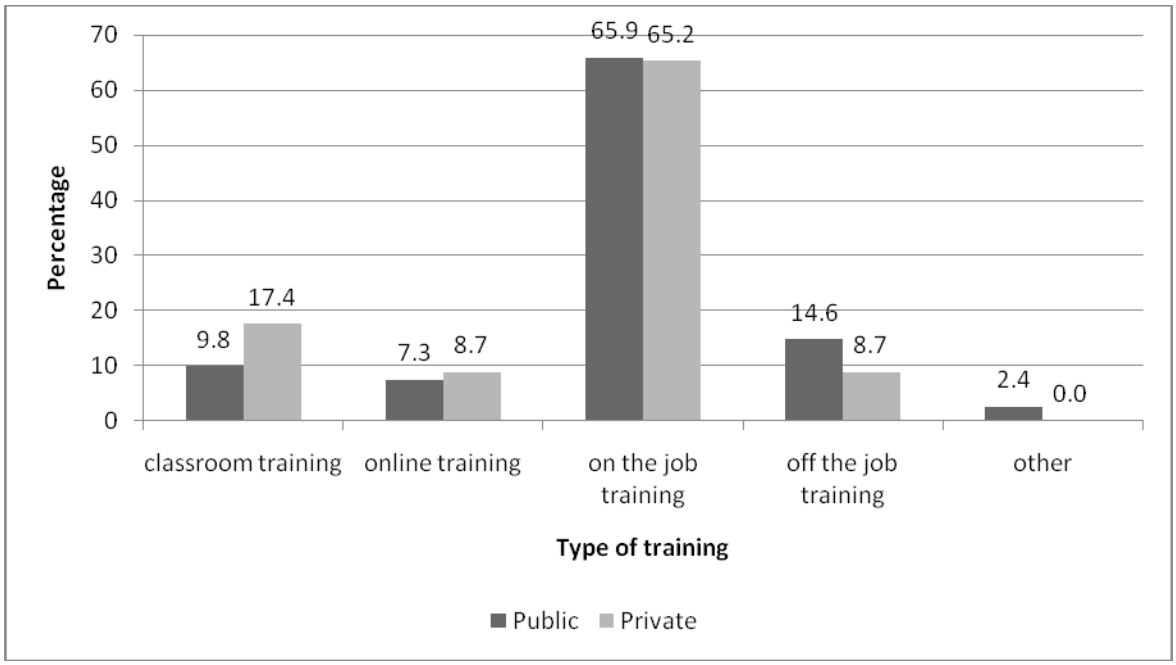


Figure 4.4 Type of training

Source: Primary data, 2014

4.4 Human resource information system used in HR service delivery in the University

Table 4.3 HRIS uses on Service Delivery

Statement	type	strongly disagree	disagree	neutral	agree	strongly agree
The institution uses HRIS recruitment subsystem	Both	30.4	15.2	30.4	20.3	3.8
	Public	26.1	15.2	32.6	21.7	4.3
	Private	36.4	15.2	27.3	18.2	3
HRIS maintains skill inventory	Both	18.2	15.6	16.9	42.9	6.5
	Public	15.9	13.6	15.9	47.7	6.8
	Private	21.2	18.2	18.2	36.4	6.1
Institution uses HRIS training and development subsystem	Both	13.9	26.6	29.1	25.3	5.1
	Public	15.2	23.9	26.1	30.4	4.3
	Private	12.1	30.3	33.3	18.2	6.1
Institution uses HRIS for succession planning	Both	7.7	14.1	35.9	32.1	10.3
	Public	6.7	15.6	35.6	31.1	11.1
	Private	9.1	12.1	36.4	33.3	9.1
Organization uses HRIS payroll subsystem at an optimum level	Both	2.5	5.1	10.1	44.3	38
	Public	2.2	4.3	10.9	41.3	41.3
	Private	3	6.1	9.1	48.5	33.3
Organization uses HRIS record management subsystem at an optimum level	Both	3.8	6.3	26.6	26.6	36.7
	Public	4.3	2.2	28.3	28.3	37
	Private	3	12.1	24.2	24.2	36.4

Source: Primary data, 2014

Majority of the respondents disagreed (41.3%) that the public university uses HRIS for recruitment in optimum level, 32.6% were neutral and minority (26%) were agreement while in private university majority of the respondents (51.6%) disagreed that the

university uses recruitment in optimum level, (27.3%) were neutral, and minority (21%) were in agreement. This trend is against what is happening in developed countries where as noted by Manzini and Grindley, (1986) companies are now using software to recruit, screen, and pretest applicants online before hiring them. In agreeing with this trend Oz (2009) argues that currently due to the growing number of job applicants many organizations refuse to receive paper applications and resumes. Therefore, it is no wonder that some companies may accept such documents via email, but that others accept only forms that are filled out and submitted on-line.

Majority of the respondents (54.5%) stated that they were in agreement that HRIS maintains skill inventory in public university, (29.5%) were in disagreement and (15.9%) were neutral. While in private university majority (42.5%) were in agreement, (39.4%) were in disagreement, and minority (18.2%) were neutral.

On the point that the institution uses HRIS training and development subsystem at an optimum level in the public university majority (39.1%) indicated they were in disagreement , (34.7%) of the respondent were in agreement and (26.1%) were neutral. while in the private university majority (42.4%) indicated they were in disagreement, (33.3%) were neutral and minority (24.3%) were in agreement. As noted by Oz (2009), in most organizations in both the manufacturing and service sectors, multimedia software training is rapidly replacing training programs involving classrooms and teachers. Such applications include interactive, three dimensional simulated environments. Training software emulates situations in which employees act and includes tests and modules to evaluate a trainee’s performance. In addition, to the saving in trainer’s time there are

other benefits. The trainee is more comfortable because he or she controls the speed at which the sessions run. The software lets the trainee go back to a certain point in the session if a concept is missed. Also the software can emulate hazardous, situations, thereby testing employee performance in a safe environment. Developments in IT enable organizations to reduce the costs of training drastically as one can move the training materials and exams to a central website so employees can share and personalize learning. Using a web browser, they can find the materials they need , bookmark selected web pages, leave the training session when they wish, and come back to finish it later (Oz, 2009).

On the point that HRIS used for succession planning in public university majority (42.2%) indicated were agreement, (36.4%) were neutral and (22.3%) were in disagreement. while in private university majority (42.4%) indicated they were in agreement, (36.4%)neutral (21.2%) were in disagreement. This is in agreement with one Administrator from Egerton University who stated that:

> *"HRIS has helped in identifying and developing internal people with the potential to fill key leadership positions in the university. Succession planning increases the availability of experienced and capable employees that are prepared to assume these roles as they become available"* (**P1-A1**, Oral Interview, Egerton University,11 March 2014).

Majority of the respondents (82.6%) were in agreement that public university uses HRIS payroll subsystem at an optimum level, (10.9%) were neutral, and minority (6.5%) were

in disagreement. While in the private university majority (81.8%) indicated they were in agreement (9.1%) were neutral and (9.1%) were in disagreement. In addition all (100%) the respondents from Egerton University mentioned that:

> "*.. we are able to apply for imprests and leave online, mhh this system has actually minimized the use of papers here, imagine you only need to have an IP number and check how many days you have for your leave, remaining days request and get approval instantly."* (**P1-A7** Oral Interview, Egerton University,11 March 2014).

Other respondents from Kabarak University stated that:

> "… *We are able to access our payslips online*" (**P2-A2,** Oral Interview, Kabarak University,11 March 2014).

Majority (65.3%) of the respondents in the public university stated that the organization used HRIS record management subsystem at an optimum, (28.3%) were neutral and minority (6.5%) were in disagreement. while in the private university, majority (60.6%) were in agreement, (24.2%) were neutral and minority (15.1%) stated that they were in disagreement. According to Manzini and Grindley (1986) basic personnel module is normally the first to be created since it is the cornerstone of the basic information to be found in the system. It includes information such as the name, Identity number, date of entry, job classification, location, job specifications and descriptions, salary comparison data, address, telephone numbers among others. HR department must keep personnel

records to satisfy both external regulations (such as federal and state laws) and internal regulations, as well as for payroll and tax collection and deposit, promotion consideration, and periodic reporting. Many HRISs are now completely digitized (including employees' pictures) which dramatically reduces the space needed to store records, the time needed to retrieve them and the costs of both (Oz, 2009). This is the case in Kenyan Universities.

