Cape Peninsula
University of Technology

A Comparative Assessment of the Utilisation of Electronic Human Resource Management Systems as a Decision-Making Tool by Selected South African and Nigerian Universities

By

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Thesis submitted in fulfilment of the requirements for

Doctor of Technology: Human Resource Management

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August 2015

DECLARATION

I, **Nnenna Eme Ukandu**, declare that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not been previously submitted for academic examination for any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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ABSTRACT

The utilization of electronic human resource management (E-HRM) systems is increasing in universities and has helped to support their human resource functions. The term E-HRM covers all possible integration mechanisms and contents between HRM and information technologies, which aim to create value within and across organizations for targeted employees and management. E-HRM is also said to include the planning, implementation and application of information technology for both networking and supporting at least two individuals or collective actors in their shared performance of human resource activities. The main aim of this study is to assess the utilization of electronic human resource management (E-HRM) systems as a decision-making tool by selected South African and Nigerian universities in order to determine the extent of using electronic human resource management (E-HRM) systems at selected universities in South Africa and Nigeria. It is a comparative study that is set to: enable the researcher to make better comparison across different countries and cultures; assist the researcher to identify the commonalities and exclusions of E-HRM which might perform important functions from the two countries used for the research; and investigate the value-adding benefits of E-HRM systems to the human resource functions of the selected universities. The study is also aimed at assessing the effectiveness and efficiency of information and decision-making for HR practitioners at the selected universities; and finally, proposing a comprehensive model for proper implementation and utilization of E-HRM systems as a decision-making tool for human resource management functions in universities.

In this study, the triangulation research method approach was adopted - including the qualitative and quantitative research methods. This approach enabled the researcher to solicit information from some members of staff of the universities used for the study. Semi-structured interview questions were used to obtain information from human resource directors and managers, while close-ended questionnaires were used to obtain information from other staff of the universities.

This study found that a statistically significant difference exists in the utilization of E-HRM systems in the area of E-recruitment and selection, E-performance management, and E-training. Essentially, this study has confirmed that the utilization of E-HRM systems is not fully implemented and utilized in both South African and Nigerian universities. This is because of poor Internet access, poor supply of electricity, lack of software, and several other

factors. Therefore, providing these facilities and software will improve the utilization of E-HRM systems in these universities.

It is also clear from the study that there is a need for improvement in the utilization of E-HRM software and other facilities; hence, the researcher proposes recommendations, which will help the managements of these universities enhance the utilization of E-HRM in their institutions. One of the recommendations is a model, which is proposed to help articulate proper implementation and utilization of E-HRM systems as a decision-making tool for human resource management functions in the universities. It is hoped that the model will help the universities' HR departments enhance their functions, outputs and performance. A major limitation of this study is the poor response rate of the target population, which warrants care in the generalization of the results. Future studies may want to examine only HR staff in universities.

ACKNOWLEDGEMENTS

I am grateful to God for all He has done for me; for His continued faith in me, and for the grace to be able to complete this journey. I must say that the journey was one of the most difficult that l have ever embarked on financially, spiritually, and so on. To God be the glory.

I wish to thank my supervisors, Prof. Charles Allen-lle, and Prof. Chux Iwu for the much-needed academic guidance. I am also thankful to Prof. Wilfred Ukpere for his support.

To all those who supported me during my data collection at the different universities, I say a big ‘thank you’, especially to Mrs. Corrie Uys, CPUT’s statistician for her tireless effort.

My gratitude also goes to Shamila Sulayman and Rolf Proske for their efficiency in proofreading and editing my thesis, and for supporting me financially.

To the entire library staff and HACC directors and staff I remain thankful for their support.

Thanks to all CPGS and Research Directorate staff for their financial support and encouragement.

I appreciate the support of my beloved brothers, sisters, nieces, nephews and in-laws for their patience and support throughout my study period.

To all my pastors, reverends and brethren, I say ‘thank you’ for your spiritual support.

To all my friends and colleagues, I also say ‘thank you’.

DEDICATION

This thesis is dedicated to my departed parents, Chief J.E. Ukandu and Chief Mrs. R.E. Ukandu, for laying a good foundation for me, and for their moral support and counsel at the beginning of this journey.

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LIST OF ACRONYMS

ACCsys	Account system for personnel managers
AHWO	African Health Workforce Observatory
CHRIS	Computer-based Human Resource Information Systems
CIPD	Chartered Institute of Personnel and Development
DOS	Disk Operating System
DPSA	Department of Public Affairs, South Africa
DRC	Democratic Republic of Congo
DSS	Decision Support Systems
ECOWAS	Economic Community of West African States
EDP	Electronic Data Processing
EFFT	Emotionally Focused Family Therapy
E-HRM	Electronic Human Resource Management
EHRMS	Electronic Human Resource Management Systems
HRMS	Human Resource Management System
ERP	Enterprise Resource Planning
ESRC	Economic and Social Research Council
ESS	Employee Self-Service
ESSi	Employee Self-Service intranet
HREA	Human Resource Extranet Application
HRIS	Human Resource Information Systems
HRM	Human Resource Management
HRPA	Human Resource Portal Application
HTTP	Hypertext Transfer Protocol
HRIA	Human Resource Intranet Application
HRFA	Human Resource Functional Applications
ICT	Information and Communication Technology
ILS	Integrated Labour Solutions
ISA	Integrated Human Resource Suite Application
IT	Information Technology
IVR	Interactive Voice Response
KSAOs	Knowledge, Skills, Abilities and Other characteristics
LAN	Local Area Network

MCT	Mobile Communications Technology
MIS	Management Information Systems
MSS	Manager Self-Service
NHRPAC	National Human Research Protections Advisory Committee
PSIBer	Postscript Interactive Bug Eradication Routine
R & D	Research and Development
SADC	South African Development Communication
SAP AG	Systems, Applications and Products in Data Processing
SARS	South African Revenue Service
SPSS	Statistical Package for the Social Sciences
SSA	Self-Service Application
UNIX	Uniplexed Information and Computing Service
UNPAN	United Nations Public Administration Network
USA	United States of America
VIP	Vermont Information Processing

Chapter One

OVERVIEW OF THE RESEARCH

1.1 Introduction

Global development of the Internet in the last few decades has increased the utilization of Electronic Human Resource Management (E-HRM) in organizations around the world, including universities. In any technology-driven economy, every organization's economic and social well-being depends on the ability of human resource professionals to incorporate a dynamic system that encourages technological development. Educational and technological developments are critically linked at higher levels of the educational system such as university education, colleges of technology and polytechnics that use computers on a daily basis. The services of human resource practitioners have continued to be at the forefront to embrace technology in different organizations (Lengnick-Hall & Moritz, 2003: 365).

According to CedarCrestone (2005, cited in Strohmeier, 2007:19), many universities are introducing E-HRM, which has led to a remarkable change in their workplace. In fact, it can be said that the human resource management departments of most universities have continued to integrate new technology into that of old processes. Computers are being used to maintain different human resources management functions, and also to increase administrative efficiency, which enable them to produce better results that can improve their decision-making (Lengnick- Hall & Moritz, 2003: 365). They further state that managers and employees are responding promptly and positively to changes when they are able to access, and are empowered to make decisions.

In the twenty first century many universities are facing increased challenges in the world of work. These challenges include the introduction of technological advancement, globalization, economic restructuring and new employment patterns. Due to the effect of global changes in South Africa, the way that human resources employees and their work are managed have been influenced (Shane, 2009:1). This has led HR professionals in South Africa to change and increase their role and functions from basic personnel activities to an operational role that gives strategic direction to universities (Jones & Arnold, 2003:7). This means moving towards

the use of technology in their human resources functions to a dynamic and strategic way of managing resources. According to Ruel, Bondarouk, and Looise (2004: 367), Electronic-Human Resource Management (E-HRM) is a web-based tool, which is used to automate and support human resource processes (Biesalski, 2003:1). Implementing E-HRM in universities will save costs and time. It also supports HR administrative work and improves the quality of HR information. This information helps HR managers to make strategic decisions (Bell, Lee & Yeung, 2006:295; Strohmeier, 2007:19; Wright & Dyer, 2000; Zhang & Wang, 2006:356).

Surveys have revealed that HR technology has enabled the use of HR payroll systems and improved HR delivery systems in South Africa (Wyatt, 2002:4). Research on E-HRM is new and South African researchers have not done so much research on it (Ruel, Bondarouk & Van der Velde, 2007: 280). Hence, this research is being conducted to determine the level of utilization of Electronic-Human Resource Management (E-HRM) as a decision-making tool in human resource functions in South African universities. South Africa is still adopting E-HRM (the adoption of E-HRM in South Africa is still on the infancy stage), and it is necessary that the international evidence of success, failure and learning from the use of E-HRM is incorporated into South Africa's human resource management systems (Shane, 2009:6).

Recently, a new step was taken by HR professionals in West Africa to introduce, and implement the use of E-HRM in their HR functions. A meeting of HR professionals was held in May 2010 at Monrovia in Liberia to address this issue (AHWO, 2010: 1). The objectives of this meeting were: to review the state of computerization of the human resource information system (HRIS) in each West African country; to review the report of pilot testing of the HRIS in Northern Ghana; to propose an action plan for the use of HRIS in the region; and others. The outcome of this meeting was not stated. But it was found that in most West African countries, human resource professionals have had difficulty introducing, implementing, and utilizing electronic-human resource management (E-HRM) systems in their human resource (HR) functions in the past years owing to poor infrastructure.

In principle, Nigeria is assumed to be one of the West African countries that adopted the use of E-HRM into their human resource functions. According to Woherem (2004:11), Nigeria,

like most other developing countries, is an information-poor country. This means that there is a scarcity of published information on the use of information technology. However, Nigeria can easily become a significant regional player in the software industry (Woherem, 2004:11). Electronic-Human Resource Management (E-HRM) is software which is used in data capturing, tracking data, and it helps to supply information needs for the human resources payroll, management, and accounting functions in universities (Heathfield, 2011: 1). Computer software and services have more opportunities in a developing country such as Nigeria owing to low capital entry requirements. But the question is to what extent are human resource practitioners in the universities of this country utilizing electronic human resource management?

The utilization of electronic human resource management (E-HRM) systems depends solely on the availability of sufficient computers in Nigeria's tertiary institutions. Bondarouk and Ruel (2009: 508) stress the fact that most universities are not bothered about their human resource department being more strategic with electronic human resource management, but want their HR functions to be done quickly and efficiently. As a result, there are weaknesses, which are associated with the use of E-HRM. Strohmeier (2007:21) lists some factors, which human resource practitioners and other users of E-HRM are facing. These include shortages of computer hardware and software for human resource practitioners. Again, the culture and the legal conditions of these institutions also affect the utilization of E-HRM systems by human resource practitioners and other users. Another problem assumed to be experienced by most HR practitioners and other users in universities is the effectiveness and efficiency of using E-HRM. Cooke (2000:6) states that the use of E-HRM in some universities is efficient and effective, while it is inefficient in other universities, depending on certain conditions such as the unavailability of electricity, which constitutes inefficient and ineffective use of E-HRM systems. This research should create awareness of the possible stumbling blocks, impacts and consequences of E-HRM.

A statement of the research problem is expressed in the next section.

1.2 Statement of the Research Problem

Kumar and Parumasur (2013: 861) have mentioned that HR technologies enable the efficiency of HR functions in South African universities. However, this seems to be at a low pace. Research also indicates a need for continued engagement of E-HRM systems to not only determine its usefulness, but also to determine the level of utilization of E-HRM as a decision-making tool in HR functions in South African universities. The scenario is somewhat different in the case of Nigeria. While not much, as is the case in South Africa, has been empirically done on the subject in Nigeria, it is stated that the adoption of E-HRM has been in the rudimentary owing to poor infrastructure, insufficient power supply, and limited basic amenities that would enable the use and adoption of E-HRM systems in Nigerian universities. It is assumed nevertheless that the potential of adoption and further utilization of E-HRM would advance the course of E-HRM in Nigeria.

Swanepoel et al (2014:905) emphasises that organisations need to ascertain whether HR operations are being performed well and if the utilization of E-HRM system would improve their operations. It can be tentatively expected that an improved E-HRM system should support the organization's goals, strategies and business, thus providing better services to the organization's clients.

Again, the utilization of E-HRM system is a key aspect for the human resource practitioners as it can facilitate strategic human resource management in areas of human resource such as workforce planning, recruitment and selection, performance management, training and development, and others. If these strategic areas are not aligned to the use of E-HRM system, the chances of success of the use of this system are severely limited.

Lawler (2005:147) says that organizations can create an electronically enabled HR system which can be self-serviced and would help increase the speed of basic HR administration. In providing HR administration services, it is believed that a strong Web capability can be used. This is the cheapest, fastest and can be used in establishing and running structures such as HR shared-service centres. Although the use of electronically enabled devices has not been fully implemented in most organizations as literature stated, recent research suggests that this should be done.

Given the foregoing, therefore, this study is conducted in the hope of determining the level of utilization of E-HRM. The study thus inquires to what extent HR practitioners are utilizing E-HRM in their HR functions in order to achieve their organisational goal.

1.3 Aim of the Study

The aim of this study is to explore the utilization of Electronic Human Resource Management (E-HRM) systems as a decision-making tool at selected South African and Nigerian universities in order to enable HR practitioners to improve their work performance and service delivery.

1.3.1 Objectives of the Study

The specific objectives of this study are:

- To determine the extent of the utilization of electronic- human resource management (E-HRM) systems at selected universities in South Africa and Nigeria;
- To determine the effect of utilizing human resource software to support well-articulated and aligned business goals across all human resource functions in both South African and Nigerian universities;
- To investigate the value adding benefits of E-HRM for Human Resource functions at selected South African and Nigerian universities;
- To identify E-HRM related enabling capacities for human resource functions at South African and Nigerian universities;
- To assess the effectiveness and efficiency of information and decision-support tools of decision-making for HR practitioners at South African and Nigerian universities;
- To evaluate the mediators that have affected the relationships between E-HRM information tools and decision-making quality; and
- To propose a comprehensive model for proper implementation and utilization of E-HRM as a decision-making tool for human resource management functions at universities.

1.4 Research Questions

- To what extent do Human Resource managers and other employees in Nigeria and South African universities utilize E-Human Resource Management (E-HRM) in their human resource management functions in order to achieve their organizational goals?
- Is there a significant difference in the utilization of E-HRM in South African and Nigerian universities?
- In what ways can the effective utilization of E-HRM assist universities human resource management departments in terms of optimizing the value of their functions to their communities/clients?
- How do information and decision- support tools, which are provided by E-HRM, affect the efficiency/ timeousness of the decision-making of HR professionals in South African and Nigerian universities?
- What mediators and moderators affect the relationship between E-HRM information tools and decision-making quality?
- What consequences, problems and challenges are associated with the use of E-HRM in these universities? Does E-HRM provide a valuable contribution to HR practitioners at the universities?

1.5 Significance of the Research

This research identifies problems, which are associated with the use of Electronic-Human Resource Management (E-HRM) in universities by human resource practitioners in their human resource functions, and tries to suggest solutions for these problems. This study contributes to the ease of the administrative functions of human resource practitioners in universities. This study provides the human resource practitioners with opportunities to create new areas which can contribute to organizational success. It points out the networks of internal and external active factors which provide required human resource services for universities without the need for a conventional human resource unit. Again, it exposes new ideas to the managers and employees which focus on the use of online management system that would be actively involving the use of E-HRM system. Additionally, this research enables different stakeholder groups to view E-HRM value creation as ‘subjective’. It suggests ways of implementing human resource strategies, policies and practices in universities through the use of Internet channels. Hence, it suggests ways of adding value to the human resource functions at South African and Nigerian universities.

1.5.1 The Need for Undergoing a Comparative Study

The reasons for undergoing a comparative research is to enable the researcher make better comparison across different countries and cultures. It is also to assist the researcher identify the commonalities and exclusions of E-HRM which might perform important functions from the two countries used for the research. Again, it is to detect and address the part of the system that has not been used in the universities that could help the system in place work more efficiently.

Furthermore, the study was conducted in South Africa and Nigeria because South Africa is a more advanced country than Nigeria, which means in order to identify problems with the Nigeria way of using E-HRM a more developed country such as South Africa needs to be used to get a better result.

1.5.2 Delineation of the Study

This research was limited to six universities: three in South Africa, which included a comprehensive, traditional and Technology University, and three in Nigeria, which included a federal, state and private university. Furthermore, the research only extended to university staff, namely the human resource department, and some selected academic and non-academic staff in the universities. Both full-time and part-time workers were used for the survey, with the exception of those who did not have at least one year working experience at the university.

1.6 Brief Literature Review

This study is about the use of electronic-human resource management (E-HRM) by human resource practitioners in both South African and Nigerian universities. The intention was to find out the extent of the utilization of electronic-human resource management (E-HRM) as a decision-making tool in their human resource management functions. This brief literature review takes the form of brief presentations of the concepts of HRIS, E-HRM, decision support systems, and enterprise resource planning systems. This is for the purpose of contextualizing the research objectives.

1.6.1 The Concept of Electronic Human Resource Management (E-HRM)

Institutions of higher learning are increasingly utilizing Electronic-Human Resource Management (E-HRM) to support their human resource functions. Electronic-Human Resource Management (E-HRM) has been defined by many authors in different ways. Bondarouk and Ruel (2009: 507) define E-HRM as "an umbrella term covering all possible integration mechanisms and contents between HRM and information technologies aiming at creating value within and across organizations for targeted employees and management". "It is also defined as the planning, implementation and application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of Human Resource (HR) activities" (Strohmeier, 2007:20). Lengnick-Hall and Moritz (2003:365) define E-HRM as "conducting human resource transactions using the internet or intranet". This definition does not comprise all the functions of E-HRM. E-HRM can be further defined as the administrative support of the human resource function in universities by using Internet technology (Voermans & Van Veldhoven, 2007:887). Human resource information systems (HRIS) were used earlier, before the introduction of Electronic-Human Resource Management (E-HRM), and are still in use presently.

Recently, it has become a pressing need for the human resource management department of different universities to initiate the use of information technology in their decision-making, which will give them strategic direction or guidance. This strategic decision-making depends solely on the ability of human resource practitioners to distribute relevant and accurate information to key decision-makers at the universities, and to make sure that the information that is supplied is utilized. Hence, the effective implementation and utilization of E-HRM in the universities necessitate both the use of technology such as hardware and software, and the end-users, which comprise all the human resource practitioners (Wilton, 2011: 445). The driving force of E-HRM is the human resource management department, which will make available a theoretical structure that is required (Nel, Van Dyk, Haasbroek, Schultz, Sono and Werner, 2004:541).

Electronic-Human Resource Management (E-HRM) involves all human resource management functions such as recruitment and selection, training and development, compensation and benefits, performance management, performance appraisal, and other HR

functions, which are carried out to provide the required human resources (Stone & Dulebohn, 2013:1). In addition, E-HRM is important for human resource practitioners at universities to assist with making good decisions. Also, it enables human resource practitioners to manage report and analyze all employee information, as well as administer benefits such as status changes, manage organizational documents such as employee handbooks and safety guidelines, and integrate employee payroll and other accounting systems (Heathfield, 2011: 2).

Electronic-Human Resource Management (E-HRM) helps human resource practitioners to make decisions on their own when capturing personal information and updating records. Employees can use this system to increase investment in their retirement plan. Furthermore, it allows human resource (HR) employees to do their work effectively in fewer hours than the traditionally. They can process their paperwork and increase data accuracy in less time (Lengnick-Hall & Moritz, 2003: 366). In as much as E-HRM supplies high quality management information to human resource personnel, there are problems that human resource management workers experience such as untimely supply of information by the system. Another challenge is that not all the data that is captured can be codified and collated by using E-HRM, as some perceptions and experiences that are necessary for universities may be difficult to capture (Wilton, 2011: 446). Therefore, one can assume that technology drives sometimes hinder decision making instead of enabling effective decision-making.

1.6.1.1 Human Resource Information System (HRIS)

Human Resource Information System (HRIS) is defined as "a system that is used to acquire, store, manipulate, analyze, retrieve and distribute information about an organization's human resources to inform and support organizational decision-making" (Wilton, 2011:460). Previously, most universities had limited computerized systems and still used the old human resource management system, which is the paper system. Employee information was not captured rapidly by human resource workers, which became an issue that needed to be solved urgently. This led to the introduction of Human Resource Information Systems (HRIS). Thite and Kavanagh (2009: 13) listed the aims and objectives of HRIS as follows: HRIS aims to provide quick services both to the human resource (HR) practitioners and to their customers; it helps HR practitioners in universities to capture accurate and timely information; it is also

used for strategic, tactical, and operational decision-making such as planning for employees to avoid litigation, and evaluate programs, policies and practices; and to support daily human resource operations. HRIS was targeted for automation because of the complexity and data intensiveness of the HRM functions (Bussler & Davis, 2002:17). With the help of information systems and the Internet, almost all the processes and the functions of HRM have been computerized in most universities (Bussler & Davis, 2002:17).

Furthermore, Human Resource Information System (HRIS) provides a structural connectivity across units and activities of Human Resource Management (HRM) in universities (Lengnick-Hall & Lengnick-Hall, 2006:179). It increases competitiveness by improving human resource operations and management processes (Beckers & Bsat, 2002:41). Also, it helps HR practitioners in universities to collect appropriate data and convert them into information and knowledge for improved timeliness and quality of decision-making (ibid). There are diferent types of HRIS: Electronic Data Processing (EDP); Management Information Systems (MIS); and Decision Support Systems (DSS) (Sprague & Carlson, 1982 cited in Thite & Kavanagh, 2009:15).

HRIS is concerned with the automation of HR services and electronic- human resource management (E-HRM) provides technological support of information regarding HR services (Shane, 2009:30). E-HRM can be regarded as a technical unlocking of HRIS for HR employees, and as a way of doing human resource management (Ruel, Bondarouk & Van der Velde, 2007:281). " HRIS is further seen as a primary transaction processor, which edits, keep records, and have a functional application system, which lies at the heart of all computerized HR work" (Walker, 2001:8). Again, "HRIS can perform many types of management functions as it is based on automated databases" (Shane, 2009: 30). Human resource staff use HRIS for various tasks such as career planning, productivity evaluation, promotion calculation, recruitment, resource allocation, training assignments and vacancy reporting (Hyde & Shafritz, 1977 cited in Shane, 2009:31). The importance of HRIS, as software, is as follows: it improves HR operations and creates a greater number and variety of HR-related reports. It also shifts the focus of HR from processing transactions to strategic HRM (Beckers & Bsat, 2002:41).

1.6.2 An Overview of E-HRM

In the 1960s many universities all over the world began to apply IT-based human resource management in order to reduce costs (Al-Ibraheem & Ruel, 2009 cited in Torres-Coronas & Arias-oliva, 2009:93). By 1998 about 60 percent of 500 organizations, including universities, had implemented the use of human resource information system (HRIS) to support their human resource management operations (Ball, 2005: 677). Major benefits that come with the use of HRIS are as follows: improved accuracy; provision of timely and quick access to information; and saving of costs (Ngai & Wat, 2006:297). Electronic-Human Resource Management (E-HRM) enhances efficiency by reducing the cycle times to process paperwork, while it also increases data accuracy and reduces human resources personnel universities (Lengnick-Hall & Mortiz, 2003: 365).

E-HRM has recently become a dominating label for HRM services, which are delivered through Internet-technology in universities. It can be defined as a way of implementing and utilizing human resource management practices, policies and strategies that are fully delivered through Internet-technology based applications (Ruel *et al*., 2004:364). The aim of utilizing this E-HRM system in universities seems to be more than that of HRIS. The utilization of E-HRM began in 1990 and it has been used to conduct human resources management functions through Internet-technology in European countries (Lengnick-Hall & Mortiz, 2003: 365). Recently, E-HRM has been used by human resource management employees for strategic decision-making. According to Al-Ibraheem and Ruel (2009) cited in Torres-Coronas and Arias-oliva (2009:93), a combined definition of E-HRM application is "the software program that offer a useful and easy-to-use electronic medium, through which the E-HRM goals are accomplished by performing different types of human resources activities electronically to yield the desired outcome and benefits". Electronic human resource management (E-HRM) differs from human resource information system (HRIS) in many ways.

1.6.3 Differences between E-HRM and HRIS

According to Ruel and Bondarouk (2008:161), the differences between HRIS and E-HRM is that HRIS is concerned with employee payroll and personal information which is done with the use of information technology system in a way that external candidates and clients would

not be able to access them, while E-HRM has to do with the use of the Internet and networks in form of web-based systems such as the use of Mobile Communications Technology (MCT) which has changed interactions amongst HR staff, line managers and employees (Florkowski & Olivas-Lujan, 2006:684).

Human Resource Information System (HRIS) is used to collect, store, analyze, distribute and retrieve data about an organization's human resource functions (Nel, Van Dyk, Haasbroek, Schultz, Sono & Werner, 2004:541). As mentioned above, this term was used earlier before the introduction of Electronic-Human Resource Management (E-HRM) and is still in use at present. There is a little difference between HRIS and E-HRM for human resource management. The major difference between the two is the magnitude and reach of E-HRM (Bondarouk & Ruel, 2009: 506). Furthermore, according to Keebler and Rhodes (2002:57), the implementation of E-HRM is shifting towards dealing with the dynamic nature of HRIS implementation in the use of innovation, implementation, learning, change management, and technology acceptance models.

Furthermore, Human Resource Information System (HRIS) is defined as "a computerized system that assists in the processing of HRM information" (Decenzo & Robbins, 2007: 127). HRIS is used to fulfil HRM information needs, and also to facilitate the employment planning decisions of universities (Decenzo & Robbins, 2007: 127). As mentioned above, HRIS is used to collect, store, analyze, distribute and retrieve data about an organization's human resource functions (Nel, Van Dyk, *et al*., 2004:541). Electronic-Human Resource Management (E-HRM) is a software programme, which is used to capture data, track data, and helps to supply data information needs for the human resources payroll, management, and accounting functions in universities (Heathfield, 2011:1). Electronic human resource management (E-HRM) is hence used as a decision making tool for human resource management functions.

Table 1: Difference between E-HRM and HRIS

E-HRM	HRIS
"E-HRM has to do with the use of the Internet and networks in form of web-based systems such as the use of mobile communications technology (MCT) that has changed the way of interactions among HR staff" (Florkowski & Olivas-Lujan, 2006:684)	"HRIS is concerned with employee payroll and personal information which is done with the use of information technology system in a way that external candidates and clients would not be able to access them".
E-HRM is a software used in capturing data, tracking data, and it helps in supplying data information needs for the human resources payroll, management, and accounting functions in the universities (Heathfield, 2011:1)	HRIS is used in collecting, storing, analyzing, distributing and retrieving data about an organization's human resource functions (Nel *et al*., 2004:541)

Source: compiled by the researcher

1.6.4 Decision Support System (DSS)

In many universities, human resource management practitioners need strategic direction that will guide them towards achieving organizational goals. This means that human resource management practitioners require the ability to distribute important information to key decision makers within the organization to ensure that their clients are able to interpret and utilize the information. The process is known as the Decision Support System (DSS) (Nel, *et al*., 2004:541). This decision support system helps human resource practitioners to generate reports using communication format and style, which are effective. Additionally, the Decision Support System can be used by HR practitioners to produce reports that contain details and summaries of employee populations, compensation, turnover rates, and other elements of human resource management.

According to Lengnick-Hall and Moritz (2003:373), an improved decision support system (DSS) will benefit HR practitioners at different universities, as human resource functions will be liberated from administrative fetters, and they will be able to focus on developing

intellectual capital, social capital, and managing knowledge to improve their organization's competitive advantage. Decision support systems improve the decision-making of human resource managers and other employees in universities (Boyett & Boyett, 2001 cited in Lengnick-Hall & Moritz, 2003:374). The decision support system will provide a 'predictor algorithm that will enable HR managers to forecast potential problems in the organization such as turnover, recruitment, compensation, and labour relation's (Lengnick-Hall & Moritz, 2003:374).

1.6.5 Utilisation of E-HRM as a Decision-Making Tool in Organisations

Different organizations internationally have increased the use of technology within their human resource management departments and functions (Torres-Coronas & Arias-Oliva, 2009:110). In Europe 70% of organizations, including universities, use the Internet or intranet to deliver human resource services to their employees. This enhances their Electronic-Human Resource Management (E-HRM) capabilities (Watson-wyatt, 2002:3). In any organization that introduces technology, the benefits that this technology comes with may vary. Ngai and Wat (2006: 297) note that organizations need to know the benefits of E-HRM before implementing or utilizing it. E-HRM is important both to HR practitioners and academics. Hence, Shrivastava and Shaw (2004: 201) proposed a transformational impact of technology by redefining the scope of the HR Function, which encourages more strategic activities. This strategic activity has led to an increase in the demand for accurate and detailed information about an organization's human resources (Ball, 2005:677).

