

**PERCEIVED EXTENT OF ADOPTION OF HUMAN RESOURCE
INFORMATION SYSTEMS ON PERFORMANCE OF PUBLIC UNIVERSITIES
IN KENYA**

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**A Research Project Submitted in Partial Fulfillment of the Requirements for the
award of the Degree of Master of Business Administration (MBA) at the University
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DECLARATION

The research project is my original work and has not been submitted for the award of a degree at any other university.

Signed.....

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The Research Project has been submitted for the examination with my approval as the University supervisor

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ABBREVIATIONS AND ACRONYMS

HRIS:	Human Resource Information Systems
HRM:	Human Resource Management
IS:	Information Systems

DEDICATION

This project is dedicated to my brothers and sisters for their prayers love and support that I received during the study. I also dedicate to my family particularly my husband Ezekiel Kangogo for all encouragement he gave me during this period of the study. I will also not forget my dear friends for their support.

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ABSTRACT

The objective of this study was to investigate the perceived effects on extent of adoption of human resource information systems on performance of public universities in Kenya. With a structured questionnaire targeting 22 heads of human resource functions, the study analyzed 19 questionnaires which on which a response rate of 86.36% was attained. The study establishes that though the Universities have implemented various HRIS systems, HRIS is mostly being employed as an administrative tool more than a strategic tool in the public universities. The role that HRIS can play in improving the efficiency and performance of the Universities is missing as HRIS has not made the HR department important in the organization. The respondents could further not establish a direct link between HRIS and its impact on their routine work especially on the Human resource management practices namely performance management, human resource planning, recruitment and selection and training and development. So even though HRIS appears to have tremendous promise, it has not been fully utilized according to its potential in the public universities in Kenya. The study thus recommends that Universities should conduct user training which ensures that there is adequate user skills and awareness of the human resource management information systems in use and its full potential to University performance. human resource departments in the public universities should ensure that the integration and specific module of information system (IS) is working as expected during the implementation of human resource management information systems through effective piloting.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

According to Porter (1998), organizations today are confronted almost daily with the need for change and to adapt to the current environment that is having very dynamic entries and exists from the industry playfield. As the environment changes, organizations must adapt if they are to be successful. Under these pressures, companies are downsizing, re-engineering, flattening structures, going global and initiating more sophisticated technologies.

Jenkins and Lloyd (1995) observe that a major challenge facing organizations is to develop a management style and culture that will enable them cope with the challenges and opportunities they face. Human resources and information technology are the two elements that many firms are learning to use as strategic weapons to compete. In a report on human resources information system, Carpenter (1991) explain that if the personnel function is to take the next big step in its development, it will have to integrate with information technology. Wager (1990) indicated that human resource practitioners and scholars had predicted more human resources input into the decision-making process and in increasing utilization of computer technology to compile and analyze human resources data. As advanced by O'Connell (1994), excellence in human resources will be defined through the strategic use of information.

The application of technology in human resource management practices is studied within the framework of the resource based view theory and the human capital theory. Resource Based View theory suggests that sustainable superior performance and competitive advantage of any firm is the result of accumulation and utilization of resources, managerial choices, factor market imperfections and strategic industry factors. The human capital theory posits that both knowledge and skill are a form of capital, and that this capital is a product of deliberate enterprise growth.

1.1.1 Concept of Perception

Perception is a cognitive process that enables us to interpret and understand our surrounding. Employee perception is a factor that can make a huge difference in the quality of the workplace (Bridges, 2003). When employees view the employer, their work, and their relationships within that workplace as being positive, there is a good chance the employee will be productive and remain with the employer for a long time. Negative perceptions of the company and the working environment can cause qualified employees to seek opportunities elsewhere. Some of the factors that can impact employee perception include how well the employer communicates with employees, the nature of the working conditions, the policies and procedures of the business in general, and how much trust and respect is present between managers, employees, and coworkers. In addition, the benefits paid and how they relate to the work assigned can also have a huge impact on the perception of an employee (Armstrong, 2006).

Ivanovich, Konopaske and Matteson (2005) defined perception as the cognitive process by which an individual selects, organize, and give meaning to environmental stimuli. Perception leads to decision making and action taking, at the most basic level, the decision to act or not to act, and this depends on how an individual develops motivation.

Employees react to change in a variety of ways. Some vehemently resist the change and continue to do so months and even years after its implementation. Often, this resistance is expressed through reduction of output, disengagement, quarrelling, hostility and even turnover (Bridges, 1991). In contrast, others seem to exert extra effort to achieve the objectives of the change and even promote the value of the change to those both inside and outside of the organization (Herscovitch & Meyer, 2002). To understand such differences, it may be useful to consider models that describe the process by which individuals experience change in the workplace (Bridges, 2003).

1.1.2 Human Resource Information Systems

Human resource information system is described by Noe and Gerhard (2007), as a computer system used to acquire, store, manipulate, analyze, retrieve, and distribute information related to human resources. Modern human resource information system needs to help organizations by automating most of the human resource planning functions. The system becomes an important strategic tool since it collects, manages and reports information for decision making. DeSanctis (1986) explain that human resource information system is designed to support the planning, administration, decision making, and control activities of human resources management.

In contemporary society, corporations consistently advance the value of human assets in their own organizations for monitoring their competitiveness (Tahssain and Zgheib, 2011). Human resource managers should comprehend how their decisions contribute to business surplus incorporating human competence and performance to the organization; this can only be achieved with an effective human resource management information system (Lengnick - Hall and Moritz, 2003). Fully integrated organizational human resource information system ought to interface with other systems enabling and enhancing 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. It should be able to enhance communication between employers and employees and build strong relationship with unions and management committees (Armstrong, 2006).

Human resource information systems involves a set of internally consistent policies and practices designed and implemented to ensure that a firm's human capital contribute to the achievement of its business objectives (Beckers and Bsath, 2002). Its concern is to ensure that human resources management is fully integrated with information systems needs of the firm; human resources policies coherent both across policy areas and across hierarchies; and human resources practices are adjusted, accepted, and used by line

managers and employees as part of their everyday work. The system should be capable of identifying trends, evaluating and managing costs, comparing the organization with other competitive organizations and issue relevant reports. New human resource information system trends seem to build important effect on human resource planning embedding new technology with organizational objectives and goals. Enterprise resource planning system, when linked with the human resource information system, provides a competitive advantage to organizations over their competitors. Therefore human resource information system implementation should be macro oriented, proactive and long term focused in nature viewing human resources as assets or investments not expenses.

1.1.3 Organizational performance

Performance measurement is the process whereby an organization establishes the parameters within which programs, investments, and acquisitions are reaching the desired results (Graham & Bennett, 1998). Controlling performance is also critical in measuring the organizational performance. Controlling ensures that the organization know how well they are progressing along the route, how correct their map is, and what deviations, if any they need to make to stay on course. The basic elements of control are as follows: establish standards of performance; measure performance; compare actual results against standards; take corrective action when required (Cole, 2005).

Managers have tended to be judged on their performance in one of the three principal ways: in terms of business outcomes (turnover, profits, return on investment, etc), in cases where they are directors or senior managers; in terms of their agreed departmental/unit objectives, as agreed under some system of management by objectives – an approach especially favored for middle management levels; in terms of how they have performed generally in carrying out their responsibilities, as stated or implied in their job descriptions, and where performance is assessed as much on the individual manager's input into the job as on any outcomes he or she has achieved (Cole, 2005).

The chief goal of a business is to achieve financial or maximization of wealth for the shareholders (Becker and Gerhart, 1996). Firm performance can be defined in financial

and non-financial terms (Kaplan and Norton, 1992). These include measures that impact on effectiveness, efficiency, development, satisfaction, innovation, product quality, profitability and sales growth. According to Schuler (1992), drawing on behavioral psychology perspective, organizational performance can be observed in terms of its sales growth, profit growth, improved quality, global response to competition, and global business performance and success. One of the key determinants of a firm's efficiency, cost structure and profitability is an employee's productivity. Productive manufacturing employees lead to reduced cost of production, increased sales revenue, increase return on investment, flexibility, innovation, enhanced quality, superior performance, high productivity, differentiated products and services and personal customer services (Porter, 1985). Thus companies which place their employees at the core of their strength produce higher long term returns to shareholders.

An organization will subsequently look at its capabilities and finally assess its performance. To measure an organization performance we need to be able to establish its core capabilities together with those of its competition. Grant (1998) defines organizational performance as the firms' capabilities of undertaking a particular productive activity. The words capability and competence can be used interchangeably. Selznick (1975) used distinctive competence to describe the things an organization can do exceptionally well relative to its competitors and Asnoff (1990) used the same to analyze the basis of the firms growth strategies.

The Balanced Scorecard method by Kaplan & Norton (1993) is defined as a strategic approach and performance management system that enables organizations to translate a company's vision and strategy into application working with four perspectives. These are; financial perspective, business process perspective, learning perspective and growth perspective. Kaplan & Norton (1993) do not disregard the traditional need for financial data. Timely and accurate funding data will always be a priority. This perspective takes a view on how the organization must and should appear to shareholders.

1.1.4 Public Universities in Kenya

The first step towards the introduction and development of university education in Kenya was undertaken in 1961 when the then Royal College, Nairobi was elevated to university college status. The university college entered into a special arrangement with the University of London, which enabled it to prepare students for degrees of the University of London. With the establishment of the University of East Africa in 1963, which coincided with Kenya's independence from Britain, the Royal College became the University College, Nairobi. The other constituent colleges of the University of East Africa were Makerere in Uganda and Dar-es-Salaam in Tanzania. Following Kenya's independence, there was a rapid expansion of the education sector with consequent heavy budget allocation to university education in order to develop adequate manpower base to enhance national development and provide solutions to such problems as, diseases, poverty and illiteracy (Kamau, 2012).

The expansion in Kenya's university education can be understood within the framework of the country's education system and the general demand for education at all levels due to high population growth. Since the mid-1980s, there has been significant expansion of public universities in Kenya in response to higher demand for university education. So far, there are 21 public and the universities have great opportunities stemming from the increasing number of students both within and outside the country (Chesang, 2013).