The HRIS according to the respondents was mostly used for payroll subsystem at an optimum level (82.3%) and (63.3%) said HRIS was used for record management subsystem at an optimum level. HRIS uses on service delivery in the University was rated on average at 61.12±13.3%, with a min of 31.67% and Maximum 88.33%. The rating was 62.5±13.6 min=33.3, max=88.3 in the Public University as compared to 59.3±12.9 min=31.7, max 85 in the private university. t (71) = 1.034, p=0.304

The least uses of HRIS were for recruitment and selection (24.1%) and Training and Development (32.9%).

4.4 Effects of HRIS on HR service delivery

Table 4.5 Effects of HRIS on Service Delivery

Statement	type	strongly disagree	disagree	neutral	agree	strongly agree
	Both	2.6	11.5	16.7	52.6	16.7

The quality of services offered by the institution has improved as a result of the use of the HRIS	Public	2.2	13	8.7	58.7	17.4
	Private	3.1	9.4	28.1	43.8	15.6
HRIS has reduced paper work in our institution	Both	6.4	15.4	19.2	44.9	14.1
	Public	6.5	13	10.9	56.5	13
	Private	6.3	18.8	31.3	28.1	15.6
HRIS has helped easy access to staff information	Both	3.8	7.7	12.8	52.6	23.1
	Public	4.3	6.5	10.9	58.7	19.6
	Private	3.1	9.4	15.6	43.8	28.1
HRIS has improved data management and control	Both	1.3	6.5	18.2	54.5	19.5
	Public	0	6.7	20	60	13.3
	Private	3.1	6.3	15.6	46.9	28.1
HRIS has contributed to success of this organization	Both	1.3	17.9	23.1	50	7.7
	Public	0	17.4	23.9	54.3	4.3
	Private	3.1	18.8	21.9	43.8	12.5
HRIS has reduced time on service delivery	Both	2.6	10.5	19.7	50	17.1
	Public	4.3	6.5	19.6	54.3	15.2
	Private	0	16.7	20	43.3	20
HRIS has facilitated ease of communication within the institution	Both	9.1	14.3	22.1	40.3	14.3
	Public	8.9	15.6	17.8	46.7	11.1
	Private	9.4	12.5	28.1	31.3	18.8
Reduced manpower due to the use of HRIS	Both	7.7	14.1	29.5	35.9	12.8
	Public	9	13	32.6	34.8	8.7
	Private	3.1	15.6	25	37.5	18.8
There are less errors as a result of the use of the HRIS	Both	0	15.4	28.2	35.9	20.5
	Public	0	21.7	28.3	32.6	17.4
	Private	0	6.3	28.1	40.6	25
Streamlining the process for effective service provision	Both	0	20.8	23.4	45.5	10.4
	Public	0	24.4	22.2	44.4	8.9
	Private	0	15.6	25	46.9	12.5
HRIS has improved the HR function of our Organization	Both	2.6	12.8	20.5	35.9	28.2
	Public	4.3	8.7	17.4	41.3	28.3
	Private	0	18.8	25	28.1	28.1
HRIS has helped with forecasting staffing needs	Both	10.3	26.9	25.6	21.8	15.4
	Public	8.7	21.7	23.9	34.8	10.9
	Private	12.5	34.4	28.1	3.1	21.9
HRIS has improved data input process	Both	2.6	7.7	12.8	50	26.9
	Public	2.2	4.3	15.2	54.3	23.9
	Private	3.1	12.5	9.4	43.8	31.3
HRIS has led to faster decision making	Both	14.1	15.4	25.6	30.8	14.1
	Public	17.4	15.2	23.9	34.8	8.7
	Private	9.4	15.6	28.1	25	21.9
HRIS has promoted the institution's competitive advantage	Both	3.8	11.5	28.2	43.6	12.8
	Public	4.3	8.7	21.7	54.3	10.9
	Private	3.1	15.6	37.5	28.1	15.6

Source: Primary data, 2014

Majority of the respondents from public (76.1) were in agreement that adoption of HRIS has led to improved quality of services offered by the institution followed by (15.2%), who disagreed and (8.7%) were neutral. While in private university majority (59.4%)

were in agreement that adoption of HRIS has led to improved quality of services offered by the institution followed by (28.1%) neutral and (12.5%) disagreed. According to Shrivastava and Shaw (2003) just as in automated production, automated HRM promises advantages in costs, time and most importantly in this case quality of HR processes.

Majority of respondents from public university (69.5%) were in agreement that HRIS has reduced paper work in in their institution followed by (19.5%) who disagreed and (10.9%) were neutral. While in the private university majority (43.7%) indicated they were in agreement, followed by (31.3%) who were neutral and minority (25.1%) were in disagreement.

Majority of respondent (78.3%) were in agreement that HRIS has helped access of staff information in the public university followed by (10.9%) who were neutral and minority (10.8%) disagreed. In private university majority (71.9%) were in agreement that HRIS has helped to access staff information, (15.6%) neutral and minority (12.5%) disagreed.

Majority (73.3%) of the respondents from the public university agree that HRS has improved data management and control, (20%) were neutral, and minority (6.7%) disagreed. In private university, majority (75%) indicated they were in agreement that HRIS has improved data management and control, (15.6%) were neutral and minority (9.4%) stated they were in disagreement.

Majority of respondents from public university (58.6%) were in agreement that HIRS had contributed to success of this institution, (23.9%) neutral, and minority (17.4%)

stated they in disagreement while in the private university majority (56.3%) indicated they were in agreement (21.9%) neutral, and minority (21.9%) stated they disagreed.

The respondents were asked to state whether HRIS had reduced time on service delivery. In the public university, majority (69.5%) indicated that they were in agreement, (19.6%) neutral, and minority (10.8%) stated they disagreed while in the private university, majority (63.3%) indicated they were in agreement, (20%) neutral, and minority (16.7%) stated they disagreed.

On the point that HRIS has facilitated ease of communication within the institution in public university majority (57.8%) indicated were in agreement (17.8%) neutral, and minority (24.5%) stated that they disagreed while in the private university majority (50.1%) indicated they were in agreement , (28.1%) were neutral, and minority (21.9%) stated they strongly disagree.

Majority of the (43.5%) respondents stated that manpower has reduced due to the use of HRIS in public universities, (32.6%) were neutral, and minority (22%) disagreed. In Private University majority (56.3%) were in agreement, (25%) were neutral, and minority (18.7%) disagreed.

Majority of respondents (50%) stated that there are fewer errors as a result of the use of the HRIS followed by (28.3%) neutral, and minority (21.7%) were in disagreement. In private university majority (65.6%) were in agreement, (28.1%) neutral, (25%) and minority (6.3%) disagreed.

Majority of respondents (53.3%) from public university states that HRIS has helped in Streamlining the HR process for effective service provision, followed by (24%) of those who disagreed and minority (22.2%) neutral. In Private University majority (59.4%) were in agreement, (25%) neutral and minority (15.6%) disagreed.

The respondents were asked to state if HRIS had improved the HR function of the Organization. In the public university, majority (69.6%) indicated that they were in agreement, (17.4%) neutral, and minority (13%) stated that they were in disagreement while in the private university, majority (56.2%) were in agreement, (25%) neutral and minority (18.8%) stated that they disagreed.

HRIS has helped with forecasting staffing needs in public university majority (45.7%) indicated were in agreement followed by (30.4%) of those who were in disagreement, (23.9%) neutral while in private university majority (46.9%) indicated they were in disagreement, (28.1%) neutral, and minority (25%) stated they were in agreement.

On the statement that HRIS has improved data input process in public university majority (78.2%) indicated were in agreement, (15.2%) neutral, and minority (6.5%) disagree while in private university majority (75.1%) indicated they were in agreement followed by (15.6%) of those who were in disagreement and minority (9.4%) were neutral

On the statement that HRIS has promoted the institution's competitive advantage in public university majority (65.2%) indicated were in agreement (21.7%) neutral and minority (13%) stated they were in disagreement while in private university majority

(43.7%) indicated they were in agreement, (37.5%) were neutral and minority (18.7%) disagreed.

From the interviews the following additional benefits came out: When asked if there has been easy connectivity of HR department with other departments due to HRIS adoption, all (100%) respondents said that HRIS is integrated with other systems in the University. 57.1% of the respondents said that Finance and Procurement and academic records management were integrated .

Respondents stated that:

> *"Yeah, the system is integrated with other systems in the university i.e. finance, procurement and Academic records. This has been of great advantage because key employee information is extracted from the system so you do not have to manage everything twice. Integration of HRIS leverages this information, greatly reducing the amount of time and effort spent maintaining separate systems"*. (**P1-A5,** Oral Interview, Egerton University,12 March 2014).