Electronic-Human Resource Management (E-HRM) has enabled such information to be made possible at the touch of a button, which has led to information efficiency, a reduction in costs and time, and analytical decision-making. Parry (2009), cited in Torres-Coronas and Arias-oliva (2009:110), listed some areas of human resource functions where E-HRM has been used as a decision-making tool: first is the recording and management of absence. Human resource practitioners have utilized the E-HRM to increase the effectiveness of recording and managing absence across the organization by introducing a system that records the start and finish times of employees; second, the automation and introduction of an e-recruitment system enables applicants to enter their own details; this makes the process of recruitment

more efficient and effective; it also enables HR practitioners to respond automatically to applicants, thereby speeding up the communication process. Third, E-HRM helps HR practitioners to review forms directly; review employees' salaries; bonus ratings; and record employee absence. This information is entered directly into the system instead of submitting paper-based forms to the HR department or other officials. Fourth, HR professionals can strategically plan for the department, and can be used for HR appraisals and compensation planning.

Furthermore, the introduction of self service can increase the accuracy of captured data. It leads to increased transparency of operations and reduces the transactional work of HR administration teams, allowing HR professionals time to work on more complex and difficult tasks. Finally, a Chartered Institute of Personnel and Development (CIPD) survey on technology and people management (2005) indicated that E-HRM reduces operational and administrative costs (CedarCrestone, 2006).

1.6.6 The Role of E-HRM in HRM

Globally, organizations are undergoing changes with the new idea and introduction of how human resource functions should be organized and managed. Information technology has been set up as a driving force of this change to enable universities to meet this competitive era. Hence, Internet development in the last decade has increased the utilization and application of Electronic-Human Resource Management (E-HRM). E-HRM is said to be a new and captivating area of study, which combines human resource management and information systems (Yusoff, Ramayah & Ibrahim, 2011: 131). Thus, E-HRM is important, as it helps HR practitioners to make strategic decisions in their workplaces concerning areas such as collecting job information, recruitment, employee selection, training and performance management (Chapman & Webster, 2003: 113).

Electronic-Human Resource Management (E-HRM) is part of a human resource manager's duties. When HR managers' work has been divided between them and other staff, HR professionals who are at top management level will be able to concentrate and make better HR-related strategic decisions that will enable the organization to achieve their organizational

goals (Hussain, Wallace & Cornelius, 2007:74). Few weaknesses have been identified with the use of E-HRM in universities. HR managers with long working experience might see it as a threat and may, therefore, be less satisfied with the introduction of E-HRM. Hence, user satisfaction of the system is considered as common measure of success in HR functions (Poutanen, 2010:45). E-HRM is a system that supports HRM functions and helps HR managers in the effective management of human resource departments. Furthermore, E-HRM was defined earlier as the administrative support of the human resource function in organizations by using Internet technology. This implies that the development of E-HRM is strongly dependent on the development of HR activities.

The functions of HRM by using E- HRM, as postulated by Mayfield, Mayfield, and Lunce, (2003), are shown below.

Table 1.1: Functions of HRM Using E- HRM

HRM Functions	Major Activities
Strategic Integration	This helps top management of organizations in making long term HR planning.
Personnel Development	Skills and abilities of the HR employees are developed thereby improving the quality of their work life.
Communication & integration	Different organizations communicate effectively with other organizations with the use of extranets which bring about change in the different organizations.
Records and Compliance	Record management systems are used in managing organizational information while compliance system safeguards government compliances.
Human Resource Analysis	It is a continuous way of gathering and analysing the human resource needs in the workplace.
Knowledge Management	This assists in developing and retaining information for the use of human resource practices.
Forecasting and planning	This is used in making a long term plan that would measure the needs of the organization.
Organizational vision	Organizational vision brings together the factors of E-HRM to induce positive organizational outcomes.

Source: Adapted from Mayfield, et al. (2003:139).

1.6.7 Barriers in the Use of E-HRM Management

Major barriers in the use and adoption of E-HRM in universities are: insufficient financial support and difficulty in capturing a lot of paperwork that has been done in the past (Ngai & Wat, 2006:300). Additional barriers might be the high cost of setting up and maintaining the system; lack of funds; lack of knowledge of HR; and lack of application for HR users (Beckers & Bsat, 2002:41). Problems that are associated with managing E-HRM are: lack of staff; lack of budget; and lack of information technology support (Institute of Management and Administration, 2002). Other software that is available for HR functions are mentioned below. In addition, HR departments might shrink as a result of using E-HRM. This might reflect as a single-person department in the institution. Another barrier is the concern for IT skilled employees in the HR departments of the institutions. Increasing technology and investing in training might become a barrier in the future to the university management.

Furthermore, government policies and regulations have contributed a barrier in the utilization of E-HRM in universities. Another barrier is the personnel skills. Others are economic constraints and lack of system infrastructure in the universities. Additionally, inadequate capital and lack of reliable background information on E-HRM.

1.6.8 HR and Software

There are few technologies, which are used for HR functions in universities. These have been clustered or summarized into two groups: software that targets HR staff as end-users and software that targets internal customers as end-users.

1.6.8.1 Software that Targets HR Staff as End-Users

Software that targets HR staff as end-users includes: HR functional applications and integrated HR suite applications. These are discussed briefly below.

HR functional applications – Different types of computer programs have been automated for different HR functions such as talent management, performance management, and stakeholder management. This technology is known as one of the first that was used to make HR functions easier, faster and more structured in universities (Sanayei & Mirzaei, 2008:89). However, there are some weaknesses that are associated with this application. It has no

unifying standards, which are made across application interfaces and hence re-enters data that has already been inputted to keep various databases updated (Florkowski & Olivas-Lujan, 2006:689). More so, these characteristics provide some flexibility for universities that wish to automate their HR functions.

Integrated HR suite applications – This is an integral solution for HR departments at universities. It provides access to larger databases through a variety of modules that automate diverse HR sub-functions, and has the ability to share data easily across applications (Sanayei & Mirzaei, 2008:89).

1.6.8.2 Software that Targets Internal Customers as End-Users

Software that targets internal customers as end-users is as follows: interactive voice response systems, HR intranet applications, self-service applications, HR extranet applications, and HR portal applications.

Interactive Voice Response (IVR) systems –This helps HR staff in universities to facilitate telephone-driven consumption (automated telephone calls targeting customers), which is useful to benefit enrolment, training registration, employee announcements, and work-related surveys. HR staff in universities have also used it to increase the efficiency of pre-screening external applicants and verifying employees' status income levels by calling the appropriate numbers (Thaler-Carter, 1999:8 and Overell, 2002).

HR intranet applications – Intranet has enabled the use of e-mails and electronic-form of software in universities. Other university employees outside of the HR department can update their databases for better work performance, and to review the university's policies, access job postings and learn about the range of services available to them from the university's HR department (Florkowski & Olivas-Lujan, 2006: 688).

Self-service applications – Self- service application is used in two ways by university HR staff: employee self-service (ESS) and manager self-service (MSS) applications (Sanayei & Mirzaei, 2006:90). Furthermore, they stated that self-service applications enable HR staff to

update their individual records, register for training and record performance evaluations. Self-service and web-based applications are used as a solution to traditional (paper-type) HR functions, which take time. PeopleSoft's collaborative application is an example of a web-based application, which consists of more than 140 self-service transactions in the HR field such as e-benefits, e-development, e-pay, and e-equity (Cedar Group, 1999, 2000, 2001, 2002).

The table below shows the tools of both employee and managers' self-service. These are functions that they carry out in their workplaces.

Table 1.2: Employee and manager self-service tools

ESS	MSS
Working time and schedule, pay and taxes, personal information, training and performance management, Life events, benefits, my career and time off from work.	Employee leave and stability, employee times and schedules, compensation and performance, employee information, employee training and development, budget and cost centre, and organising and staffing.

HR extranet applications – The HR department at universities use extranet applications to share useful information and to communicate effectively with their colleagues outside the HR department, and with their external clients such as job applicants, trainers, South African Revenue Service (SARS) and the labour department. HR extranet application is also used for database management and service administration by HR staff (Sanayei & Mirzaei, 2006:91).

HR portal applications – HR staff in universities use the HR portals in various ways. The availability of the Internet has made it possible for them to access information point sources, tools and systems, which are essential for HR services. Portals are highly configured through code modules, which are, called "pagelets" or "applets", which can be added to or from the entry page to enable users to log into the system (Cedar, 2001, 2002; Towers Perrin, 2002; Plumtree, 2002).

1.6.8.3 Other Technologies Used for Human Resource Management

Amongst much information technology-based systems that are used for human resource functions, the most well-known and used software technologies for human resource functions are: human resource information systems (HRIS); and enterprise resource planning (ERP). Having previously described HRIS, ERP is briefly discussed next.

Enterprise Resource Planning (ERP) Systems

Marnewick and Labuschagne (2005:145) define enterprise resource planning (ERP) systems as "packaged business software system that lets an organization automate and integrate the majority of its work processes, share common data and practices across the enterprise and produce an access to information in a real-time environment". The most important issue with ERP is that information must be entered once (Peslak, 2006:1288). ERP systems integrate the core corporate activities in the organization, and HR employees use this software to communicate and share information with other staff in the institution (Tsamantanis & Kogetsidis, 2006:118).

In comparison with the other software listed above, which are used for human resource (HR) functions, E-HRM seems to be the most suitable system, as it offers numerous advantages over other systems, that are enabled by the versatility of the use of Internet technology. With this background, the research aims to assess the utilization of Electronic Human Resource Management (E-HRM) systems as a decision-making tool by selected South African and Nigerian universities. E-HRM has been chosen amongst other software that are used by human resource practitioners in universities, because it comprises the functions of all other HR software, which are available. In addition, it is a new area of interest for human resource practitioners and researchers.

1.7 Brief Research Methodology

Research method is a plan of how the researcher intends to carry out the research (Babbie & Mouton, 2008: 74). The researcher made use of both quantitative and qualitative research methods, as this was most convenient for this study.

1.7.1 Research Design

There are three types of research design: exploratory, descriptive and explanatory research design methods (Babbie & Mouton, 2009: 79). This study employs all three. Exploratory study was used for this research since this type of study itself is relatively new (Fox & Bayat, 2007: 30). Descriptive research method was employed because this research involves qualitative research. According to Babbie and Mouton (2009: 81), qualitative studies are primarily aimed at description, which was used in this research through content analysis. This gave the researcher a detailed description of the extent of the utilization of E-HRM in the studied institutions. Exploratory design helped the researcher to answer questions on 'how', 'what', 'who' and 'which' in respect of the research. It enabled the researcher to determine the ease and usefulness of E-HRM for human resource management employees in universities by asking questions on how this subject has been used, what activities this system have been used for, and who are the people who use E-HRM and so on. In addition, explanatory research design was used, as this enabled the researcher to report on the outcomes of the study (Babbie & Mouton, 2009:81). Also, since the research is a comparative one, it helped the researcher to compare activities from the studies that were obtained from the field in a descriptive format. Moreover, it was used to explain the relations between variables (Fox & Bayat, 2007:31).

1.7.2 Qualitative Research Method

The qualitative research method will involve the use of in-depth interviews, case studies and rigorous review of literature (Babbie & Mouton, 2009:270). A semi-structured interview guide was used as one of the instruments to collect data. In-depth interviews were conducted on a one-to-one basis. This was to enable the researcher to probe deeper into a response that was given by an interviewee, thus producing a higher response rate. Electronic human resource management (E-HRM) is a new area of interest in research, and its utilization in human resource management (HRM) functions is essential, as it enhances employees' skills and abilities. Furthermore, it improves the quality of the work life of employees. A case study approach was employed to assess the utilization of E-HRM in the different universities that were chosen for this study. A case study approach enabled the researcher to have an in-depth understanding of the complexity of the situation. "A case study is the study of a person, a

small group, a single situation, or a specific case" (Holetzky, 2003:1). It involves extensive research, which has documentary evidence of a particular issue, and with regard to different functions of human resource management, how these were distributed, and carried out, in the case of this research study, was sourced.

1.7.3 Quantitative Research Method

The quantitative method is a systematic and objective process that investigates a particular problem by using numerical data. This method strives to utilize a consistent and logical approach towards what is being investigated, and utilizes statistical inferences to process the data (Saunders, Lewis and Thornhill, 2003:327). Questionnaires were distributed to the six universities that were used for the research. The questionnaire contained a demographic information section, which aimed to collect demographic data from participants (Please see Appendices A-C). The questionnaire also contained open and closed-ended questions. Open-ended questions enabled participants to express their own views on the use of electronic human resource management in their workplace. Closed-ended questions used a five rating likert scale, which ranged from strongly disagree to strongly agree. Closed-ended questions were used to obtain the opinions of general HR staff and other staff at the institutions who use the services of the HR department. This made it easier for respondents to make their choices.

Lastly, content-based questions were used to interview HR directors and managers in order to obtain in-depth answers and high responses from them regarding the utilization of E-HRM in the institution.

The questionnaire was designed so that employees could complete it within twenty minutes. The advantages of using a questionnaire, according to McNabb (2002:125), are as follows:

- They are flexible;
- They meet the objectives of the research project when designed well;
- They can be administered face-to-face, over the telephone, and by mail, and by computer network; and
- They measure factual knowledge about a thing or idea or peoples' opinions.

1.7.4 Research Population

Population is defined as the members of a particular group that the researcher wishes to investigate (Dunn, 2010:428). The population of this study comprised six universities; three universities from South Africa, and three universities from Nigeria. South Africa has 23 universities, which are divided into three different categories (SAinfo reporter, 2012:1). These include eleven traditional and six comprehensive universities, and six universities of technology. The researcher surveyed one university from each category: one traditional, one comprehensive and one University of Technology, comprising three universities from South Africa. Nigeria has 104 universities in total since 2010 (Ayanda & Sani, 2011:14). These include state, federal and private universities. The research population in Nigeria was divided into three groups: the first, second and third generation universities. This means that one university was chosen from each generational university for the survey. Each of these generational universities also constitutes the state, federal and private universities. The survey covered one state, one federal and one private university in Nigeria.

1.7.5 Sample Size

The sample size of the population was 658 from the six universities mentioned above; 47 participants comprised HR directors and managers, and 611 participants comprised HR staff and HR service recipients at the universities. This was to ensure that there were enough respondents and also to get enough samples for the results to be statistically significant. This research was based on systematic stratified random sampling, and hence statistical tests such as Pearson's chi square test was used to gauge the confidence of the generalization, and to determine if there was any significant difference between the expected frequencies and the observed frequencies in the total population. Furthermore, as a comparative study, the Levene's Test of Equality of variance and group statistics of T-Test tables were used to know whether there were significant differences between the comparisons that were made. The total sample size was decided with the help of the university's statistician, considering the fact that one of the universities chosen (Cape Peninsula University of Technology) had more than 100 employees at their university. The researcher and the Cape Peninsula University of Technology statistician considered the confidence intervals to select a sample size that would be a comfortable selection number for the study.

Table 1.3:Confidence intervals for selecting sample size

+/- 20%	40 ← 60 →80 40+80=120 120/2= 60	25
+/- 10%	50 ← 60 → 70	100
+/- 5%	55 ← 60 → 65	400

The above table shows that if plus or minus 20% confidence level is assumed, and 60% of a sample of 40 to 80 employees in the organization is taken, then the sample size will be a total of 25. Also, using 60% sample at plus or minus 10% of a sample of 50 to 70 employees, the sample size will be a total of 100; and *vis-à-vis* (Babbie & Mouton, 2009: 475). In this research, using 70% of a sample of 20 to 50 employees' samples for each university would enable the researcher to have a satisfactory confidence level of about 420 for the six universities.

The participants included human resource directors, human resource managers, human resource employees and other university staff who use/access the human resource services. The respondents were chosen based on their level of experience in the human resource department, namely at least from one year working experience within the HR department. This was to enable the researcher to obtain reliable results.

1.7.6 Data Collection Process

Data was collected, as mentioned above, from human resource directors, human resource managers, human resource employees and other university staff who made use of the human resource services at the six different universities: three universities from South Africa and three from Nigeria, as mentioned above. Documents, employees` hand-books and organizational records served as extra sources of information, and these were compared to results that were obtained from the field. The researcher also visited the universities that were used for the survey during the period of data collection to help the participants by explaining certain questions, and to collect the answered questionnaires. Data was collected by utilizing the following structure:

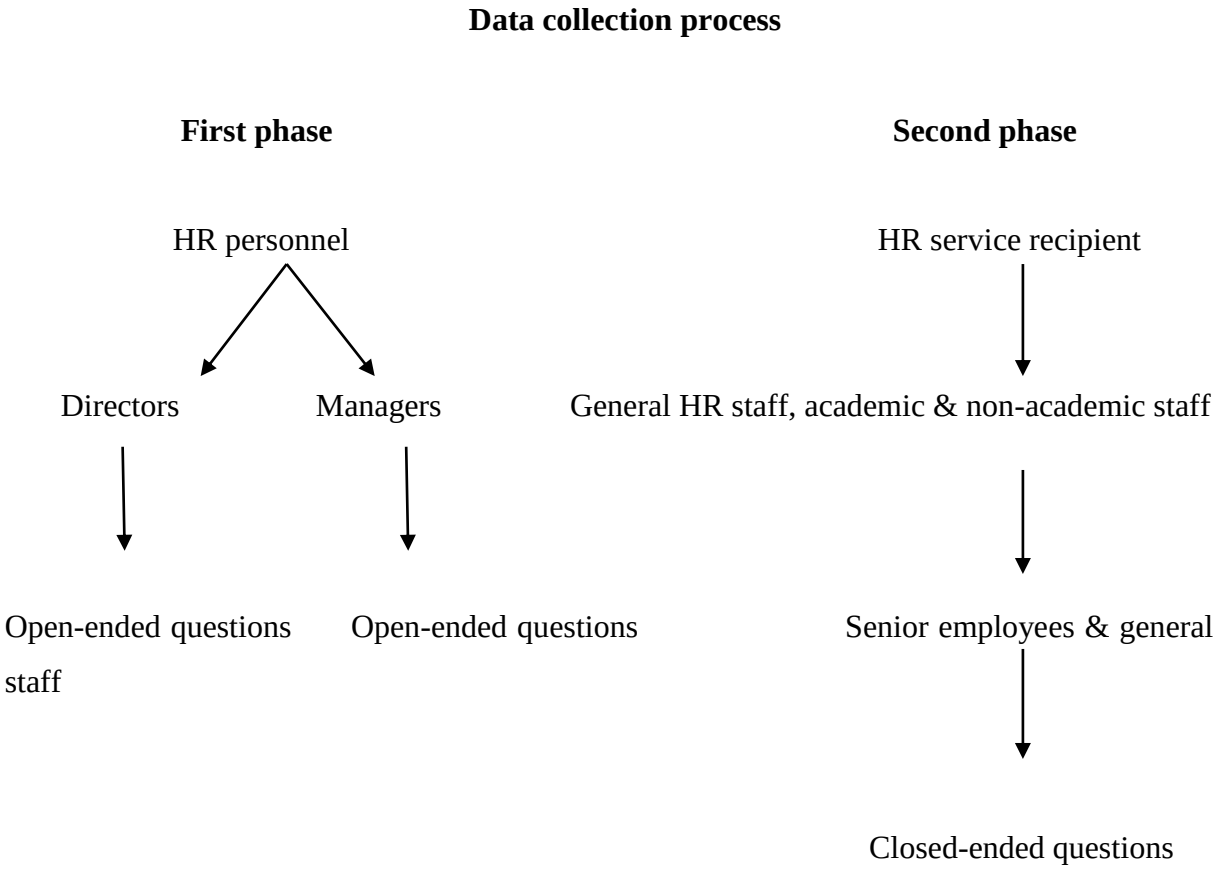


Fig. 1.1: Data collection process

Source: Compiled by the researcher

Data was collected by using interviews and questionnaires. Interview questions were used to obtain information from the HR directors and managers. This was to gain a high response rate and to reduce the number of 'don't know' and 'no answer'. It guided the researcher against some questionnaire items that were confusing (Babbie, 2014: 281). Additionally, data were collected by using questionnaires. This was distributed to general HR staff and other academic and non-academic staff who use the universities' HR services. Documents, employee's handbooks and other organisational records were used for this research. Considering the large number of respondents, questionnaires were used because it is quick to complete; and reliable numerical figures can easily be quantified (Babbie & Mouton, 2010:250). The investigation was conducted at six different universities: three in South Africa and three in Nigeria. These instruments were used because it enabled the researcher to gain enough information, understanding and knowledge to the extent of utilizing electronic human

resource management (E-HRM) systems in the various universities that were used for this study.

Data collection was done in two phases from the human resource personnel and the general university staff who made use of human resource management services. This was done to ascertain whether responses from the HR participants were the same as the responses from HR service recipients at the universities. The first participants that were interviewed included HR personnel: directors and managers. Open-ended interview questions were distributed to the HR directors and managers of the six universities. This was done to allow respondents to include more information and understanding of the subject. It allowed the researcher to better access the respondents' true feelings about the issue. Furthermore, it gave the researcher strategic direction regarding the issue at hand.

The second phase of the interview included HR staff and HR service recipients of the different universities. In this section both the academic and non-academic employees were assessed. This was subdivided into senior and general employees of the six universities. Intermittently, they were interviewed with closed-ended questions in order to achieve a high response rate from the participants. This was for easy analysis of the data and to be able to assess statistical interpretation. Furthermore, it helped the researcher to know the operational standards of HR workers with the use of E-HRM. It took less time from participants and was a less expensive survey method. The same types of questions were distributed to ensure reliable and valid results.

1.7.7 Intended Data Analysis Procedure

The data that was obtained was analysed by using content analysis and statistical inferences, given the research methods that were utilized - qualitative and quantitative research methods. This implied the use of open-ended interview questions and closed-ended questions for convenience, a high response rate and valid results.

Content analysis consists of three types: summarizing content analysis, explicative content analysis and structuring content analysis. Structural content analysis was used to analyze the qualitative responses, while statistical inferences were used to analyze the quantitative data.

This was because of the structure of the interview questions. Also, structural content analysis enabled the researcher to answer questions on who, what, how and why. Content analysis helped the researcher to answer the research questions explicitly and clearly with the information that was gathered from the interviewees.

Statistical techniques were applied by using the Statistical Package for the Social Sciences (SPSS). The coded responses were captured into a Microsoft Excel spreadsheet, which was later converted into an SPSS data sheet. The demographic profile of each participant was captured to determine the demographic structure of the sample. Results are presented in the study via pie charts and bar graphs. Statistical inferences were made in this study to draw inferences from the sample that was collected, and to generalize it to the whole population.

1.7.8 Ethical Concerns

The researcher obtained approval from six different universities: three from South Africa and three from Nigeria where the research was conducted. The questionnaires were accompanied by a covering letter. The letter was drafted to include the topic, aim and importance of the research. The researcher expected to receive an acceptance letter, which granted permission to conduct the research at the six different universities, as mentioned above.

Meetings were arranged virtually with the different HR directors of the different universities to discuss the nature of the research, and to obtain their cooperation and assistance. Time frames for scheduled interviews and to administer the questionnaires were also discussed.

The data that was collected was used only for the purpose of this research. The names of the respondents were not mentioned in the questionnaires to ensure confidentiality and anonymity. Respondents were given the right to remain anonymous and their privacy was assured and safeguarded by the researcher. Participation by employees in this survey was made voluntary, and participants were allowed to withdraw at any time, in which case their data was destroyed.

1.7.9 Outcomes of this Study

This study anticipated a number of outcomes. Firstly, an expected outcome of this study is the enhancement of the use of Electronic-Human Resource Management (E-HRM) as a decision-making tool in the human resource functions of the human resource department of the universities under study in South Africa and Nigeria. Secondly, to help the human resource practitioners of the universities in South Africa and Nigeria, manage the challenges of E-HRM in the human resource departments. This research is expected to be a source of information for other researchers, human resource practitioners and academics at universities within South Africa and Nigeria. Finally, the research has proposed a model that will help with the proper implementation and utilization of E-HRM for human resource management functions.

1.8 CLARIFICATION OF BASIC TERMS AND CONCEPTS

Human Resource Management (HRM) – Is an umbrella acronym that refers to managerial activities, which are associated with managing an employment relationship (Wilton, 2011: 461). It also shows an approach of managing people that stresses the importance of human resources to the achievement of a strategic objective, which promotes patterns of human resource practices.

Decision-making – This is a process of identifying and choosing alternatives based on the values and preferences of the decision-maker (Harris, 2009: 1). He further states that, making a decision implies choosing an alternative that has the highest probability of success with their goals and desires.

Electronic-Human Resource Management (E-HRM) – It isdefined "as an advanced business solution that can be used for supporting HR professionals in their work function such as processing of data and information" (Srivastava, 2010:47).It is an Implementation Support System (ISS) for human resource management (ibid). It helps Human Resource (HR) practitioners to understand better skills, creative abilities and talents of human resource as quickly as possible.

Human Resource Information System (HRIS) – This term is defined "as a system that is used to acquire, store, manipulate, analyze, retrieve and distribute information about an organization's human resources to inform and support organizational decision-making" (Wilton, 2011:460). HRIS is also a database system that helps human resource practitioners to store employee information in a central and accessible place. This stored information can be retrieved at any time that it is needed to facilitate employment planning decisions (Decenzo & Robbins, 2007:127).

Information Technology (IT) - Information Technology (IT) is technology that can be used to acquire, store, organise and process data to form a specified application, and to disseminate processed data in organization (Rajaraman, 2006:1). Human Resource (HR) practitioners can take strategic decisions and initiate action if information is processed as data.

HRM software –It is an approach of managing employees, which emphasizes an investment in work development, nurturing employee loyalty, providing well rewarded and satisfying work, and developing a positive and trusting employment relationship (Wilton, 2011:471). Human resource software includes payroll software to process employee payroll. Attendance software is an access control device to monitor and manage employee attendance and absenteeism. Leave management software facilitates online leave application and approval with notifications (Lincoln, 2011:2).

1.9 Chapter Summary

In any technology-driven economy, every organization's economic and social well-being depends on the ability of the human resource professionals to incorporate a dynamic system that encourages technological development. It is with this background that the research was conducted to identify the level of utilization of Electronic- Human Resource Management (E-HRM) as a decision-making tool in universities with reference to selected South African and Nigerian universities.

The utilization of Electronic-Human Resource Management (E-HRM) depends solely on the availability of sufficient computers in the South African and Nigerian universities. Most universities are not concerned about their human resource department being more strategic with Electronic-Human Resource Management (E-HRM) (Bondarouk & Ruel, 2009: 508). As

a result, there are weaknesses that are associated with the use of E-HRM. Some universities in South Africa and Nigeria do not have enough computers for their human resource practitioners. Again, the culture and the legal conditions of these institutions also affect the utilization of E-HRM amongst human resource practitioners and other users. Another problem assumed to be experienced by most HR practitioners and other users in the universities, is the effectiveness and efficiency of using E-HRM.

In order to ensure achievement of these organization's goals, the South African and Nigerian universities should provide all that is necessary for better implementation and utilization of E-HRM for their human resource practitioners to ease their work, and to achieve organizational goals.

Chapter Two
REVIEW OF THE LITERATURE

2. The Use of Electronic Human Resource Management (E-HRM) in Human Resource Management (HRM) Functions in South African Universities

2.1 Introduction

Human Resources Management (HRM) was initially limited to administration, salaries and recruiting new candidates until public servants discovered that these functions were ineffective, discriminatory and inefficient (James, 2006: 7; South Africa, 1997b). In 2001 the ministries of Education and Labour jointly decided to launch a human resources strategy for South Africa (James, 2006:7). This would maximise the potential of South African employees through the attainment of knowledge and skills to compete, and to introduce a new operational plan for human resource (HR) employees in South Africa (South Africa, 2005). E-HRM came into being in South Africa as an IT support system for the functions of human resource practitioners during the nineties (Hendrickson, 2003:381). HRIS supports HR professionals to perform their HR functions, while E-HRM supports both HR professionals, HR managers and other HR employees to perform their HR tasks (Maatman, 2006:17). A challenge for South African university managements is for HR practitioners to embrace technology, as this will improve their job performance (Doughty, 2010: 2). A survey, which was conducted at the Roffey Park Institute, suggests that HR employees in South African universities lack credibility and foresight of E-HRM. It is true that about 75% of South African companies intend to improve E-HR capabilities within a period of two years (Wyatt, 2002:1). However, many HR employees in South African universities continue to misuse E-HRM, since they are unsure of the benefits that it offers (Wyatt, 2002:2). In addition, South African university managements have reported low usage of E-HRM by some HR practitioners/employees because they feel that the system is not effective in helping them to achieve their organizational goals, while others believe that the system is indeed effective.