The Universities Act 2012 sets up, The Commission of University Education, to plan for the establishment and development of higher education and training; The University Funding Board, to coordinate financing of universities; The Kenya Universities and Colleges Central Placement Service, to handle admissions to public universities and colleges; and The Technical and Vocational Education Funding Board (Education Survey, 2008). As of 2013, there were a total of seven traditional public universities and 15 newly established university constituent colleges that were awarded charters recently to be fully fledged public universities. There are also nine public university constituent colleges and three public university campuses. It is estimated that the country has

122,874 university students of which approximately 80 percent are in public universities (Aswani, 2013).

1.2 Research Problem

According to Broderick and Boudreau (1992) and Kossek (1994), human resource information systems have enormous potential to make human resources more competitive and thus enable human resource departments to become strategic partners in business organizations. Pasqualetto (1993) argued that human resources information system should help reengineer human resources processes to maximize their effectiveness and evolve from capturing information to managing change. Parry, Tyson, Selbie, & Leighton (2007) indicate that the rationale for the implementation of HRIS varies between organizations. Some use it to reduce costs, others to facilitate better communication, and some use it to re-orient HR operations to increase the department's strategic contribution. Parry (2010) underscore that HRIS provides management with strategic data not only in recruitment and retention strategies, but also in merging HRIS data into large-scale corporate strategy. The data collected from HRIS provides management with decision-making tool. An HRIS can have a wide range of usage from simple spread sheets to complex calculations performed easily. DeSanctis (1986) explain that through proper HR management, firms are able to perform calculations that have effects on the business as a whole. Such calculations include health-care costs per employee, pay benefits as a percentage of operating expense, cost per hire, return on training, turnover rates and costs, time required to fill certain jobs, return on human capital invested, and human value added.

The Public Universities in Kenya has for the last decade seen various expansions with establishments of new universities, expansion of academic programmes, expansion of learning centers and increased competition. The public universities have continued to incorporate information technology in their operations to remain competitive and visible in their web presence. Currently, public universities management are put on performance contracting by the Government and the attainment of these performance contracts are

cascaded downwards to various university units. At the same time, all Universities are ranked within the webometrics framework. These initiatives assist in rating universities in Kenya.

Several studies have been conducted on human resource information systems in public institutions in Kenya. For instance, Atika (2011) looked at the factors influencing the effectiveness of human resource information system at the National Cereals and Produce Board and concluded that user satisfaction, attitudes, beliefs, cultural, and behavioral issues are key areas that influence successful implementation of information systems. Kinyua (2010) investigated the challenges facing state corporations in Kenya in the implementation of human resource management information system. The findings indicated that the adoption and use of information communication technology remains a major challenge in the implementation of human resource management information systems in Kenyan state corporations. Fatuma (2013) investigates the perceived factors affecting the implementation of Human Resource Information System at Kenya Revenue Authority and concludes that top management support, effective communication, training, support of ICT department, support of HR department and user involvement influences the implementation of HRIS at KRA. Atsanga (2013) determines the perception of effectiveness of human resource management information systems by branch managers in Kenya Commercial Bank Ltd and finds that the managers support the functions of the human resource management information system and the adoption of the system was a success.

The foregoing studies investigate the challenges in implementation and the perceptions on the implementation. They however do not investigate the effects of the implementation on organizational performance. This study seeks to fill the research gap by answering the question: What is the effect of human resource information systems on performance of public universities in Kenya?

1.3 Objectives of the Study

The objective of the study was to investigate the perceived effects on extent of adoption of human resource information systems on performance of public universities in Kenya.

1.4 Value of the Study

The development of human resource management information systems has for many years been regarded as the domain of the technical expert. In what appears to be a growing number of instances, various institutions have implemented human resource management information systems. This study is therefore of value to: Public universities in Kenya in their endeavor to develop and implement human resource management information systems. The study findings can inform the policy formulation processes within the universities.

The study contributes significantly to both theory and practice with regard to the effects of implementation on performance of state supported universities in Kenya. The study findings adds to the literature on resource based theories and human capital theories. In Practice, the Human Resource Managers' infer the significance of the systems initiated in their units and their effects on attaining the overall objectives of the specific universities.

Research and academic institutions use the study knowledge to establish benchmarks for further research of implementation of human resource systems and performance of Universities in Kenya. The study findings also opens up further research on aspects of organizational resources, human capital and effectiveness of information technology in human capital management.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents relevant literature review gathered in relation to the study. It covers areas on human resource management, human resource management practices, human resource information system and the effects of human resource information systems on organizational performance.

2.2 Theoretical foundation of the Study

This study is founded on theories of competitive advantage especially the resource based view and the human capital theories.

2.2.1 Resource Based View Theory

The RBV originated from research that acknowledged the importance of organizational specific resources to firm success and was developed further by Penrose (1959) and Demstesz (1973). Further research has made significant contribution to its development (Barney, 1996, Grant 2002). The Resource Based View (RBV) suggests that sustainable superior performance and competitive advantage of any firm is the result of the accumulation and utilisation of resources, managerial choices, factor market imperfections and strategic industry factors (Dharanaj and Beamish, 2003). Firm heterogeneity instead of external environmental factors are considered relatively more important determinants of the performance and competitive position of a firm both in the local and international market place (Barney, 2001, Tseng et al, 2007; Lu et al., 2010).

The Resource Based View (RBV) views firms as a combination of skills, resource and capabilities. The acquisition, integration and utilisation of resources and capabilities are expected to influence the performance of firms. These resources are expected to be rare, inimitable, valuable and unbundable (Grant, 2002; Yaprak & Karademir, 2010). It also implies that firm performance and behaviour is influenced by firm specific factors instead of market structures and firms strive to identify, acquire, exploit, utilise and protect its

rare, valuable and inimitable resources, skills and proprietary assets (Dhanaraj and Beamish, 2003; Tseng et al., 2007; Barney, 1996).

2.2.2 Human Capital Theory

Human Capital theory was proposed by Schultz (1961) and developed extensively by Becker (1964). Schultz (1961) in an article entitled “Investment in Human Capital” introduces his theory of Human Capital. Schultz argues that both knowledge and skill are a form of capital, and that this capital is a product of deliberate enterprise growth. The concept of human capital implies an investment in people through education and training. Schultz compares the acquisition of knowledge and skills to acquiring the means of production. The difference in earnings between people relates to the differences in access to education and health. Schultz argues that investment in education and training leads to an increase in human productivity, which in turn leads to a positive rate of return and hence of growth of organizations.

This theory emphasizes the value addition that people contribute to an organization. It regards people as assets and stresses that investments by organizations in people will generate worthwhile returns. The theory is associated with the resource based view of strategy developed by Barney (1991), the theory proposes that sustainable competitive advantage is attained when the firm has a human resource pool that cannot be imitated or substituted by its rival. For the employer, investment in training and development is a means of attracting and retaining people. These returns are expected to be improvements in performance, productivity, flexibility and the capacity to innovate that should result from enlarging the skills base and increasing levels of knowledge and competence.

2.3 Role of HRMIS in HRM functions

HRM is a specialist function of management which has the prime responsibility for the following: formulating, proposing and gaining acceptance for the personnel policies and strategies of the organization; advising and guiding the organization’s managers on the implementation of personnel policies and strategies; providing personnel services for the organization to facilitate the recruitment, motivation and development of sufficient and

suitable employees at all levels; advising the organization's managers of the human consequences of change. There are several elements that constitute HRM. They include: human resource planning, recruitment and selection, performance management, reward systems, training & development, career planning and employee relations (Cole 2004). According to Dessler & Al Ariss (2012) human resource management is about the procedures and practices that encompass the human resource aspect within organizations. This requires viewing people as human assets, not costs to the organization. Looking at people as assets is part of contemporary human resource management and human capital management.

Recent developments in technology have made it probable to make real-time information based, self - service, and interactive work environment. According to Desanctis (1986), personnel information systems have developed from the automated employee record keeping from the 1960s into more complex reporting and decision systems of late. Today, managers and employees are assuming activities once considered the field of human resource professionals and administrative personnel. As a result, given the authority and relevant accessible information for decision making, both managers and employees react more rapidly to changes (Lengnick and Moritz, 2003).

Management information system is designed to assist managerial and professional workers by processing and disseminating vast amounts of information to managers' organization-wide (Alavi & Leidner, 1999). Management information system supplies information for strategic, tactical and operational decision making to all subsystems within the organization. This information provides an essential part of the feedback control mechanism in these areas and is necessary for the realization of subsystem objectives (Curtis & Cobham, 2002). Management information system is any system that provides information for management activities carried out within an organization. The information is selected and presented in a form suitable for managerial decision making and for the planning and monitoring of the organization's activities (Curtis & Cobham, 2002).

The system is considered as a systematic procedure for collecting, storing, maintaining, and recovering data required by the organizations about their human resources, personnel activities and organizational characteristics (Kovach and Cathcart, 2002). Kovach, et al. (2002) explains that HRIS may comprise stand-alone software for any of the primary areas of use for information systems in HR management. These areas include employee record management, compensation and benefits, recruitment and retention, training and development, performance appraisal, and promotion and succession planning.

Hendrickson (2003) observe that HRIS provides an opportunity for human resource to play a more strategic role, through their ability to generate metrics which can be used to support strategic decision making. Boudreau and Ramstad (2003) opine that generally speaking there are three different kinds of metrics that organizations can collect in order to better understand and evaluate the impact of HR activities and to influence business strategy and business performance. They are efficiency, effectiveness, and impact.

The metric of efficiency of HR function as explained by Lawler, et al (2004) is the easiest to collect. It considers how well the HR function does its basic administrative tasks. The metrics that can be collected in order to assess HR efficiency include productivity and cost metrics for the HR function such as time to fill open positions, HR headcount ratios and administrative cost per employee. It is possible to produce a comprehensive set of metrics to evaluate HR's administrative activities that in effect evaluate it as a stand-alone business.

The metric of effectiveness of the HR function means that HR programs and practices have the intended effect on the people or talent pools towards which they are directed. Lawler, et al (2004) expound in the case of training and development, for example, true effectiveness metrics should offer information on whether employees build needed skills not just on participation in training and/or employee and management satisfaction with the training provided. A potentially meaningful set of effectiveness metrics for the HR function concerns talent and talent management. Typical metrics in this area include

measures of the strategic skills and core competences embodied in the work force, as well as metrics that classify how well pivotal jobs are filled and the type of development activities that are taking place for critical talent.