> While in private university 100% of the respondents stated that they HRIS was not integrated with other systems in the university, (**P2-A2** Oral Interview, Egerton University,17 March 2014).

The most felt benefits of the HRIS were: data input process improvement (76.9%), improved access to staff information (75.7%) and improvement in data management and control (74%). Effect of HRIS on HR service delivery was rated by the respondents on

average at 70.89±14.1%, minimum 40% and maximum 100%. Public University 70.6±13.2 min=40, max 100 compared to the Private University 71.3±15.5 min=40 max 94.7. t (71) = -0.203, p= 0.84

4.6 Challenges associated with the usage of HRIS on service delivery in the University

Table 4.5 Challenges associated with usage of HRIS

Statement	type	strongly disagree	disagree	neutral	agree	strongly agree
Lack of skilled Staff as regards the HRIS	Both	8.2	20.5	24.7	39.7	6.8
	Public	4.9	19.5	26.8	46.3	2.4
	Private	12.5	21.9	21.9	31.3	12.5
	Both	2.6	31.2	20.8	36.4	9.1

High cost of setting up and maintaining a HRIS hinders the adoption of a HRIS	Public	0	28.9	26.7	40	4.4
	Private	6.3	34.4	12.5	31.3	15.6
Lack of support from top management	Both	11.5	28.2	25.6	25.6	9
	Public	6.5	34.8	23.9	23.9	10.9
	Private	18.8	18.8	28.1	28.1	6.3
The lack of IT support undermines HRIS adoption	Both	17.9	29.5	17.9	26.9	7.7
	Public	15.2	26.1	19.6	32.6	6.5
	Private	21.9	34.4	15.6	18.8	9.4
Difficulty in changing organization culture hinders achieving the full potential of HRIS	Both	6.4	16.7	9	46.2	21.8
	Public	8.7	10.9	10.9	45.7	23.9
	Private	3.1	25	6.3	46.9	18.8
HRIS not being perceived as an advantage at all hinders achieving its full potential	Both	5.3	20	22.7	38.7	13.3
	Public	4.5	18.2	25	36.4	15.9
	Private	6.5	22.6	19.4	41.9	9.7
Resistance from worker unions that members may lose jobs	Both	17.9	20.5	33.3	21.8	6.4
	Public	6.5	23.9	41.3	21.7	6.5
	Private	34.4	15.6	21.9	21.9	6.3

Source: Primary data, 2014

Majority of respondents (48.7%) stated that they were in agreement that lack of skilled Staff is a challenge as regards the HRIS in public university, (26.8%) neutral and minority (24.4%) stated they disagreed while in private university majority (43.8%) indicated they were in agreement followed by (34.4%) who disagreed and minority 21.9 were neutral.

On the statement that High cost of setting up and maintaining a HRIS hinders the adopting of a HRIS in public university majority (44.4%) indicated were in agreement, (28.9%) disagreed, and minority (26.7%) were neutral while in private university

majority (46.9%) indicated they were in agreement (40.7%) were in disagreement, and minority (12.5%) were neutral.

Majority (41.3%) of the respondents indicated that were in disagreement that Lack of support from top management hinders the organization from achieving full potential of HRIS in public university following by (34.8%) who were in agreement and minority (23.9%) were neutral while in private university majority (37.6%) indicated they were in disagreement followed by those who were in agreement (34.4%) and minority (28.1%) were neutral.

On the statement that the lack of IT support undermines HRIS adoption in public university majority (41.3%) indicated they were in disagreement, followed by (39.1%) who were in agreement, and minority (19.6%) were neutral while in private university majority (56.3%) indicated they were in disagreement, followed by (28.2%) who were in agreement and minority (15.6%) were neutral.

On the statement that Difficulty in changing organization culture hinders achieving the full potential of HRIS in public university majority (69.6%) indicated were in agreement followed by (19.6%) who were in disagreement and minority (10.9%) were neutral. while in private university majority (65.7%) indicated they were agreement, (28.1%) disagreed, and minority (6.3%) were neutral.

Majority of the respondents from public university (52.3%) were in agreement that HRIS not being perceived as an advantage at all hinders achieving its full potential ,

(25%) neutral, (and minority (22.7%) were in disagreement. In private university majority (51.6%) were in agreement, (29.1%) were in disagreement and minority (19.4%) were neutral.

Majority of respondents from public university (41.3%) were neutral that resistance from worker unions that members may lose jobs, (30.4%) disagreed, minority (28.2%) were in agreement. In private university (50%) were in disagreement, (28.2%) were in agreement and minority (21.9%) were neutral.

The most identifiable challenge was “difficulty in changing organization culture hinders achieving the full potential of HRIS” (68%), followed by “HRIS not being perceived as an advantage at all hinders achieving its full potential” (52%) the least was “resistance from worker unions that members may lose jobs” (28.2%).

The respondents were asked to identify and describe challenges or problems experienced by the respondents from using HRIS. Most of the interviewed respondents strongly agreed that the HRIS implementation process was not achieved easily, since the System had to change the business processes. Furthermore, it was a big challenge for Egerton University since the purchased system had to be implemented in the Department of HR. The findings, in terms of HRIS implementation challenges, can be explained based on each stages of implementation process as follows.

One of the most challenging issues is the beginning of the HRIS implementation project, since implementing the HRIS system had a short and tight schedule. Therefore one of the respondents from Egerton University stated that:

> *"The project team had to plan and keep on the right track from the beginning"* (**P1**-**A4** Oral Interview, Egerton University, 12 March 2014).

However, this project was in the high priority task for the University. As a result, top management supported and provided the resources needed. As mentioned earlier, due to the tight schedule, it was quite a challenge and the need to set up good strategic planning in order to achieve the goals effectively and efficiently.

Some of respondents mentioned that a great problem is that the education and training process is a big challenge for implementing HRIS. One of the respondents stated:

> *"…Let's say there is a need to train a thousand users before you go live. How should you do that?, that's the challenge".* (**P1**-**A3** Oral Interview, Egerton University,12 March 2014).

In addition, one of the interviewed respondents from Kabarak University mentioned how important training the people for HRIS is:

> *"..I think that the training is very challenging. If a successful training is performed the system gives more value to the users and develop new features instead of discussing handling of the system on and on.."* (**P2**-**A4** Oral Interview, Egerton University,18 March 2014).

Another effect and consequence is that people who are involved with this HRIS system have to change their organisational culture and working process in order to successfully achieve the implementation. In other words, the maintenance process of HRIS has to be changed due to the fact that, Business change management, Data cleansing,Business process documentation, Training and Development , Integration ,Test & Trial period and Go-live. Two respondents who have been working with this system said:

> *"..This changes organisational culture, we have our own routines in terms of maintenance processes. Conversely, when System was implemented in Egerton University we had to change our working process. This changed the way that I used to work before.."* (**P1-A6,** Oral Interview, Egerton University,12 March 2014).

On the other hand, two respondents from Egerton University mentioned about the outcome of changing from the old system to the new information system (Paper based system to HRIS) saying that:

> *"..Some people are not happy when they have to change the organisation structure. I think I am satisfied with the outcome of this systems. It makes my working easier .."* (**P1-A7& P1-A4,** Oral Interview, Egerton University, 11 March 2014).

Another effect and consequence is that the HRIS is complex software with many functions because the maintenance of staff information is complicated. As a result, it's difficult for the users to learn the system and it takes time to understand the complexity of

the system (Oral Interview, 14 March 2014). Consequently, the following issue always occurs and is problematic regarding any discussion of information system implementation because technology is often complex, together with the fact that implementation of new information system generates fear, thus it creates significant resistance to change. In other words, when a new information system is implemented, some people who got used to the older system are always resistant to change and to use the new system. However, in the case of the Kabarak University users were qualified to be participants of HRIS System; for this reason, the degree of resistance to change is decreased. Some of the respondents mentioned that a great effect and consequence of implementing HRIS is increasing tasks for some users. Since the HRIS is a complex system, the users have to input a number of detailed data in the system (Oral Interview, 17 March 2014). However, one of the respondents stated that some areas of system reduce work tasks for them and make their tasks much easier (Interview, 18 March 2014).