2.1.1 Origin of E-HRM in the SADC Region

The Southern African Development Community (SADC) originated from the Southern African Development Coordination Conference, which was held in 1980. A declaration and

treaty was signed in 1992 by the member states, hence establishing SADC as a replacement for SADCC. SADC comprises 14 member states, namely "Angola, Botswana, the Democratic Republic of Congo (DRC), Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, the United Republic of Tanzania, Zambia and Zimbabwe", and its headquarters is in Gaborone, Botswana (Banco Nacional de Angola, 2012:18). "The vision of SADC is to have a regional community in which the people of Southern African can realise economic well-being, improved standards of living and quality of life, freedom and social justice, and peace and security"; while their mission is "to promote sustainable and equitable economic growth and socio-economic development through efficient productive systems, deeper co-operation and integration, good governance and durable peace, and security so that the region emerges as a competitive and effective player in international relations and the world economy" (Mckeever, 2008:453).

Western universities have since acknowledged effective human resource management as a competitive advantage, however, in many SADC countries, awareness of the need and value of HRM linked to competitive advantage has not been identified (Othman & Teh, 2003:393). In the 1990s, the integration of HRIS to manage different HR functions emerged, which provided more sophisticated management and reporting features (Marler & Dulebohn, 2005: 137). They also mentioned that these systems were used as standalone, or part of an enterprise resource planning (ERP) software suite that integrates HR and broader institutional data into one, large-scale university. HRIS also replaced intranets to collect, save and distribute HR information. These intranet systems were restricted only to authorised users. Intranet systems led to the development and use of self service capabilities, which are used to maintain employees' records when they apply for leave and/or job openings, hence HR managers use it to generate reports and develop HR plans (Marler, 2006:15). In the mid-1990s, the development of the World Wide Web as a technology platform was used for instant information and communication (Lengnick-Hall & Mortiz, 2003:365). Furthermore, by early 2000, all HR and organizational data was centralized to allow users to access data through the web browser (Stone *et al*., 2013:3). In a short time, web-based recruiting systems were developed, which attracted applicants globally and allowed or permitted them to apply for jobs online. It was during this time that electronic human resource management (E-HRM) was introduced in South Africa, which enabled HR transactions via the Internet (Lengnick-Hall *et al*., 2003:366). The functions of E-HRM include: facilitating HR processes such as job analysis; recruitment; selection; training; compensation; performance management; and HR

planning. In addition, E-HRM applications provide access to all internal and external stakeholders such as job applicants, employees, managers, HR professionals, business partners and others (Stone *et al*., 2013:1).

2.1.2 Electronic Human Resource Management (E-HRM) in South Africa

Research in E-HRM is rapidly growing in South Africa owing to the challenges faced by human resource management practitioners (Pillay & Singh, 2012:4). The emergence of globalization has led to talent pools shrinking, high employee turnover rates and escalating recruitment costs. However, effective human resource management has a competitive advantage over other departments in the institution, and have been acknowledged at South African universities, but they still lack awareness of the importance and value of HRM linked to competitive advantage (Othman & Teh, 2003:393). Again, research into the application of technology in HRM has only emerged recently owing to rapid technological advancements and their adoption (Olivas-Lujan *et al*., 2007:418). Change is a feature of every institution and is present in every organization globally (Pillay & Singh, 2012:70). Human resource management, is a department within South African universities, is in a constant state of evolution and change, which involves them introducing E-HRM into their work functions (Truss, 2003, De Souza Freitas, Jabbour & Santos, 2011:226).

In the last two decades and presently, South African universities have realised the importance of technology in HRM functions (Ward, 2009:212). Moreover, this has given rise to new tools to manage HRM functions such as Enterprise Resource Planning (ERP) and HRIS, which are standard tools for technology implementation (Ward, 2009:212-214). Electronic human resource management (E-HRM) is usually substituted with the following words: Virtual human resource management, Computer-based human resource management systems and others (Ruel *et al*., 2004:364). E-HRM is used in supporting the HR administrative activities through the use of Internet Technology in the workplace (Voermans and Van Veldhoven, 2007:887). It is also said to be "a way of implementing HR strategy, policies and practices in organizations through conscious and directed support and/or with the full use of web-technology-based channels" (Ruel *et al*., 2004:368). The uses of electronic human resource management in human resource management functions in South African tertiary institutions are numerous, and a few are discussed below.

2.2 Use of E-HRM in HRM Functions in South African Universities

Web development, in association with the HR department, is known as electronic human resources management (E-HRM), and is changing the way that HR practitioners perform their duties (Mongelli, 2000:10). E-HRM originates from HR departments across the world (James, 2006:15). 'E' stands for '*enabling*', '*empowering*' and '*extending*' HR functions (James, 2006: 15). E-HRM ties and integrates HR activities into other corporate processes such as finance, supply chain and customer service (Doughty, 2010: 4; Karakanian, 2000:36). The uses of E-HRM in human resources management functions within South African universities include: E-planning, E-recruitment and selection, E-commerce, and E-training and development.

2.2.1 Electronic Planning (E-Planning)

Electronic planning (E-planning) enables human resource (HR) practitioners in South African universities to estimate future labour supply and demand electronically (Swanepoel, *et al*., 2007:775). Electronic human resource management (E-HRM) is a way of implementing HR strategies, policies, and practices in organizations through the use of web-technology-based channels. E-HRM is supported by human resource information system (HRIS), which is an integrated system that consists of hardware, software, and databases that are designed to provide information that is used in HR decision making and HR analytics and metrics. It improves administrative and operational HR functions by ensuring the availability, compilation and management of HR data for effective strategic HR planning (DPSA, 2008:19).

E-HRM planning is enabled by web-technology to identify the best strategic way of co-ordinating the universities' HR departments and other staff. It enables online recruitment, development, promotion, succession and employment equity (DPSA, 2008: 11). E-HRM planning helps HR departments to update employees' information, post job specifications, change policies and procedures, and arrange training for staff (Panayotopoulou, *et al*., 2007:277). According to Ruel, Bondarouk, and Looise (2004:368), the benefits of E-HRM planning is as follows: it enables HR practitioners and the universities' managements to develop, and implement strategic workforce plans that will help them to achieve the institution's goals; HR practitioners can determine critical skills and competencies that will

enable them to achieve current and future programs; they can build capacity that could address administrative, educational and support work force planning strategies; and E-HRM also enables HR practitioners to estimate future human resource management needs by analysing current job occupation, turn-over transfers, promotions, retirements and employee skills levels (Werner, 2003:577).

2.2.2 Electronic Recruitment (E-Recruitment)

The importance of utilizing electronic recruitment at South African universities is increasing (Smith, 2007:33). This is a new method of sourcing candidates, which has also widened access to the labour pool. E-recruitment is a popular, cost-effective, easy and fast means of reaching thousands of potentially suitable candidates (Swanepoel, *et al*., 2008:268). Recruitment is crucial in South African universities, as it helps to recruit talented employees. The recruitment process has often been affected by challenges such as an increasing need for flexibility and responsiveness (Girard & Bernard, 2009:39). E-recruitment paves a new way for HR practitioners to attract, recruit and select candidates for South African universities, and this has contributed to organizational effectiveness (Erdogmus & Esen, 2011:487). Recruitment is an HR function, which used to be done manually, and was characterised by cumbersome and time consuming tasks (Stone & Dulebohn, 2013:3). Automated HR functions were introduced during the 1970s when online recruitment began (Kavanagh, Gueutal, & Tannenbaum, 1990 cited in Koch & Van Brakel, 2012:8). Recently, online recruitment has developed into electronic recruitment.

E-recruitment has enabled HR staff at South African universities to attract a lot of people within a short time (Stone *et al*., 2005:24). They also claim that applications that are handed in via the Internet are delivered much faster than applications that are sent by email. The quality of responses that are received via e-recruitment has improved by way of the company's website. McManus and Ferguson (2003:176) state that vacancies that are posted online are faster and attract more talent than vacancies, which are advertised. Stone *et al* (2005:24) assert that hiring cycle time is reduced by 25% by the e-recruitment method. Job vacancies/openings are posted online or in the company's website and qualified employees are easily identified through the use of e-recruitment (Cedar, 2002). However, e-recruitment has enabled HR staff at South African universities to convey information about job opportunities and to give applicants an opportunity to complete their applications online

(Stone, Johnson, Navas & Stone-Romero, 2005:502; Stone, Lukaszewski & Isenhour, 2005:54). HR practitioners at South African universities use the e-recruitment process to search for employment records to determine if the knowledge, skills, abilities and other characteristics (KSAOs) of current employees are consistent with the requirements of vacant posts. E-HRM enables HR practitioners to provide lists of qualified employees, and notifies individuals of new job opportunities. Again, E-HRM-based recruiting systems have more prospects than traditional recruiting systems (Gueutal & Stone, 2005:54; Stone, Lukaszewski *et al*., 2005:54). E-recruitment uncovers individuals who have unique talents and skills and also attracts a greater number of candidates than other sources (Chapman & Webster, 2003: 113; Galanaki, 2002:243).

2.2.3 Electronic Selection (E-Selection)

HR practitioners use the E-selection process to identify the best candidates who have the right knowledge, skills and abilities for a particular job (Johnson & Gueutal, 2011:11). The E-selection system enables HR employees to manage the selection process more actively and to provide more evidence of the effectiveness of the chosen selection method. The E-selection system enables sustainability of the organization and evolves the system to satisfy the changing requirements of selection (Kehoe, Dickter, Russell & Sacco, 2005:74). The E-selection method enables HR practitioners to reduce the time and resources, which are required to manage the selection process. In addition, they can conduct tests through web-based versions of testing for a job instead of applicants visiting a centre for the test. HRIS helps HR practitioners to use longitudinal performance data to assess the effectiveness of selection tests (Johnson & Gueutal, 2011:11).

2.2.4 Electronic Performance Management

According to Shane (2009:47), technology has an impact on the administrative burden of performance management in organizations. Electronic human resource management (E-HRM) is used by human resource (HR) practitioners in South African universities to conduct performance appraisals online via the Intranet (Shane, 2009:48). E-HRM enables HR managers at tertiary institutions in South Africa to facilitate or measure employees' performance levels beyond their task performance (Cardy & Miller, 2005:15). The E-performance management system is used mainly by HR managers, and allows them to retrieve data from the employee's position description, and transfer the information into the

evaluation (People Admin, 2006:1). The E-performance management system is used as an archive, which stores past evaluations and permits comparisons between evaluations that are done over time. The advantage of the E-performance management system is that it allows HR practitioners to access data from any computer that has Internet and at any time. Again, it is easier and faster for HR practitioners to generate accurate HR related reports (Kavanagh & Thite, 2008: 36). Based on the performance appraisal results from their work performance, E-performance management system enables the HR workers in managing their personal performance in their workplace (Walker, 2001:24). Furthermore, the E-performance management system is used to collect performance data, and to monitor employees' performance. It supports planning and setting for employees during each performance cycle (Payne *et al*., 2009:526; Johnson, *et al*., 2012:126).

2.2.5 Electronic Compensation

Compensation and reward systems are crucial to attract, motivate and retain employees in any organization (Wright & Dyer, 2000: 58). Human resource (HR) practitioners at South African universities use E-HRM to effectively manage compensation and rewards for employees. HR employees can make their own decisions by electronically accessing their preferred benefits and rewards. HR managers use the e-compensation system to make decisions regarding salary administration or changes, bonuses and rewards for both employees and leaders (Panayotopoulou *et al*., 2007:279). Compensation and reward systems have given institutions a competitive advantage in search for and to retain talented employees (Wright & Dyer, 2000: 59). The E-compensation system also enables HR employees to make concrete decisions about their life insurance, health, disability and other benefits (Walker, 2001:36).

2.2.6 Electronic Communication

The use of electronic communication in human resource management functions at South African universities include sending and receiving messages electronically through computer systems or via the Internet such as email, voicemail, cell phones and others (Shane, 2009:43). Electronic communication systems facilitate the effective and efficient conduct of human resource (HR) functions. It gives HR practitioners' access to the Internet and assists them to perform their jobs (EFFT, 2001:1).

Intranet and e-forums have been highlighted as a fast, effective and easy way to transmit information to employees (Panayotopoulou *et al*., 2007:279). Furthermore, HR practitioners use Internet blogs to support communication. Pratheepan and Arulrajah (2012:165) list some uses of E-HRM in communication, which include: web-based on-line suggestion schemes to drive employees to greater levels of creative thinking; web-based information sharing facilities; an open-door management approach, which is enabled through various electronic communication channels with the workforce; and team briefing through intra-mail systems.

2.2.7 Electronic Training and Development

Electronic human resource management has enabled employee training to be done on-line via the intranet and Internet by using multimedia such as video downloads, video conferencing and links to resources (Sambrook, 2003:506). E-learning facilities and modules have been made available for HR practitioners via the Internet (Pratheepan and Arulrajah, 2012:164). Hence, web-based training opportunities have been made available for HR practitioners at branch level (Hirschman, 2001:3). Again, HR practitioners can organize E-conference training, especially for HR staff at the branches. Also, a post-training tracking system allows team members to assess post training or learning knowledge retention (Wright & Dyer, 2000:6). E-HRM has allowed on-line training record books for trainees in order to monitor and evaluate their progress. They can also have web-based special individual development plans (Pratheepan & Arulrajah, 2012:165). The benefits of using E-HRM for training and development purposes are for cost reduction by eliminating the costs of travel, time away from work, training material and refresher courses. Again, e-learning promotes better, more effective learning, as there are no time limitations (Ensher *et al*., 2002:224).

2.3 Use of other Technologies within HRM Functions in South African Universities

The use of other technologies as decision making tools was done initially before the introduction and application of E-HRM. Few institutions still use other technologies besides E-HRM as a decision making tool in their HRM functions. Other technologies, which are used, include Enterprise Resource Planning (ERP), and Human Resource Information Systems (HRIS), as well as computers (Marler & Fisher, 2010:33).

2.3.1 Use of Computers in Human Resource Management Functions

Computer systems were used to improve pay and the working conditions of human resource employees and other employees at South African universities. More contract workers were employed and the work-force decreased as a result of the introduction of computer systems (Hendrickson, 2003:388). These computer systems/technologies have increased and improved the work performance of human resource employees through lower computer processing and storage costs. They also improved record keeping and analytical requirements. These computer systems continue to grow in size and capacity, and operate mainly on record-keeping (Kavanagh, *et al*., 1990 cited in Hendrickson, 2003:389).

2.3.2 Enterprise Resource Planning (ERP)

According to Chand, Hachey, Hunton, Owhoso and Vasudevan (2005), ERP is defined as any software system that is designed to support and automate HR functions in South African universities. ERP was used in HR decision making processes because it covers a much broader area than HR alone. Examples of ERP systems include SAP AG, Oracle, PeopleSoft and Microsoft (Beheshti & Beheshti, 2010:445). ERP systems also enable HR practitioners to create links with stakeholders, achieve operational efficiencies, and centralize institutional data to facilitate decision making (Schalk, *et al*., 2013:87).

2.3.3 Human Resource Information System (HRIS)

Humanresource information system is defined "as an electronic system that performs HR activities such as keeping personnel records, job information, information on job training, and managing HR tools (for example, career development planning, salary planning and administration, performance management and financial transactions in the HR field" (Lawler & Boudreau, 2009:90). HR practitioners used HRIS because it was effective and fits the strategy of HR activities (Lawler & Boudreau, 2009:95). According to Schalk (2013:88), HRIS can be defined as ERP systems for HR, while E-HRM is seen as a module of HRIS, which provides the use of HR functionalities.

A human resource information system is defined "as a system, which is used to acquire, store, manipulate, analyze, retrieve and distribute information regarding an organization's human resources" (Swanepoel *et al*., 2003: 785; Kavanagh, 1990 cited in Iwu & Benedict, 2013:

405). It is important to note that HRIS consist of both computer hardware, and HR related software, with data in them that has the policies and procedures performed in the organization (Thite & Kavanagh, 2007:5). The latter authors add that HRIS emphasizes the computerization of HR activities, which include people and data so that any computer without a computerized system can still have an HRM system on paper. The concern is more about systems and processes, which are used by HR practitioners than electronic functions, which E-HRM has introduced to all HR employees. E-HRM tends to be more application and HR-function focused such as E-recruitment and E-training. Whereas HRIS focuses more on systems and technologies that underlie the design and acquisition of system that support the move to E-HRM (Kavanagh *et al*., 2011: 420).

2.3.4 Virtual HR

Virtual HR refers to "a network-based structure, which is built on partnerships and is typically mediated by information technologies to help the organization to acquire, develop, and deploy intellectual capital" (Snell, Strueber & Lepak, 2001:6). They further state that partnership refers to a contract with third parties, which can be in the form of outsourcing HR activities via a network. The difference between virtual HR and E-HRM is that HR activities are outsourced and done externally in a virtual HR platform, while activities are performed internally through a virtual channel in E-HRM (MacDuffie, 2007:549).

2.3.5 Web-Based HR

Web-Based HR is used in teaching the HR professionals how to use online technologies in delivering better services to their workers at a low cost (Walker, 2001: 8). Web-based HR can be defined as an application that works under an active Internet connection, and uses relevant protocols such as HTTP to deliver services. The means of networking in this software excludes other domains such as intranet that works only within the organization.

2.3.6 HR Intranet

This software emphasizes the implementation of HR electronic services through an internal network in the area of organization with the help of intranet architecture. The only

disadvantage of this software is that access is restricted only to internal employees who work within the same organization's building.

2.3.7 Computer-Based HRIS (CHRIS)

Computer-based HRIS keeps track of information on computers. Another function of CHRIS is the use of bits or electronics either via virtual HR, web-based HR, HR intranet or HRIS (Swanepoel *et al*., 2003:785).

2.4 Types of E-HRM Used in South African Universities

Electronic Human Resource Management (E-HRM), as a concept, began in 1995 (Strohmeier, 2007:20). It is defined as the planning, implementation and application of information technology for networking, and to support HR practitioners at South African universities in their shared performance of HR activities (Strohmeier, 2007:20). The E-HRM system enables HR practitioners to gather, store, and use information effectively. It decreases the cost of the HR function. The E-HRM application tracking system allows HR practitioners to capture and process an applicant's data.

There are three influential structural integrations within the HR function through Information Technology, namely operational, which is through rearranging and aggravating HR functions and administrative burden; relational, has to do with improving the work time and services of the HR employees and managers to their stakeholders; and, lastly, transformational, which involves that HR employees that have access to telephones, emails and so on, should be able to communicate and share information with other HR staff located within their geographic region in a space of time (Snell, Pedigo & Krawiec, 1995, Lepak and Snell, 1998 cited in Arjomandy, 2013:10).

Human resource management can also be conducted in the following three manners: Transactional HRM, Traditional HRM and Transformational HRM (Wright & Dyer, 2000:5). Furthermore, Lengnick-Hall and Moritz (2003:376) argue that there are three development stages in HR, which include publishing information, which involves one way communication

from the organization to employees or managers such as company policies and procedures. The second is automation of transaction, where paperwork is replaced by electronic input via intranet and extranet such as information updating, workflow applications and others. The third is transformation, which redirects HR activities to strategic focus such as partnering with other organizations (Walker, 2001:8). Other researchers have listed different approaches of E-HRM that can be obtained, as shown below.

Table 2: E-HRM APPROACHES

Researchers	**Approach 1**	**Approach 2**	**Approach 3**
Lepak & Snell (1998)	Operational	Relational	Transformational
Wright & Dyer (2000)	Transactional	Traditional	Transformational
Lengnick-Hall & Moritz (2003)	Publishing	Automation	Transformational
Bondarouk & Ruel (2006)	Operational	Relational	Transformational
Strohmeier (2007)	Operational	Relational	Transformational
Martin, Reddington & Alexandra (2008)	Operational	Relational	Transformational

Source: Adopted from Shane, 2009:35.

Every organization has the right to choose the most appropriate method for their organization. Shane (2009:34) states that the three types that are mostly practised in South Africa are Operational HRM, Relational HRM and Transformational HRM.

2.4.1 Operational HRM

Human resource practitioners at South African universities use this type of E-HRM when doing administrative functions such as capturing personnel data, keeping records, payroll, company policies and procedures (Snell *et al*., 2001:3). HRM functions such as e-learning, e-recruitment and e-selection can be done with the use of operational HRM. Operational HRM enables HR practitioners at universities to reduce staff, make work processes faster, reduce costs and relieve HR practitioners at universities of administrative burdens (Hawking *et al*., 2004:1019; Ruel *et al*., 2004: 369 & Ruta, 2005:35). Once more, HR practitioners can save costs in terms of e-recruiting and e-selection through reduced employee turnover, reduced staffing costs and increased hiring efficiency (Buckley *et al*., 2004:233). The primary

information delivery medium is the Intranet. This type of E-HRM also allows changes to be made in information that is given by employees. One of the disadvantages of this type of E-HRM is that the usability, quality and quantity of information could be altered by another person (Lengnick-Hall & Moritz, 2003:377).

2.4.2 Relational HRM

Relational HRM involves about 15-30 percent of the HR workload and requires a direct and two-way relationship amongst HR practitioners and internal or external sources (Snell *et al*., 2001:3). This form of E-HRM enables HR practitioners to use e-recruitment, e-selection, and e-performance appraisal in their work functions. E-recruitment, e-selection and e-learning can be used through both operational and relational HRM (Ruel *et al*., 2006: 280).HR practitioners can also interact and network with their colleagues and stakeholders through relational HRM (Strohmeier, 2007:21).

2.4.3 Transformational HRM

Snell *et al*. (2001:4) present transformational HRM as the highest level and most complex type of HRM, which is strategic in nature. Nevertheless, about 50% percent of the time it is used to increase the share by reducing operational activities (Marler & Fisher, 2010:34). This type of E-HRM enables HR practitioners to interact face-to-face with their co-workers, or use web-enabled activities to find possible solutions to their work (Bondarouk & Ruel, 2009:505). Transformational HRM creates a motivated workforce through an integrated set of web-based tools that enable the workforce to develop by making strategic choices (Walker, 2001:37).

2.5 E-HRM Tools and Software Used in South African Universities

E-HRM is “the planning, implementation, and application of information technology for both networking and supporting at least two individuals or collective HR practitioners in their shared performance of HR activities” (Strohmeier, 2007:20). Apart from E-HRM, there are other tools and software that are used to perform similar operations, but are different to the E-HRM system. A few of these are discussed below.

2.5.1 ACCsys Personnel Manager

This is used for administrative functions. It serves as a data base that provides employees' profiles, and gives HR practitioners access to data regarding training, as well as employees' details (Swanepoel *et al*., 2003:788).

2.5.2 Skills Planner Software

This software is used to develop employee job profiles, compile skills strategies, establish skills gaps and track unit standard progress. Hence, it is used to compile skills plans and reports (Grobler *et al*., 2006: 45).

2.5.3 Integrated Labour Solutions (ILS Assessor)

This is used to generate reports and graphical representations of identified risk areas. This software also assesses employees' compliance with the institution's policies, procedures and practices in line with employment relationships (Grobler *et al*., 2006: 45).

2.5.4 VIP Human Resource Management System

This is a system, which is used to manage employee data bases such as managing employees' leave. Integrated with the VIP payroll system are DOS, UNIX, Windows, LAN and others (Swanepoel *et al*., 2003:788).

2.5.5 Employee Self-Service Intranet (ESSi)

Employee Self Service intranet allows employees to change their personal information, and view salary details, including current and past payslips. They can apply for leave through this system, and also check the status of their applications (Grobler *et al*., 2006: 45).

2.5.6 PSIBer TAX

This is a South African web-based, salary structuring tool development that effortlessly assists HR practitioners at South African universities to achieve the most tax effective package structure (Grobler *et al*., 2006:45).

2.6 Effects of the Use of E-HRM within HRM Functions in South African Universities

Recently, within a global context, E-HRM has been considered as one of the radical changes taking place in every institution, including South African universities. Technological changes and the need for greater communication within organizations have become more important. These changes tend to affect internal operations such as the way that universities manage their human resources employees with the use of E-HRM. There are few effects for the use of E-HRM systems in HR functions at South African universities. These are presented below:

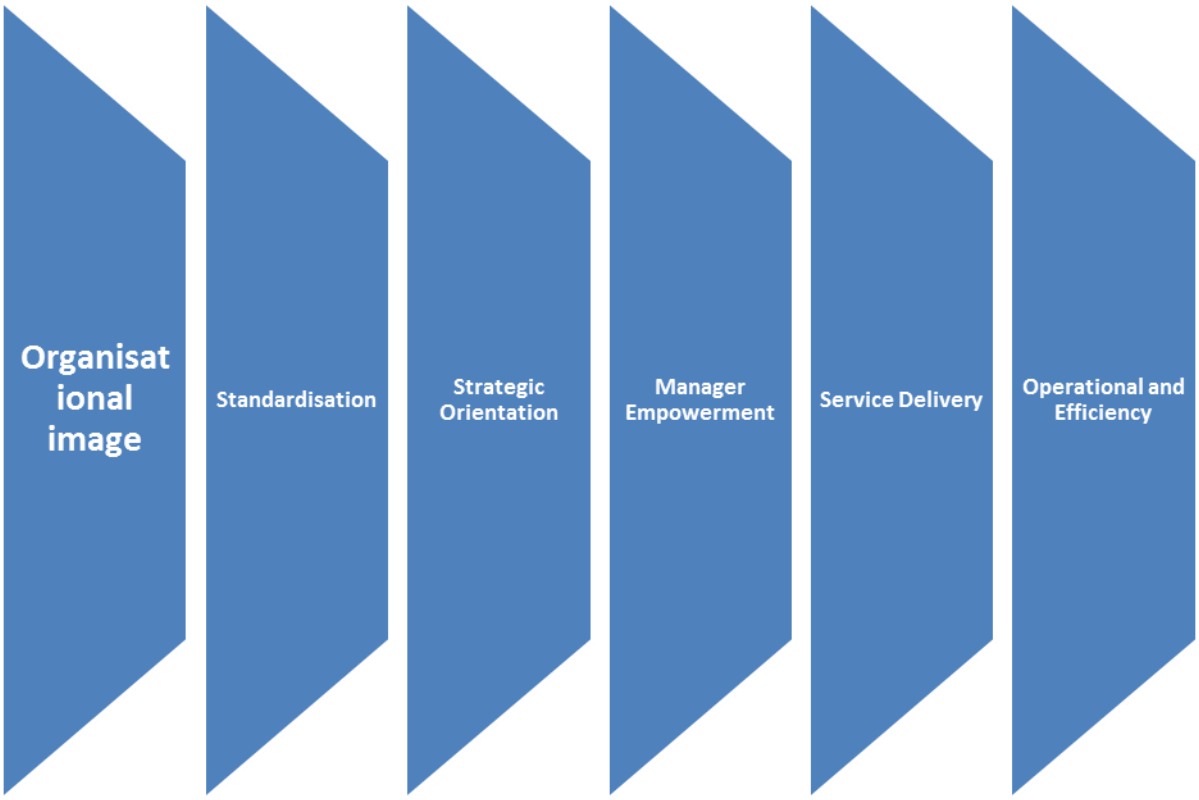


Fig. 2.1: Effects of the use of E-HRM within HRM functions at South African universities
Source: Compiled by the researcher

2.6.1 Operational and Efficiency

Efficiency and operational effectiveness is one of the functions that E-HRM has brought to HR practitioners at South African universities. E-HRM has enabled them to reduce the headcount within HR departments, improve cost effectiveness and remove the use of paper type HR or traditional HR processes (Marler, 2009: 515; Hendrickson, 2003:383). It has also improved the speed of work processes. An example is short listing of candidates that was

often delayed as a result of the paper type process, which was also unreliable (Strohmeier, 2007:19; Ruta, 2005:35). In addition, the huge task of inputting data in the computer system is tedious and time-consuming. These functions can be managed efficiently through the use of online systems (Bell *et al*., 2006:295). In South African universities HR managers automate their work processes and enter information directly, which removes the need for the duplicate keying of data and reduces the amount of time that is spent on transactions. The use of E-HRM has affected performance appraisals, compensation planning, salary reviews, bonus ratings and absence recording (Voermans & Van Veldhoven, 2007: 894).