Finally, metrics having to do with developing and optimizing the capabilities and the core competencies of the organization can be collected in order to measure the impact of HR programs and practices (Lawler, 2003). Note that impact in this case means demonstrating a link between what HR does and tangible effects on the organization's ability to gain and sustain competitive advantage. Operational effectiveness impact metrics might focus on changes in the performance of business processes (e.g., reduced defects, increased speed, more frequent innovations) that occur when the quality of talent is improved or when new HR practices are introduced.

In Kenya, Fatuma (2013) investigated the perceived factors influencing the implementation of human resource information system at Kenya Revenue Authority. The study found that top management support, effective communication, training, support of ICT department, support of HR department and user involvement influences the implementation of HRIS at KRA. The study recommends allocation of adequate resources by management for the implementation and maintenance of the HRIS. It further recommends that communication between managers and employees needs to be encouraged and HR managers should play a proactive role to support HRIS implementation in their organizations.

Grant et al. (2006) in studying the impact of human resource information system in four organizations based in Australia realized that the potential of human resource information system to deliver the strategic competencies promised remained unrealized. Initial findings from the four case studies suggested that although new or upgraded human resource information systems were being used to automate and devolve routine administrative and compliance functions traditionally performed by the human resources function, the potential for the technology to be used in ways that contribute to the

strategic direction of the organization were not being realized. More specifically, the results suggested that the opportunity to enhance human resource's role as strategic partner as a result of the use of the system was being hindered.

Ngai and Wat in (2006) conducted a survey of the implementation of human resource information system in Hong Kong organizations, they found that the greatest benefits to the implementation of human resource information system was the quick response and access to information that it brought while the greatest barrier was the insufficient financial support. Krishnan and Singh (2006) explored the issues and barriers faced by nine Indian organizations in implementing and managing HRIS. The main HRIS problems were lack of knowledge of HR department about HRIS and lack of importance given to HR department in these organizations. Cooperation is required across various functions and divisions of the organization for proper implementation of HRIS.

2.4 Organizational performance

Owing to the revolution in information technology, the face of the contemporary workplace has changed and systems have been made more effective by introducing new techniques. Majority of the organizations have now understood the importance of information storage and retrieval. It is theatrically believed that HRIS as a systematic arrangement of HR practices help organizations to achieve their goals & aligns itself to the business strategy that it pursues. This implies that HRIS brings about improved organizational performance (Chowdhury, Yunus, Bhuiyan & Kabir, 2013).

According to Usman, Khan, Ikhlaq & Mujtaba (2012), the addition of information technology to the human resource industry has revolutionized the contemporary workplace. HR professionals now have an increased capacity not only to gather information, but also to store and retrieve it in a timely and effective manner. Also, HRIS or new technology has not only increased the efficiency of the organization but also the effectiveness of management functions leading to improved performance.

Most of the organizations are now dependent upon knowledge workers and thus on effective knowledge management practices. Today, knowledge management offers a unique concept considered by many in the industry as progressive and “soft” in

application, primarily because of the intangible elements of knowledge (Mujtaba, 2007, p. 201). The ability to not only attract and hire but also to retain and properly utilize these individuals is crucial knowledge for the survival and success of the organization. In this globalized world, a department that is increasingly becoming central to the implementation of organization policy is the HR department. So the HRIS is now considered an integral part of every organization (Waytt, 2002). More and more organizations are now developing information technology which can help the organization achieve its goals in a timely manner. These information systems can then help the organization make more strategic decisions.

In addition, organizational performance is the final achievement of an organization and contains measures, such as the existence of certain targets to be achieved, has a period of time in achieving the targets and the realization of efficiency and effectiveness (Gibson et al., 2010). It has also been defined as the ability of an enterprise to achieve such objectives as high profit, quality product, large market share, good financial results, and survival at pre-determined time using relevant strategy for action (Koontz and Donnell, 2003). Organizational performance can also be viewed as how an enterprise is doing in terms of level of profit, market share and product quality in relation to other enterprises in the same industry. Consequently, it is a reflection of productivity of members of an enterprise measured in terms of revenue, profit, growth, development and expansion of the organization.

Organizational performance can be measured by financial aims attainment or workers satisfaction. In the same manner Ho (2008) pointed out that performance can be evaluated by efficiency and effectiveness of aim attainment. Furthermore, Venkatraman et al (1986) cited that performance can be assessed by financial performance, namely: return on investment, growth of sales, profit, organization effectiveness, and business performance. Similarly, Delaney et al, (2006) asserted that organization performance can be evaluated by quality service and products, satisfying customers, market performance, service innovations, and that organization performance can be appraised by the following “dimensions of performance: return on investment, margin on sales, capacity utilization,

customer satisfaction and product quality”. In the same way, Green et al, (2007) identified that return on investment, sales and market growth, and profit are important factors that can be issued to measure by organization performance. According to these researchers, there are many factors that can be used to measure performance and include market shares, financial performance, efficiency and effectiveness of an organization performance, and human resource management.

The Knowledge-Based View of the Firm differs from the Resource-Based View in that the latter views knowledge as a generic resource, rather than having special characteristics (Barney 1986). This limits the Resource-Based View, since the theory cannot distinguish between different types of knowledge capabilities in an organization. In contrast, the Knowledge-Based View suggests that knowledge can have different characteristics, such as a degree of expertise or innovativeness. Research shows that collecting and sharing either expert or innovative knowledge can produce long-term competitive advantage for an organization (Argote and Ingram, 2000; Lee and Choi, 2003). Also, building upon the Knowledge-Based View, Gold et al. (2001) propose that the formal structure, culture, and technologies of an organization influences organizational performance.

2.5 Human Resource Information Systems and Organizational Performance

While working in organizations in today's highly competitive and changing world people come across situations where they are to take decision which forces them either to stick to an existing practice system or to transform the practice system by getting into a new practice. The same is in the case with technology adoption. Organizations do have a filing system. Everyone has a filing system no matter what whether it is organized or disorganized. With the development of technology the filing procedure is often maintained by using software in PCs (Personal Computers) (Chowdhury, Yunus, Bhuiyan and Kabir, 2013).

In addition to the above, over the last few decades there has been a considerable expansion in the number of organizations collecting, storing, monitoring, and analyzing information regarding their human talents with the use of Human Resource Information Systems (HRIS) software or other types of software which include HRIS functionality (Ball, 2001; Chowdhury, Yunus, Bhuiyan and Kabir, 2013). The adoption of the HRIS is due to the fact that it enhances efficiency in information processing thus improving a firm's performance. Also, the significance for the execution of HRIS varies among organizations. Some use it to reduce costs, others to accelerate better communication, and some use it to re-orient HR activities to increase the department's strategic contribution (Parry, Tyson, Selbie and Leighton, 2007).

Ngai and Wat (2006) conducted a survey of the implementation of HRIS in Hong Kong organizations. They found that the greatest benefits of the implementation of HRIS were the quick response and access to information that it brought. Moreover, the application of an HRIS would minimize HR related costs by automating information and reducing the number of HR employees; by facilitating employees to monitor & control their own personal information; and by permitting managers to access relevant information and data, conduct analyses, make decisions, and communicate with others without consulting an HR professional (Awazu and Desouza, 2003).

As observed by Usman, Khan, Ikhlaq & Mujtaba (2012) and Parry (2010), HRIS can have a wide range of usage from simple spread sheets to complex calculations performed easily. Through proper HR management, firms are able to perform calculations that have effects on the business as a whole. Such calculations include health-care costs per employee, pay benefits as a percentage of operating expense, cost per hire, return on training, turnover rates and costs, time required to fill certain jobs, return on human capital invested, and human value added. However, it must be noted that none of these calculations results in cost reduction in the HR function (DeSanctis, 1986: 15).

Also, HRIS adaption and implementation has its negative side. The study of Krishnan & Singh (2006) explored the issues and barriers faced by nine Indian organizations in implementing and managing HRIS and the findings of the study were lack of knowledge of HR department about HRIS and lack of importance given to HR department in these organizations.

Consequently, HRIS is seen to facilitate the provision of quality information to management for informed decision-making (Usman, Khan, Ikhlaq & Mujtaba, 2012). Most notably, it supports the provision of executive reports and summaries for senior management and is crucial for learning organizations that see their human resources as providing a major competitive advantage. HRIS is therefore, a medium that helps HR professionals perform their job roles more effectively.

Furthermore, Chowdhury, Yunus, Bhuiyan & Kabir, 2013) conducted a study on HRIS application in the Banking sector. It is found that HRIS is being used in Banks in three different areas as of a) Recruitment and selection b) Training and Development c) Payroll. Among different areas of applications of HRIS in HRM process, the highest importance is on recruitment and selection followed by payroll but the result of the roles of HRIS in saving time showed a mixed response showing that HRIS is still subject to human manipulation or it depends on human beings to function well.

A study by Martinson's (1994) which aimed to compare the degree and sophistication in the use of IT between Canada and Hong Kong found that the use of HRIS was less widespread in Hong Kong than in Canada, while IT for HRM was applied more in Hong Kong than in Canada. Ball (2001) conducted a survey in order to explore the uses of HRIS in smaller UK organizations and found that smaller organizations were less likely to use HRIS. Moreover, Burbach and Dundon (2005) conducted a study to assess the strategic potential of HRIS to facilitate people management activities in 520 organizations in the Republic of Ireland. They found that foreign owned large organizations adopted HRIS more often than smaller Irish owned organizations. They

also found that HRIS technologies were used for administrative rather than strategic decision-making purposes.

Another recent study conducted by Delorme and Arcand (2010), aimed to elaborate on the development of the roles and responsibilities of HR practitioners from a traditional perspective to a strategic perspective, found that the introduction of new technologies in the organization affected the way HR. professionals accomplished their tasks within the HR department and the rest of the organization. The study by Krishnan & Singh (2006) explored the issues and barriers faced by nine Indian organizations in implementing and managing HRIS. The main HRIS problems were lack of knowledge of HR department about HRIS and lack of importance given to HR department in these organizations. Cooperation is required across various functions and divisions of the organization for proper implementation of HRIS.

Adopting a resource based perspective, information systems researchers have identified various IT related resources that serve as potential sources of competitive advantage. Meta et al. (1995) argue that managerial IT skills are rare and firm specific and therefore likely to serve as sources of sustained competitive advantage. Along with competent IT skills (human IT asset), Ross et al. (1996) point out that a reusable technology base (technical asset) and a strong partnering relationship between a firm's IT and business unit management (relationship asset) influence a firm's ability to deploy IT for strategic objectives.