Another problem is that, in Kabarak University there is a lack of personnel to operate the system. Two of respondents explained:

> *"..One of the problems of this system is lack of people to input the data into the system. Since they have to input the data from the files you can see here. Therefore, no reserved people do this task. Moreover, someone who can operate this system must have to be trained and get certificate*.." (**P2-A4**, Oral Interview, 18 March 2014)

The main problems identified by the interviewed respondents over the use of the HRIS were data insecurity, poor infrastructures, staff attitude and huge cost associated with

implementation and maintenance of the system. On average, challenges associated with the usage of HRIS on service delivery in the University were rated at 64.32±14.3%, having a minimum of 31.43% and a Maximum of 88.57%. Public university 67.1 ±14.3, min=31.4, max 88.6. Private University 60.8 ±13.7 min=37.1, 88.6. t(68) = 1.86, p=0.67.

4.6 Strategies for sustained usage of HRIS on service delivery

Table 4.6 Strategies for sustained usage of HRIS on Service Delivery

Statement	type	strongly disagree	disagree	neutral	agree	strongly agree
There should be mobilization of resources required to set up HRIS	Both	0	1.3	10.3	48.7	39.7
	Public	0	2.2	15.2	54.3	28.3
	Private	0	0	3.1	40.6	56.3
Suitable HRIS software should be availed in order to achieve effective HRIS	Both	0	3.8	12.8	37.2	46.2
	Public	0	6.5	13	43.5	37
	Private	0	0	12.5	28.1	59.4
In order to enhance the performance of HRIS there is focus on goals	Both	0	2.6	12.8	60.3	24.4
	Public	0	0	19.6	58.7	21.7
	Private	0	6.3	3.1	62.5	28.1
To strengthen the effectiveness of the HRIS, there should be an effort to ensure proper record keeping	Both	0	2.6	10.3	46.2	41
	Public	0	2.2	13	52.2	32.6
	Private	0	3.1	6.3	37.5	53.1
Following a standardized process has improving the effectiveness of the HRIS	Both	0	5.1	20.5	46.2	28.2
	Public	0	2.2	26.1	45.7	26.1
	Private	0	9.4	12.5	46.9	31.3
Trained and qualified HRIS staff	Both	0	3.8	9	48.7	38.5
	Public	0	4.3	10.9	52.2	32.6
	Private	0	3.1	6.3	43.8	46.9
	Both	1.3	5.1	10.3	33.3	50

Continuous in house training for staff	Public	2.2	4.3	10.9	39.1	43.5
	Private	0	6.3	9.4	25	59.4

Source: Primary data, 2014

On the point that there should be mobilization of resources required to set up HRIS in public university, majority (82.6%) indicated they were in agreement, (15.2%) neutral and minority (2.2%) stated they were in disagreement while in private university majority (96.9%) were in agreement and minority (3.1%) were neutral. In conclusion, the analysis shows employees of universities are in agreement on the top management support in approval of implementation of HRIS project and aligning it to strategic goals, they also agreed that HRIS has enhanced decision making process, planning and coordination by managers. However the employees were not sure about top management committal to resources and allocation of a sizeable budget to cater for the HRIS implementation.

Based on the findings that Suitable HRIS software should be availed in order to achieve effective HRIS in public university majority (80.5%) indicated were in agreement, (13%) neutral and minority (6.5%) stated they disagree while in private university majority (87.5%) indicated they were in agreement, (28.1) and minority (12.5%) neutral.

On the statement that in order to enhance the performance of HRIS there is focus on goals in public university majority (80.4%) indicated were in agreement, and minority (19.6%) stated they were neutral while in private university majority (90.6%) were in agreement, (6.3%) disagreed and minority (3.1%) were neutral.

On the point that in order to strengthen the effectiveness of the HRIS, there should be an effort to ensure proper record keeping in public university majority (84.8%) indicated were in agreement (13%) neutral and minority (2.2%) stated that they disagree while in private university majority (90.6%) were in agreement, (6.3%) were neutral and minority (3.1%) stated they disagreed.

On the statement that Following a standardized process has done a lot in improving the effectiveness of the HRIS in public university majority (71.8%) indicated were in agreement, (26.1%) who were neutral and minority (2.2%) stated they disagree while in private university majority (78.2%) indicated they were in agreement, (12.5%) were neutral and minority (9.4%) stated they disagreed.

Majority of the respondents (84.8%) agreed that trained and qualified HRIS staff are required for sustained HRIS in public universities, (10.9) neutral while minority (4.3%) disagree. In private university (90.7%) were in agreement, (6.3%) were neutral and minority (3.1%) disagreed.

Majority of respondents from public university (82.6%) were in agreement that there should be continuous in house training for staff, (10.9%) neutral, and minority (6.5%) disagreed. In private university (84.4%) were in agreement, (9.4%) neutral and minority (6.3%) disagreed.

Table 4.4 shows that, almost all the respondents agreed with the statements regarding strategies needed to sustain HRIS usage in their institutions. Strategy of “mobilization of

resources required to set up HRIS" was the most (88.4%) agreed upon followed by "In order to strengthen the effectiveness of the HRIS, there should be an effort to ensure proper record keeping" and "trained and qualified HRIS staff", agreed upon by 87.2% of the respondents. "Following a standardized process has done a lot in improving the effectiveness of the HRIS" was the most unpopular strategy with 74.4%.

Most of the respondents who were interviewed from Kabarak University stated that a significant success of HRIS is good coordination and cooperation. The main critical success factors of HRIS implementation was efficient and effective coordination and operation. Moreover, setting up the project team members with the right skills for the right job are critical success factors in the implementation project. One of the respondents stated:

> *"..Project team with the right skills and their team work are the most important part to be successful in this project.."* (**P2-A2**, Oral Interview, Kabarak University, 17 March 2014).

In addition, the test and trials process is a very significant process and can be one of the critical success factors of HRIS implementation. In each system implementation, a test and trial period was conducted for three months in order to ensure that the system was working well. Also in Egerton University the test and trials process had been conducted for three months before deployment or "go-live".

As one respondent said:

> *"… Our system endured three months of rigorous testing procedures before the system went live Trials are important because when you test the system in a live situation, you will find the problems and get positive thinking before you go live.."* (**P1-A1**, Oral Interview, Egerton University, 11 March 2014).

On average strategies for sustained usage of HRIS on service delivery was rated at 83.7 ±11.5% with minimum rating of 48.57% and a Maximum of 100%. Public University 81.8 ±11.4 min=48.6, max=100 compared to the Private University 86.4 ±11.5 min 51.3, max 100. $t(76) = -1.764$, $p=0.82$

One respondent from the Egerton University stated that:

> "*.. HR department must develop policies and guidelines to protect the integrity and security of the HRIS so that private employee information does not fall into the wrong hands. To maintain the security and privacy of HRIS records, university should control access, develop policies and guidelines that govern the utilization of information, and allow employees to check their records. A combination of written policy and effective use of your system's security features is needed to manage issues of data integrity and privacy. Because employee records are increasingly maintained in computer files, the traditional recordkeeping policies and practices need to be reviewed and updated in light of these technological times. Often more complete than paper records, computer records are full of information that needs to be protected from inaccurate actions as well as from unwarranted use…*" (**P1-A3**, Oral Interview, Egerton University, 11 March 2014)

Staff development in regards to training and hiring of staff was identified as the main way to mitigate the problems experienced in the use of HRIS, followed by infrastructure improvement and maintenance of the system.

On average, the HRIS uses in the Universities was rated 62.5% in public university higher than in private Universities which was rated at 59.3%, however the difference in these means was not statistically significant $t(71) = 1.034$, $p=0.304$.

Effect of HRIS on HR service delivery was rated 71.3% on average in Private Universities and 70.6% in Public Universities. The difference was not significant $t(71) = -0.203$, $p=0.84$

More (67.1%) respondents pointed challenges in the Public University than in the Private University (60.8%), however the difference in these means was not significant $t(68) = 1.86$, $p= 0.067$. Also, the Private University was rate high (86.4%) on average in Strategies for sustained usage of HRIS on service delivery compared to the Public University (81.8%). This difference was not significant $t (76) = -1.764$, $p=0.082$.