2.6.2 Service Delivery

The use of E-HRM by HR practitioners at South African universities has enabled HR practitioners to perform their job tasks quicker and easier (Shane, 2009:58). Again, HR managers can manage absenteeism that might be caused by stress or sickness. E-HRM has brought about report keeping, which HR managers can use to make good decisions that are reliable and accurate (Sareen, 2012:124). Initially, HR departments did not have tools to provide valid reports and information that could help to make good decisions. E-HRM enables HR practitioners to locate any data or document at any time that it is needed, unlike submitting a document, which can get lost as it passes from one hand to another (Parry & Tyson, 2011:341).

2.6.3 Manager Empowerment

HR managers have been empowered through the development of capabilities to conduct HR activities such as recruitment, performance management and updating information (Zampetti & Adamson, 2001:18). More so, HR managers now have more HR responsibilities than before such as conducting HR activities with online support, and capturing HR information on the intranet. This has given HR managers a higher level of HR knowledge and ability to cope with changes in HR functions (Fisher & Howell, 2004:243).

2.6.4 Strategic Orientation

The strategic orientation of HR functions in universities has been increased, as E-HRM provides strategic information on promotion rates, turnover rates, and also assists in

modelling human resource systems for planning purposes (Marler & Fisher, 2010:40). The credibility of the HR role has been increased as a result of E-HRM. This has enabled HR practitioners at South African universities to produce statistics of different aspects of their HR functions and processes, which are used for HR managerial decision making (Bell *et al*., 2006:295). In addition, university managements have set up a group information team within their HR departments that sees to the running of reports on a regular basis, whilist providing data, identifying trends and areas that need amendment in the HR functions in order to improve work efficiency (Schwartz *et al*., 2003:57, Gunasekaran *et al*., 2001:349 cited in Iwu & Benedict, 2013:406). The use of E-HRM has facilitated a change in HR structures such as facilitating HR shared services. This aims to create a more customer-centric HR department (Voermans & Van Veldhoven, 2007: 900).

2.6.5 Standardisation

E-HRM has helped HR practitioners to standardize their work processes, which has led to the benchmarking of the institution and has provided consistency in the quality of work done by HR practitioners (Shrivastava &Shaw, 2003:201). Moreso, commonality of the training approach and information sharing resources for HR staff can be obtained (Ruel *et al*., 2004:377). E-HRM coordinates the scattered HR work and creates a form of organizing them (Lepak & Snell, 1998 cited in Strohmeier & Kabst, 2009:490). Standardization and homogenization can be used as a control variable (Ruel *et al*., 2004:377).

2.6.6 Organisational Image

The use of E-HRM has a positive impact on the organizational image, as this system has a high level of technological sophistication. For instance, the use of an online recruitment and selection process, and the use of E-performance management in the organization have improved the image of the institution (Akmanigil & Palvia, 2004:45). Nevertheless, if the image of the use of IT in the institution is good, the use of E-HRM will be effective, but if the image of the use of IT is poor, then the use of E-HRM in the institution may not be effective (Fisher & Howell, 2004:245, Ruta, 2004:40).

2.7 Challenges for the Use of E-HRM within HRM in South African Universities

Based on existing literature, there are benefits for the use of the E-HRM system, as well as challenges that emerge when using the E-HRM system (Sareen, 2012:123). Apart from the high costs of installing the system, there are high costs involved in using and maintaining the system. However, there are concerns over change management and technology acceptance by HR practitioners at South African universities (Martin *et al.*, 2006: 365). Furthermore, positive results of reducing the HR headcount may have a negative impact on the institution at times. More challenges are listed below.

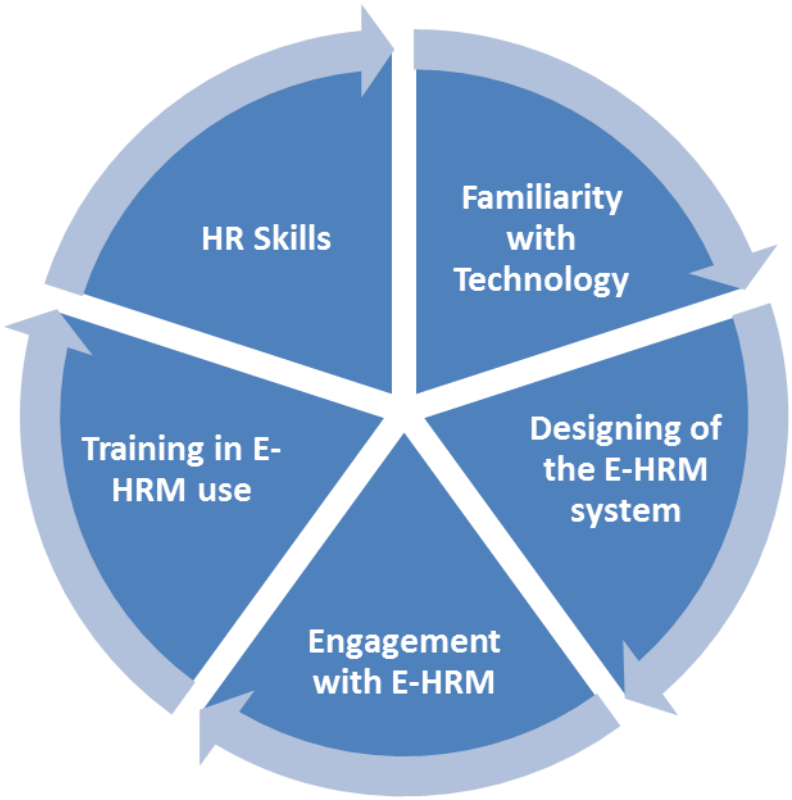


Fig. 2.2: Challenges for the use of E-HRM within HRM at South African universities
Source: Compiled by the researcher

2.7.1 HR Skills

The use of electronic human resource management requires different skills that every HR practitioner must have, which may not have been in existence amongst HR functions such as strategic thinking skills; IT skills; "the ability to use web-based channels to deliver services, ability to teach others how to use HR technology; understanding of technological aspects to identify technology needs and managing technology vendors; and capabilities for using

technology to collect data and transform it into strategic valuable information" (Maatman, 2006: 64, Gardner *et al*., 2003:162). A change to HR roles requires the development of new skills amongst HR staff (Voermans & Van Veldhoven, 2007: 900).

2.7.2 Training in E-HRM Use

Parry and Tyson (2011:5) suggest that it is important to train users in the E-HRM system, as this will affect the outcome of E-HRM use. However, they mention that the system did not provide the desired efficiency that it was meant to owing to a lack of users' knowledge of how to use the system. More so, the users needed more time to practice use of the system, since they regularly contacted the system administrators for support. Again, Voerman and Van Veldhoven (2007:900) identified less IT skills by HR practitioners and negative attitudes towards IT usage, which have contributed to the use of E-HRM in the institutions. Furthermore, it is necessary for HR practitioners at South African universities to receive appropriate education and training on the use of E-HRM (Shane, 2009:61). Also, the training needs of HR practitioners should be reviewed (Bell *et al*., 2006: 298).

2.7.3 Engagement with E-HRM

Most HR practitioners experienced difficulties with the use of E-HRM system. Others still use the traditionaloffline system, and complain of the time that it consumes, while struggling to use the system. Again, some HR practitionershave their mindset on the traditional method of HRM, and find it difficult to change to using the E-HRM system. More so, the culture of the institution towards the use of E-HRM can have a negative effect on HR employees (Ruta, 2005:40).

2.7.4 Designing of the E-HRM System

The design of the E-HRM system is presumed to have been a hindrance to the use of the system by HR practitioners. This is because E-HRM may not be user friendly, as it is slow in operation and increases the amount of administrative burden instead of reducing it (Reddington *et al*., 2005: 105, Fisher & Howell, 2004:249). It is important to improve HR efficiencies in the E-HRM system design, but effort should be made to make the system more user-friendly, which will improve services that are offered by HR managers and employees (Keebler & Rhodes, 2002:59).

2.7.5 Familiarity with Technology

A lack of knowledge of technology can contribute to hindrances when using the E-HRM system by HR practitioners. Conversely, some institutions have a culture, which readily accepts the use of technology, which made it easier for HR practitioners to use the system (Reddington *et al*., 2005: 105).Again, previous knowledge of IT use may have resulted in different experiences with IT systems for different types of users, which can cause confusion in the use of E-HRM (Gardner *et al*., 2003:160, Legris *et al*., 2003:191).

2.8 Implications of E-HRM within HRM Functions in South African Universities

One of the roles of E-HRM is developing and implementing organizations' strategy with regard to HR functions. The use of E-HRM has improved the HR workforce and has facilitated strategic decision-making within universities. Some of the implications of the use of E-HRM at South African universities are discussed below.

2.8.1 High Commitment

The use of E-HRM can help the institution's management to build a motivated and understanding workforce within the HR department. These workers will also be willing to co-operate with the management with regard to changes that can improve the institution, and bring about the institution's goals (Shane, 2009:57). Human resource (HR) practitioners will also be able to play the role of change agent with other staff within the university. Manager self-service and employee self-service in E-HRM assists HR practitioners to meet their needs and achieve the institution's goals (Keebler & Rhodes, 2002:57). This will keep employees motivated and satisfied with their job. Furthermore, it was mentioned that "performing HR processes well in respect of efficient planning, administration and communication, recruitment, great performance management, well-structured compensation and training and development, will result in increasing employee retention and commitment" (Aghazadeh, 2003:201).

2.8.2 High Level of Competence

There will be a high level of trust between the management of the university and the HR practitioners. HR employees will have the capacity of learning new tasks and roles as a result of the use of E-HRM (Voerman & Van Veldhoven, 2007:900). They will also play a champion role within the university for being able to use these sophisticated E-HRM systems (Gardner *et al*., 2003:159). However, the HR practitioners will learn the use of new technologies, new network designs, and new HRM strategies and policies. E-HRM is also used to shift HR roles and competencies (Caldwell, 2003:938, Guest & King, 2004:401).

2.8.3 Cost Effectiveness

The use of E-HRM reduces costs and enables HR practitioners to do more work in a limited time (Dias, 2001:269). Having less employees leads to competitiveness of pay levels and reduces the employee turnover rate (Hawking *et al*., 2004:1017). HR practitioners have become experts in carrying out their administrative functions, as this has improved the institution's cost effectiveness (Strohmeier, 2007:23). The use of the E-HRM system improves the institution's cost effectiveness, as HR practitioners use the system to speed up their work processes (Hawking *et al*., 2004:1019).

2.8.4 Higher Congruence

The use of E-HRM enables HR managers to structure reward systems, compensation systems, performance management methods, and others (Kovach & Cathcart, 1999: 275). It provides comprehensive HR-related knowledge (Strohmeier, & Kabst, 2009:482). E-HRM helps to create competitive advantage, and to align the function more closely with corporate strategy (Akmanligil & Palvia, 2004:45).

2.8.5 Strategic Orientation

Strategic orientation of HR practitioners will be improved from transactional to strategic. HR functions have provided strategic direction to human capital management within the institution, and have played a strategic role in achieving the institution's goal (Lepak, Bartol & Erhardt, 2005: 139).

2.8.6 Cost Reduction and Improved Efficiency

The use of E-HRM enables HR practitioners to have more time to deal with key strategic issues rather than administrative paper work activities (Shrivastava & Shaw, 2003:204). Better work performances and accuracy will also be obtained (Martin, Reddington & Alexander, 2008: 301). It can be proposed that there is also a need to improve levels of service delivery, reduce costs and allow more time for higher value tasks (Parry, 2011:1151).

2.8.7 Client Service Improvement/Facilitating Management and Employees

The use of E-HRM improves the strategic role of HRM, reduces administrative HR work, and improves employees' job satisfaction with HRM services (Zampetti & Adamson, 2001:20). Every HR practitioner intends to be a high quality service provider to other staff within the institution. E-HRM has enabled them to meet this goal by increasing timeliness and improving their client service orientation ability (Lepak & Snell, 1998 cited in Sareen, 2012:122).

2.9 The Use of Electronic Human Resource Management within Human Resource Management Functions in Nigerian Universities

2.9.1 Introduction

This chapter focuses on how electronic human resource management (E-HRM) influences human resource management functions at Nigerian universities. It aims to find out the extent of the use of electronic human resource management (E-HRM) by human resource (HR) department employees at Nigerian universities. It also considers how HR workers use E-HRM systems to make good decisions in their HR activities. Electronic human resource management introduces the use of technology to the functions of human resource management, and also assists HR workers to think and act in this digital world, and hence make good decisions in their workplace (Arif, Rahaman & Uddin, 2012:14). E-HRM brings positive change to the HR function by introducing electronic and strategic functions of HR in place of paperwork and traditional HR (Cruz, 2006:1). In addition, this section also highlights the strengths and weaknesses of HR staff in Nigerian universities using electronic human

resource management (E-HRM) in human resource management functions. Finally, it outlines implications of the utilization of electronic human resource management in human resources management functions. The major role played by E-HRM is to help HR practitioners to publish information with the use of the intranet; to automate transactions with workflow integration by replacing paperwork with electronic input; and finally, to transform all HR functions to a more strategic one (Panayotopoulou, Vakola & Galanaki, 2007: 279). The cross-national perspective on the use of E-HRM provides a brief description of the use of E-HRM at global universities such as in the USA and other European countries.

2.9.2 Theoretical Framework

Globally, the use of information technology in the work functions of employees in organizations has increased immensely (Lawlor, 2007:1). The human resource (HR) department of different universities are no exception to this. Human resource (HR) department employees use information technology in the form of electronic human resource management (E-HRM) to improve their work functions from the traditional method to the electronic human resource management method. E-HRM is said to be a new and captivating area of study, which combines human resource management and information systems (Yusoff, Ramayah & Ibrahim, 2011: 131). E-HRM is a system that supports HRM functions and helps HR managers in the effective management of the human resource department (Poutanen, 2010:45). In this chapter the researcher investigate the theoretical concepts of the use of electronic human resource management in Nigerian universities. This will give the researcher insight into the extent of the use of E-HRM in their HR functions. This will also enable the researcher to identify problem areas regarding the use of E-HRM in the HR functions of Nigerian universities.

2.9.3 Cross-National Perspective of the Use of E-HRM

In the past decade, many universities, globally, adopted the use of E-HRM, especially in Europe and the USA, where research on E-HRM began (Bondarouk & Ruel, 2010: i). The use of E-HRM in European universities has brought considerable change, which has led to further development in the field of human resource management (Gueutal & Stone, 2005 cited in Strohmeier & Kabst, 2009:482). The use of human resource information systems (HRIS) was first introduced and integrated as a human resource management module of an enterprise

resource planning (ERP) system such as SAP or ORACLE, which was used to improve the administrative and analytical functions of human resource management (HRM) (Kanthawongs, 2004: 104). In addition, HRIS enables HR employees to obtain quick responses and access to information. A disadvantage is insufficient financial support to adopt and use this system (Ngai & Wat, 2006:297).

Human resource information systems became more of an Internet –based technology during the 1990s. As a result, the function of HRIS in the HR department changed from supporting the HRM department to targeting the effectiveness of managers and employees (Bondarouk & Ruel, 2009:505; Mesquita, 2010: i). E-HRM refers to Electronic Human Resource Management, and was introduced and used to categorize HRM services that were provided through the use of Internet technology (Mesquita, 2010:i). A study, which was conducted on the use of E-HRM in Europe showed that at least 91% of US organizations use web-based HRM technology (Strohmeier, 2007:19; Foster, 2008). The study also showed 62% use of E-HRM for administrative functions; 61% usage for talent acquisition services; and 52% use for performance management (CedarCrestone, 2008). Finally, E-HRM was defined as an umbrella, which covers all possible integration mechanisms and content between HRM and information technologies, which aim to create value within and across organizations (Bondarouk & Ruel, 2009:507). In a fast growing economy such as in African countries, there is a need for HR practitioners in that economy to familiarize themselves with capabilities that would improve their work. Such capabilities include the use of E-HRM in work functions. The Economic Commission for Africa has suggested that the ability of HR practitioners who utilize E-HRM will improve in respect of their work functions (Aduwa-Ogiegbaen & Iyamu, 2005:105). However, many developing countries, especially in West Africa, are already using the Internet and E-HRM incorrectly in their HR functions (Aduwa-Ogiegbaen & Iyamu, 2005:105).

2.9.4 An Overview of E-HRM in ECOWAS

The Economic Community of West African States (ECOWAS) is a political construction that consists of fifteen countries, namely Benin, Burkina Faso, Cote d' Ivoire, Cap Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo, and was founded in Monrovia in January 1975 (Ikeanyibe & Ezeibe, 2012:2).

ECOWAS aims to promote the economic, social and cultural activities that collaborates the establishment of an economic and monetary union through the merging of the national economies of the member states (Abodohoui, 2011:2). It also aims to improve the standard of living of the citizens' and enhance their economic stability in order to promote the relationship among member states (Abodohoui, 2011:2). Hence, the ECOWAS region comprises various populations with differences in ethnicity, language, gender, age, and educational qualifications. Primarily, ECOWAS researchers work together in various exchange programs such as academia and the extension of the university system (Ikeanyibe & Ezeibe, 2012:1). This has helped the university system to bring about diverse human resources to work together in West African universities. ECOWAS countries are associated with poor infrastructure, low literacy levels, and insufficient educational and technical endowment (World Bank Report, 2004). Following independence in most of the ECOWAS countries, they are still associated with military coups, civil war, ethnic and communal clashes and rigged elections. More so, they are burdened with political instability, corruption and poor macro-economic structures.

The management of human resources in the ECOWAS countries has played a crucial role in revitalizing human resource functions at their universities (Abodohoui, 2011: 3). The support of electronic human resource management (E-HRM) is low in all the ECOWAS countries (The World Economic Forum, 2008). These countries should be concerned with the application of Internet and web-based systems in order to change the nature of human resource functions in their universities (Farazmand, 2003). Again, without well-trained, well-developed, well-appreciated and well managed human resource management (HRM), the universities cannot meet the challenges of globalization (Farazmand, 2004). Human resource management in the ECOWAS countries still remains broadly as it was in 1960 in terms of quality services that can enhance organizational development (Herkett *et al*., 1994, cited in Abodohoui, 2011:2). Herkett also states that E-HRM is widely used in the ECOWAS countries, but that little is written about it. The utilization of electronic human resource management (E-HRM) was first introduced in West Africa through the ECOWAS body before it was introduced in Nigeria. Nigeria, as an ECOWAS country, has also introduced the use of E-HRM in HRM functions at their universities. The researcher discusses the use of E-HRM in Nigerian universities in detail below.

2.9.5 General Review of the Use of E-HRM in Nigerian Universities

The use of electronic technology in human resource functions has since become a vital and effective tool of human resource management in universities across the world (Urien, 2011: 60). In Nigeria it is fast becoming a significant aspect of human resource management. Human resource management, as a fast growing specialty in Nigeria, is said to be an important field, which can help management at the universities to achieve their goals. Electronic human resource management (E-HRM) enhances the productivity of human resource departments at Nigerian universities (Urien, 2011:60). Human resource practitioners are keen on technology and the information that it brings, as it helps them drive decisions that will lead to the organization's success. Human resource management functions can be more strategic, flexible, cost-efficient, and customer-oriented, if combined with information technology (Snell, Stueber & Lepak, 2002:81). The latter authors further state that information technology has an ability to reduce administrative costs, increase productivity, speed response times, improve decision-making and enhance customer service.

Most Nigerian universities seek IT-driven human resource solutions for cost reduction, higher quality services and cultural change (Yeung & Brockbank, 1995, cited in Mishra, 2009: 286). Electronic human resource management (E-HRM) implementation was brought about at Nigerian universities via introduction of the Internet in the last decade (Strohmeier, 2007:30). It is the planning, implementation and application of information technology for both networking and supporting human resource workers in their work functions. CedarCrestone (2005), states that the adoption and utilization of electronic human resource management (E-HRM) in many organizations in Nigeria is continually increasing. In addition, Okpara and Wynn (2007:61) state that there has not been much research done on electronic human resource management practices in Nigerian universities and, hence, there are gaps with respect to understanding electronic human resource management practices in Nigeria. The uses of electronic human resource management in Nigerian universities are many, and are discussed in detail below.

2.10 The Use of E-HRM in HRM Functions in Nigerian Universities

The use of electronic human resource management (E-HRM) in human resource management functions in Nigerian universities includes the use of E-recruitment and selection; E-training and development; E-compensation; E-planning; E-performance management; and E-communication.

Fig. 2.3: The functions of electronic human resource management (E-HRM)

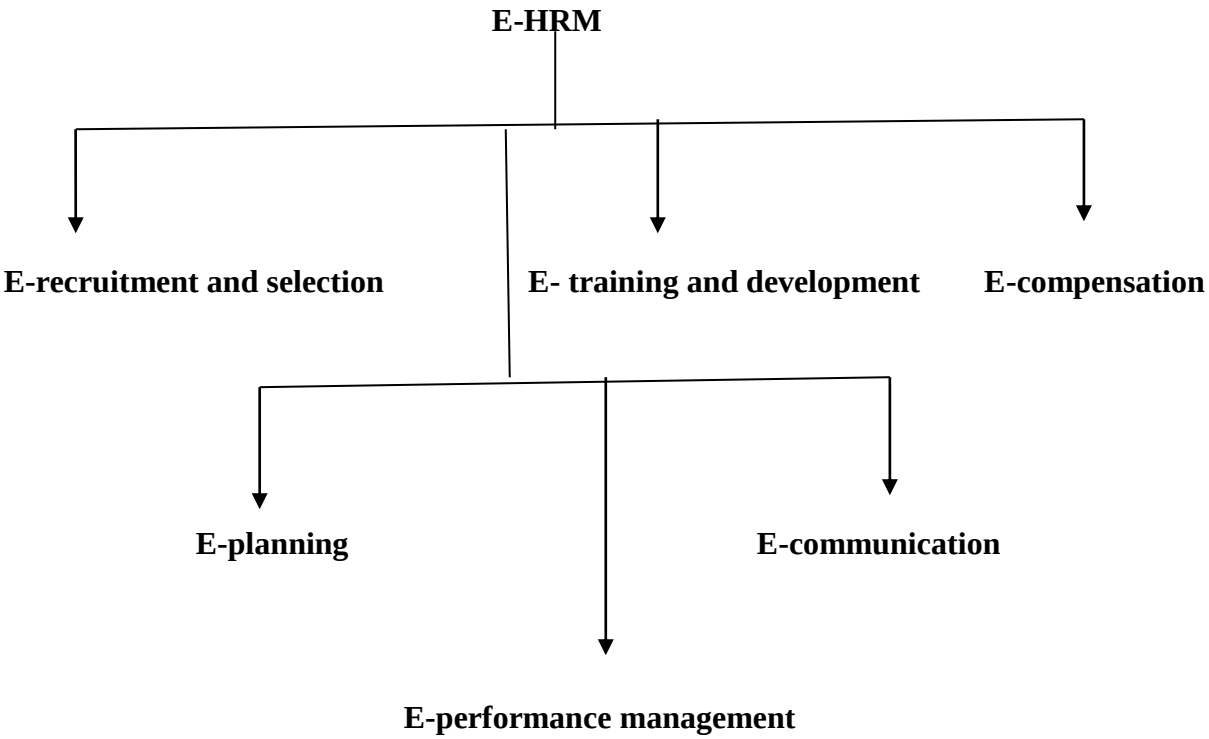


Figure 2.3: Functions of E-HRM

Source: Compiled by the researcher

2.10.1 Electronic Recruitment and Selection (E-Recruitment and Selection)

Human resource management practitioners have initiated technological changes in their work functions through electronic channels as new roads and bridges of doing their work (Dortok, 2006: 322 and Cowell, 2010). Electronic recruitment was introduced in Nigeria in 2005 when public services reform recommended the use of online recruitment to hire applicants in the public sector, hence many organizations in Nigeria adopted this method of recruitment,

including human resource management practitioners at Nigerian universities, federal civil service commissions, the Nigerian army, the Nigerian police force, Nigerian Customs Services, the Corporate Affairs Commission and others (Sanusi & Martadha, 2011:616). A reason for the adoption of this E-recruitment process is that they have a tendency to attract a large number of applicants (Bumah, 2008:8). E-recruitment was preferred to that of the traditional or paper type of recruitment process because of the following reasons:

- Newspaper advertisements were used for traditional recruitment, which lacked geographical spread in Nigerian society;
- Traditional methods were not cost-effective during the economic recession; and
- Records of submitted applications were poorly kept and the recruitment process was cumbersome and time-consuming (Government Gazette, 2010 cited in Sanusi & Martadha, 2011:617).

Human resource practitioners in Nigerian universities used e-recruitment to achieve the following: post job vacancies on the university's website or intranet; post online applications; search an established applicant database; and shortlist proposed candidates (Shane, 2009:44). Furthermore, e-recruitment allows applicants to send their resumes electronically via e-mail or in an electronic format (Galanaki, 2002:243). Human resource (HR) managers can also search and locate applicant résumés on the Internet. Again, e-recruitment enables HR managers to monitor recruitment progress through the cycle, and candidates can be matched to job specifications and standardized conditions of employment clauses (Sanayei & Mirzaei, 2008:87).

2.10.2 Electronic Performance Management (E-Performance Management)

Technology should be incorporated into the strategic plans of the HR department at universities for effective performance in service delivery (Agbolade, 2011:104). It is necessary for university managements to intensify investment in technology in their HR functions to facilitate speed, convenience and accurate services. Technology applications include the use of the Internet and company intranets to support performance management (Shane, 2009:47). In Nigerian universities, HR employees use E-performance management

systems to improve employee performance by developing the capabilities of teams and individual contributors (Armstrong, 2004:477). They also use e-performance management to streamline the performance management process into a web-based solution, and to cut organizations' costs (Dauda & Akingbade, 2011:34). It enables HR employees to fulfil their sophisticated business strategies. In addition, e-performance management helps HR employees to integrate their services, and to improve the quality, timeliness and effectiveness of their feedback (Wachira, 2010:4). It tracks performance progress throughout the performance period. Hence, it enables HR employees to easily complete their self-evaluations by rating evaluation items and by entering comments (Sanayei & Mirzaei, 2008:86).

According to Dauda and Akingbade (2011: 36), Nigeria is one of the most populous and well-endowed in natural resources, but also one of the most poverty-stricken nations in the world. In most Nigerian universities, the use of electronic systems or technology is dependent on the purchase of the latest equipment, which is acquired from European, American and Asian suppliers, thus causing the country to invest heavily in equipment. Once more, a lack of HR professionalism and specialization has affected HR work in Nigeria, which has led to them employing technologists in the research and development (R&D) department in order to improve technology application in the field of human resources. Furthermore, many duties that were supposed to be performed by HR professionals were now being performed by HR managers and employees such as "performance appraisals; generating HR reports on turnover; absenteeism; processing training requests; and overseeing competence management" (Ruel *et al*, 2004; Ruta, 2005; Martin, 2005, cited in Wachira, 2010:10).However, human resource managers at Nigerian universities monitor their employee attitudes and behaviours through the use of performance appraisal mechanisms. Again, appraisal-based information is used to select and develop employees' behaviours and attitudes (Ayanda & Sani, 2011:11). E-performance management enables human resource managers to conduct appraisals online. Managers and employees are then able to submit performance data directly to the human resource department in electronic format (Zafar, 2010:57).

2.10.3 Electronic-Training and Development (E-Training and Development)

The quality of training and development which is given to human resource employees is improved through comprehensive training and development. This means that investments in the training of HR workers in problem-solving, teamwork and interpersonal relations result in beneficial/useful organizational development (Ayanda & Sani, 2011:11). Electronic-training management provides the facility for human resource managers to capture course information; book employees on specific courses; and record individual training history (Barak *et al*, 1999 cited in Sanayei & Mirzaei, 2008:88). In addition, e-training management provides an efficient means of tracking training courses and employee training records, and hence achieve reduced training costs and easy access to training records (Sanayei & Mirzaei, 2008:89). Electronic human resource management (E-HRM) systems offer new methods of processing human resource activities, and so proper training in this area must be given to all HR staff at Nigerian universities to enable them to carry out their functions (Remus, 2007: 538).