Moreover, studies done by Dessler, Griffiths & Walker (2004) and Usman, Khan, Ikhlaq & Mujtaba (2012), HRIS is an effective tool that can be used for streamlining the administrative functions of the HR department. This can be achieved by creating an elaborate and relevant database. The data that an effective HRIS would have on individual employees can include training completed, awards received, projects participated in and finished successfully, level of education attained, number of years of service, skills, competencies, etc. By using this data the HR department can make a

contribution towards strategy formation within an organization. With an efficient HRIS in place, the development of HR systems becomes easier.

Ravichandran and Lertwongsatien (2005) draw on the resource based theory to examine how information systems (IS) resources and capabilities affect firm performance. The study suggests that variation in firm performance is explained by the extent to which IT is used to support and enhance a firm's core competencies. Sadiq, Khan, Ikhlaq and Mujtaba (2012) studied the impact of information systems on the performance of human resources department. The focus of the study is to understand the extent to which HRIS is being used in increasing the administrative and strategic functions of the HR department. The results show that HRIS is positively used as a tool to achieve greater administrative efficiency by adding value in the department. However, all of its benefits are difficult to quantify. HRIS utility as a strategic tool is still not been fully recognized, and this is preventing the system to be used to its fullest potential.

Based on resource based theory to examine how information system resources and capabilities affect firm performance, Ravichandran and Lertwongsatien (2005) posited and found that variation in firm performance is explained by the extent to which IT is used to support and enhance a firm's core competencies. They also found that an organization's ability to use IT to support its core competencies is dependent on IS functional capabilities, which in turn is dependent on the nature of human, technology, and relationship resources of the IS department. The results provide empirical support for the notion that IS has the potential to improve firm performance when its capabilities are channeled to develop distinctive firm competencies.

Burbach and Dundon (2005) conducted a study to assess the strategic potential of HRIS to facilitate people management activities in 520 organizations in the Republic of Ireland. They found that foreign owned large organizations adopted HRIS more often than smaller Irish owned organizations. They also found that HRIS technologies were used for administrative rather than strategic decision-making purposes. The conclusions by

Usman, Khan, Ikhlaq & Mujtaba (2012) in Pakistan showed that HRIS is mostly being employed as an administrative tool more than a strategic one although the holistic view of the role that HRIS can play in improving the efficiency and integration of HR department into a more strategic role was missing and this also shows that the benefits of HRIS are difficult to quantify, and cannot be displayed in monetary terms. Neither cost saving, strong communication nor effective recruitment decisions were linked directly to HRIS. So even though HRIS appears to have tremendous promise it has not been fully utilized according to its potential.

It is worth noting that most of these studies focused on the status of human resource information system and its uses and implementation, however, little or no research has been conducted to examine the effects of Human resource information systems in developing countries. Since the notion of human resource information system is still new and just in its initial years of implementation, this study investigates its effects on performance of public institutions. Majority of the studies have been conducted in developed countries and hence this study will contribute immensely to knowledge of this area in Kenya. Chowdhury, Yunus, Bhuiyan & Kabir (2013) summarize that previous studies show that HRIS has very important role to play in saving cost for record keeping while the main the barriers against the application of HRIS are ability of HRIS to check of Nepotism, threat of unemployment and privacy problem.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research methodology used in the study. The first section of this chapter highlights the design strategy that the study adopted. The study population and sampling techniques as well as means of collecting data and data analysis methodologies are explained towards the end of the chapter.

3.2 Research Design

A descriptive research approach was adopted in this study. This approach is appropriate for in-depth gathering of both qualitative and quantitative data on effects of human resource information systems on organization performance in public universities in Kenya. The strategy is popular both in business and management research since it answers the questions of who, what, where and how much in the study (Saunders, Lewis, & Thornhill, 2009). The descriptive research design is thus suitable in studying how adoption of HRMIS influences performance of Public universities in Kenya.

3.3 Population

The study was conducted on public universities in Kenya. As attached in appendix two, currently, there are 22 chartered public universities in Kenya according to the commission of University education (CUE). Since this number is small, a census study was carried out.

3.4 Data Collection

Data was collected from both primary and secondary sources. The primary data was obtained from the public universities through the administration of self- completion questionnaire attached as appendix one, which was completed by the administration Officer in charge of Human Resources. The questionnaire were administered through “drop and pick later” method. The questionnaire comprised closed and open - ended questions. The questionnaire had three sections where section A outlines the demographics of the respondents, Section B highlights the administration of HRMIS in

public universities and its challenges. Section C outlines the roles of HRIS in HRM practices. Secondary data was obtained from the published university statements, annual webometrics rankings and annual government performance contract reports.

3.5 Data Analysis and Presentation

Data collected was checked for completeness and consistency before analysis was made. Statistical Package for Social Science (SPSS) and Microsoft Excel was used to analyze the data. Various descriptive analyses such as means, range, frequency distribution, percentages and coefficient were then derived from the analyzed data and inferences made there from. Presentation of data was done using pie-charts, percentages and tables.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis, findings of the data that was collected from the public universities and the discussion of the findings. The chapter covers various sections that handle a distinct theme. The sections covered include response rate, respondents' demographics, perceived extent of adoption of HRIS and application of HRIS in HRM practices in the public universities.

4.2 Response Rate

To establish the total number of the respondents who actively participated in the study by answering and submitting the questionnaires for data analysis, an analysis of the response rate was carried out and presented in Table 4.1. The table indicates that the total response rate comprised 19 respondents who were 86.36% of the total sample size. The response rate of 86.36% gave the study a high degree of representativeness that could be relied upon to generalize the respondents perceived effect on extent of adoption and of Human Resource information systems on performance of public universities in Kenya. This was in tandem with Cooper & Schindler (2003) who argued that response rate exceeding 30% of the total sample size provides enough data that can be used to generalize the characteristics of a study problem as expressed by the opinions of few respondents in the target population.

Table 4.1 Analysis of the response rate

	Frequency	Percentage
Questionnaire sent	22	100
Questionnaire returned	19	86.36

Source: Primary data (2014).

4.3 Respondents Profile

This section analyses the respondents profile in terms of position in the university and level of education. The purpose was to assess the respondent's capacity to answer

questions relating to the objectives of the study and the ability to respond appropriately to the questions that address the research objectives.

4.3.1 Respondents Position

In total, nineteen questionnaires from the targeted respondents who comprised of heads of human resource, training and development departments of nineteen universities were received as shown in Table 4.2.

Table 4.2: Position of Respondents

	Frequency	Percentage
Human Resource officer	5	26.32
Human Resource manager	4	21.05
Human Resource director	7	36.84
Training, development officer	2	10.53
Training, development manager	1	5.26
Total	19	100

Source: Primary data (2014).

Table 4.2 shows that, majority of the respondents (36.84%) are human resource directors, 26.32% are human resource officers, 21.05% are human resource managers, 10.53% are training and development officers and 5.26% are training and development managers in the respective universities. From the respondents position profile, the researcher confirms their capacity to answer questions relating to the objectives of the study.

4.3.2 Highest level of Education

All the respondents interviewed had university degrees with eight of them having a master's degree as well as presented in Table 4.3 .

Table 4.3: Highest Level of Education attained by Respondents

	Frequency	Percentage
Bachelors Degree	11	57.89
Masters Degree	8	42.11
PhD	0	0
Total	19	100

Source: Primary data

From Table 4.3, it is evident that majority of the respondents (57.89%) have a bachelors degree and 42.11% have a masters degree. With such academic background, the respondents are deemed to be capable of analyzing, critically identifying and responding appropriately to questions on the perceived effects on extent of adoption of human resource information systems on performance of public universities in Kenya.

4.4 Perceived extent of adoption of Human Resource information systems

This study sought to investigate the perceived effects on extent of adoption of human resource information systems on performance of public universities in Kenya. In this section, respondents were asked to indicate their perceptions on the applications of Human resource information systems in Human resource administration in the public universities. The respondents were asked to rate their perception using a likert scale of 1-5 where 5 means Strongly Agree, 4 implies Agree , 3 implies Neither Agree nor Disagree , Disagree at 2 and 1 implies Strongly Disagree. For interpretation purposes a mean of 1.5<implies strongly disagree, while a mean of 1.5-2.4 implies Disagree. A mean of 2.5-3.5 implies neither agree nor Disagree, a mean of 3.5-4.5 means Agree and finally a mean of > 4.5 means Strongly Agree.

The standard deviation describes the distribution of responses in relation to mean. The standard deviation provides an indication of how far the individual responses to each factor vary from mean. A standard deviation of 1 indicates that the responses are further

spread out; a standard deviation of more than 1 indicates that there is no consensus on the responses obtained.

Table 4.4: Perception of Human Resource information systems in Human Resource Administration

	Mean	Standard Deviation
Human Resource Administration		
I am actively involved with the Human Resource Information System (HRIS).	4.20	0.0581
Overall I am satisfied with our HRIS.	2.51	0.7805
The employees of the Human Resources (HR) department appear to be satisfied with our HRIS.	3.89	1.2934
Overall we are satisfied with the modules we have installed and are available for use.	4.52	0.0684
Our HRIS has met our expectations.	3.98	0.7015
Our HRIS could be better utilized.	3.20	1.2051
Our HR employees understand how to use the Human Resource Information System.	4.10	0.2508
Our HRIS has made the HR department more important to the institution.	1.09	1.7827
We are satisfied with the deployment of our HRIS.	3.69	1.0176
We are satisfied with the support we have received from our information technology (IT) department.	4.25	0.1681
We are satisfied with the support we have received from the software vendor.	4.50	0.1182
We are satisfied with the flexibility of the system.	3.98	0.2681
Our HRIS has decreased the time spent on making staff decisions.	3.65	0.368
Our HRIS has decreased the time spent on inputting data.	4.81	0.025
Our HRIS has decreased the time spent on communicating information within our institution.	3.58	0.754
Our HRIS has decreased the time spent on processing paperwork.	4.24	0.18948
Our HRIS has decreased the time spent on correcting errors.	2.20	1.0581
Our HRIS has decreased data input expense.	3.51	0.7805
Our HRIS has decreased the overall HR staff's salary expense.	1.89	1.2934

Table 4.4 continues to page 29

Continuation of Table 4.4 from page 28

Our HRIS has improved our ability to disseminate information.	4.52	0.0684
Our HRIS has provided increased levels of useful information.	3.03	0.8001
Our HRIS has improved the data input process.	3.57	0.97
Our HRIS has improved the data maintenance process.	3.27	1.01
Our HRIS has decreased paperwork.	3.74	0.89
Our HRIS has increased security concerns.	3.70	1.04
The information generated from our HRIS is shared with top administrators.	3.94	0.93
The information generated from our HRIS is underutilized by top administrators.	3.82	0.98
The information generated from our HRIS has increased coordination between HR department and top administrators.	3.81	0.85
The information generated from our HRIS has added value to the institution.	3.80	1.05
Overall our administration thinks that HRIS is effective in meeting strategic goals.	3.53	1.23
The information generated from our HRIS has made HR a more strategic partner in the institution.	3.69	0.98
Human Resource Information System (HRIS) is useful in keeping correspondence records in our University.	3.78	1.02
Human Resource Information System (HRIS) is useful in maintaining employee leave records in our University.	3.58	1.04
Human Resource Information System (HRIS) is useful in maintaining employee demographic information in our University.	3.79	1.12
Human Resource Information System (HRIS) is useful in maintaining employee disciplinary records in our University.	3.98	0.93

Source: Primary data (2014).