4.10 Summary

Furthermore, the study was to compare differences among private and public universities in terms of HRIS perceived uses, benefits and barriers and strategies to put in place for sustained HRIS based on university's type. Interestingly, the study found no significant differences among universities. One explanation for the above finding is that regardless

of the type of the university, there are many other classifications variables that make Kenyan universities different, such as number of students; university's age; financial and non-financial resources; organizational culture; and the location of the university. Instead of targeting all of these variables the study used one question: what is the university you work in? This question supposes to include all of above-mentioned variables. Interestingly, the results suggested that universities were varied in the following challenges: lack of expertise in IT, inadequate knowledge in implementing the system, lack of commitment from top managers, no suitable HRIS or software, difficulty in changing the organization's culture, employees fearful of changing the way they do things, not perceived as an advantage at all. In addition, they were varied in the following benefits: improving data control, reducing data reentry and data may be used immediately, allowing for fewer errors, standardizing programmes and procedures, tracking and controlling the different HR functions. Importantly, the revealed findings from Table 4.6 suggest that all universities suffered from low financial support for HRIS; since it is costly software. In addition, all suffer from lack of commitment and involvement by all employees and managers. These findings will therefore be further discussed in Chapter Five.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Overview

The researcher summarizes the findings and their implications based on the objectives and research questions. Further major conclusions that can be drawn from the study are also mentioned followed by key recommendations and suggestions for further research.

5.2 Summary of the findings

On the demographic characteristics of the respondent, the research revealed that the majority of respondents (58%) were from public university while (42%) were from private university. This could have been contributed by the level of investment in both universities. The research also established that most of the respondents from private university were relatively younger than the public university which had middle aged people. It is perceived young and middle aged people accept change more easily. Thus they will embrace the system more easily. Although male were more than female, the difference was not significant and therefore the study was not skewed towards any gender. This is in agreement with Kenyan constitution of 2010 which states that a third of employees should be of either gender. This also agrees with National Policy on Gender and Development (NPGD), 2000 which spells out that although women's participation in IT is increasing still remains below that of men.Given the education levels of the

respondents, majority from both universities possessed undergraduate degrees meaning there was high level of literacy though varied. Even though there was high literacy level majority of the respondents stated that they lacked IT training and those who had it had trained without the help of the university. These respondents had the requisite academic credentials to understand the area of HRIS. This also implies that the respondents had the capacity to give quality response for the purpose of this study. Majority of the respondents from Egerton University had worked for 6-10 years. It can be assumed that many years of experience enables respondents to provide accurate information of a given concept in the organization such as adoption of Human Resource Information on Service Delivery. Majority of respondents in Private University had worked for <5 years. This implies that the respondents had worked for a period long enough to understand the systems and processes at the Universities.

5.2.1 Human resource information system used on service delivery in universities

The findings of this study revealed that the most used HRIS in the public and private universities were record management and payroll services. Payroll services encompasses performance measurement and reward systems which is an important function performed by the HR department. Respondents stated that this system help to manage compensation efficiently and effectively for example; available software programs can easily calculate weekly, monthly and hourly pay according to annual salaries and can could assist to complying with compensation regulations. Skill inventory is another HRIS use that was perceived by the respondents. The respondents stated that HRIS helped to keep inventory

of the various skills that are already available should be taken and stored in the HRIS database. Skill inventory helps to indicate the magnitude of the gaps that exist between the available skills and those that are needed but are not yet available. Ordinarily HR Service Delivery within an organization should have a system of recording employee information in which majority of respondents stated that it was in use. It can be explained that Payroll and record management are basic personnel module which are normally the first to be created since it is the cornerstone of the basic information to be found in the system. It includes information such as the name, Identity number, date of entry, job classification, location, job specifications and descriptions, salary comparison data, address, telephone numbers among others. HR department must keep personnel records to satisfy both external regulations and internal regulations, as well as for payroll and tax collection and deposit, promotion consideration, and periodic reporting. Many HRISs are now completely digitized (including employees' pictures) which dramatically reduces the space needed to store records, the time needed to retrieve them and the costs of both.

There was no significant difference on the use of HRIS between public and private universities. That means that there is no actual utilization of HRIS software, which as mentioned in the literature could help in saving cost, increasing competitiveness and shifting the role of HRM from transactions to SHRM. In this context, HRIS should not only be designed to automate HRM activities to gain administrative advantages rather it should be also used for decision making and to provide strategic advantages for organizations.

5.2.2 Effects of HRIS on Service Delivery

According to the findings, the benefits of HRIS which were highlighted by most of the respondents were improved data input process, easy access to staff information, improved data management, improved HR function, and the saving of time and costs. Majority of the respondents stated that the initial drive to adopt HRIS was related to cutting HR costs and improving service delivery in the universities. In agreeing with the other scholars Boddy et al (2002) notes that a modern information system can save an organization from a future increase in costs, lead to prospects of increased sales through offering new services, delivery channels, promotional activities, or market penetration. In addition, the results presented in Table 4.5 suggest that participants agreed on all of the listed HRIS effects. Based on the above-mentioned findings it could be argued HRIS helped in reducing the paperwork and in streamlining HR processes in Kenyan universities. However, it is important to say those participants' responses on the perceived HRIS benefits may reflect their personal opinions or point of views on HRIS benefits not the actual achievable benefits of HRIS in their organizations. The findings on the effects of HRIS revealed that the quality of services offered by staff had improved. HRIS is therefore a medium that helps HR professionals perform their jobs more effectively and to support strategic decision-making. As human capital plays a larger role in competitive advantage, functional managers expect the HRIS to provide functionality to meet the universities goals and objectives. This is in line with the findings of developed countries which revealed that it was important that the core competencies of the HRIS be clearly defined, and the ability to create, apply and extend knowledge of the HRIS promoted the success of the organization.

Another benefit that came out clearly from the interviews is that the use of HRIS in private universities has reduced errors compared to the manual system. The major effect of HRIS is the ability to reduce errors when it replaces a manual system. The respondents argued that advances in HRIS have been associated with a “delayering” (flattening) of the organizational hierarchy and a move toward greater decentralization and horizontal information flows within organizations. By providing employees with high quality, timely, relevant and relatively complete information, modern Management Information Systems has reduced the need for a hierarchy to function as means of controlling the activities of the organization. In addition, they have reduced the need for a management hierarchy to coordinate organizational activities and hence enhancing organizational effectiveness. Moreover according to the respondents, one reason for an increase in efficiency is that the use of advances in information systems can reduce the number of employees required to perform organizational activities.

Finally, regarding if there has been easy connectivity of HR department with other departments due HRIS adoption, the respondents from public university said that the HRIS is integrated with other systems in the University such as finance, procurement and Academic records. This has been of great advantage because key employee information is extracted from the system so you do not have to manage everything twice. Integration of HRIS leverages this information, greatly reducing the amount of time and effort spent maintaining separate systems.

5.2.3 Challenges associated with the usage of HRIS on service delivery in the University

The findings presented in Table 4.6 suggest that the greatest barriers to the implementation of HRIS were insufficient financial support; lack of commitment from top managers. That could be explained by the facts that most of Kenyan Universities confront financial crisis in general and they face a lack of budget, money to design and develop HRIS or any other HRM applications. The other important factors that need to be highlighted and that could affect negatively most of managerial activities, including the implementation of HRIS in universities, are the social-cultural factors, which shape the way people think, act and behave. The findings are supported by Beckers and Bsat (2002), who assert that the cost of setting up and maintaining a HRIS can be high, which is the major obstacle in the implementation of a HRIS.

The respondents further indicated that other challenges were a lack of skilled staff as regards HRIS. However, the situation in the Universities is worrying since majority of the interviewees stated that the level of IT literacy is insufficient to enable HRIS adoption in HR function and further majority stated that they lack confidence in carrying out HR activities using HRIS, selecting appropriate HRIS, lack confidence that they have the necessary skills to use HRIS in HR function activities and lack confidence in helping other employees to solve HRIS problems. This can be attributed to the fact that there is lack of management support towards training and development on IT related subjects. The study findings according to the majority revealed that HR function within private universities had not organized IT training for its employees and those employees who had

undergone IT training did it without assistance of their organization. Majority of the respondents stated that they would like the institution to provide on the job training. On-the-job training, which is an effective method for helping employees develop their knowledge, skills, and experience. It can be noted that personnel issues are one of the major problematic issues regarding the HRIS implementation process. For instance, even if an organisation has a perfect information system, if the staffs do not know what to do with the information that it produces, it wastes time and money. Similarly, functional managers probably underestimate the cost because they have a vested interest in getting the project accepted. Technical staff in turn also under estimate training costs because being experts in the field they do not perceive the needs and difficulties of new users. Normally the best person to do the training is the individual's immediate supervisor as he or she will know how best, how long is required and the approach to take when instructing a particular individual. It is significant to ensure that all the users have been trained adequately. Another issue that also relates to the training process is staffing.

From the findings, resistance to change was seen as another challenge in implementing HRIS. Part of the resistance is performed as fear, such as fear of technologies, fear of being displaced by technology, and fear of the unfamiliar. Employers resist HRIS as they think that it increases cost of manpower as trade unions demand for employee based plans, more facilities and benefits including training and development. Consequently, individuals who have resistance to change can perform by putting off the extra work and effort needed in learning new information systems or technologies.