2.10.4 Electronic-Compensation System (E-Compensation System)

Human resource (HR) professionals in Nigerian universities have changed their compensation system to better their institution, and meet the competitive business world. They have implemented a skill-based pay system, which compensates their staff for the number and types of skills that they have and not the type of job that they are doing (Taylor & Kleiman, 2012:12). Taylor and Kleiman also note that there is "at risk" compensation where the worker's pay is tied to performance and the year-end bonus. This method of compensation helps the university to develop more flexible workforces. According to Zafar, Shaukat and Mat (2010:22), the compensation and benefit planning units in universities are responsible for carrying out all activities relating to the development of the organization's strategy regarding compensation and benefits for human resource employees. Human resource staff in Nigerian universities make use of performance-based compensation to provide rewards to employees for achieving their organization's goals (Ayanda & Sani, 2011:11). Hence, incentive-based compensation has an impact on the organization's performance (Milkovich & Boudreau, 1998, cited in Ayanda & Sani, 2011:11). Human resource employees use automated salary payment to eliminate manual intervention. They also access information on compensation for direct reports from a central location such as salary, cash components and non-cash items.

Hence, human resource managers receive alerts, which notify them when a compensation cycle is available for their employees (Armstrong, 2007:107).

2.10.5 Electronic–HR Planning and Career Management

Nigeria, as a developing country, has introduced electronic human resource management (E-HRM) in the human resource departments of the country's universities. E-HRM updates employee data, personnel changes and job requisitions. Employees are given an opportunity to update their personal data, and there is high accuracy and data quality in HR record-keeping (Adamson & Zampetti, 2001, cited in Davoudi & Fartash, 2012:81). A good career planning system enables employees to take more responsibility for their own skills development in the organization. Also, HR employees in Nigerian universities are motivated when there is a good career development system with internal advancement opportunities, which are based on merits (Milkovich & Boudreau, 1998, cited in Danlami, 2012:10).

2.10.6 Electronic-Communication (E-Communication)

The use of electronic human resources management (E-HRM) in human resource (HR) departments at Nigerian universities includes communication. This includes the use of electronic mail (e-mail) for communication with other employees (Bontis *et al*, 2003:6). The use of email for communication is higher than 75 percent (Zafar, Shaukat & Mat, 2010:20). Both emails and the electronic form of intranet are used by HR employees to gather information on training needs assessment, thereby inducing benefits in terms of less paperwork and obtaining a high response rate (Zafar, Shaukat & Mat, 2010:20). E-HRM has made it possible for HR employees to practise interdepartmental communication, as well as communication with other university employees, other customers, and business partners (Remus, 2007:538). E-HRM has supported internal communication and knowledge through the use of intranet portals (Smith, 2004: 94). Communication is the key engine of human resource management in tertiary institutions in Nigeria (Urien, 2011:62). Apart from the use of electronic human resource management (E-HRM) in Nigerian universities by HR practitioners to improve HRM functions, there are other technologies that are made available for HRM functions.

2.11 Use of other Technologies for HRM Functions in Nigerian Universities

The functions of human resource management practitioners in Nigerian universities are numerous and include general administrative activities. To reduce manual workloads, human resources employees have electronically automated their work processes by developing and introducing IT-oriented software applications, which have led to the development of electronic human resource management systems (Adewoye & Obasan, 2012: 29). "HRMS is a system that helps an organization to acquire, store, manipulate, analyse, retrieve and distribute information about an organization's human resources". While electronic human resources management (E-HRM) is used to express the use of information technology within the HRM function (Adewoye & Obasan, 2012: 29), other technologies, which are used for human resource management functions in Nigerian universities include the Human Resource Information System (HRIS). This is an intersection and interaction between IT and HRM. The second is Enterprise Resource Planning (ERP), which is software that is used to programme data processes into a standardized and routine package (Adewoye & Obasan, 2012: 29).

2.11.1 Human Resource Information System (HRIS)

In a developing country such as Nigeria, HRIS software is used as an online solution for data entry, data tracking, and data information needs of human resources management at universities (Ogunkua, 2011: 32). The author further states that HRIS enables HR staff at Nigerian universities to manage all employee information, report and analyse employee information, administer benefits such as enrolment, status change and personal information updating, complete integration with payroll and manage applications and resumes. Heathfield *et al.* (2008: 1959) list the functions of HRIS as follows: it helps human resource staff to do their own benefit updates; and to make other changes for more strategic HR functions. In addition, HRIS facilitates employee management, knowledge development and career growth. Again, HR managers can access required information to support the success of their reporting employees such as legal and ethical information. HRIS also enables HR employees and other users to obtain information on available vacancies within the institution, and to obtain information on recruitment statistics and profile management (Ogunkua, 2011:33).

2.11.2 Enterprise Resource Planning (ERP)

Development of the use of information systems with ERP systems was introduced in the 1990s (Esteves & Pastor, 1999:2; Alwabel *et al.*, 2006:64). Enterprise Resource Planning (ERP) software comprises different modules such as sales, human resources, finance and production information, which provide interdepartmental integration of data and information into different businesses in order to achieve the organization's goal (Esteves & Pastor, 1999:2; Wallace & Kremzar, 2001, cited in Alwabel *et al*, 2006:64). "ERP is defined as application software that helps organizations integrate their business activities across various functional units of their organization" (Shehad *et al*, 2004:360). This system also integrates basic raw data and organizational processes into a unified system that makes use of system software and hardware to integrate the data (Shehab *et al*, 2004:360). Furthermore, it helps to reduce costs, facilitate decision-making and gives adequate control of business.

ERP helps HR employees to make decisions, while it also creates avenues to re-engineer their work processes (Alwabel *et al*, 2006:64; Esteves, 2009:25). The benefits of ERP for HR functions, as outlined by Yang and Su (2009:722), are the following: ERP facilitates strategic decision making by checking on cost analysis of the various HR functions; it also improves daily HR operations such as administration of funds and benefits; and it helps HR practitioners to process information, plan and support adequate client service delivery. Different tools and software, which support the use of E-HRM, include Interactive Voice Response (IVR) systems; Self-service applications (SSA); and others.

2.12 E-HRM Tools and Software Used in Nigerian Universities

Human resource employees in Nigerian universities make use of almost all types of software involved in electronic human resource management. The types of E-HRM software that is used in Nigerian universities, as listed by Florkowski and Olivas-Lujan (2006:684), includes Interactive Voice Response (IVR) systems; HR extranet applications (HREA); Self-service applications (SSA); HR portal applications (HRPA); Integrated HR suite applications (ISA); HR intranet applications (HRIA); and HR functional applications (HRFA).

Interactive Voice Response (IVR) systems – This software enables HR practitioners to change payroll, and edit employees' addresses for benefits and payroll records.

HR extranet applications (HREA) – This application helps HR workers to personalize an individual's role, experience, work content, language, and information needs.

Self-service applications (SSA) – The self-service application enables HR staff to upgrade and use employee specific information online.

HR portal applications (HRPA) – This application provides training information for HR workers at universities by providing an online service, which can identify suitable training; it allows HR employees to register for the training; negotiate; process documents; and confirm sales of training materials.

Integrated HR suite applications (ISA) – Human resource employees can manage their benefit plan via a web-based interface.

HR intranet applications (HRIA) – HR practitioners monitor workforce demographics in line with recruitment and retention objectives.

HR functional applications (HRFA) – HR employees monitor workforce demographics in line with recruitment and retention objectives through this application.

2.13 Types of E-HRM Used in Nigerian Universities

According to Zafar (2010:55), E-HRM is a new term, which is used for IT-supported HRM through the use of Internet technology. The rise of E-HRM is a result of transition in the Western economies from industry-oriented towards knowledge-oriented. One-fifth of large companies took a step towards supporting HR practices and policies through this technology (Ruel, et. al., 2002:24). There are three types of E-HRM, which are practised in Nigeria (Lepak and Snell, 1998, cited in Zafar, 2010:56), which include Operational, Relational and Transformational E-HRM.

2.13.1 Operational E-HRM – This allows HR employees at Nigerian universities to work effectively with basic administrative functions such as salary administration (payroll), and personnel data administration. It also enables them to update their personal data with the use of an HR website (Sanayei & Mirzaei, 2008:81).

2.13.2 Relational E-HRM – Relational E-HRM has a more advanced HRM function. This type of E-HRM is used by HR staff at Nigerian universities to support basic business processes, which are known as HR tools such as recruitment and selection of new workers, training, performance management and rewards (Koldewijn, 2009:21). Web-based application for recruitment and selection is made possible for applicants through E-HRM (Sanayei & Mirzaei, 2008:81).

2.13.3 Transformational E-HRM – This is concerned with HRM functions, which have a strategic character. It facilitates human resource functions in the area of organizational change processes, strategic re-orientation, strategic competence management and strategic knowledge management (Koldewijn, 2009: 21). The researcher next describes the effects of utilizing E-HRM in Nigerian universities.

2.14 Effects of the Use of E-HRM within HRM Functions in Nigerian Universities

The effects of the use of electronic human resource management within human resource management functions in Nigerian universities are numerous. Electronic human resource management (E-HRM) is supported in Nigeria through the use of information and communication technology (ICT) (Lengnick-Hall & Moritz, 2003:373; Abodohoui, 2011:4). Information and communication technology (ICT) is a resource that improves work efficiency, as well as the effectiveness of an organization (Adewoye & Obasan, 2012:29). E-HRM is a new field of research that involves both human resource management (HRM) and Management Information Systems (MIS) (Abodohoui, 2011:1). E-HRM enables HR managers to access information, conduct analysis, make decisions, and communicate with other employees. HR staff can also control their personal data (information) through the use of E-HRM (Lengnick-Hall & Moritz, 2003:366). E-HRM enables HR staff to improve the efficiency and effectiveness of their job by reducing the manual workload of administrative activities (Ball, 2005:677). HR managers and employees make better and timelier decisions with the use of E-HRM (Lengnick-Hall & Moritz, 2003:366).

E-HRM assists HR practitioners to reduce administrative costs, track HR actions efficiently and contribute to the availability of information and knowledge (Ruel *et al*., 2008:161). HR managers are able to analyse, make ideal decisions and communicate with other staff within the institution (Abodohoui, 2011:5). Above all, HR staff at the university can control and update personal information. It reduces and eliminates time consuming bureaucratic procedures and helps HR practitioners to manage data that could bring about strategic decision making forecasting, planning, recruiting, developing promotions, and evaluating and developing HR in Nigeria (Te Woerd, 2009:25 and Ngai & Wat, 2006:297). Again, regardless of these uses, some HR practitioners do not think strategically before using this system, which renders the system redundant in the institution (Marler, 2009:515). Furthermore, other effects of E-HRM for the use of electronic human resource management (E-HRM) within human resource management (HRM) functions in Nigerian universities are discussed below.

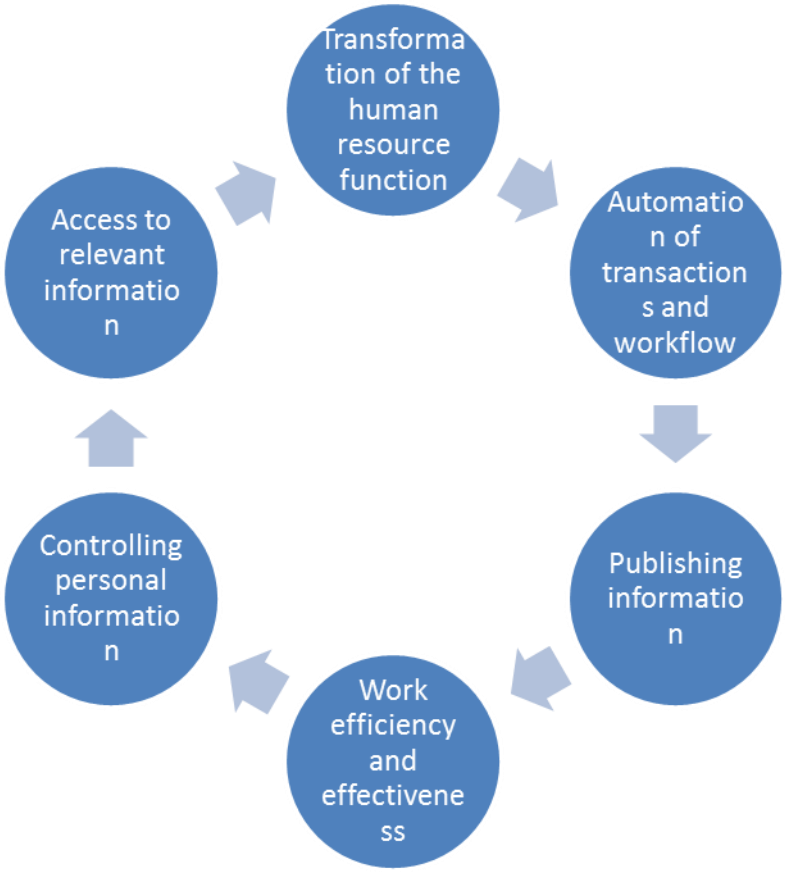


Fig. 2.4: Effects of the use of E-HRM within HRM functions at Nigerian universities

Source: Compiled by the researcher

2.14.1 Access to Relevant Information

Human resource (HR) managers at Nigerian universities access relevant information through the use of E-HRM. Electronic human resource management systems also enable them to conduct analyses, make good decisions and be able to communicate with other staff within the institution. They are able to access data files, which contain employee information, which help HR managers to reduce time and much paperwork (Lengnick-Hall & Moritz, 2003:366).

2.14.2 Controlling Personal Information

Human resource management employees can access and control their personal information with the help of the above mentioned system. They can make changes in their personal records, and are able to make decisions with the use of E-HRM.

2.14.3 Work Efficiency and Effectiveness

HR employees' work efficiency and effectiveness are improved with the use of E-HRM by reducing the cycle time for processing paperwork, increasing data accuracy and reducing HR staff. The institution's human resource workers' job effectiveness is improved by, for example, knowledge management through the use of E-HRM.

2.14.4 Publishing Information

E-HRM encourages one-way communication from the management of the institution to the managers and employees through the use of intranets as the primary information delivery medium. E-HRM also enables HR practitioners to publish information on the institution's policies and procedures, benefits, directories of services and current events. This helps to reduce the costs of printing publications. Also, changes can be made to published information whenever the need arises, and where they have access to a computer and the Internet (Lengnick-Hall & Moritz, 2003:367).

2.14.5 Automation of Transactions and Workflow

This involves different application programs such as intranets and extranets. Automation of workflow and transactions also involves the replacement of paperwork by electronic input such as recruitment to E-recruitment. Again, HR practitioners access databases, update information, search for important information and make decisions with the use of E-HRM (McCormick, 2002). Workflow applications enable HR employees to obtain salary increases with compliance to the institution's policies (Lengnick-Hall & Moritz, 2003:366). Furthermore, human resource processes can be highly coordinated through automation services.

2.14.6 Transformation of the Human Resource Function

Human resource functions can be liberated from operational focus and be redirected towards a strategic one with the use of E-HRM (Lengnick-Hall & Moritz, 2003:368). There are three types of work for human resources in the transformation stage; these include strategic partnering, creating centres of expertise such as housing necessary resource functional specialists and service centre administration (Walker, 2001:xiii). E-HRM enables HR employees to get non-strategic work done faster, cheaper and with less reliance on other staff. It also helps them to focus on new ways of adding value to the institution (Lengnick-Hall & Moritz, 2003:368). Despite all the advantages that E-HRM has brought to HR functions at Nigerian universities, there are also some challenges and problems, which are associated with the use of E-HRM in these institutions.

2.15 Challenges in Utilizing E-HRM within HRM Functions in Nigerian Universities

One of the problems of using E-HRM in human resource management functions in Nigerian universities is a lack of understanding of the system by human resource (HR) practitioners (Kunda & Brooks, 2000:123). Government policies and regulations have also affected the use of E-HRM in these universities. In addition, a lack of skilled personnel is among the major problems, which are associated with the use of this system by HR practitioners, while other problems are economic constraints and a lack of systems infrastructure and application (Woherem, 1993, cited in Agalamanyi *et al*., 2011:17). Examples of economic constraints are

non- existence of reliable background information on E-HRM, and inadequate capital to finance the adoption and utilization of E-HRM in Nigerian universities (Kunda & Brooks, 2000:123). Additionally, irregular electrical power supply and low Internet penetration have contributed immensely to the poor use of E-HRM in Nigerian universities (Golding *et al*., 2008).

Above all, G8 Dot Force (2001) and UNPAN (2005) argue that challenges, which face HR practitioners with the use of E-HRM in Nigerian universities are grouped into three, namely institutional, infrastructural and human capital problems. Institutional problems include political instability and regulatory framework, as well as cultural and organizational problems. Infrastructural problems include poor Internet access and low bandwidth, high cost of E-HRM systems, and poor power generation. Lastly, human capital problems include poverty, low literacy levels, poor skills and technical ability. Major challenges, which hinder the use of E-HRM at Nigerian universities, are discussed below.

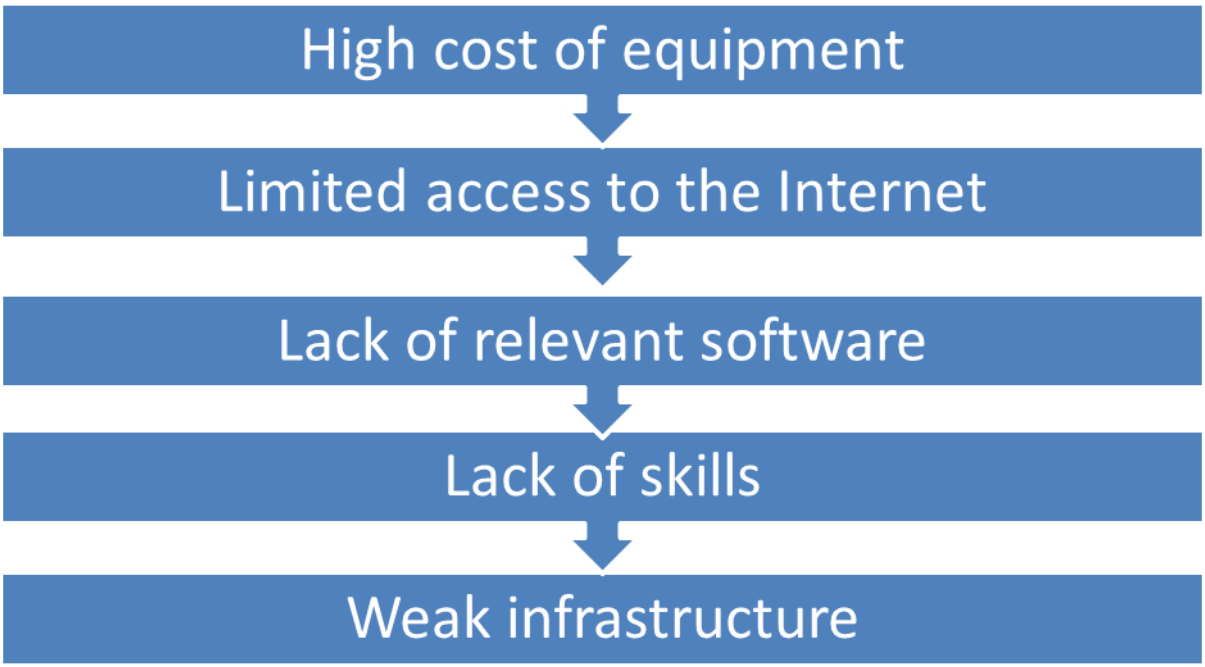


Fig. 2.5: Challenges when using E-HRM within HRM functions at Nigerian universities
Source: Compiled by the researcher

2.15.1 High Cost of Equipment

The high cost of computer software and hardware in Nigeria, as well as in other developing countries, has constituted a major obstacle to the use of E-HRM in universities. Computers are so expensive that the universities have to spend a lot of money to buy them for use in these institutions and often end up buying few computers, which are not enough for the universities' human resource management staff (Woherem, 2004:12). Despite the lack of basic infrastructures such as computers, there are other computer facilities that are necessary for the use of E-HRM in these institutions such as printers, papers, monitors, modem, extra disk drives and others. The university managements cannot afford exorbitant Internet connections (Aduwa-Ogiegbaen & Iyamu, 2005:108). Furthermore, Nigerian universities lack capital (funds) that can be used to provide basic infrastructural amenities that will support the use of E-HRM in their institutions (Odion & Adetona, 2009:27).

2.15.2 Weak Infrastructure

Human resource staffs are hindered with the use of E-HRM in Nigerian universities by deficiencies in infrastructure. Apart from the availability of few computers for use for human resource functions, there is also inadequate power supply in Nigeria (Golding *et al*., 2008). Provision of stable and reliable electricity supply in Nigeria has been difficult for the past fifteen years; hence, there is no part of the country, which has complete power supply for 24 hours in a day (Ebijuwa, 2005:23). Literature also shows that electronic devices such as refrigerators, microwave ovens, computers, printers and others have been damaged as a result of an irregular supply of electricity. High-tech equipment such as computers cannot function effectively with an unstable supply of electricity, especially in Nigeria where there are severe weather conditions (extremely hot weather and a high level of dust during the dry season), which can damage computers and hence decrease their life span. Above all, access to electricity and the Internet is denied to those universities that are situated in the rural part of Nigeria, which means that the management of those universities need to spend freely to access electricity and computers. Additionally, air conditioning systems are not generally available in Nigerian universities.

Furthermore, inadequate telecommunication facilities contribute to restrictions on the use of electronic communication by human resource management employees (UNPAN, 2005). Nigerian telecommunications have been rated as the fastest growing telecommunication sector in Africa, but the majority of Nigerian universities have little access to telephone connections, for instance (Aduwa-Ogiegbaen & Iyamu, 2005:109). Hence, Nigerian telecommunications have attracted more direct foreign investment to improve levels of communication among workers. Aduwa-Ogiegbaen and Iyamu (2005: 109) assert that, initially, the cost of connecting landlines in the workplaces were high at $1.500, but have recently decreased to $148.

2.15.3 Lack of Skills

Nigerian universities do not only lack resources for the utilization of electronic human resource management in their human resource functions, but also lack human skills and knowledge that will fully integrate E-HRM into their HR functions (Krubu & Osawaru, 2011:3). The use of E-HRM requires trained HR workers that will be able to install, maintain and support the system. Ani *et al*. (2005:27) opine that Nigerian universities require properly trained HR staff who will be able to use E-HRM systems, as well as have knowledge of using operation systems, application software, network administration and technicians that can service and repair computer facilities, in case of any problem. There is a lack of trained IT workers that can handle these systems (Woherem, 2004:19 and Okebukola, 1997:8).

2.15.4 Lack of Relevant Software

Software developers have tried to develop software applications in Nigerian organizations, but have not been able to fully integrate appropriate and culturally accepted software for this country (Howell, 2001, cited in Woherem, 2004:3). The use of E-HRM by HR workers in Nigerian universities is challenged with the low supply of relevant software for computer applications, which will encourage the use of E-HRM (Arora & Athreye, 2001:20). Nigeria faces two major problems of developing their own software: the cost of producing relevant software for the country, and a lack of qualified computer software designers in the country. This calls for a need for trained instructional designers in Nigeria (Woherem, 2004:14).

2.15.5 Limited Access to the Internet

Nigeria faces a great technological challenge to establish consistent and cost effective Internet connectivity. Few Nigerians have partnerships with foreign information and communication companies in order to help to supply Internet access to the country. It is known that some of these companies offer poor services to their customers even after exploiting them, while some offer reliable services and are expensive, thus limiting Internet access in Nigeria (Aduwa-Ogiegbaen & Iyamu, 2005:110). Most universities in Nigeria are not given enough funds to cater for all their needs, let alone have adequate funds for high-tech equipment and Internet connectivity. Again, low Internet access is affected by electricity supply problems in Nigerian universities. Nigeria is lagging behind other African countries such as Senegal, Uganda and South Africa in terms of Internet access (Aduwa-Ogiegbaen & Iyamu, 2005: 110).

2.16 Potential Prospects Regarding Challenges for the Use of Electronic Human Resource Management (E-HRM) within Human Resource Management Functions in Nigerian Universities

Electronic human resource management (E-HRM) has brought with it many benefits and advantages for human resource practitioners. Some of these benefits were listed earlier in this chapter, and includes enhancing HR efficiency; reducing costs; decreasing administrative burdens; facilitating HR planning; and allowing HR practitioners to become strategic partners within universities (Bartram, 2006, Gueutal and Stone, 2005 and Kavanagh *et al*., 2011). The use of electronic human resource management (E-HRM) in human resource functions have few disadvantages, which focus on efficiency and cost content, while it does not enhance effectiveness of HR processes such as the selection system, and have an adverse effect on members of some protected groups such as older job applicants and an invasion of personal privacy (Harris *et al*., 2003:230, Kehoe *et al*., 2005 and Stone *et al*., 2003, McManus & Ferguson, 2003:175). However, E-HRM has more prospects than have been listed above.

2.16.1 Increased Use of Technology within Human Resource (HR) Functions

Electronic human resource management (E-HRM) involves the utilization of technology, which allows universities' HR practitioners to train their employees around the globe (Salas *et al*., 2005). It has provided a guideline for designing training systems (Sitzmann *et al*., 2006: 623).

2.16.2 Increased Use of Electronic Recruiting Method

Electronic human resource management has increased the use of web-sites, web-portals, or kiosks to attract applicants for recruitment purposes (Braddy *et al*., 2009:525; Dineen & Noe, 2009 and Stone, Lukaszewski & Isenhour, 2005:22). E-recruitment has affected a number of factors for applicants in order to attract them to the organization such as the effects of website characteristics (Braddy *et al*., 2009 and Dineen & Noe, 2009). Factors that can influence applicants' intentions to apply for a particular job are also taught to the applicants with the help of an e-recruitment website (McManus & Ferguson, 2003 and Stone *et al*., 2005).

2.16.3 Improved Use of Electronic Selection

Electronic human resource management (E-HRM) has established the outlining of key parameters that are associated with the use of web-based systems for selection processes (Kehoe *et al*., 2005). These key parameters include the equivalence of computerized and paper employment tests, while personality inventories were not left behind (Ployhart *et al*., 2003 and Potosky & Bobko, 2004:1003).

2.16.4 Enhanced Effectiveness of other Human Resource Processes

The use of electronic human resource management (E-HRM) has introduced human resource (HR) practitioners at Nigerian universities to the practice of electronic job analysis, electronic compensation (E-Compensation) and benefit systems (Reiter-Palmon, Brown, Sandall, Buboltz & Nimps, 2006:294). E-compensation systems enable HR managers at Nigerian universities to effectively design, and administer compensation and benefit information (Dulebohn & Marler, 2005). The use of e-compensation tools has given access to information that can be used to increase the effectiveness of compensation programs for HR practitioners

(Kesti, Syvajarvi, & Stenvall, 2009:294). Furthermore, the use of e-HRM has enabled HR practitioners at Nigerian universities to be more valuable to their organization, and also to improve their understanding of the organization (Lawler & Mohrman, 2003:15). E-HRM is a medium that helps HR practitioners to make strategic decisions through the provision of executive reports and summaries (Hussain *et al*., 2007:85). Again, it supports HR administrative tasks and the filing of cabinet replication (Haines 111 and Lafleur, 2008:534 and Ball, 2005:683).

2.16.5 E-HRM Has Improved the Method of Performance Management Used by HR Practitioners

E-HRM management has introduced e-performance management. E-performance is an online performance appraisal system, which is more effective than traditional performance appraisal systems (Payne, Horner, Boswell, Schroeder & Stine-Cheyne, 2009:526). E-HRM has also introduced methods that are used to deliver online HR services (Gueutal & Falbe, 2005: 190).

2.17 Literature Comparison of the Use of Electronic Human Resource Management in South Africa and Nigeria

2.17.1 Introduction

In this chapter, the utilization of electronic human resource management (E-HRM) within human resource management (HRM) functions in South African and Nigerian universities was compared. The utilization of electronic human resource management (E-HRM) within human resource management functions in both South African and Nigerian universities are almost the same. The system was introduced to serve the same purpose for human resource management practitioners globally, hence functions in the same way except for the effects or challenges that the various users might experience. This could be as a result of the type of software and hardware that the system comprises. Comparisons in the use of electronic human resource management in human resource management systems amongst HR practitioners in the South African and Nigerian universities are discussed below.