The respondents strongly agree that HRIS has decreased the time spent on inputting data with a mean of 4.81. With a mean of 4.52, the respondents strongly agree that they are satisfied with the support received from the software vendor and are satisfied with the modules we have installed and are available for use with a mean of 4.51.

The respondents agree that HRIS has improved ability to disseminate information with a mean of 4.53, they are satisfied with the support received from the information technology (IT) department with a mean of 4.25, HRIS has decreased the time spent on

processing paperwork with a mean of 4.24, HR department are actively involved with the Human Resource Information System (HRIS) with a mean of 4.21, HR employees understand how to use the Human Resource Information System with a mean of 4.10, employees of the Human Resources (HR) department appear to be satisfied with HRIS with a mean of 3.89, HRIS has met HR department expectations with a mean of 3.98, satisfied with the flexibility of the HRIS with a mean of 3.98, HRIS is useful in maintaining employee disciplinary records with a mean of 3.98, information generated from HRIS is shared with top administrators with a mean of 3.94, information generated from HRIS is underutilized by top administrators with a mean of 3.82, Information generated from HRIS has increased coordination between HR department and top administrators with a mean of 3.81, information generated from HRIS has added value to the institution with a mean of 3.80, HRIS is useful in maintaining employee demographic information with a mean of 3.79, HRIS is useful in keeping correspondence records with a mean of 3.78, HRIS is useful in maintaining employee leave records with a mean of 3.58, HRIS has decreased paperwork with a mean of 3.74, HRIS has increased security concerns with a mean of 3.70, information generated from HRIS has made HR a more strategic partner in the institution with a mean of 3.69, satisfied with the deployment of HRIS with a mean of 3.69, HRIS has decreased the time spent on making staff decisions with a mean of 3.65, HRIS has decreased the time spent on communicating information within our institution with a mean of 3.58, administration thinks that HRIS is effective in meeting strategic goals with a mean of 3.53, HRIS has decreased data input expense with a mean of 3.51.

The respondents neither agree nor disagree that HRIS has improved the data input process with a mean of 3.57, HRIS has improved the data maintenance process with a mean of 3.27, HRIS could be better utilized with a mean of 3.20, and HRIS has provided increased levels of useful information with a mean of 3.03 and the respondents are overall satisfied with the HRIS with a mean of 2.51. The respondents disagree that HRIS has decreased the time spent on correcting errors with a mean of 2.20 as they also disagree that HRIS has decreased the overall HR staff's salary expense with a mean of

1.89. The respondents strongly disagree with the proposal that the HRIS has made the HR department more important to the institution with a mean of 1.09.

The analysis above implies that Public Universities in Kenya have acquired HRMIS for purposes of streamlining the HR functions. Though the respondents opine that this has not made the HR department an important unit of the universities, the HR practitioners are satisfied with the support of the HRMIS vendors and the modules put in place. The analysis confirms that the universities use HRMIS for data processing, record keeping and information retrieval and dissemination for decision making. The result is in agreement with Parry, Tyson, Selbie and Leighton (2007) who posit that the adoption of the HRIS is due to the fact that it enhances efficiency in information processing thus improving a firm's performance. Also, the significance for the execution of HRIS varies among organizations. It also reduces costs, accelerate better communication, the application of an HRIS minimize HR related costs by automating information and reducing the number of HR employees; by facilitating employees to monitor & control their own personal information; and by permitting managers to access relevant information and data, conducts analyses, make decisions, and communicate with others without consulting an HR professional as suggested by (Awazu and Desouza, 2003).

4.5 HRIS and Human Resource Management Practices

In this section, respondents were asked to indicate their perceptions on the applications of Human resource information systems in Human resource management practices in the public universities. The human resource management practices considered were human resource planning, recruitment and selection, performance management, training and development and performance management. The respondents were asked to rate their perception using a likert scale of 1-5 where 5 means Strongly Agree, 4 implies Agree, 3 implies Neither Agree nor Disagree, Disagree at 2 and 1 implies Strongly Disagree. For interpretation purposes a mean of 1.5<implies strongly disagree, while a mean of 1.5-2.4 implies Disagree. A mean of 2.5-3.5 implies neither agree nor Disagree, a mean of 3.5 - 4.5 means Agree and finally a mean of > 4.5 means Strongly Agree.

The standard deviation on the other hand describes the distribution of responses in relation to mean. The standard deviation provides an indication of how far the individual responses to each factor vary from mean. A standard deviation of 1 indicates that the responses are further spread out; a standard deviation of more than 1 indicates that there is no consensus on the responses obtained.

Table 4.5: Perception of Human Resource information systems in Human Resource Planning

Human resource planning	Mean	Standard Deviation
Our HRIS has made our HR decision-making more effective.	2.50	0.1182
The information generated from our HRIS has improved the strategic decision making of top administrators.	3.20	0.0581
Human Resource Information System (HRIS) is used as a tool for human resource assessment our University.	2.20	1.0581
Human Resource Information System (HRIS) data is used in human resource demand forecasting our University.	2.20	1.0581
Human Resource Information System (HRIS) data is used in human resource Supply forecasting in our University.	1.89	1.2934

Source: Primary data (2014).

The respondents neither agree nor disagree that HRIS information improves decision making of top university administrators. With a mean of 2.50 and standard deviation of 0.1182 the respondents disagree that. The finding further indicates that the information generated from our HRIS has improved the strategic decision making of top administrators as confirmed a mean of 3.20 and standard deviation of 0.0581. With a mean of 2.20 and standard deviation of 1.0581, the respondents dis agreed that human resource information system data is used in human resource demand forecasting in the university. A mean of 1.89 and standard deviation of 1.2934 confirms that human resource information system data is used in human resource supply forecasting in the university.

Table 4.6: Perception of Human Resource information systems in Human Recruitment and Selection Process

Recruitment and Selection Processes	Mean	Standard Deviation
Our HRIS has decreased the time spent on recruiting.	3.17	0.64
Our HRIS has decreased cost per hire	2.94	0.55
Our HRIS has decreased recruiting expenses	2.61	0.78
Our HRIS has improved the recruitment process	1.79	0.86
The information generated from our HRIS helps our institution decide when to hire.	2.94	0.55
The information generated from our HRIS helps our institution make better decisions in choosing better people	1.79	0.86
Human Resource Information System (HRIS) is a tool applied in human resource position analysis and position description in our University	2.84	0.70
Human Resource Information System (HRIS) is used in human resource application screening criteria in our University	4.07	0.57
Human Resource Information System (HRIS) is used in human resource interviewing in our University	3.77	0.64
Human Resource Information System (HRIS) is used in selection decisions and reference checks in our University	3.65	0.70

Source: Primary data (2014).

The respondents agree that HRIS is used in human resource application screening with a mean of 4.07, HRIS is used in interviewing process in the universities with a mean of 3.77 and HRIS is applicable in selection decisions and reference checks with a mean of 3.65. Respondents neither agree nor disagree that HRIS decrease the time spent on recruiting with a mean of 3.17. The respondents disagree that HRIS reduces the cost per hire with a mean of 2.94, HRIS provides information for when to hire with a mean of 2.94, HRIS is a tool in human resource position analysis with a mean of 2.84, HRIS has decreased recruiting expenses with a mean of 2.61, HRIS has improved the recruitment process with a mean of 1.79 and HRIS helps our institution make better decisions in choosing better people with a mean of 1.79.

The analysis above shows that the universities use the HRIS in application screening, interviewing processes, selection decisions and reference checks. The HRIS has however not reduced the time spent on recruitment, cost per hire for the universities and recruiting expenses. HRIS does not provide information for when to hire, information on human resource position analysis.

Table 4.7: Perception of Human Resource information systems in Human Resource Training and Development

Training and Development	Mean	Standard Deviation
Our HRIS has decreased the time spent on training	2.1	1.0
Our HRIS has decreased training expenses	2.5	1.2
Our HRIS has improved the training process	1.5	0.77
Our HRIS has helped with forecasting staff training needs	1.5	0.77
The information generated from our HRIS helps our institution decide when training and skill development are necessary.	3.6	0.90
Human Resource Information System (HRIS) is applicable in training needs analysis in our University	4.3	0.77
Human Resource Information System (HRIS) is applicable in training validation in our University	4.3	0.77
Human Resource Information System (HRIS) is applicable in post training evaluation in our University	2.6	1.00

Source: Primary data (2014).

The respondents agree that HRIS is applicable in training needs analysis with a mean of 4.3, HRIS is applicable in training validation with a mean of 4.3 and HRIS information helps to decide when training and skill development are necessary with a mean of 3.6. The respondents neither agree nor disagree that HRIS is applicable in post training evaluation with a mean of 2.6, HRIS decreases training expenses with a mean of 2.5. The respondents disagree that HRIS decreases the time spent on training with a mean of 2.1, improves training processes with a mean of 1.5 and helps in forecasting staff training needs with a mean of 1.5.

The analysis above imply that HRIS is used in training needs analysis and post training evaluation in the public universities in Kenya. Further, HRIS helps institutions to decide when training and skill development is required.

The analysis shows that HRIS has not been extensively applied in post training evaluation, forecasting staff training needs, improving training processes, decreasing training expenses and decreasing time spent on training in the public universities in Kenya.