According to the interviews, most of respondents claimed that there was always a challenge when the organisation replaces the old system with the new system. For instance, in the case of implementation of the HRIS in Egerton to replace the old system, called paper system, that had been used for almost 30 years, some of the users didn't want to change the way they had worked before. In addition, one of the respondents in Kabarak University also supported this phenomenon that when they recruit a new system users in order to be trained, these people always show their resistance to change. The reason behind this seems to be the complexity of the system as one of the respondents mentioned. As a result, the users can act in a way that is resistant to change.

Another challenge found from the interviews is a lack of adequate communication to the operational level in order to make the users understand what the system is designed to do, what the system look like, and so forth. According to Beaumaster (2002), technical systems issues are primarily related to the impact information technology has on organisations and individuals. In addition, these issues include hardware and software considerations as well as the compatibility and life cycles of various information technologies.

However, the challenge for Private Universities, currently, is integration between HRIS and other Systems in the university. This is in agreement with (McNurnin *et al.,* 2006) who stated that connecting the different functions into a central location, data redundancy becomes much easier to control and eliminate. Enterprise Resource Planning is a potential source for salvation for most organizations. The modularity allows managers

not just from human resources but from the entire organization to have access to the same data which is transformed into information to suit the user's needs. The typical common database at the center of an HRIS usually contains some sort of database management system (DBMS) that acts as a data scrubber as well as a means of storage.

According to the findings the biggest problems or obstacles to managing a HRIS were lack of staff, lack of a budget, problems with time management, the need to work with other departments and the lack of information technology (IT) support. Likewise, there was a challenge to keep information protected all the time from being accessed by unauthorized persons, system hackers, and web spam and document viruses.

5.2.4 Strategies for sustained usage of HRIS on service delivery

In regard to training, the employees of both universities agreed that training influences the HRIS implementation. They also agreed that training motivates them to embrace change during HRIS implementation. But they were neutral on administration of training programs being faster through HRIS and on whether they were given adequate training on how to use HRIS. The respondents disagreed to the fact that training on HRIS is done frequently in the universities.

The study revealed that respondents strongly agreed that for HR department to exist, ICT department should be responsible for the maintenance of the HRIS. This is because ICT plays a major role in facilitating the computerization of HRIS in the universities and that the department participates in planning and developmental stages of HRIS.

Therefore, in order to promote the smooth adoption of HRIS in universities, it is necessary to ensure the financial and non-financial support to set up a HRIS, a managerial commitment, compulsion and control are required to ensure a complete adoption of HRIS. Moreover, the support of top management is one of the most important factors for successful implementation of HRIS. The respondents agree that top management should take primary responsibility for providing sufficient financial support and adequate resources for building a successful HRIS. The lack of financial support and adequate resources will inevitably lead to failure. A comprehensive HRIS requires a sizeable budget to implement and maintain. If top managements do not understand how the HRIS bring the benefits to the organization, they will not be willing to allocate valuable resources, time and efforts of implementation.

Another implementation strategy, the respondents argued that it is important to have tests and trials before the deployment of HRIS process. Test and trials of the system have proven to be the key components of success for some organisations. The findings from the interviews also indicate that the Egerton University system endured three month of rigorous testing procedures before the system went live. Moreover, this process also seems like an evaluation process before the system goes live (Oral Interview, 14 March 2014). This determination is best achieved by focusing on the ultimate objective, and asking how a particular situation will impact achievement of this final goal.

5.3 Contribution of Study to theory

Human Resource Management plays a vital role in implementing the strategic business objectives of the organization, and in running the daily functions effectively and efficiently to improve the productivity and proficiency. HRIS has been addressed as a tool that organizations use to solve and manage a variety of issues and processes connected to the management of people. On the one hand, technology may be used for different purposes within particular human resource functions: for recruitment and selection, performance evaluation, compensation and benefits, training and development, health and safety, employee relation and legal issues, retention and work life balance (Enshur *et al.*, 2002). On the other hand, a company that uses a complex mix of HRIS solutions enables the human resource function to manage in human resources as well as employees information flow in an integrated approach across the entire employment cycle of each individual, thus shifting the attention from a process centered human resource to a customer(employee)-centered human resource management. User interface creates the interaction with end users. Each sub system is attached to a user interface where the user can enter information to the relevant sub system and view information, provided by subsystems based on rules and facts. This model is shown below (Figure 5.1).

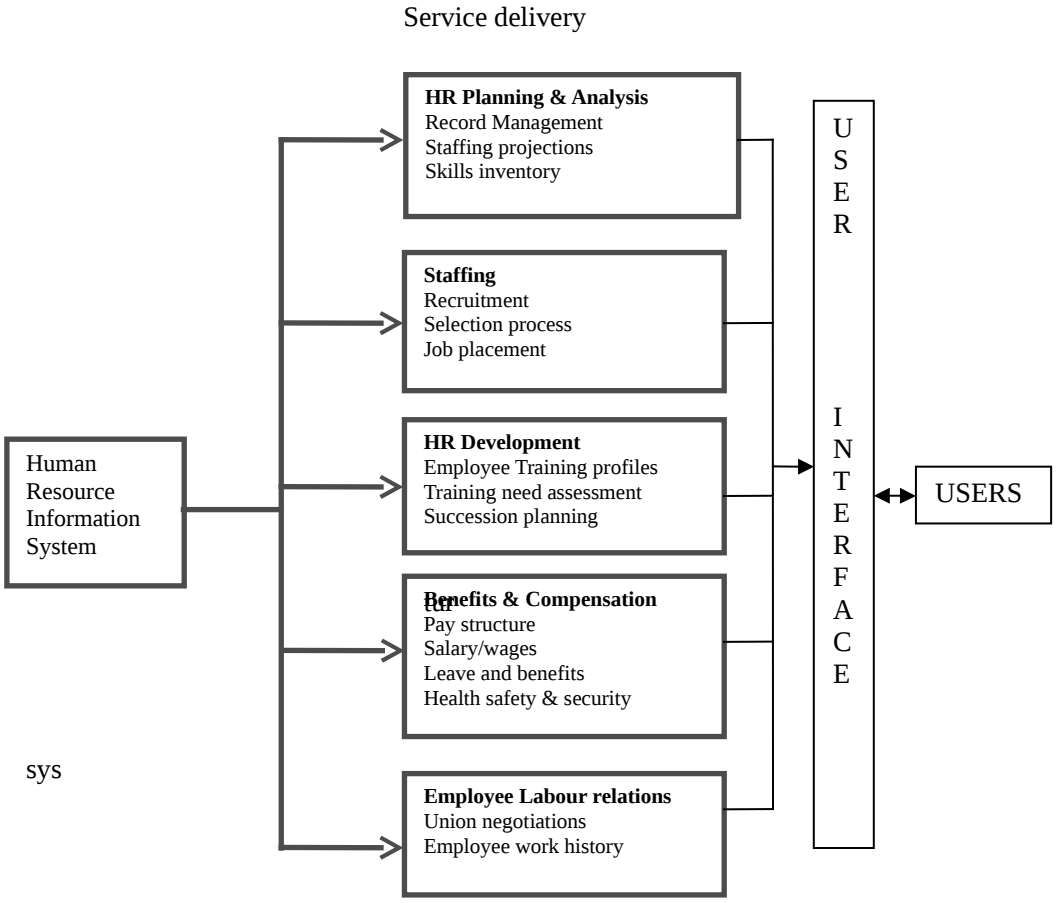


Figure 5.4 Proven model for research

5.4 Conclusion

Based on the above-discussed findings, the following conclusions can be made. Despite the investment of HRIS in the surveyed universities, HRIS in Kenyan universities is adopted to automate HRM activities in order to obtain some general administrative routine purposes. It was revealed that vast majority of the survey respondents indicated that HRIS was used mainly for administrative purposes like payroll and employee record keeping, rather than strategic applications like succession planning, training and

Development, Recruitment and selection. The results thus indicate a tremendous amount of unrealized HRIS potential as few respondents were using the HRIS strategically to directly improve their competitiveness.

A wide majority of the participants perceived that the HRIS provided improved data input process, data management and easy access of staff information with the effectiveness of the HR department by automating administrative tasks. However, other widely acclaimed benefits of reduced manpower, forecasting of staffing needs and improving training needs were least perceived by the organizations.