2.17.2 Comparison of the Use of other Technologies for HRM Functions between South African and Nigerian Universities

South Africa, being a more developed country than Nigeria, has given more opportunities to human resource management practitioners to have more technologies that they can use in place of the electronic human resource management system. The opportunities include constant power supply and regular access to Internet. Nigerian universities, conversely, have two other types of technologies that are used in place of electronic human resource management in their human resource management functions. These include: Human Resource Information System (HRIS); and Enterprise Resource Planning (ERP); while in South African universities, they include: Enterprise Resource Planning (ERP); Human Resource Information Systems (HRIS); Virtual HR; Web-based HR; HR Intranet and Computerised Human Resource Information Systems (CHRIS) (Marler & Fisher, 2010:33); (Schalk, *et al*., 2013:87). Their different functions were listed in previous chapters.

2.17.3 Comparing E-HRM Tools and Software Used in South African and Nigerian Universities

The type of electronic human resource management (E-HRM) tools and software, which are used in any country, depends on the type of Internet that is used within that country. Therefore, the types of E-HRM software used in South African universities for human resource management functions differ from the ones that are used in the Nigerian universities. Although, there are some software, which are used in the South African universities for human resource management functions that are also used in the Nigerian universities such as the extranets and intranets, and self-service applications software for employees and managers (Grobler *et al*., 2006: 45). The table below shows the different software used in the different countries for the human resource management functions.

Table 2.1: Comparison between E-HRM tools and software used in South African and Nigerian universities

Software used in South African universities for HR functions	**Software used in Nigerian universities for HR functions**
ACCSys Personnel Manager	Interactive Voice Response (IVR)
Skills Planner Software	HR extranet applications
Integrated labour solutions	Self- service applications
VIP HRM System	HR portal applications
Employee self-service intranet	Integrated HR suite applications
PSIBer Tax	HR intranet applications
Payroll software	HR functional applications

2.18 Comparing the Effects of the Use of E-HRM within HRM Functions in South African and Nigerian Universities

The effects of the use of electronic human resource management within human resource management functions in South African and Nigerian universities are similar. Although the chart below shows different information, all the effects on the South African universities can be seen at the Nigerian universities.

Fig. 2.6: Comparison the effects of the use of E-HRM within HRM functions at South African and Nigerian universities

Source: Compiled by the researcher

2.19 Comparing Challenges for the Use of E-HRM with HRM Functions in South African and Nigerian Universities

Table 2.2: Comparing challenges for the use of electronic human resource management within human resource management functions in South African and Nigerian universities

South Africa universities	Nigerian universities
HR skills	High cost of equipment
Training in E-HRM use	Limited access to the Internet
Engagement with E-HRM	Lack of relevant software
Designing of the E-HRM system	Lack of skills
Familiarity with technology	Weak infrastructure

Source: Compiled by the researcher

The above table lists the different challenges, which are faced by human resource management practitioners regarding the use of electronic human resource management within their human resource (HR) functions in South African and Nigerian universities. The differences in the challenges could be as a result of the different countries in which they are located. Though, there are similarities such as HR skills in South African universities and a lack of skills in the Nigerian universities. Some of the challenges faced by HR practitioners in the South African universities can also be found in the Nigerian universities such as familiarity with technology. HR practitioners in the Nigerian universities might not be familiar with technology. Nevertheless, inadequate power and funds for high-tech equipment and Internet connectivity were listed as some of the challenges that human resource management practitioners face in the Nigerian universities, which were not listed or mentioned as challenges for human resource management practitioners in the South African universities (Aduwa-Ogiegbaen & Iyamu, 2005: 110).

2.20 Comparing the Implications of Using E-HRM within HRM Functions in South African and Nigerian Universities

The implications and prospects regarding the use of electronic human resource management within human resource management functions in South African universities includes: high commitment; high competence; cost effectiveness; higher congruence; strategic orientation; cost reduction and improved efficiency; and client service improvement/facilitating management and employees. With regard to Nigerian universities, they include: increased use of technology in the human resource functions; increased use of electronic recruiting method; improved use of electronic selection; enhanced effectiveness of other human resource processes; and improved method of performance management used by HR practitioners.

Table 2.3: Comparing the implications of using E-HRM within HRM functions in South African and Nigerian universities

South African universities	Nigerian universities
High commitment and competence	Increased use of technology in human resource functions
Cost effectiveness and higher congruence	Increased use of electronic recruiting method
Strategic orientation	Improved use of electronic selection
Cost reduction and improved efficiency	Enhanced effectiveness of other human resource processes
Client service improvement/ facilitating management and employees	Improved method of performance management used by HR practitioners

Source: Compiled by the researcher

The use of electronic human resource management within human resource management functions at South African universities has brought about high commitment levels and competence from employees (Shane, 2009:57). Human resource (HR) practitioners will be able to play the role of change agent with other staff of the university. While in the Nigerian universities, the use of electronic human resource management has increased the use of technology in human resource functions. In addition, it has increased the use of electronic

recruitment and selection in the HR functions of Nigerian universities. Strategic orientation of the human resource management practitioners have improved from traditional to strategic. Cost reduction and improved efficiency is prevalent in South African universities (Martin, Reddington & Alexander, 2008: 301). While; there is enhanced effectiveness of the human resource processes and improved method of performance management through the use of electronic human resource management by human resource management practitioners in the Nigerian universities.

2.21 Chapter Summary

This chapter presented different uses of the electronic human resource management (E-HRM) system in South African universities with the support of past literature on the use of E-HRM. It was suggested that effective human resource management has a competitive advantage over other systems that are used in the institution, and have been acknowledged in South African universities, but still lack the awareness of the importance and value of HRM linked to competitive advantage. The use of E-HRM in South African universities include: e-recruitment, e-selection, e-performance management, and e-compensation, to mention but a few.

The importance of the uses of E-HRM at South African universities is numerous, and includes: high commitment from employees to their job; high competence; cost effectiveness; cost reduction; improved efficiency; and high congruence. HR practitioners in these institutions also face few challenges, which are not detrimental and can be tackled. These include: a lack of HR skills; poor training with the use of E-HRM systems; engagement with the E-HRM system; and employee familiarity with the use of the E-HRM system.
Despite these challenges, South African universities should consider the value of the E-HRM system in their human resource management functions, and make an effort to use the system more often in order to promote and maximise the benefits of using the system.

The utilization of electronic- human resource management (E-HRM) within human resource management (HRM) functions originates from Europe and the USA, and has spread to many other European and African countries, including Nigeria in West Africa. In Nigeria, the

utilization of E-HRM is fast becoming a significant aspect of human resource management. Human resource management, as an area of specialization in Nigeria, is an important field, which can help the management of universities to achieve their goals.

The adoption of E-HRM may have no effect if HR employees in the Nigerian universities are not utilizing it for the purposes that it was meant for. The use of E-HRM system enhances the productivity of human resource departments in the Nigerian universities. It helps HR practitioners to make strategic decisions that would improve their work functions. Also, the use of E-HRM has an ability to reduce administrative costs, increase productivity, speed response times, improve decision making and enhance customer service. Hence, the functions of E-HRM systems are many in the Nigerian universities, which include allowing HR practitioners to use online recruiting services; record submitted applications online; and carrying out performance management evaluation online by streamlining the performance management process into a web-based solution. Electronic-training (E-training) management provides a facility for human resource managers to capture course information; book employees on specific courses; and record individual training history. Electronic-compensation systems have introduced the use of automated salary payment to eliminate manual intervention, and can access information on compensation for direct reports from a central location such as salary, cash components and non-cash items. The uses of E-HRM by HR practitioners have enabled them to make use of electronic mail and intranets for communication within and outside the institution.

Electronic human resource management (E-HRM) enables HR managers to access information, conduct analysis, make decisions, and communicate with other employees effectively. Regardless of these uses, some HR practitioners do not think strategically before using this system, which makes the system redundant in the institution. The more HR practitioners use this system, the better their work functions. It will also create an empowered workforce that will be willing to invest in themselves for the sustainable growth and development of Nigerian universities.

The use of electronic human resource management in South African and Nigerian universities has contributed to the effective and efficient functions of human resource management practitioners in the universities. Despite the challenges faced by human resource management practitioners in the use of this system, the advantages cannot be overemphasized, and have duly been reported on throughout this chapter, and research study.

Chapter Three
RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Research methodology is an art, which is aided by skills of inquiry, experimental design, data collection, measurement and analysis by interpretation and by presentation (Greenfield, 2002:3). Research methodology is also an indispensable research criterion, since it defines the activity of any specific research, its procedural methods, strategies for progress measurement, and criteria for research success in relation to specific research aims (De Vaus, 2003: 4). The main purpose of research methodology is to explain the process and nature of research (Welman, *et al*., 2005:2). Research is conducted to find answers for specific research problems, and involves acquiring scientific knowledge through various procedures and objectives. This chapter describes different methods and tools, which were used to acquire and measure data that was used to realise the purpose of this research. However, this research aims to propose a comprehensive model for proper implementation and utilization of E-HRM as a decision making tool for human resource management functions in universities. In addition, this chapter explains the research design and methods that were used for this research. It also highlights the study population, sampling techniques and methods of data collection.

3.1.1 Conceptualisation of the Study

Conceptualization is a process, which a researcher takes to develop a clear and explicit theoretical image or idea of the construct that matches the attributes that are measured or understood (Blanche, Durrheim & Painter, 2009:557). It also involves developing the research idea and how the studies were conducted (Robertson & Baysens, 2010: 3). System analysis is the process of understanding and specifying in detail what the information system should accomplish (Satzinger, *et al*., 2007:4). In this study the researcher made use of analysis and design techniques to provide solutions for problems by using information technology. One of the most important stages in the conceptualization process is to explain the different research methods and design, which befit the study.

3.2 Research Design

According to Mouton (2006:107), research design is a route planner; a set of guidelines and instructions on how the researcher desires to reach the goal of the study. Mouton also notes that research design could be seen as a pathway that guides or directs the researcher on how to carry out the research project. A research design is "a strategic framework for action that serves as a bridge between research questions and implementation of the research" (Blanche, Durrheim & Painter, 2009:34). As a guide for the collection and analysis of data, this research was carried out as shown below:

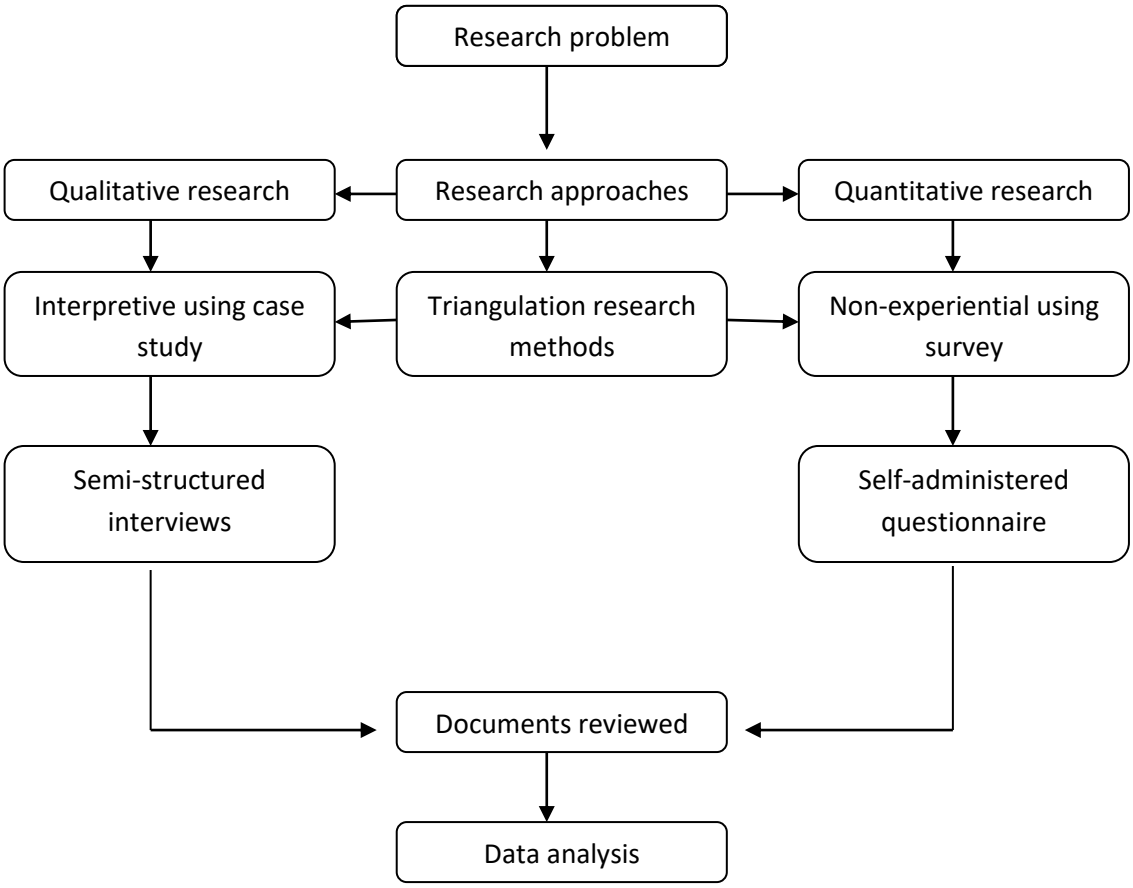


Fig. 3.1: Flowchart of the research process. Adopted from Ukpere, 2009:44

Burns and Bush (2005:104) list three types of research designs as follows: exploratory; descriptive; and explanatory. These research designs serve different purposes. This study involved the three types of research design mentioned above.

3.2.1 Descriptive Research Design

Descriptive research design is used to describe answers to questions of who, what, where, when and how (Burns & Bush, 2005:110). The researcher used descriptive research design to accurately and precisely describe the extent of utilizing electronic human resource management systems in various universities by the universities' human resource staff members. It was also used to compile and describe the demographic profile of the research such as the age, race, gender and others. Descriptive research method was used to report the responses from the interview questions in the form of content analysis.

3.2.2Exploratory Research Design

Exploratory research design is used to satisfy the researcher's curiosity and desire for better understanding of the research undertaking, and to develop the methods employed in the subsequent study and to explicate the central concepts and constructs of a study (Babbie & Mouton, 2010:80). This research design enabled the researcher to have a better understanding of the research, since it involved the use of in-depth interviews, analysis of case studies and use of informants. Hence, exploratory research design involves surveying people who have had practical experience of the problem that is studied (Babbie & Mouton, 2010: 80). The researcher conducted the survey by using mainly human resource management staff members at different universities who have used the electronic human resource management system for at least one (1) year, and other university staff members that have worked for at least one year within a university setting.

3.2.3 Explanatory Research Design

Explanatory research design aims to provide causal explanations of phenomena (Blanche, Durrheim & Painter, 2009:44). The researcher used explanatory research design to explain the opinions of respondents regarding the use of electronic human resource management (E-HRM) systems. This helped the researcher to determine the different software, which are used in the operation of the system and other systems that are used in the university's human resource department in order to achieve their goal.

3.3 Research Methodology

Research methodology considers and explains the logic behind research techniques (Welman, Kruger and Mitchell, 2005:2). According to Babbie and Mouton (2010:75), research methodology is defined as "the systematic, methodical and accurate execution of the design". Research methodology is important in the planning, structuring and carrying out the research with the demand of truth, objectivity and validity (Brynard & Hanekom, 2006: 36). It further focuses on decisions that the researcher made to execute the research project, namely decisions that should be taken as the research progresses, and methods that should be employed for data collection and analysis. Research methodology involves the use of two types of research approaches which enables the researcher in drawing inferences from the study. The two approaches are the quantitative and quantitative and qualitative research methods. Each of these two research methods, which are discussed later, focuses on different areas in the research process and on different strengths and weaknesses that they offer.

In order to examine the utilization of E-HRM in the universities, a combination of both qualitative and quantitative research methods were employed. This was to enable the researcher to understand the research problem from a subjective and objective point of view. This combination of research methods is known as triangulation. Methodological triangulation is defined "as the rationale for using multiple sources to collect data in a single study" (Yin, 2003: Singleton and Straits, 2005). This is done in order to increase the validity and reliability of findings. The purpose of this research was to explore the extent of utilization of electronic human resource management (E-HRM) by human resource employees at different universities; therefore, it also adopted a case study approach. Case study is an empirical inquiry of primary data which examines a research that has to do with real life situation. For example, when if the study boundaries are not clearly evident (Yin, 2003:12). It can be said that "case study strives to gain a holistic understanding of how people make meaning of particular phenomena under study" (Maree, 2008:75 and Babbie & Mouton, 2010:76). The use of primary data was essential for this research, as it enables the researcher to know the opinions of staff members regarding the use of E-HRM in their institutions. Moreover, the case study approach was used for this research because it was conducted in a

real-life setting, which is the universities, and involved people who have been using E-HRM for at least one year.

As mentioned, the method that was used in this research comprises both qualitative and quantitative research methods. This was to properly check and examine the extent of the utilization of electronic human resource management systems by human resource staff members at different universities, and also to understand the research problems from both a subjective and objective point of view. This also allows the researcher in getting reliable and valid results. Social science research methods have both advantages and disadvantages. In order to reduce the disadvantages, different methods of research have been implemented to enhance limitations that may be experienced in the use of a single research method. Therefore, the method of triangulation has been used. This is defined as employing multiple strategies of field research in order to overcome problems that stem from studies, which rely on a single theory, single method, single set of data and single investigator (Burgess, 1984: 164 cited in Henn, Weinstein & Foard, 2009:20). It is also referred to as the use of multiple methods of data collection (Mouton, 2006:156).

3.3.1 Triangulation

Triangulation in research is used to describe the use of a variety of data sources or methods to examine a specific situation, either simultaneously or sequentially, in order to produce a more accurate result for the investigator (Singh, 2007:410). The idea of using this method in research is to find multiple sources of confirmation when drawing a conclusion (Willis, 2007:218). It involves the use of more than one research method or data collection technique, because each method addresses a different dimension of the topic (Perone & Tucker, 2003: 3). In fact, triangulation provides confirmation and completeness. It relates the two types of information in order to leave the validity of each type of information intact. In addition, it allows the researcher to capture a more complete, holistic and contextual representation and reveals various sections of a given event. Biases can be minimized and validity enhanced when triangulation is used (Perone & Tucker, 2003:4).

As mentioned above. One of the advantages of using the triangulation method is to confirm data and ensure their completeness (Hussein, 2009:5), which helps the researcher to gain

validity of the research result. The triangulation method combines both the qualitative and quantitative method. This enables the researcher to overcome the bias of using a single method. Babbie and Mouton (2002:275) state that "triangulation enables the researcher to obtain relaible and valid results, which increase the credibility and validity of results". A disadvantage of using the triangulation method is that it is expensive. However, the triangulation method adopts positive aspects of the qualitative and quantitative approach.

3.3.2 Qualitative Research Method

This refers to research that produces descriptive data (Brynard and Hanekom, 2006:37). It is also defined as "a range of interpretive techniques that seek to describe, decode and translate terms that occur in a social environment" (Welman *et al*., 2006:188). It is also characterised by concerns for context, natural setting, human instrument, participant observation, field study, case study and descriptive data of a research (Creswell, 2003:181). It helps the researcher to understand the abilities of participants and to experience their daily struggles in the use of electronic human resource management systems in the workplace. Qualitative research methods involve an in-depth interview of key informants and observation (Brynard and Hanekom, 2006:38). Qualitative research method leads to answers that are typically for a specific context, and explains what makes the situation different from others (Stenbacka, 2001:551). It can also be said that qualitative research seeks a better understanding of complex situations and the work is sometimes exploratory in nature, and uses observations to build theories from the ground up (Leedy & Ormord, 2010:136). Qualitative research method allows open mindedness in order to interact with participants, but categories emerge from the data, which lead to information patterns and theories that assist to explain the phenomenon of the study.

The advantages of qualitative research method include having accurate data, flexible ways of data collection, and interpretation of collected information. Qualitative research method provides a holistic way of investigation and, finally, it provides descriptive capability based on primary and unstructured data (Matveev, 2002:59). In addition, the qualitative method is conducted in a natural setting and provides an in-depth description and understanding of actions and events (Ukpere, 2007: 21). The weakness is that the results are dependent on the

interpretation of the researcher, which makes it prone to biases, and hence results in more subjective way making it difficult for generalization (Babbie & Mouton, 2010:263). Qualitative research is more interactive since it involves one-to-one discussion and, therefore, requires someone that has good communication and analytical skills to report the social phenomenon in a more objective way. The figure below shows qualitative research methods that were used for this study.

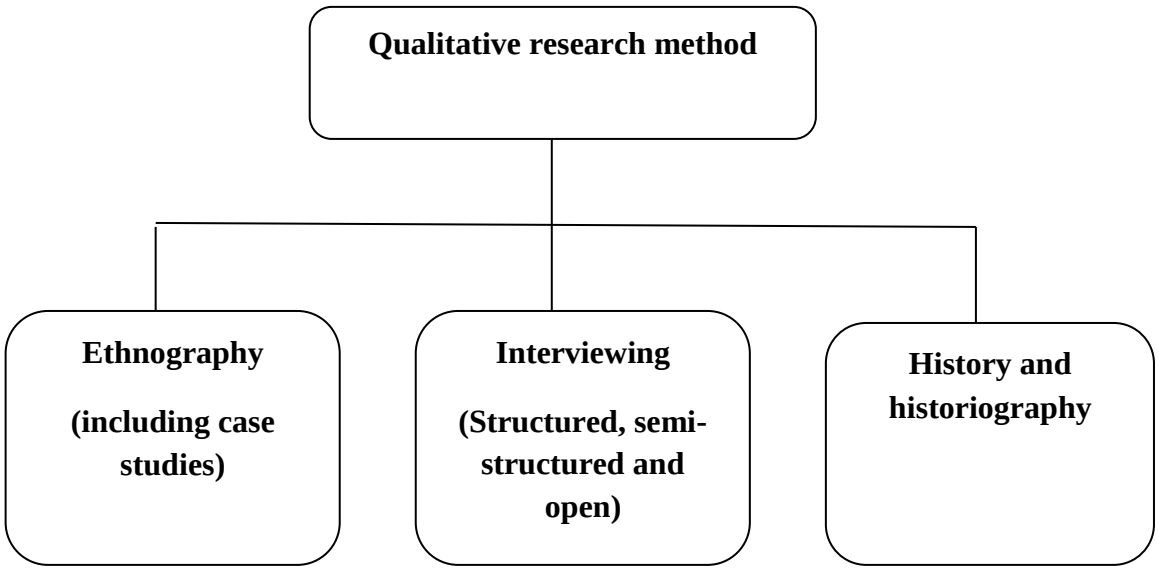


Fig. 3.2: Qualitative research method. Adopted from Willis, 2007:231

3.3.2.1 Ethnography

"Ethnography is an umbrella term for fieldwork, interviewing, and other means of gathering data in authentic (real-world) environments" (Willis, 2007:235). It involves letting people speak using their own words. Ethnography is used to achieve a fine grained understanding of a social situation (Greener, 2011:75). In addition, it seeks to find out answers to 'what' questions, 'how' and 'why' questions. It attempts to gain its legitimacy by giving the researcher an in-depth, immersive understanding of a social context. Ethnography research method is implicit and embraces a range of methods such as observation, interviews, focus groups and documentary analysis, which it draws inferences from (Greener, 2011:75).

The researcher used interview questions to obtain an in-depth understanding of how the university's human resource (HR) directors and managers understood the use of electronic human resource management (E-HRM) in their institution. The use of this method enabled the researcher to mingle within the HR department and other departments in the universities to observe and record the on-going use of E-HRM by HR practitioners in the universities (Hesse-Biber & Leavy, 2006:230). Tied to ethnographic research, is the case study approach.

3.3.2.2 Case Study Method

Case study research method has different meanings for different people and in different disciplines (Gomm, Hammersley & Foster, 2004:2). The case study method is defined as a method, which is used to study the particularity and complexity of a single case in order to understand its activity within important circumstances (Stake, 1995:xi cited in Simons, 2009:19). This method was employed to identify a specific form of inquiry, which is in contrast to the survey on several dimensions such as the number of cases that are investigated in the field, and the amount of detailed information that is collected about each case (Gomm *et al*., 2004:3). The case study method was conducted with the use of unstructured questions such as open-ended interview questions. The aim was to help the researcher to understand the case itself rather than to generalize the whole population or situation. Case studies explore many variables of interest; and rely on multiple sources of evidence and prior development of theoretical propositions to guide the collection of data (Simons, 2009:20). The researcher used six universities: three South African universities and three Nigerian universities as a case study for this study. This enabled the researcher to choose the type of inquiry that suits the study, and also assisted the researcher to obtain detailed information from the field.

3.3.2.3 History and Historiography

Historiography has to do with the historical interpretations and representations of the past (O'Brien, Remenyi, & Keaney, 2004: 137). Historical writing gives a narrative history of a past event, while historiography exposes the frames and parameters of historical writing (Villaverde, Helyar and Kincheloe, 2006:1). The latter author also states that historiography offers a method of intervention in the comprehension of socio-cultural political events. This is

the ability to discern how history is mediated by philosophy, ideology and politics. This method was not essential for this study and was, therefore, not used.

3.3.3 Quantitative Research Method

Quantitative research involves the use of surveys or questionnaires and also involves numerical analysis of data (Partington, 2002:32). The survey research method allows the researcher to search for more information through the use of interviews, observation, documents and questionnaires. It also allows the researcher to collect data from a large number of people. In addition, the survey research method ensures considerable flexibility in analysis (Babbie & Mouton, 2010:263). Questionnaires and interviews are commonly used in the survey method, though it does not give detailed answers to certain specific questions, but serves as the most effective method of collecting data. A self-administered questionnaire was used, which helped to gather responses from respondents at the different universities.

3.3.3.1 Research Methods in Quantitative Research

This type of research method enabled the researcher to examine the extent of utilization of electronic human resource management (E-HRM) in the human resource departments of the studied universities. This was done by distributing questionnaires to respondents. The purpose of this research was to explore the extent of utilization of electronic human resource management (E-HRM) by the human resource departments of different universities by surveying a sample from a large population of human resource (HR) staff members and other staff at the universities. The research methods that were employed to obtain data include surveys, and numerical methods such as mathematical modelling. The survey research method allows the researcher to search for information via interviews, observation, documents and questionnaires. It also enables the researcher to collect data from a large number of people. The quantitative research method has been proved to be the best research method for surveys that involve a large group of people (Babbie & Mouton, 2010:263). Survey research methods are known to be flexible because several questions can be asked from one topic, which ensures considerable flexibility in analysis.

Commonly used survey methods of collecting data include questionnaires and interviews. A self-administered questionnaire was used as an instrument to collect data. Furthermore, the research process for the study is described below. This is the logical process that is followed to link the research questions to the data collection before interpreting the findings (Yin, 2003:21). Therefore, based on the nature of this study, the research problem and questions were employed to collect the data.

3.3.3.1.1 Population and Sample

Population is defined as "the study of objects, which consists of individuals, groups, organizations and human products" (Welman *et al*., 2006:52). The targeted population for this study comprised university staff members, namely human resource directors, human resource managers, human resource employees and other university staff members who use the services of the human resource workers. Academic and non-academic; senior and junior university staff members were included in this survey. Thus, six (6) different universities were used as the population for the survey: three (3) South African universities comprising each of comprehensive, traditional and technology, and three (3) Nigerian universities comprising each of federal, state and private universities. The sample size of the population was 658 from the six universities mentioned above; 47 participants from the HR directors and managers, and 611 participants from the HR staff members and HR recipients of the universities.

3.3.3.1.2 Population Identification and Description

This study was conducted at six different universities; three from South Africa and three from Nigeria. The South African universities that were used for this study included a comprehensive, traditional and technology university. These universities are well known and comprise not less than 3000 staff members and 500,000 students. This was to ensure reliability, accuracy and validity of the results from the data collection (Golafshani, 2003:599). Three Nigerian universities were used for the research, which included a federal, state and private university. These universities are situated in different provinces in Nigeria and consist of no less than 3000 staff members and 500,000 students. This was to ensure that the same sample size was collected both in Nigeria and South Africa, and to ensure that in

each of the two countries the populations were drawn from different provinces to make up a representation of the whole population in the universities.