Table 4.8: Perception of Human Resource information systems in Performance management

Performance Management	Mean	Standard Deviation
The information generated from our HRIS helps our institution decide on employee raises.	1.71	0.46
The information generated from our HRIS helps our institution to make more effective promotion decisions.	2.21	0.95
Our HRIS has promoted our institution's competitive advantage	3.10	1.0
Human Resource Information System (HRIS) is applied in planning and setting goals in our University.	3.10	0.85
Human Resource Information System (HRIS) is applied in monitoring activities in our University.	2.27	0.75
Human Resource Information System (HRIS) is applied in collecting data and measuring results in our University.	2.9	0.49
Human Resource Information System (HRIS) is applied in design and implementation of Reward Systems in our University.	1.7	0.73
Human Resource Information System (HRIS) data is useful in performance Reward System decisions in our University.	2.0	1.1
Human Resource Information System (HRIS) is useful in communication of employee performance results in our University.	2.2	0.87

Source: Primary data (2014).

The respondents neither agree nor disagree that HRIS promotes the universities competitive advantage with a mean of 3.10, HRIS is applied in planning and setting goals with a mean of 3.10, HRIS is applied in collecting data and measuring results with a mean of 2.9. The respondents disagree that HRIS is applied in monitoring activities with

a mean of 2.27, HRIS helps our institution to make more effective promotion decisions with a mean of 2.21, HRIS is useful in communication of employee performance results with a mean of 2.2, HRIS data is useful in performance Reward System decisions with a mean of 2.0, HRIS helps decide on employee pay raises with a mean of 1.71 and HRIS is applied in design and implementation of Reward Systems with a mean of 1.7.

The analysis shows that the universities have not fully applied HRIS in their performance management functions.

Table 4.9: Perception of Human Resource information systems in University Performance

Performance Management	Mean	Standard Deviation
Human Resource Information System (HRIS) has improved efficiency in our University.	2.4	1.0
Implementation of Human Resource Information System (HRIS) has assisted our University in Employee productivity	3.6	1.2
Implementation of Human Resource Information System (HRIS) has assisted our University in Employee relations.	4.3	0.77
Implementation of Human Resource Information System (HRIS) has assisted our University in improving on webometrics ranking.	1.5	0.77
Implementation of Human Resource Information System (HRIS) has assisted our University in improving on rankings on performance contracting reports.	3.4	0.90

Source: Primary data (2014).

University performance is measured in terms of performance contract rankings, webometrics ranking, efficiency, employee productivity and employee relations. The respondents agree that HRIS implementation has assisted with employee relations with a mean of 4.3 and employee productivity with a mean of 3.6. The respondents neither agree nor disagree that HRIS implementation has improved performance contract rankings for the university with a mean of 3.4. The respondents disagree that HRIS has improved university efficiency with a mean of 2.4 and improves university webometrics ranking with a mean of 1.5. These findings thus suggest that the respondents do not perceive the adoption of HRIS as affecting performance of the respective universities

4.6 Discussion of Findings

The study finds that Public Universities in Kenya have acquired HRMIS for purposes of streamlining the HR functions. Though the respondents opine that this has not made the HR department an important unit of the universities, the HR practitioners are satisfied with the support of the HRMIS vendors and the modules put in place. The analysis confirms that the universities use HRMIS for data processing, record keeping and information retrieval and dissemination for decision making. This finding is consistent with the findings of Ngai and Wat (2006) and Usman, et al. (2012) and Chowdhury, et al. (2013) who indicates that previous studies show that HRIS has very important role to play in saving cost for record keeping.

These study shows that the application of HRIS in human resource planning is lacking across the public universities in Kenya. The universities do not extensively use HRIS for human resource assessment especially with respect to employee demand and supply forecasting, training needs analysis and post training evaluation, deciding when training and skill development is required, post training evaluation, forecasting staff training needs, improving training processes, decreasing training expenses and decreasing time spent on training in the public universities in Kenya.

The role of HRIS in enhancing universities performance has not come out strongly. Possibly, due to low levels of application, the universities are yet to reap the potential benefits of HRIS with respect to promoting the universities competitive advantage, planning and setting goals, collecting data and measuring results, monitoring activities, making effective promotion decisions, communication of employee performance results, and employee reward and remuneration systems design.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings of the research generated from data analysis. The conclusion is drawn in line with the objective of the study. It then gives recommendation and finally gives suggestions for further studies.

5.2 Summary

The objective of this study was to investigate the perceived effects on extent of adoption of human resource information systems on performance of public universities in Kenya. A majority of 36.84% of the respondents were human resource directors, 26.32% were human resource officers, 21.05% were human resource managers, 10.53% were training and development officers and 5.26% were training and development managers in the various public universities. From the respondents position profile, the researcher confirms their capacity to answer questions relating to the objectives of the study.

On HRIS administration function, the respondents strongly agree on three items. First, that HRIS has decreased time spent on inputting data. Secondly that they are satisfied with the support received from the software vendor and third, they are satisfied with the modules installed and are available for use in the HRIS.

The respondents also agree on various items regarding HRIS administration. First, HRIS improves ability to disseminate information. Second, the support received from the information technology (IT) department is satisfactory. Third, HRIS decreases the time spent on processing paperwork. Fourth, HR department are actively involved with the HRIS. Fifth, HR employees understand how to use the HRIS and employees of the HR department appear to be satisfied with HRIS. The study also establishes that the HRIS has met HR department expectations, HR department is satisfied with the flexibility of the HRIS and HRIS is useful in maintaining employee disciplinary records. The

respondents however disagree that HRIS has decreased the time spent on correcting errors, HRIS has decreased the overall HR staff's salary expense and HRIS implementation has made the HR department more important to the institution.

Perceived effect of adoption of HRIS on functional HRM practices are investigated within key HRM practices namely; human resource planning, recruitment and selection, performance management, training and development and performance management. Human resource planning responses show a perception of ineffectiveness of application of HRIS in human resource planning across the public universities in Kenya. The respondents neither agree nor disagree that HRIS information improves decision making of top university administrators with. The respondents disagree that HRIS implementation has made decision making more effective, that HRIS is applied as a tool for human resource forecasting, HRIS data is used in human resource demand forecasting and HRIS data is used in human resource supply forecasting.

On recruitment and selection, HRIS is established to be used in human resource application screening, HRIS found to be is used in interviewing process and HRIS is applicable in selection decisions and reference checks. Respondents neither agree nor disagree that HRIS decrease time spent on recruiting. The respondents disagree that HRIS reduces the cost per hire, HRIS provides information for when to hire, HRIS is a tool in human resource position analysis, HRIS has decreased recruiting expenses, HRIS has improved the recruitment process and HRIS helps institutions make better decisions in choosing better people.

On training and development, HRIS is applicable in training needs analysis, HRIS is applicable in training validation and HRIS information helps to decide when training and skill development are necessary. The respondents neither agree nor disagree that HRIS is applicable in post training evaluation, HRIS decreases training expenses. The time spent on training is not decreased with implementation of HRIS, staff training processes is not improved and staff forecasting is not applied in HRIS.

The perception on performance management within HRIS framework shows indifference as to whether HRIS promotes the universities competitive advantage, HRIS is applied in planning and setting goals and HRIS is applied in collecting data and measuring results. The respondents however disagree that HRIS is applied in monitoring activities, HRIS helps institutions to make more effective promotion decisions, HRIS is useful in communication of employee performance results, HRIS data is useful in performance reward system decisions, HRIS helps decide on employee pay raises and HRIS is applied in design and implementation of reward systems in the universities.

Respondents' perception on effect of HRIS on Universities performance establishes that the implementation of HRIS has assisted with employee relations and employee productivity. However, respondents neither agree nor disagree that HRIS implementation improves University performance contract rankings, improves University efficiency and improves University webometrics ranking.

5.3 Conclusion

The result supports the argument that HRIS is mostly being employed as an administrative tool more than a strategic one in the public universities surveyed. The holistic view of the role that HRIS can play in improving the efficiency and integration of HR department into a more strategic role is missing in the universities. It's therefore not surprising that the respondents concur that HRIS has not made the HR department important in the organization. The respondents could further not establish a direct link between HRIS and its impact on their routine work especially on the Human resource management practices.

There was a lack of clarity as to the exact value the HIRS system would add to the Universities especially with respect to performance. Neither cost saving, strong communication nor effective recruitment decisions were linked directly to HRIS. So even though HRIS appears to have tremendous promise, it has not been fully utilized according to its potential in all the public universities in Kenya.

5.4 Recommendations for Policy and Practice

Based on the study's conclusions, the researcher made the following recommendations:

Public Universities should conduct user training which ensures that there is adequate user skills and awareness of the human resource management information systems in use and its full potential; human resource managers of the public universities should select and recruit adequate staff during the implementation of the human resource management information systems; the management should facilitate for adequate prior experience in the implementation of human resource management information systems through site visits and hiring of experienced staff;

human resource departments in the public universities should ensure that the integration and specific module of information system (IS) is working as expected during the implementation of human resource management information systems through effective piloting; and human resource managers of the universities should ensure that adequate risk assessment and budgetary allocations are undertaken in order to avoid cost overruns during the implementation of human resource management information systems.

5.5 Limitations of the Study

The study was limited to the perceived extend on effect of adoption of HRIS on performance of public universities in Kenya. Public universities only represent a fraction of the universities in Kenya as there are quite a number of registered and accredited private universities. This presented a limitation to the research because the extent to which the findings can be generalized across all the universities- both public and private- in Kenya is constrained.

The research methodology used was cross sectional survey. In as much the design would have yielded uniformity in data, a deeper understanding of the individual population of study might not have adequately been covered. Furthermore, structured questionnaire that were used did not provide an opportunity for the respondents to give opportunity to be express adequately what they felt about the study topic. As a result, more qualitative

information relating to the study might have been left out. This would have enhanced the understanding of the quantitative data that was collected.

5.6 Suggestions for Further Research

There is need for future research to include other universities that were not sampled in this study. Private universities should also be studied in the same study area. Another possible area of study would be on the factors that affect the performance of public universities other than HRIS adoption or implementation especially on aspects of human capital.

The study used the cross sectional survey design. Future research can adopt different designs like longitudinal survey that would trace the influence of strategic innovation on the organizational performance over a period of time. The researcher can adopt case study in order to get deeper information on the influence of HRIS on University performance. Future studies may also adopt other analysis tools to reveal the relationship established in this study.