From the findings, several challenges were pointed out among which included inadequate funds, inadequate knowledge, lack of expertise(s) in IT to operate the HRIS, insufficient financial support, problems with time management of the HRIS implementation process and the need to work with other departments. Likewise, lack of information technology (IT) support, unavailability of suitable HRIS or software, difficulty in changing the organization's culture, fear of changing the way staff do things, the HRIS not being perceived as an advantage, lack of commitment and involvement by all employees and lot of paper work that is difficult to computerize undermined the achievement of the full potential of HRIS.

Some of the strategies put forward to counteract the challenges were ensuring that the sources of funds to cover the costs of setting up and maintaining a HRIS, mobilization of financial resources, support from top management, training of staff on how to operate

HRIS, staff attitude change towards the HRIS, sourcing for the required expertise(s) and timeliness during the implementation stage.

5.5 Recommendation

Based on above findings and discussions on the assessment of Human Resource Information Systems on service delivery, the researcher recommends that:

1. The management of Kenyan Universities allocates adequate resources for the implementation and maintenance of the system. HR managers should play a proactive role to support HRIS implementation in their organizations. They should convince top managers and other line managers of the importance of HRIS implementation, so that time and budget required for implementing HRIS could be gained. The top management needs to be convinced by the values and the strategic benefits of HRIS in order to grant the required financial and non-financial support for HRIS implementation.

2. The study findings indicate that Information Technology Literacy is the most important factor in HRIS adoption in Human Resource departments in Kenyan Universities. This being the case there is need for management to facilitate and support HRIS training among employees working in the HR Departments. The training should be geared towards enhancing the skills and knowledge of employers on how to integrate HRIS in Human Resource Management activities.

Since skills in HRIS only will not necessarily lead to improvement of Human Resource Function.

3. There is need to diversify the use of Human Resource Information Systems in the Human Resource Department in public and private universities. This will enable the Universities to efficiently and effectively run Human Resource Management matters and many more benefits.

4. This study is expected to be helpful to the managers in planning, implementing and utilizing HRIS thus extensive attentions need be given to the applications of HRIS, to be focused on aspects required for supporting decision making process, rather than being just for administrative applications.

5. Since the Universities have adopted different types of Human Resource information systems, these systems need to be integrated and exchange data in order to increase availability and readiness of information to support top management and the operational level.

5.9 Areas of further Research

This study concentrated on assessing Human Resource services delivery through human resource information systems in selected universities. Future research should attempt to collect data from all the public and private universities in Kenya.

To study the true nature of the association between Human Resource services delivery and Human Resource Information Systems, a longitudinal study is more appropriate.

Other variables other than Human Resource Management services delivery should be used to predict Human Resource Information Systems.

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APPENDICES

Appendix I: Introduction Letter

Dear respondent

RE: ASSESSMENT OF HRIS ON HUMAN RESOURCE SERVICE DELIVERY

I am Mercy Kananu Kanake, Reg. SHRD/PGH/02/12, a master's student at Moi University taking MSc in Human Resource Development. The programme requires that I undertake a research in any area of interest. I am, therefore, doing a research on the assessment of human resource information system on HR service delivery.

I therefore request you to participate in this research by filling the following questionnaire. The information you will provide will be treated with confidentiality and used for the sole purpose of this research. Please note that your name should not be included anywhere in the questionnaire.

Your participation in this study will be valuable as it will contribute to the achievement of the study objectives.

Yours faithfully,

MERCY KANANU KANAKE

Appendix II: Questionnaire

This questionnaire consists of three sections. Please see the instructions at the beginning of each section.

SECTION A: EMPLOYEE DEMOGRAPHIC INFORMATION

This section contains aspects that pertain to employee demographic information in an institution. Please fill in the blank spaces or check the provided boxes.

1. Which university do you work for?

   Public ☐ Private ☐

2. Please indicate your Grade

   Grade 1-4 ☐

   Grade 5-11 ☐

   Grade 12 and above ☐

3. Please indicate your age bracket

   18-25yrs ☐ 26-32yrs ☐

   32-40yrs ☐ 41 -48yrs ☐

   49 -57yrs ☐ 58yrs & above ☐

4. Gender? Male ☐ Female ☐

5. Which department do you work for?

   Human Resource ☐

   Finance ☐

   ICT ☐

6. Educational Qualification

Secondary ☐ Diploma ☐ Under-graduate ☐ Post-graduate ☐

Professional ☐

7. How long have worked in your department?

a. Less than 5 years ☐

b. 6 to 10 years ☐

c. 11 to 15 years ☐

d. 16 to 20 years ☐

e. More than 20 years ☐

8. Which Human Resource Systems do you use in your department?

a. Paper-based system ☐

b. Human resource information systems (HRIS) ☐

c. Both ☐

9. Did the organization provide any sort of assistance/training to you concerning HRIS?

Yes ☐

No ☐

If no, do you expect the management to provide adequate training about HRIS?

Yes ☐

No ☐

If yes, then which type of assistance/training is provided?

a. Classroom Training ☐

b. Online Training ☐

c. On- the-Job Training ☐

d. Off- the- Job Training ☐

e. Others. Mention if any _____

SECTION B:

This section contains information about the uses of HRIS. Please tick one of the following that suits your feelings in the statements. To what extent do you agree with the following statements as pertains you institution?

A. Human Resource Information Systems that determine Service Delivery in the University

Please rate the following on a scale of 1 to 5, where 1=strongly disagree and 5 = strongly agree

Statement	**Strongly Disagree 1**	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
The institution uses HRIS recruitment subsystem at an optimum level					
HRIS maintains skill inventory					
The institution uses HRIS training and development subsystem at an optimum level					

Institution uses HRIS for succession planning					
Organization uses HRIS payroll subsystem at an optimum level					
Organization uses HRIS record management subsystem at an optimum level					

B. Effect of HRIS on HR service delivery

Please rate the following on a scale of 1 to 5, where 1=strongly disagree and 5 = strongly agree

Statement	**Strongly Disagree 1**	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
The quality of services offered by the institution has improved as a result of the use of the HRIS					
HRIS has reduced paper work in our institution					
HRIS has helped easy access to staff information					
HRS has improved data management and control					
HIRS has contributed to success of this organization					
HRIS has reduced time on service delivery					
HRIS has facilitated ease of communication within the institution					
Reduced manpower due to the use of HRIS					
There are less errors as a result of the use of the HRIS					
Streamlining the process for					

effective service provision					
HRIS has improved the HR function of our Organization					
HRIS has helped with forecasting staffing needs					
HRIS has improved data input process					
HRIS has improved the training process					
HRIS has promoted the institution's competitive advantage					

C. Challenges associated with the usage of HRIS on Service Delivery in the University

Please rate the following on a scale of 1to 5, where 1=strongly disagree and 5 strongly agree

Statement	**Strongly Disagree 1**	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
Lack of skilled Staff as regards the HRIS					
High cost of setting up and maintaining software hinders the adoption of a HRIS					
Lack of support from top management hinders the organization from achieving full potential of HRIS					
The lack of IT support undermines HRIS adoption					
Difficulty in changing organization culture hinders achieving the full potential of HRIS					
HRIS not being perceived as an advantage at all hinders achieving its full potential					
Resistance from worker Unions that members may lose jobs					

D. Strategies for sustained usage of HRIS on Service Delivery

Please rate the following on a scale of 1to 5, where 1=strongly disagree and 5 strongly agree

Statement	**Strongly Disagree 1**	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
There should be mobilization of resources required to set up HRIS					
Suitable HRIS software should be availed in order to achieve effective HRIS					
In order to enhance the performance of HRIS there is focus on goals					
In order to strengthen the effectiveness of the HRIS, there should be an effort to ensure proper record keeping					
Following a standardized process has done a lot in improving the effectiveness of the HRIS					
Trained and qualified HRIS staff.					
Continuous in house training of staff					

***** Thank you for your contribution *****

Appendix III: Interview Schedule

INTERVIEW SCHEDULE

1. I would like us to know one another

- ❖ job title
- ❖ Unit or department where you work?

How long have you worked in this Department?

_____

2. What software (HRIS) do you currently employ in this department? i.e, PeopleSoft, SAP, Oracle etc

_____

_____

3. When was the software installed?

_____

_____

4. Was the software implemented immediately it was installed?

5. What are the services offered by this software (HRIS) i.e. recruitment, payroll, data management, training and development.