3.3.3.1.3 Sampling Frame

A sampling frame is a list of all the units in the population from which the sample will be drawn (Bryman, 2004:87). The sampling frame for this research was taken from the six universities that are mentioned above. The population that was sampled was comprehensive enough to make up valid data. A sample frame was drawn from each university; 10% of confidence intervals were used for the sampled population; and about 100 data samples were collected from each university to ensure accuracy and validity of the study. As mentioned above, a probability random sampling method was also used for this study.

3.3.3.1.4 Sampling Technique

A subset of the population was made, since it was not possible for the researcher to use the entire population. The subset of a population is known as a sample (Welman *et al*., 2006:180; Sapsford & Jupp, 2006:26). The sample that was selected was meant to represent the targeted population. A sampling method comprises two types: probability and non-probability sampling methods. The sampling method that was used for this research is the probability sampling method because the sample size that was selected represented the entire population. There is different probability sampling which include random, stratified, systematic, quota, cluster or multi-stage sampling (Singleton & Straits, 2005:147). A simple stratified random sampling method was best for this study because the staff members at the different universities that were used for this study consists of academic and non-academic; as well as senior and junior university staff members. The staff members were selected according to strata in order to ensure that there was an equal representation. The strata consist of the human resource directors, human resource managers, human resource employees, and senior and junior academic and non-academic staff members of the universities. This was done to give everyone within the targeted population a fair chance of being selected. Each staff member was selected based on a simple random sampling technique, which was drawn from each stratum. Stratification improves sampling efficiency and provides stratifying variables, which are related to the research problems (Ukandu & Ukpere, 2011:67).

3.3.3.1.5 Sampling Size and Representative

For the purpose of this study, a sample size of six hundred and eleven (611) staff members was used and a sample size of 47 HR directors and managers were interviewed, making a total of 658 participants. The representative sample was drawn from a computer-generated list, which was obtained from the institutions (Appendix E). Those who were selected in the sample size have more than one year (1year) of work experience in the institution. The researcher considered that with their one year experience in the university environment, they would be in a better position to answer questions pertaining to the use of electronic human resource management (E-HRM), which is used by human resource employees. Those that were interviewed included the HR directors and HR managers. In order to better understand the structure of the sample, frequencies were computed for demographic variables to ensure fair representation. The most important for the sampling was the need for different views and opinions of all the staff members that were selected. Furthermore, the researcher and the Cape Peninsula University of Technology (CPUT) statistician considered the confidence intervals for selecting a sample size to help make a comfortable selection number for the study. The confidence interval that was chosen was 10%, which would give at least 100 samples from each university.

3.3.3.1.6 Participant Selection and Development

Data was selected by using documents from the universities. These documents contain lists of employees at the universities with their different faculties, work experience, qualifications and total number of employees in each faculty included. The researcher used a simple probability random method to select from the list, provided that the employees participate in the survey. The list was divided into different strata, according to their faculties, work experience, total number of employees in each faculty, and qualifications. The faculties were also arranged according to their scale of preference. This means that the most important faculties were selected first. For this research, the most important faculty was of course the Human Resource Department, where all the staff members were asked to participate in the survey, followed by other faculties.

3.4 Data Collection

Data was collected in two phases from human resource personnel and general university staff members who use the human resource management services. This was done to ascertain whether the responses from the human resource participants are the same as the responses from the human resource service recipients of the universities. Interview questions and survey questionnaires were used as research instruments for this study. Documents and organizational records were also reviewed to corroborate the information that was obtained from the interviews and questionnaires, and to make inferences.

3.4.1 Research Instruments

The instruments that were used for data collection for this research were both open-ended interview questions and closed-ended questionnaires. Open-ended interview questions were used to sample the HR directors and managers, while the closed-ended questionnaires were distributed to the HR employees and HR recipients. Open-ended interview questions were used because it allowed the researcher to have an in-depth description and understanding of the use of electronic human resource management (E-HRM) by human resource (HR) staff members at the different universities that were used for this study (Ukpere, 2007: 21). They provide a flexible and holistic way of investigation and also give descriptive capabilities based on primary and unstructured data (Ukandu & Ukpere, 2011:58). Closed-ended questionnaires were also used as a research instrument because it would help the researcher to achieve a high level of reliability with regard to data collection, and would allow the respondents to complete the questionnaires in their own time, since the researcher was not directly involved.

Data collection was done in two phases: the first phase involved human resource personnel who were the human resource (HR) directors and managers. In the first phase, the HR directors and managers were interviewed face-to-face with open-ended interview questions. This allowed the respondents to include more information and understanding of the subject. Again, it would allow the researcher to better access respondents' true feelings on the issue. Moreover, it gave the researcher strategic direction on the issue at hand. The second phase involved the HR staff members, HR service recipients who consisted of both senior and the

junior; and academic and non-academic staff members of the university under study. Closed-ended questionnaires were also distributed to them for completion. This would help the researcher to understand the operational standards of the HR workers with the use of E-HRM.

3.4.1.1 Questionnaire

The questionnaire comprised self-administered closed-ended questions and the respondents were asked to complete it themselves. The questionnaire was compiled in a user friendly manner to ensure that relevant data was obtained. The statements included a list of optional answers that the staff members could choose from. A likert scale of 1 to 5 was utilized to measure levels of the statements. Correspondence was sought with the different universities before the questionnaires were distributed. This was done via email, telephone calls and visitation to the universities to agree on how distribution would take place. A consent letter was also sent to the universities to obtain permission, and to solicit their assistance with completion of the questionnaires (See Appendices A & B). The process of obtaining permission from each university took approximately one month. The questionnaire was distributed to nine hundred (900) university staff members. Six hundred and eleven (611) questionnaires were returned. The questionnaire began with profile questions and then moved to specific questions, which addressed the research objectives. The questions focused on the research questions that have both dependent and independent variables of the research problem.

To explain the purpose and importance of this research, same questionnaires were hand delivered and some were sent electronically via email. This was to enable the researcher to obtain a high response rate. Most of the university staff members were consulted during working hours. Due to the fact that they may not have enough time to complete the questionnaire immediately, they were given two (2) weeks to complete it. Other staff members were given an opportunity to select a free and convenient time to respond to the questionnaire, especially those whose questionnaires were hand delivered. Having distributed the questionnaires and given the staff members enough time to respond, they were asked to mail back the questionnaires as soon as possible. Hence, some were hand delivered. A total of eighty three (83) respondents completed their questionnaires online, while five hundred and

twenty eight (528) respondents returned their questionnaires by hand-delivery, totalling six hundred and eleven (611) responses, and rendering a response rate of 67.9%. Privacy and anonymity of respondents were maintained and they were assured that the data would only be used for research purposes. A total of 47 HR directors and managers were interviewed.

The advantages of using questionnaires are that questionnaires are cheap and quick to complete. The make large samples feasible and are useful when dealing with sensitive topics (Babbie and Mouton, 2010:250). It involves reliable numerical figures that can easily be quantified. However, the disadvantage is that respondents may feel irritated because they are restricted to a particular response. Participants were given the liberty to only answer what they know. The aim was to obtain a numerical figure from the views of the staff members, and to complement it with the interviews in order to generalise the findings.

3.4.1.2 Interviews

An interview seeks to find out what is in and on someone else's mind concerning a situation (Greenfield, 2002:209; King & Horrocks, 2009:42). Moreover, it is used to understand the meaning of what the interviewees say. Research interviews are based on the conversation of everyday life, that is, conversations with structure and purpose that are defined and controlled by the researcher (Lincoln & Denzin, 2005:869. Interviews can be useful to obtain the story behind a participant's experiences. For this study the researcher conducted interviews with human resource (HR) directors and managers.

Face-to-face semi-structured interviews were conducted with the HR directors and HR managers to ascertain their views on the study. Interviews were conducted within 20 minutes depending on the person that was interviewed. The purpose of interviewing them was because they are in senior positions and, therefore, has the responsibility of monitoring how E-HRM functions, and how it has been used by HR staff members and possible problems/challenges that their employees face when using E-HRM in their HR functions. A weakness in the use of the interview method is in locating respondents. In order to avoid this, however, appointments were scheduled a month before visitation through telephone calls and emails.

Furthermore, a semi-structured interview guide was used, which defines the line of inquiry and ensures that qualitative data was obtained. Structured interviews enable the interviewer to maintain consistency during interviews and to be in control of the interview process (Sapsford & Jupp, 2006:99). More participants were consulted and notes were taken in the course of the interview with the permission of the respondents. The interview method was employed, as it is flexible and questions that may have been misunderstood could be explained and clarified on the spot. Also, it allows the researcher to probe the participants in order to clarify vague answers (Welman *et al*., 2006:167). The questions that were posed adopted an interpretive, explanatory and descriptive approach. This makes it easier to interpret the results. Despite the interview method being costly and time consuming owing to the costs of travelling to the different South African and Nigerian universities, respondents were dispersedly located. Few interviews were rescheduled owing to time constraints, but most of the respondents participated fully and the interviews and data collection process went smoothly. The other source of evidence that was utilized for data collection was the questionnaire.

3.4.1.3 Interview Guide

An interview guide comprises of lists of topics that has to do with the theme and, which the interviewer should raise during the course of the interview (Welman & Kruger, 2002:161). It provides a checklist of topics that the interviewer intends to cover. These checklists include reminders about the categories of interest to the researcher in an order that seems likely to promote understanding. Interviewers were asked to talk about the use of electronic human resource management (E-HRM) within the administrative functions of the human resource management. They were also asked to explain how the utilization of E-HRM tools affects the attitude of their employees' work functions, and to describe the types of software that are used in the human resource management functions of their institution. However, they were required to explain how the electronic human resource management system is used in the university's various human resource functions. The interviewers were expected to state the challenges that their employees faced when using E-HRM. Finally, they were asked to give some recommendations for use of E-HRM within the human resource management functions at their institution. The researcher conducted a pilot study before the final survey was carried out.

3.4.1.4 Pilot Study

The questionnaires and interview questions were preliminarily tested with a few human resource staff members of the six (6) universities. According to Yin (2003:79), “a pilot study is an important part of the quantitative research process”. It revealed that some items were missing in the questionnaire, which needed to be included. There was a need to make corrections to the piloted questionnaire before floating it to the participants, in order to be able to measure quality and validity. There are few delimitations and delineations to the study at hand.

3.4.2 Validity and Reliability

Psychometric properties are done to check if a particular technique that is used in the research is applied repeatedly to the same object that will yield the same result each time that it is used (Babbie, 2013:152). It is defined as the quality of measurement methods that suggest that the same data was collected each time in repeated observations of the same phenomenon (Babbie, 2007:143). The most important criterion of research is validity (Bryman, 2004:28). Validity is concerned with the integrity of the conclusion that is generated from a piece of research (Bryman, 2004:28). It can be defined as a term, which describes a measure that accurately reflects the concepts that it intends to measure (Babbie, 2013:154).

3.4.2.1 Reliability

To ensure reliability of the findings, a collection of literature was reviewed to define the problem, aims and objectives of the study. This gave the researcher insight into the methodological and theoretical lapses of the existing studies within this subject. It also served as a guide to design the methodological approach that was used for this research. Conversely, similar questions were asked both in the interview and in the questionnaires for the different universities that were used for the study. This would ensure accuracy and consistency in the findings. Reliability methods that were employed in this study include: Levene’s test of equality of variance; T-test; internal consistency; and Cronbach’s alpha test.

Also, in the process of selecting the universities for the study, the researcher chose three universities from South Africa, which comprised of a comprehensive, traditional and technology university. This would ensure accuracy and consistency in the findings. In addition, three universities were selected from Nigeria, which included a federal, state and the private university. This was done in consideration to the first, second and third generational universities in Nigeria. However, the sample size that was used for the study was precisely the same to ensure credible representation of the views and opinions of the larger population that was used for the sample. Finally, all the participants in the study passed through the same selection process. This was to ensure accuracy of the data that was obtained from the participants. The validity of the study was also measured.

3.4.2.2 Validity

Validity of the study was done by establishing the chain of evidence throughout the data collection process; by presenting informants with a draft of the study for review (Munhall, 2010:390). The validity test received approval via the research proposal by the Higher Degrees Committee of the university as a suitable project, which is fit for a Doctorate Degree in Human Resource Management, as it will contribute to the body of knowledge. Also, this research has achieved the purpose for which it was meant for, which is to propose a comprehensive model for proper implementation and utilization of the E-HRM system as a decision-making tool for human resource management functions at universities. In other words, to realise this purpose, the researcher involved all human resource professionals at the six universities to participate in the survey. The approach that was employed for this study includes construct, and content validity. Content validity was employed in data analysis to measure the percentage of respondents in the research. Construct validity was based on the logical relationship of the variables in the Cronbach's alpha test, T-test and Levene's test. This was used to compare the variables.

Furthermore, to ensure that the sampled population was representative of all the universities in South Africa and Nigeria, the researcher ensured that participants were selected from different types of universities both in South Africa and Nigeria. In addition, questions for the interviews and the questionnaire survey were carefully designed to ensure that the research

questions and objectives were reflected in the questions to align with the purpose of the study. The researcher's supervisor also reviewed the questions for credibility. This was to ensure that respondents did not have any problems responding to the questions. Interviews were conducted to improve the quality of the research.

3.5 Delineation of the Research

This research was limited to six universities: three in South Africa, which included a comprehensive, traditional and technology University, and three in Nigeria, which included a federal, state and private university. Furthermore, the research only extended to university staff members, namely in the human resource department and some selected academic and non-academic staff members at the universities. Both full-time and part-time workers were used for the survey, with the exception of those who did not have at least one year working experience at the university. Ethical clearance was undertaken to ensure that the names of the universities, which were used for the survey would not be mentioned in the write ups.

3.6 Ethical Concerns/Ethical Clearance

The researcher obtained permission from the six (6) universities to allow her to conduct the research at their institution. This was done by sending consent letters via email to the HR directors of the six universities, informing them about the research. The objectives of the research were also explained to them in the email. The data that was collected was used for the purpose of this research. The names of the respondents were not mentioned in the questionnaires to ensure confidentiality and anonymity. The respondents were advised to withdraw at any time that they wanted to, since it was optional for them to answer the questions, in which case their data was destroyed.

Meetings were arranged telephonically and via emails with the different HR directors of the six (6) universities to discuss the nature of the research, and to obtain their cooperation and assistance for the survey. Timeframes for scheduling interviews and administering questionnaires were also discussed. The participants were informed that the data that was collected was only for the purpose of the research. The following are some parameters, which were considered in the ethical clearance.

Researchers are expected to be practical in the designing and performing of research. This is to ensure that the dignity and privacy of individuals who are involved in the research are protected (NHRPAC, 2002:1). Cognisance was taken of participants who might want to withdraw from the research. The researcher sought the consent of the participants to arrange for a time for the distribution and collection of the questionnaires. The researcher would not alter the communicated scope of the research without informing the participants and re-negotiating access with the participants. The level of confidentiality and anonymity that is offered to the research participants should be maintained with respect to the type of research that is conducted, namely qualitative and quantitative. No participant should be forced to participate in a survey.

3.6.1 Confidentiality

It is important to note that at every stage of the research process confidentiality should be recognized and considered. Such stages include the initial design; identification; consent process for the study population; analysis and publication of dissemination of data and results (NHRPAC, 2002:2). The participants were assured that the collected data would remain confidential. Their names would not be mentioned both in the questionnaires and in the research. Again, no information, which was released by them would be detrimental to their work, or released in their workplace.

3.6.2 Anonymity

Participants were informed that their names were not required in the questionnaires and interview questions. Again, the human resources directors and managers of the universities were assured that no survey data will be made available to the public in identifying the name of the institution or the names of any participants. According to Clark (2006:3), the anonymity and privacy of those that participated in the research should be respected and their personal information kept confidential.

3.6.3 Informed Consent

The human resource directors and managers were informed of the nature of the questionnaires and the interview questions. The same was given to them as a preview. The participants were also informed that their participation should be voluntary and that they are free to withdraw at any stage, in which case their data would be destroyed. Furthermore, they were not obligated to answer any questions with which they were not comfortable.

3.6.4 De-Briefing

The HR directors and managers were offered an option to receive follow-up information about the research results. Contact details were provided by the researcher in the questionnaire for follow-up meetings and to forward the questionnaires. The benefit of the research was also made known to the participants. Debriefing in research refers to the qualitative process, whereby feedback is sought from the interviewers about interviews that were conducted in the survey process (Lavrakas & Kelly, 2008: 806).

3.7 Data Analysis Procedure

The previous section discussed methods that were used in the data collection. Studies have revealed that data alone cannot give answers to a research problem (Skilling & Sivia, 2006:148). In order to see patterns and trends in the data, they must be analysed and interpreted (Skilling and Sivia, 2006:148). Data analysis enables the researcher to determine the best course of action, and the decision is based on interpretation of the information (Guerrero, 2010:56). This research involved two research methods, namely quantitative and qualitative. This means that data was also collected by using interviews and a questionnaire (survey), which was later analysed.

3.7.1. Qualitative Data Analysis

The qualitative research method evaluates selected topics in depth and in detail (Rossman & Marshall, 2010:2). Qualitative studies gain insight into people's attitudes, concerns, aspirations and lifestyles. They are used to inform business decisions, policy formation, communication and research (Njomo, 2011:156). Face-to-face in depth interviews were

conducted and they were analysed by using content analysis. Content analysis consists of three types: summarizing content analysis; explicative content analysis; and structural content analysis. For this research, structural content analysis was used to analyse data from the interview questions. This enabled the researcher to answer the research questions and to find solutions for the research objectives explicitly.

3.7.2 Quantitative Data Analysis

The vehicle that was used to collect quantitative data was closed-ended structured questionnaires. The data that was collected was analysed by using the statistical package for the social sciences (SPSS). The coded responses were captured on a Microsoft Excel spreadsheet, which was converted into an SPSS data sheet. The demographic profiles of the participants were captured to determine the demographic structure of the sample. The data that was captured was presented by using tables, pie charts and bar graphs. The tables constitute frequencies, and percentages. Statistical inferences were used in this study to draw inferences from the samples that were collected, and to generalize it to the whole population. Equally, systematic stratified random sampling was used and so statistical tests such as the Pearson's chi square test were used to gauge the confidence of the generalization, and to determine if there are significant differences between the expected frequencies and the observed frequencies in the total population. Chi square is a non-parametric test of statistical significance for bivariate tabular analysis (Flick, 2011:144). The non-parametric test enables the researcher to know the degree of confidence that can be accepted or rejected. Moreover, this study is a comparative study and the analysis of variance was used to know whether there will be significant differences between the comparisons that are made.

3.8 Limitations of the Study

There were a few challenges that the researcher faced while conducting this research. Some university staff members were not interested in the study so they decided to either participate partly or not at all. As was stated in the ethical consideration section, participants' data was destroyed when they did not participate fully or withdrew from the research, at any stage. This was to ensure that the data was valid and reliable. Again, it was not easy to find respondents. Nevertheless, the researcher relied on recommendations for the survey and the

interviews. Also, the researcher ensured that the questions were explained clearly to participants. Furthermore, the researcher spent a lot of money by repeatedly travelling from one university to another to make contact in order to obtain permission for the distribution of the questionnaires, and to conduct interviews with the HR directors and managers. In addition, some of the HR directors and managers were not available to meet the researcher at the interview time, which led the researcher to repeatedly contact them via email and telephone to request another appointment.

3.9 Chapter Summary

This chapter presented the methods that were used to acquire, interpret and analyse the data. The two types of research methods that were used have been discussed in detail, namely qualitative and quantitative analysis. The population that was sampled and the sampling size were also discussed. Different stages of collecting, capturing, presenting and analysing the data were also explained. Hence, discussions with the researcher's supervisors were deemed to be vital, and contributed hugely to the data analysis process.

Additionally, the data that was collected and analysed assisted the researcher to define the problem, background, aims and methodology of the research. The two research instruments, which were used, were interview questions and survey questionnaires, which were analysed by using content analysis and SPSS. Finally, inferences were drawn from the analysis. The next chapter discusses data analysis and results.

Chapter four
DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter provides an analysis of the data and results of the research. The analysis is descriptive and explanatory. The descriptive analysis approach was used for both the demographic and research data from the quantitative data collection, while the explanatory study was used for content analysis of the interview questions. The questionnaires, interviews and other documents were assessed to obtain results for the research. Hence, the evidence is analysed in detail and interpreted in relation to the key research objectives of the study, which included proposing a comprehensive model for proper implementation and utilization of electronic human resource management (E-HRM) as a decision-making tool for human resource management functions in universities. This was done by using both content analysis and statistical inferences. Data cleaning and coding was done for easy interpreting, classifying and recording of data.

4.2 Data Cleaning and Coding

Data was collected from six universities; three South African universities and three Nigerian universities. The raw data that was collected was captured into an Excel spread sheet before being transferred to Statistical Package for Social Sciences (SPSS). The data was arranged according to the individual universities and coded in numbers 1,2,3,4, and so on, both vertically and horizontally according to their numbers in the questionnaires. Descriptive statistics, frequency tables and bar graphs were used to compare the data that was collected and to draw conclusions. Closed questions were used with limited responses allowed for a simple, straightforward analysis and generation of graphs to graphically illustrate information. The questionnaires were divided into two sections; demographic and research sections. The demographic and research sections were captured separately to enable the researcher to conduct proper analysis. Detailed analysis was done with the quantitative data to enable the researcher to relate the analysis to the research topic. The coding process was thoroughly checked several times and at random to ensure that the process was error free. Other statistical packages such as Pearson Chi-square, T-test, and Levene's test were used for the analysis. In order to make it easier for the researcher, some of the data was merged into one object such as

‘agree’ and ‘strongly agree’ to be ‘agreed’ for easy discussion and explanation. The data was represented in tables and figures and was coded for easy recognition and discussion.

4.3 Data Presentation

This chapter also presents the different categories in the questionnaires, which concern the different functions of human resource management (HRM) in line with the utilization of electronic human resource management (E-HRM) in the different universities. The presentations appear in the form of tables, charts, and histograms. Each category contains items that describe its level in the utilization of E-HRM within HRM functions. These items are presented in the form of a likert scale. Furthermore, the items’ categories are arranged, as mentioned above, in two different sections: demographic and research sections. Datawas presented in tables with their frequencies and percentages. Cross-tabulation and statistical inferences were used to establish relationships between the two countries’ data.

4.3.1 Frequency Distribution

Frequency distribution is a table that displays how many times each response occurs in a data set (Price, 2000:50). It is also a description of the number of times the various attributes of a variable are observed in a sample (Babbie, 2014:442). Frequency distribution also measures and presents the way in which single variables are distributed within a group of sampled individuals. The collected data was completed to give a percentage of each response. The scores were displayed from top to bottom in ascending order with the help of the Statistical Package for Social Sciences (SPSS) data capturing method.

4.3.2 Cross-Tabulation

This is a statistical technique that establishes an independent relationship between two tables of values, but does not identify a causal relationship between the values (Singleton & Straits, 2005:467). They further added that it is also known as a two-way tabulation. It is used to analyse the results of a survey.

4.3.3 Statistical Analysis

From the 900 questionnaires that were distributed in the six universities (150 for each university) via hand delivery and e-mail, a total of 611 responses were returned, of which 83 responses were e-mailed back and 528 responses were hand collected. A total of 47 respondents participated in the interviews, making a total of 658. This shows a percentage of 73% responses. Statistical analysis implies the use of frequency tables, bar charts, pie charts and histograms, which the researcher made use of in this study. It also ensures accurate data analysis, hence the researcher made use of the questionnaires. The questionnaires were divided into different sections (Refer to Appendix A, B and C),starting with Appendix A, which was divided into two parts, namely demographic and research questions. The questions that were asked were mainly regarding the utilization of electronic human resource management (E-HRM) in selected universities within South Africa and Nigeria. The following are the results of the collected data.

4.4 Research Results of Closed-Ended Questions

4.4.1 Demographic section

Demographic data was collected to identify the number of respondents: their age, gender, work experience, qualifications; race and so on This was also to enable the researcher to identify different views of employees in the study.

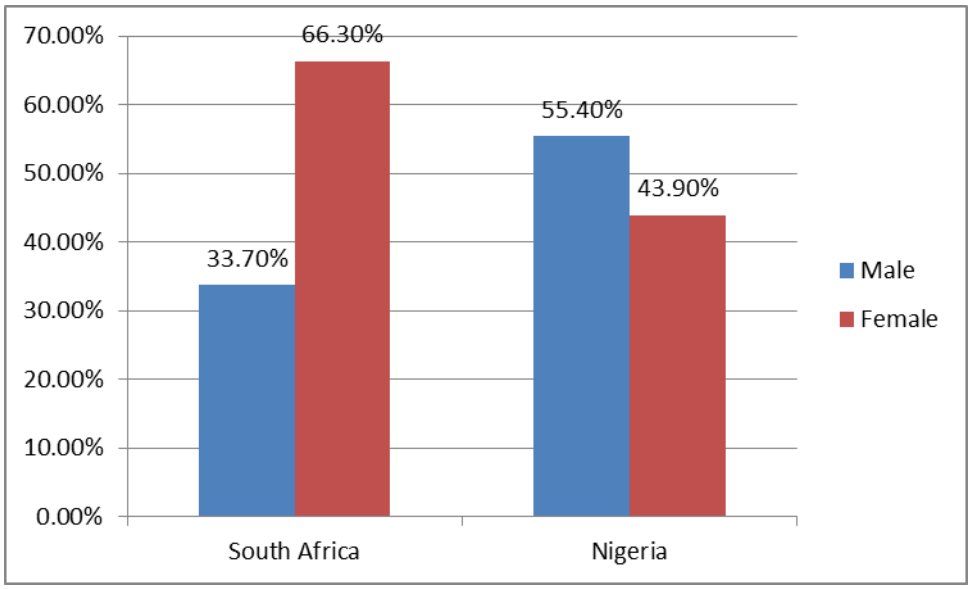
4.4.1.1 Different countries that participated in the survey

The total number of the universities that were used for this research was six. Different universities were used for validity and reliability of the results. These universities were chosen according to the different types of universities in the different countries. Furthermore, for ethical reasons, the universities were represented by their countries and alphabets as country A and country B. The table below shows that only two countries were involved in this survey.

Table 4: Country

Country A	South Africa
Country B	Nigeria

4.4.1.2 Gender representation of respondents



(n= 306 + 305)

Fig. 4.1: Gender representation of respondents

The above figure shows the gender representation of the South African and Nigerian respondents. In the South African universities, 33.7% males responded, while 66.3% females responded. This shows that female staff members responded more than male staff members, which perhaps reflect the high number of females who were available at the time of the survey. In the Nigerian universities, 55.4% males responded, while 43.9% females responded. This shows that the number of male respondents was higher than the female respondents. This could be as a result of the male staff members present in the office during the time of the survey, and it could perhaps reflect the high number of male staff members in the universities. Representation in terms of the age category follows.

4.4.1.3 Age range of the university respondents

Table 4.1a: Age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20	1	.3	.3	.3
	20 - 24	25	8.2	8.2	8.5
	25 - 29	48	15.7	15.7	24.2
	30 - 34	58	19.0	19.0	43.1
	35 - 39	44	14.4	14.4	57.5
	40 - 44	51	16.7	16.7	74.2
	45 - 49	34	11.1	11.1	85.3
	50 - 54	20	6.5	6.5	91.8
	55 - 59	18	5.9	5.9	97.7
	60 or more	7	2.3	2.3	100.0
	Total	306	100.0	100.0	

Country A= South Africa (n=306)

Table 4.1b: Age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 – 24	6	2.0	2.0	2.0
	25 – 29	30	9.8	9.9	11.9
	30 – 34	52	17.0	17.2	29.0
	35 – 39	55	18.0	18.2	47.2
	40 – 44	46	15.1	15.2	62.4
	45 – 49	36	11.8	11.9	74.3
	50 – 54	43	14.1	14.2	88.4
	55 – 59	25	8.2	8.3	96.7
	60 or more	10	3.3	3.3	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

Country B = Nigeria (n=305)

The basis of this information was to determine the age range of the university workers. In country A, the table shows that 19% of respondents who were between the ages of 30-34 years, had the highest responses, followed by 16.7% of respondents between the ages of 40-44 years, and so on. In country B the table shows that 18% of respondents were between the ages of 35-39 years and had the highest responses, followed by 17% of respondents between the age of 30 -34 years, and so on. This could mean that a majority of the university staff

members were between the ages of 30- 44 years. It could also mean that there were more respondents of this age group available at the time of the survey owing to the fact that they had the highest frequency and percentages. The population groups are presented below.