The researcher recommends that further research should be undertaken to investigate the factors affecting strategic planning and strategy implementation in the implementation of Human Resource Management Information Systems within the Kenyan public sector.

REFERENCES

- Alavi, M., & Leidner, D. (1999), Knowledge management systems: Issues, challenges, and benefits, *Communications of the Association for Information Systems*, 1(7), 17.
- Ajayi G. O. (2002). African Response to Communication Technology Revolution: Case study of the ICT Development in Nigeria. African Technology Policy Studies Network Special Paper No. 8. Nigeria.
- Altarawneh, I. (2010). Human Resource Information Systems in Jordanian Universities, *International Journal of Business and Management* Vol. 5, No. 10; October 2010, College of Business and Economics, Al-Hussein Bin Talal University, Jordan.
- Armstrong, M. (2006). *Human Resource Management* 10th Edition. London: Kogan.
- Atika, J. N. (2011). Factors influencing the effectiveness of human resource information system at the National Cereals and Produce Board, Kenya. Unpublished MBA project, University of Nairobi.
- Atsanga, S.C. (2010). Perception of effectiveness of human resource information system by Branch managers in Kenya Commercial Bank. Unpublished MBA project, University of Nairobi.
- Awazu, Y. & Desouza, K. C. (2003). "Knowledge Management", *HR Magazine*, 48(11), 107.
- Ball, K. S. (2001). "The Use of Human Resource Information Systems: a Survey". *Personnel Review*, 30(6), 667-693.

- Barney, J.B. (1991), Firm Resources and Sustainable Competitive Advantage, *Journal of Management*, Vol.17, pp.99-120.
- Barney, J.B. (1996). The resource-based theory of the firm. *Organization Science*,7(5), 469.
- Barney, J.B. (2001). Is the resource-based ‘view’ a useful perspective for strategic management research? Yes. *The Academy of Management Review*, 26 (1), 41-56.
- Beadles, N. A., Lowery, C. M., & Johns, K. (2005). The impact of human resource information systems: An exploratory study in the public sector, *Communication of the IIMA*, 5(4), pp. 39–46.
- Beckers, A. M., Bsai, M. Z. (2002). A DSS classification model for research in human resource information systems. *Information Systems Management*, 19(3), 41-50.
- Becker, B.E and Gerhart, B., (1996). ‘The Impact of Human Resource Management on Organizational performance: Progress and Prospects; *Academy of Management Journal*, 39(4) PP 779-801.
- Boudreau, J.W. & Ramstad, P.M. (2003). Strategic HRM Measurement in the 21st Century: From Justifying HR to Strategic Talent Leadership. In Marshall Goldsmith, Robert P. Gandossy & Marc S. Efron (Eds), *HRM in the 21st Century*(pp. 79-90). New York: John Wiley.
- Boxall, P.F. (1995), Building the Theory of Competitive HRM. *Human Resource Management Journal*, Vol.5, 5-17.
- Bridges, W. (2003).*Managing Transitions: Making the Best of Change* , (2nd ed.).Cambridge, MA: Perseus Publishing.

- Broderick, R. & Boudreau, J.W (1992), Human resource management information technology and the competitive edge, *Academy of Management Executive*, 6(2), 7-17.
- Burbach, R. and Dundon, T. (2005). The strategic potential of human resource information systems: evidence from the republic of Ireland. *Intentional Employment Relations Review*, 11(1\2), 97-117.
- Carpenter, R.C. (1994). The shape of things to come”, *Personnel Management*, 26
- Chien, S.W & Tsaur, S.M (2010). “Investigating the Success of ERP Systems” Case studies in Three Taiwanese High Tech Industries,” *Computers in Industry*.
- Chowdhury M.S.A., Yunus M., Bhuiyan F. and Kabir M.R., (2013). Impact of Human Resources Information System (HRIS) on the Performance of Firms: A Study on Some Selected Bangladeshi Banks. *Proceedings of 9th Asian Business Research Conference 20-21 December, 2013, BIAM Foundation, Dhaka, Bangladesh ISBN: 978-1-922069-399 .*
- Cole, G.A. (2004). *Management Theory and Practice*. Sixth Edition. TJ International, Padstow Cornwall, UK.
- Curtis, G., & Cobham, D. (2002), *Business information systems*. London, UK: Pearson.
- Daley, D.M. (1985), An Examination of the MBO/Performance Standards approach to employee evaluation: Attitudes towards Performance appraisal in IOWA. *Review of Public Personnel Administration*, Vol.6:1, 11-29.
- Delorme, M. & Arcand, M. (2010). HRIS implementation and deployment: a conceptual framework of the new roles, responsibilities and competences for HR professionals. *International Journal of Business Information Systems*, 5, 148-161.

- Demsetz, H. (1973). Industry structure, market rivalry, and public policy. *Journal of Law and Economics* 16 (1), 1–9.
- Dessler, G. & AlAriss, A. (2012). *Human Resource Management: Strategic Human Resource Management and the HR Scorecard*, 10th edition. India: Prentice Hall.
- Dessler, G., Griffiths, J. and Lloyd W, B. (2004), *Human Resources Management*, 2nd ed. Frenchs Forest, New South Wales: Pearson Education Australia, 2004, pp. 97 - 99.
- DeSanctis, G. (1986). Human resource information systems: A current assessment, *MIS Quarterly*, March, 15-27.
- Dhanaraj, C., & Beamish, P. W. (2003). A resource-based approach to the study of export performance. *Journal of Small Business Management*, 41(3), 242–261.
- Fatuma, M.M. (2013). Perceived factors influencing the implementation of human resource information system at Kenya revenue authority. Unpublished MBA research project. University of Nairobi.
- Fey, C. F. and Bjorkman, I. (2001). “The Effect of Human Resource Management Practices on MNC Subsidiary Performance in Russia. *Journal of International Business Studies*. 32 (1).
- Graham, H.T., & Bennett, R. (1998), *Human Resources Management*.
- Grant, R. M. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, 33(3), 114–135.

- Guest, D.E (1987), Human Resource Management and Industrial Relations. *Journal of Management Studies*, Vol.24, 503-21.
- Havel, G.H and Tzadir, S.S (1999), “The Effect of Human resource management Practices on the perceptions of organizational and market performance of the firm: *Human Resource Management* Vol. 38, pp 185- 200.
- Hendrickson, A. R. (2003), Human Resource Information Systems: Backbone Technology of Contemporary Human Resources. *Journal of Labor Research*, 24(3): 381-394.
- Herscovitch, L. & Meyer, J. P. (2002). Commitment to organizational change: Extension of a three-component model. *Journal of Applied Psychology*, 87, 474–487
- Hitt, L.M. Wu, D.J & Zhou, X. (2002). “Investment in Enterprise Resource Planning: Business Impact and Productivity Measures,” *Journal of Management Information Systems*.
- Huselid, M.A. (1995), The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. *Academy of Management Journal*, Vol.38, No.3, 635-672.
- Ivanovich, J.M., Konopaske, R.and Matteson, M.T. (2005). *Organizational Behavior and Management* (7 th Ed.). New York: McGraw-Hill Irwin.
- Jenkins, M.L. & Lloyd, G. (1985). How corporate philosophy and strategy shape the use of HR information systems, *Personnel*, May, 28-38.
- Johnson, G. & Scholes, K. (2002). *Exploring corporate strategy – text and cases*. New Jersey: Prentice – Hall.

- Kaplan, R.S and Norton, D.P (1992).The Balanced scorecard. Measure that Drive performance, Harvard Business Review, January- February PP 71-80.
- Kinyua, J. (2012). Challenges facing state corporations in Kenya in the implementation of human resource management information systems. Unpublished MBA research project. University of Nairobi.
- Krishnan, S., & Singh, M. (2006). “Issues and concerns in the implementation and maintenance of HRIS”. Issues and concerns in the implementation. Indian institute of management ahmedabad-380015. Research and Publication Department in its series IIMA working papers with number WP2006-07-01.
- Kossek, E.E., Young, N., Gash, D.C. & Nichol, V. (1994). Waiting for innovation in the human resources department: Godot implements a human resource information system, Human Resource Management, 33(1), 135-159.
- Kovach, K.A. & Cathcart, C.E. (2002). Human resource information systems (HRIS): providing business with rapid data access, information exchange and strategic advantage. Public Personnel Management. 28(2), 275-281.
- Kovach, K.A., Hughes, A.A., Fagan, P. and Maggitti, P.G. (2002). Administrative and strategic advantages of HRIS, Willey periodicals.
- Krishnan, S., & Singh, M. (2006). Issues and concerns in the implementation and maintenance of HRIS. Issues and concerns in the implementation and. Indian institute of management ahmedabad-380015. Research and Publication Department in its series IIMA working papers with number WP2006-07-01.
- Lawler, E. E. (2003). Treat People Right.San Francisco: Jossey-Bass.
- Lengnick, H., Mark, L. & Moritz, S. (2003), . The impact of e-HR on the human resource management function. Journal of Labor Research, 24(3), 365-379.

- Lu, Y. Zhou, L. Bruton, G. Weiwen, L. (2010). Capabilities as a mediator linking resources and the international performance of entrepreneurial firms in emerging economy. *Journal of International Business Studies*, 41, 419-436 .
- Martinsons, M. G. (1994). Benchmarking human resource information systems in Canada and Hong Kong. *Information & Management*, 26, 305-16.
- Mujtaba, B. G. (2007). *Workplace Diversity Management: Challenges, Competencies and Strategies*. Llumina Press: Florida.
- Ngai, E.W.T. & Wat F.K.T. (2006). Human resource information systems: a review and empirical analysis. *Human Resource Information Systems*.
- Noe, H. and Gerhard, W. (2007). *Fundamentals of Human Resource Management*, 2nd edition, The McGraw-Hill Companies.
- O'Connell, S.E. (1994). System redesign makes FedEx a technology leader, *HR Magazine*, April, 33.
- Paauwe, J. (2004), *HRM and Performance: Unique Approaches for Achieving Long-Term Viability*, Oxford: Oxford University Press.
- Park, H.J., Mitsuhashi. H., Fey, C.F., and Bjorkman, I. (2003), The effect of Human Resource Management Practices on Japanese MNC subsidiary performance: A Practical Mediating Model. *International Journal of Human Resource Management*. 14 (8).
- Parry, E., Tyson, S., Selbie, D., & Leighton, R. (2007). *HR and Technology: Impact and Advantages*. London: Chartered Institute of Personnel and Development.