_____

_____

6. Is HRIS integrated with other systems in the university? If yes which one

_____

_____

7. What information is your staff able to access online? If no, why?

_____

_____

_____

8. What are the advantages of using Human resource information systems in your institution?

_____

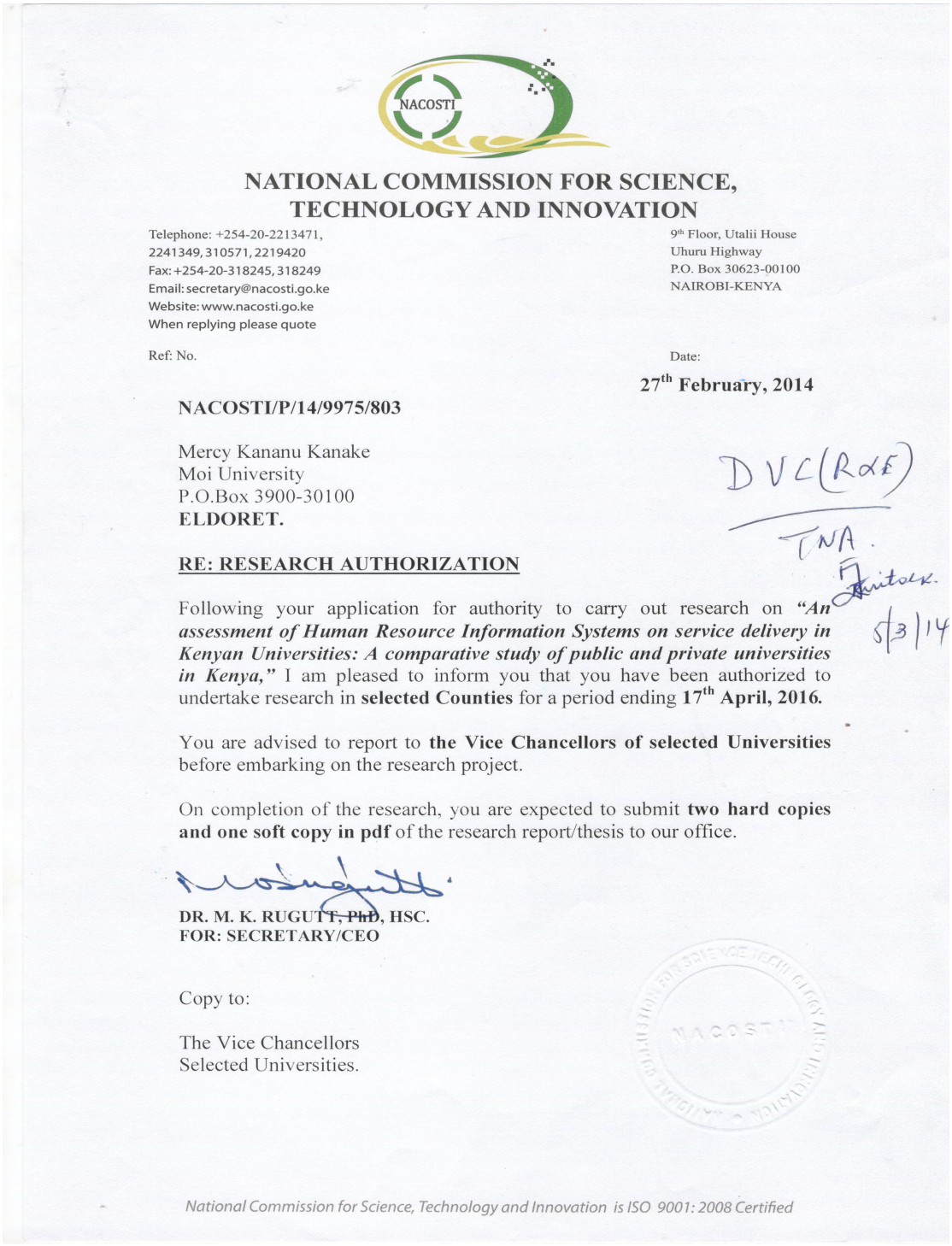
_____

_____

9. What problems/disadvantages have you experienced with this system?

10. What do you think should be done to mitigate these problems?

Appendix IV: Authorization Letter from the Ministry



NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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2241349, 310571, 2219420
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Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:
27th February, 2014

NACOSTI/P/14/9975/803

Mercy Kananu Kanake
Moi University
P.O.Box 3900-30100
ELDORET.

DVC(R&E)
TNA.
5/3/14

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"An assessment of Human Resource Information Systems on service delivery in Kenyan Universities: A comparative study of public and private universities in Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **selected Counties** for a period ending **17th April, 2016.**

You are advised to report to **the Vice Chancellors of selected Universities** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC.
FOR: SECRETARY/CEO

Copy to:

The Vice Chancellors
Selected Universities.

National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified

Appendix V: Letter of permission from Egerton University

EGERTON UNIVERSITY

P. O. BOX 536-20115
EGERTON, KENYA

Tel: (051) 2217987, 2217781, 2217892
Fax: (051) 2217805, 2217827
Email: radmin@egerton.ac.ke

OFFICE OF THE REGISTRAR (ADMINISTRATION)

EU/AF/R/ADM/37 **6th March, 2014**

Ms Mercy Kananu Kanake
P.O. Box 4606-30100
ELDORET

Dear Ms Kanake

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Reference is made to your letter dated 4th February, 2014 on the above mentioned subject.

Permission is hereby granted for you to collect research data on the topic "**Assessment of Human Resource Information Systems on HR Service Delivery in Kenyan Universities. A Comparative study of Public and Private Universities in Kenya**'' at Egerton University.

It is noted that you will collect research data of the above study in the following departments:

- Human Resource
- Finance
- Training and Development
- ICT

Yours sincerely

EGERTON UNIVERSITY
REGISTRAR (ADMINISTRATION)
P. O. Box 536 - 20115
EGERTON

Dr. T. K. Serrem
REGISTRAR (ADMINISTRATION)

TKS/jjk

Appendix VI: Letter of Authority from Egerton University

EGERTON UNIVERSITY

P.O. Box 536 -20115
Egerton, Kenya

Tel: +254-51-2217801/808
+254-51-2217891/2
Cell: 0708489256
0775015388
Fax: +254-51-2217942
E-mail: dvcre@egerton.ac.ke

OFFICE OF THE DEPUTY VICE - CHANCELLOR
RESEARCH AND EXTENSION

EU/DVCRE/060 6th March, 2014

Mercy Kananu Kanake
Moi University
P. O. Box 3900-30100
Eldoret

RE: AUTHORITY TO CONDUCT RESEARCH AT EGERTON UNIVERSITY

Reference is made to letter No. NACOSTI/P/14/9975/803 dated 27th February, 2014 requesting for authority to conduct academic research at Egerton University on ***'An Assessment of Human Resource Information Systems on Service Delivery in Kenyan Universities: A Comparative Study of Public and Private Universities in Kenya'.*** It is noted that respondents will be sampled from Human Resource, ICT and Finance and Accounts Departments.

Authority is hereby granted for you to collect data at Egerton University. Upon completion of the study please ensure that you provide a copy of the report for our retention.

Prof. I. Nyokabi Wagara
For: Director (Research & Extension)

INW/po

DEPUTY VICE CHANCELLOR EGERTON UNIVERSITY P.O. Box 536 - 20115 EGERTON RESEARCH & EXTENSION

Appendix VII: Authority letter to conduct research in Kabarak University

Office of the Registrar (Administration & Human Resources)

Private Bag - 20157
KABARAK, KENYA
Email: registrar@kabarak.ac.ke

Tel: 254-51-343509
Fax: 254-51-343529
www.kabarak.ac.ke

12th March 2014

Ms. Mercy Kananu Kanake
P.O. Box 4606 - 30100
ELDORET

Dear Ms. Kanake,

RE: REQUEST TO CONDUCT RESEARCH

Reference is made to your letter dated 4th February 2014 on the above mentioned subject.

We wish to inform you that your request to undertake your research at Kabarak University on ***"Assessment of Human Resource Information Systems on HR Service Delivery in Kenyan Universities. A Comparative Study of Public and Private Universities in Kenya"*** has been approved. We would appreciate if you would share with us your research findings.

Thank you for choosing to undertake your research thesis at Kabarak University.

Yours sincerely,

Prof. Ronald K. Chepkilot
REGISTRAR (ADMIN & HR)

C.C. Registrar (Academic & Research)
Finance Manager
ICT Manager
Senior Administrative Assistant (HR)

Kabarak University Moral Code
As members of Kabarak University family, we purpose at all times and in all places to set apart in one's heart Jesus as Lord.
(1 Peter 3:15)