- Parry, E. (2010). The benefits of using technology in human resource management. IGI global. Cranfield School of Management.
- Pasqualetto, J. (1993). New competencies define the HRIS manager's future role, *Personnel Journal*, January, 91-99.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*, John Wiley, New York, NY.
- Porter, M.E. (1998). *Competitive advantage of Nations: Creating and sustaining superior performance*. New York: The Free Press.
- Ravichandran, T., & Lertwongsatien, C. (2002). Impact of information systems resources and capabilities on firm performance: a resource-based perspective. *ICIS 2002 Proceedings*, 53.
- Sadiq, U., Khan, A.F., Ikhtlaq, K. and Mujtaba, B.G. (2012). The impact of information systems on the performance of human resources department. *Journal of business studies quarterly*. 3(4), 77 – 91.
- Schuler, R.S. (1992). "Strategic Human Resource Management: Linking the people with the strategic Business Needs of the Business" *Organizational Dynamic*, 18-31.
- Schuler, R.S. (1994), *World class Human Resource Departments: Six Critical issues*. *Accounting and Business Review*, 1:1, 43-72.
- Selznick, P. (1975), *Leadership in Admin. A Sociological Interpretation*, Row, Peterson.
- Tahssain, L. & Zgheib, M. (2009). *Perceived performance of the human resource information systems (HRIS) and perceived performance of the management of human resources*, Harper Collins, New York, NY.

- Terpstra, D., and Rozell,E. (1993). The Relationship of Staffing Practices to Organizational Level Measures of Performance. *Personnel Psychology* 46 Vol. 1.
- Tessema, M. and Soeters, J. (2006), Challenges and prospects of HRM in developing countries: testing the HRM-performance link in Eritrean civil service. *Int. J. Hum. Resource Management*, Vol.17:1, 86- 105.
- Tseng C, Tansuhaj P., HallaganW.,McCullough J. (2007). Effects of firm resources on growth in multinationality. *Journal of International Business Studies*, y38, 961–974.
- Usman S., Khan A.F., Ikhlaq K., & Mujtaba B.G., (2012). The Impact of Information Systems on the Performance of Human Resources Department. *Journal of Business Studies Quarterly* 2012, Vol. 3, No. 4, pp. 77-91.
- Wagel, W.H. (1990). On the horizon: HR in the 1990s, *Personnel*, 67(1), 10-16.
- Wright, P. (1998). Strategy – HR fit: does it really matter? *Human Resource Planning* Vol.21:4, 56-58.
- Wyatt Watson. (2002). e-HR: Getting Results Along the Journey – 2002 Survey Report. Watson Wyatt Worldwide.

Appendices

Appendix I: Questionnaire

Dear Participant,

I am a student of MBA from University of Nairobi. I am conducting a research which aims to assess the effect of Human Resource Information System (HRIS) on the performance of public universities in Kenya. This research is purely for academics purposes. I am assuring you that all the information provided in this survey will be kept confidential and anonymous. Your cooperation in this regard is highly appreciated.

Section A: Respondents Demographics

Name / Title: _____ (Optional)

Designation: _____

University: _____

Highest level of Education Attained

Secondary certificate ()

Degree certificate ()

Masters degree ()

PhD ()

Others (Specify).....

Section B: Administration of HRIS

Scale: SA= Strongly Agree A=Agree N=Neutral DA=Disagree SDA=Strongly Disagree

Sr. No	Statements	SA 5	A 4	N 3	DA 2	SDA 1
	Human Resource Administration					
1.	I am actively involved with the Human Resource Information System (HRIS).					
2.	Overall I am satisfied with our HRIS.					
3.	The employees of the Human Resources (HR) department appear to be satisfied with our					

	HRIS.					
4.	Overall we are satisfied with the modules we have installed and are available for use.					
5.	Our HRIS has met our expectations.					
6.	Our HRIS could be better utilized.					
7.	Our HR employees understand how to use the Human Resource Information System.					
8.	Our HRIS has made the HR department more important to the institution.					
9.	We are satisfied with the deployment of our HRIS.					
10.	We are satisfied with the support we have received from our information technology (IT) department.					
11.	We are satisfied with the support we have received from the software vendor.					
12.	We are satisfied with the flexibility of the system.					
13.	Our HRIS has decreased the time spent on making staff decisions.					
14.	Our HRIS has decreased the time spent on inputting data.					
15.	Our HRIS has decreased the time spent on communicating information within our institution.					
16.	Our HRIS has decreased the time spent on processing paperwork.					
17.	Our HRIS has decreased the time spent on correcting errors.					
18.	Our HRIS has decreased data input expense.					
19.	Our HRIS has decreased the overall HR staff's salary expense.					
20.	Our HRIS has improved our ability to disseminate information.					
21.	Our HRIS has provided increased levels of useful information.					
22.	Our HRIS has improved the data input process.					
23.	Our HRIS has improved the data maintenance process.					
24.	Our HRIS has decreased paperwork.					
25.	Our HRIS has increased security concerns.					
26.	The information generated from our HRIS is shared with top administrators.					
27.	The information generated from our HRIS is					

	underutilized by top administrators.					
28.	The information generated from our HRIS has increased coordination between HR department and top administrators.					
29.	The information generated from our HRIS has added value to the institution.					
30.	Overall our administration thinks that HRIS is effective in meeting strategic goals.					
31.	The information generated from our HRIS has made HR a more strategic partner in the institution.					
32.	Human Resource Information System (HRIS) is useful in keeping correspondence records in our University.					
33.	Human Resource Information System (HRIS) is useful in maintaining employee leave records in our University.					
34.	Human Resource Information System (HRIS) is useful in maintaining employee demographic information in our University.					
35.	Human Resource Information System (HRIS) is useful in maintaining employee disciplinary records in our University.					

Section C: HRIS and Human Resource Management Practices

	Human resource planning					
1.	Our HRIS has made our HR decision-making more effective.					
2.	The information generated from our HRIS has improved the strategic decision making of top administrators.					
3.	Human Resource Information System (HRIS) is used as a tool for human resource assessment our University.					
4.	Human Resource Information System (HRIS) data is used in human resource demand forecasting our University.					
5.	Human Resource Information System (HRIS) data is used in human resource Supply forecasting in our University.					
	Recruitment and selection processes					
6.	Our HRIS has decreased the time spent on recruiting.					

7.	Our HRIS has decreased cost per hire.					
8.	Our HRIS has decreased recruiting expenses.					
9.	Our HRIS has improved the recruitment process.					
10.	The information generated from our HRIS helps our institution decide when to hire.					
11.	The information generated from our HRIS helps our institution make better decisions in choosing better people.					
12.	Human Resource Information System (HRIS) is a tool applied in human resource position analysis and position description in our University.					
13.	Human Resource Information System (HRIS) is used in human resource application screening criteria in our University.					
14.	Human Resource Information System (HRIS) is used in human resource interviewing in our University.					
15.	Human Resource Information System (HRIS) is used in human resource interviewing in our University.					
16.	Human Resource Information System (HRIS) is used in selection decisions and reference checks in our University.					
	Performance management					
17.	The information generated from our HRIS helps our institution decide on employee raises.					
18.	The information generated from our HRIS helps our institution to make more effective promotion decisions.					
19.	Our HRIS has promoted our institution's competitive advantage					
20.	Human Resource Information System (HRIS) is applied in planning and setting goals in our University.					
21.	Human Resource Information System (HRIS) is applied in monitoring activities in our University.					
22.	Human Resource Information System (HRIS) is applied in collecting data and measuring results in our University.					
23.	Human Resource Information System (HRIS) is applied in design and implementation of Reward Systems in our University.					

24.	Human Resource Information System (HRIS) data is useful in performance Reward System decisions in our University.					
25.	Human Resource Information System (HRIS) is useful in communication of employee performance results in our University.					
	Training and Development					
26.	Our HRIS has decreased the time spent on training.					
27.	Our HRIS has decreased training expenses.					
28.	Our HRIS has improved the training process.					
29.	Our HRIS has helped with forecasting staffing needs.					
30.	The information generated from our HRIS helps our institution decide when training and skill development are necessary.					
31.	Human Resource Information System (HRIS) is applicable in training needs analysis in our University.					
32.	Human Resource Information System (HRIS) is applicable in training validation in our University.					
33.	Human Resource Information System (HRIS) is applicable in post training evaluation in our University.					
	Performance Management					
34.	Human Resource Information System (HRIS) is effectively used in human resource planning in our University.					
35.	Human Resource Information System (HRIS) has improved efficiency in our University.					
36.	Human Resource Information System (HRIS) is applied in performance management in our University.					
37.	Human Resource Information System (HRIS) is applied in design and implementation of Reward Systems in our University.					
38.	Implementation of Human Resource Information System (HRIS) has assisted our University in Employee productivity					
39.	Implementation of Human Resource Information System (HRIS) has assisted our University in Employee relations.					
40.	Implementation of Human Resource Information System (HRIS) has assisted our					

	University in improving on webmetrics ranking.					
41	Implementation of Human Resource Information System (HRIS) has assisted our University in improving on rankings on performance contracting reports.					

Appendix II: Chartered Public Universities in Kenya

Public Chartered Universities		
1.	University of Nairobi (UoN)	Established - 1970 Chartered - 2013
2.	Moi University (MU)	Established - 1984 Chartered - 2013
3.	Kenyatta University (KU)	Established - 1985 Chartered - 2013
4.	Egerton University (EU)	Established - 1987 Chartered - 2013
5.	Jomo Kenyatta University of Agriculture and Technology (JKUAT)	Established - 1994 Chartered - 2013
6.	Maseno University (Maseno)	Established - 2001 Chartered - 2013
7.	MasindeMuliro University of Science and Technology (MMUST)	Established - 2007 Chartered - 2013
8.	DedanKimathi University of Technology	2012
9.	Chuka University	2013
10.	Technical University of Kenya	2013
11.	Technical University of Mombasa	2013
12.	Pwani University	2013
13.	Kisii University	2013
14.	University of Eldoret	2013
15.	Maasai Mara University	2013
16.	JaramogiOgingaOdinga University of Science and Technology	2013
17.	Laikipia University	2013
18.	South Eastern Kenya University	2013
19.	Meru University of Science and Technology	2013
20.	Multimedia University of Kenya	2013
21.	University of Kabianga	2013
22.	Karatina University	2013

Source: CUE Website