4.4.1.4 Different population groups represented in the survey

Table 4.2a: Population group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	80	26.1	26.3	26.3
	Black	115	37.6	37.8	64.1
	Coloured	88	28.8	28.9	93.1
	Indian	17	5.6	5.6	98.7
	Others	4	1.3	1.3	100.0
	Total	304	99.3	100.0	
Missing	System	2	.7		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.2b: Population group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	5	1.6	1.7	1.7
	Black	295	96.7	97.6	99.3
	Coloured	0	0	0	99.3
	Indian	2	.7	.7	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

Country = Nigeria (n=305)

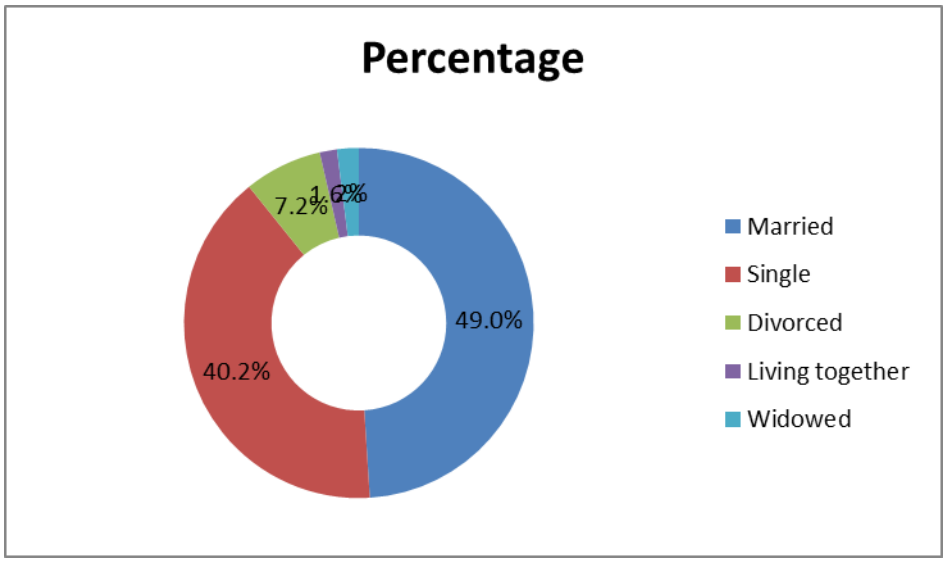
The main reason for checking the population group of the university staff members was to determine if there were inequalities among the university workers and to know, which population group is dominant. In country A, the table shows that Blacks out-numbered the other races with 37.6% of the respondents. There are 26.1% White respondents and 28.8%

Coloured respondents, and so on. While it can be said that since the percentages do not have much differences, those were the numbers present at the time of the survey. Again one could assume that there are more Blacks than White, Coloured and Indians in the universities, which were used for the survey.

It is important to note that few Whites and Indians were represented in the table because there were few in the universities that were used for the research. The Coloured are assumed to be Black in some cultures. According to Nigerian culture, there are half casts who were referred to as Blacks because they are not a major group in Nigeria.

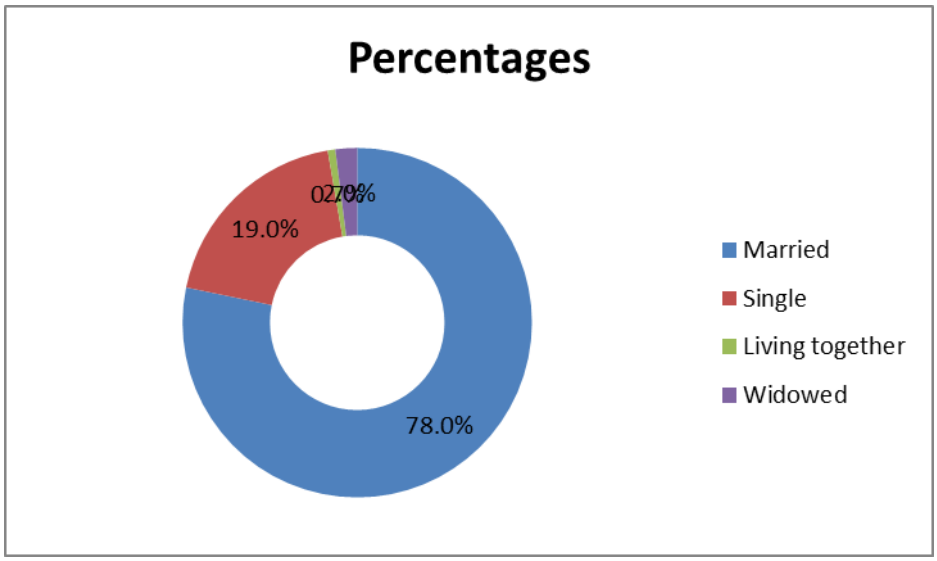
Furthermore, in country B, the table shows that Blacks also out-numbered the other races with 96.7% of the respondents. This means that Blacks dominate in country B universities because of the high percentage of respondents other than Whites, and Indians. The total number of the population that participated during the survey enabled the researcher to obtain enough information regarding the utilization of electronic human resource management (E-HRM) in the surveyed universities. However, data that was provided by all the racial groups was important for the study's empirical survey. Respondents' marital status is presented below.

4.4.1.5 Marital status of the respondents



Country A = South Africa (n=306)

Fig.4.2a: Marital status



Country B = Nigeria (n=305)

Fig. 4.2b: Marital status

The marital status of respondents was taken to establish the marital status of the university workers. In country A, it was found that 49% of respondents were married; 40.2% of respondents were single, and so on. While in country B, 78% of respondents were married and 19% of respondents were single, and so on. There is 0.3% missing data. The education levels of the university employees who participated in the survey are shown below.

4.4.1.6 Education levels of the university employees' representation in the survey

Table 4.3a: Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	1	.3	.3	.3
	Secondary	45	14.7	14.8	15.1
	Tertiary	259	84.6	84.9	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.3b: Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	5	1.6	1.7	1.7
	Secondary	29	9.5	9.6	11.3
	Tertiary	268	87.9	88.7	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

Country B = Nigeria (n=305)

Education levels of respondents were gauged to determine their different levels of education, as this could affect their knowledge of understanding and utilization of electronic human resource management (E-HRM). It is illustrated above that most of the respondents in country A had a tertiary education with 84.6% of respondents, which is advantageous to the study that was undertaken. A total of 14.7% of respondents ended their formal education at secondary school level, while 0.3% of respondents ended at a primary school level. About 0.3% of respondents did not answer the question. This shows that most university staff members in country A are educated enough to be able to participate in the study and were able to understand the utilization of electronic human resource management. In country B, 87.9% of respondents had tertiary education, 9.5% had secondary education, and 1.6% had primary education. This also showed that most university staff members in country B had tertiary education, and would be able to understand the survey at hand. A total of 1.0% of respondents did not answer the question. Below is the university staff members' qualifications represented.

4.4.1.7 University staff members' qualifications

Table 4.4a: Qualification obtained

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academic	194	63.4	63.4	63.4
	Non-academic	112	36.6	36.6	100.0
	Total	306	100.0	100.0	

Country A = South Africa (n=306)

Table 4.4b: Qualification obtained

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academic	185	60.7	61.1	61.1
	Non-academic	118	38.7	38.9	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

Country B = Nigeria (n=305)

A total of 63.4% of respondents hold academic qualifications; 36.6% of respondents have non- academic qualifications in country A, while a total of 60.7% of respondents hold academic qualifications and 38.7% of respondents have non-academic qualifications in country B. In order to ascertain the highest level that the employees obtained academically, their qualifications were obtained, and to determine the level of competence of the university staff members. A total of 0.7% of respondents did not answer the question.

4.4.1.8 Respondents' level of employment

Table 4.5a: Level of employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Senior Management	19	6.2	6.3	6.3
	Middle management	99	32.4	32.8	39.1
	Junior employee	184	60.1	60.9	100.0
	Total	302	98.7	100.0	
Missing	System	4	1.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.5b: Level of employment

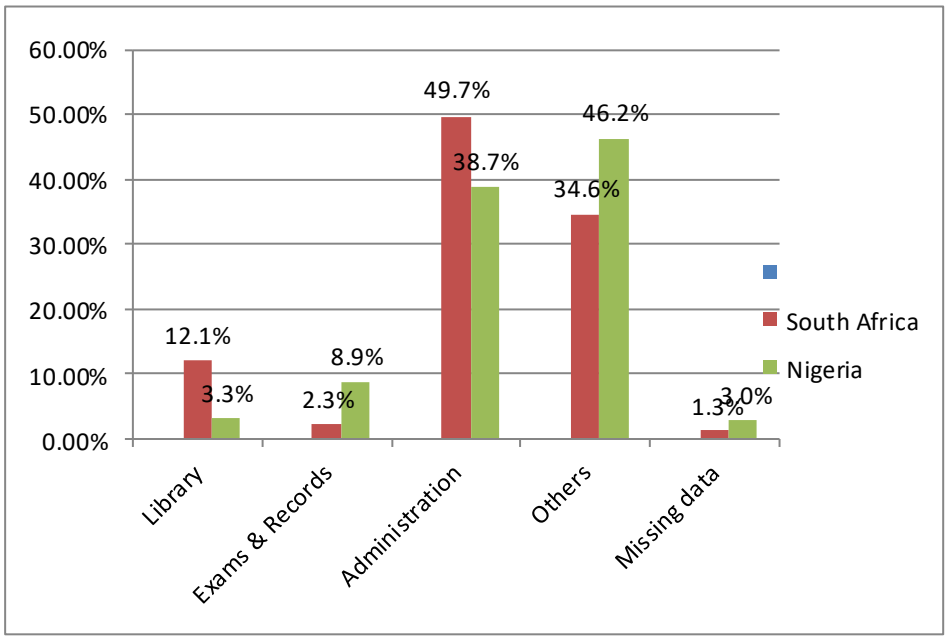
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Senior Management	111	36.4	37.2	37.2
	Middle management	118	38.7	39.6	76.8
	Junior employee	69	22.6	23.2	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

Country B = Nigeria (n=305)

The levels of employment of the university workers were taken to ascertain their understanding of the study at hand. It was found that in country A, the highest respondents were the junior workers with 60.1% of respondents, followed by middle management with 32.4% of respondents and 6.2% of respondents from the senior management levels. This shows that the junior employees made themselves available to respond to the questionnaires more so than middle and senior management. In country B, middle management responded more with 38.7% of responses, which can be compared with that of senior management with 36.4% of respondents. A total of 22.6% of respondents comprised junior employees. This shows that respondents in country B made themselves almost equally available to respond to the questionnaires.

A high percentage of the respondents in the South African universities were from junior employees. The reason could be that they were the ones in the office at the time of the survey, and that senior management were in meetings and/or other engagements. The data from the Nigerian universities showed that most of the responses came from senior management and middle management compared to junior employees. This could be because senior and middle management were around during the survey. The researcher views this positively because these senior and middle managers are more likely to present more reliable and viable information.

4.4.1.9 The different university departments of the respondents



(n=306 +305)

Fig. 4.3: University departments

The above figure indicates that several university departments participated in the survey in both countries. The reason for surveying the different university departments was for validity and reliability of the results of the research. Again, this was to measure equality of the different departments that participated. In the South African universities, 12.1% of respondents were from the library; 2.3% of respondents from the exams and records department; 49.7% of respondents were administrative officers and 34.6% of respondents were from other departments, mostly lecturers. Electronic human resource management (E-HRM) mostly used by the administrative officers, few lecturers and human resource staff members. To enable the researcher to obtain accurate information on the use of this system, more administrative officers were used apart from human resource staff members. In the Nigerian universities, the highest number of respondents was from the other departments with 46.2% of respondents; followed by administrative officers with 38.7% of respondents. A total of 8.9% of respondents were from the exams and records department, and 3.3% of respondents were from the library. Respondents' work experience was necessary for this survey in order for the researcher to interview the right people who could give reliable and accurate information on the utilization of E-HRM in the universities.

4.4.1.10 Respondents' work experience at the university

Table 4.6a: Work experience at university

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than1 year	2	.7	.7	.7
	1 - 2 years	66	21.6	21.7	22.4
	3 - 5 years	76	24.8	25.0	47.4
	6 - 9 years	44	14.4	14.5	61.8
	10 - 14 years	57	18.6	18.8	80.6
	15 years or above	59	19.3	19.4	100.0
	Total	304	99.3	100.0	
Missing	System	2	.7		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.6b: Work experience at university

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 - 2 years	43	14.1	14.2	14.2
	3 - 5 years	55	18.0	18.2	32.3
	6 - 9 years	66	21.6	21.8	54.1
	10 - 14 years	42	13.8	13.9	68.0
	15 years or above	97	31.8	32.0	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

Country B = Nigeria (n=305)

Employees' work experience was necessary to determine how well the university workers know their institutions, and also to determine how much the staff members know about the use of electronic human resource management (E-HRM) in their institution. In country A, the highest percentage of work experience amongst employees was 24.8%, which equals between 3 -5years of age. This means that most of the staff members had between 3 – 5years of work experience. The required age limit that is qualified to participate in this survey was one year and above. This is to ascertain accuracy of the survey results. Only 0.7% of respondents participated in country A, who had less than one year work experience in the university environment. There is 0.7% of missing items. In country B, 31.8% of respondents had from 15 years and above work experience in the university environment. This could help the researcher to obtain more accurate and reliable survey results. A total of 0.7% of respondents

did not answer the question. The employment type of the respondents was surveyed to ascertain the different types of employment, which are found in the universities. Below are the employment types of the respondents.

4.4.1.11 Employment type of the respondents

Table 4.7a: Type of employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Casual employment	6	2.0	2.0	2.0
	Part-time employment	41	13.4	13.4	15.4
	Full-time employment	258	84.3	84.6	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.7b: Type of employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Casual employment	15	4.9	5.0	5.0
	Part-time employment	7	2.3	2.3	7.3
	Full-time employment	281	92.1	92.7	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

Country B = Nigeria (n=305)

Employees' type of employment was noted, amongst others, to ascertain the different types of employment found in the university environment, and to know the employment type of the respondents as well. Three employment types were noted, namely casual, part time and full time. In country A, 2% of respondents were casual workers; 13.4% of respondents were part time staff members, and 84.3% of respondents were full time staff members of the university. Full time staff members had the highest response rate. This shows that most university employees that participated in the survey were full time employees. A total of 0.3% of respondents did not answer the question. In country B, 4.9% of the respondents were casual staff members; 2.3% of the respondents were part time staff members and 92.1% of respondents were full time staff members. This also shows that most employees who were sampled were full time staff members of the university. A total of 0.7% of respondents did not

answer the question. Apart from the demographic data, the researcher also conducted a survey on the research items, which are shown below.

4.4.2 Data analysis for closed-ended questions

Research was conducted to find out the extent of utilization of electronic human resource management (E-HRM) in the two countries (A & B).

4.4.3 Objectives of the Study

The objective of this study was to determine the extent of utilization of electronic human resource management (E-HRM) amongst selected universities of South Africa and Nigeria. The study also intended to determine the effect of utilizing the human resource software to support well-articulated and aligned business goals across all human resource functions in both the South African and Nigerian universities. There was a need for the researcher to investigate the value adding benefits of E-HRM within the human resource management functions of the selected universities. Again, the mediators that had affected the relationship between E-HRM and information tools and decision-making quality were evaluated. Finally, the author proposed a comprehensive model for proper implementation and utilization of E-HRM as a decision-making tool for the human resource management functions in universities.

4.4.4 Data Transformation

Exploratory data analysis was used in this section to lend visual interpretation to the research project and the data analysis such as bar graphs, pie charts and tables. Descriptive statistics were also used in order to give the analysis a quantitative element. This reduces the difficulty of forming explanations and deductions that are observed from the data (Saunders *et al*., 2009: 62). The next paragraph deals with the results of the research data that was collected from the field.

4.4.5 Results of the Study

All the questions were explained and evaluated to determine the links to the research objectives, as well as to explore the association between the primary and secondary data. The following data was obtained from the survey. This section was divided into six categories.

4.4.6Category 1: General questions on the use of electronic human resource management (E-HRM)

4.4.6.1: I regularly use the services of the human resource department

Table 4.8a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	33	10.8	10.8	10.8
	Disagree	59	19.3	19.3	30.2
	Not applicable	37	12.1	12.1	42.3
	Agree	138	45.1	45.2	87.5
	Strongly agree	38	12.4	12.5	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.8b: I regularly use the services of the human resource department

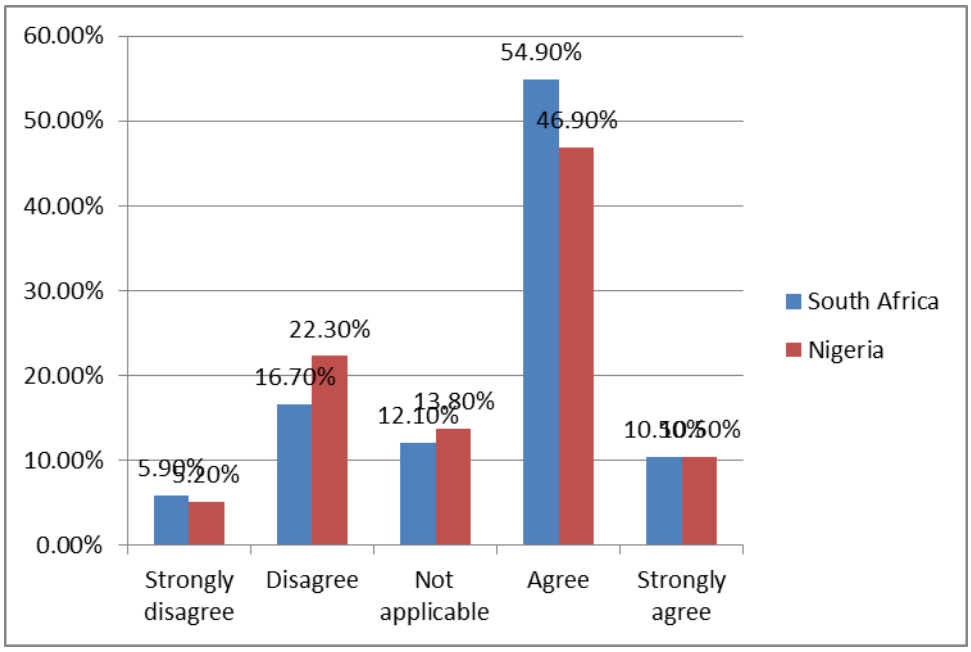
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	24	7.9	8.0	8.0
	Disagree	45	14.8	15.1	23.1
	Not applicable	48	15.7	16.1	39.1
	Agree	144	47.2	48.2	87.3
	Strongly agree	38	12.5	12.7	100.0
	Total	299	98.0	100.0	
Missing	System	6	2.0		
Total		305	100.0		

Country B = Nigeria (n=305)

The reason for this question was to know how often university employees visit the human resource department. This would also show the level of their understanding about the use of electronic human resource management (E-HRM). The above table shows that country A has 10.8% of respondents saying that they strongly disagree that they regularly use the services of the human resource (HR) department, and 19.3% of respondents say that they disagree, which totalled 30.1% (10.8% plus 19.3%). A total of 45.1% of respondents agreed and 12.4% of respondents strongly agreed, totalling 57.5% (45.1% plus 12.4%) who agreed that they regularly use the services of the Human Resource Department. About 12.1% said that it was

not applicable to them. A total of 0.3% of the respondents did not answer this question. In country B, 7.9% of respondents strongly disagreed that they use the HR services, and 14.8% of respondents disagreed, which makes a total of 22.7% (7.9% plus 14.8%). A total of 47.2% of respondents agreed that they regularly use the services of the HR department and 12.5% of respondents strongly agreed, making a total of 59.7% (47.2% plus 12.5%) who agreed that they make use of the HR services. A total of 15.7% of respondents said that it was not applicable to them. There are 2.0% missing items. Based on the responses, it can be said that the at least half of the university staff members utilise the human resource (HR) department often. This could prove the accuracy of the result.

4.4.6.2: I normally receive an effective and efficient service from HR staff members



(n=306=305)

Fig. 4.4: I normally receive an effective and efficient service from HR staff members

The basis of the above question was to find out if the human resource (HR) staff members offer an effective and efficient service to their colleagues, and the students. It gauged whether this value adding benefit of E-HRM is present in these institutions. In the South African universities, 5.9% of respondents strongly disagreed that they receive effective and efficient services from HR staff members, and 16.7% of respondents disagreed, making a total of 22.6% (5.9% plus 16.7%). A total of 54.9% respondents agreed that they receive an efficient

and effective service from HR staff members, and 10.5% of respondents strongly agreed, making a total of 65.4% (54.9% plus 10.5%) who agreed that they receive an efficient and effective service from HR staff members. In the Nigerian universities, 46.9% of respondents agreed that they receive an efficient and effective service from the HR staff members, and 10.5% of respondents strongly agreed that they receive an efficient and effective service from HR staff members, making a total of 57.4% (46.9% plus 10.5%). A total of 5.2% of respondents strongly disagreed that they receive efficient and effective services from HR staff members, and 22.3% of respondents disagreed, making a total of 27.5% (5.2% plus 22.3%) who disagreed that they receive efficient and effective services from HR staff members. A total of 13.8% said that it was not applicable to them, and 1.3% of respondents did not answer the question. It is important to note that a majority of the respondents agreed or strongly agreed. The positive response shows that HR staff members offer an effective and efficient service to their colleagues and the student which is regarded as a value added benefit of the use of E-HRM in these institutions.

4.4.6.3: I received quick service from the human resource employees on visiting their office

Table 4.9a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	3.3	3.3	3.3
	Disagree	30	9.8	9.8	13.1
	Not applicable	57	18.6	18.7	31.8
	Agree	167	54.6	54.8	86.6
	Strongly agree	41	13.4	13.4	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

Country A= South Africa (n=306)

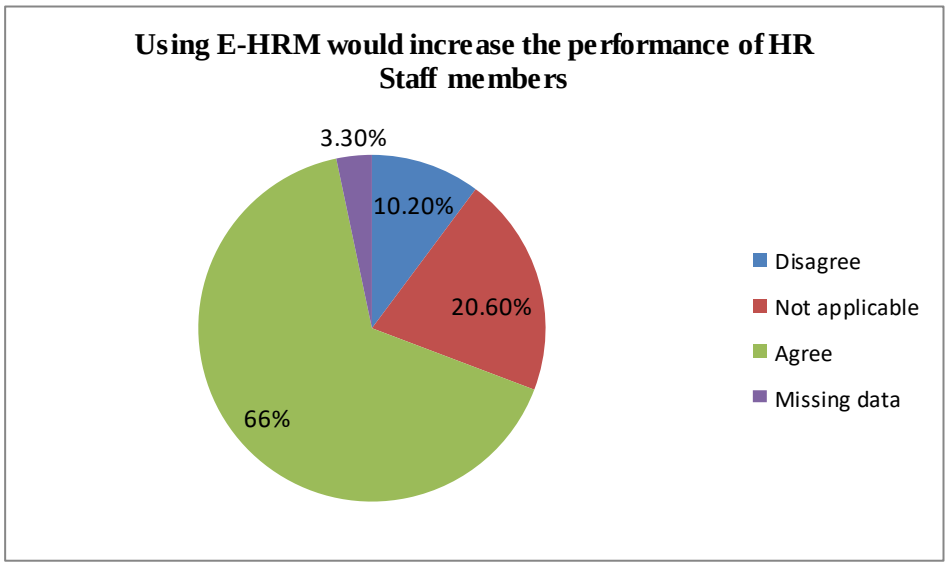
Table 4.9b: I received quick service from the human resource employees on visiting their office

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	24	7.9	8.0	8.0
	Disagree	71	23.3	23.6	31.6
	Not applicable	45	14.8	15.0	46.5
	Agree	128	42.0	42.5	89.0
	Strongly agree	33	10.8	11.0	100.0
	Total	301	98.7	100.0	
Missing	System	4	1.3		
Total		305	100.0		

Country B = Nigeria (n=305)

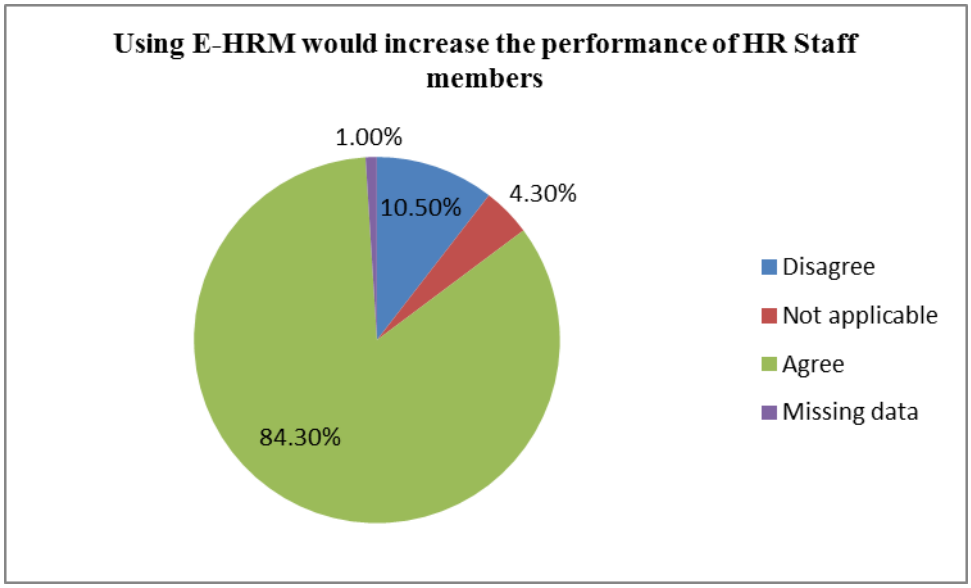
The researcher also asked if respondents received quick service from the HR employees. This determined if the HR staff members deliver quick service to their colleagues, students and stakeholders. The results indicate that 3.3% of respondents from country A said that they strongly disagreed with the statement, and 9.8% of respondents said that they disagreed with the statement, which totalled 13.1% (3.3% plus 9.8%). A total of 54.6% of respondents agreed with the statement, and 13.4% of respondents strongly agreed with the statement, which totalled 68% (54.6% plus 13.4%). In country B, 7.9% of respondents strongly disagreed with receiving quick service from the HR staff members, and 23.3% of respondents disagreed with the statement, which totalled 31.2% (7.9% plus 23.3%). A total of 42% of respondents agreed that they received quick service from the HR staff members, and 10.8% of respondents strongly agreed with the statement, which totalled 52.8% (42% plus 10.8%). A total of 14.8% said that they were not certain if they received quick service or not from the HR staff members. The cumulative percentage of those who strongly agreed and agreed is substantially greater than the cumulative percentage of those who strongly disagreed and agreed. This indicates that value adding benefits, which are associated with the use of E-HRM in the area of helping HR staff members to deliver quick service to their colleagues, students and their stakeholders, are present in these universities.

4.4.6.4: Using E-HRM would increase the performance of HR staff members



Country A = South Africa (n=306)

Fig. 4.5a: Using E-HRM would increase the performance of HR staff members



Country B = Nigeria (n=305)

Fig. 4.5b: Using E-HRM would increase the performance of HR staff members

The rationale for this information was to determine whether E-HRM improves the job performances of HR staff members and to know if it supports the business goals of human resource management employees in the universities. In country A 3.3% of respondents strongly disagreed with the fact that the use of E-HRM would improve their job performance, and 6.9% of respondents disagreed, which totalled 10.2%. A total of 43.1% of respondents

agreed that the use of E-HRM would improve their job performance, and 22.9% of respondents strongly agreed, which totalled 66% (43.1% plus 22.9%). A total of 3.3% did not answer the question. In country B, 4.6% of respondents strongly disagreed that the use of E-HRM would improve their job performance, while 5.9% of respondents disagreed, making a total of 10.5% (4.6% plus 5.9%). A total of 44.3% of respondents agreed that the use of E-HRM would improve their job performance and 40% respondents strongly agreed, making a total of 84.3% (44.3% plus 40.0%) who agreed that the use of E-HRM would improve their job performance. A total of 1.0% of respondents did not answer the question. It is important to consider the use of E-HRM to improve the work performances of HR staff members as a business goal for HR staff members. The cumulative percentage of those who strongly agreed and agreed is substantially higher than the cumulative percentage of those who strongly disagreed and disagreed. This indicates that the use of E-HRM improves the work performance of HR staff members, and is aligned to the business goal of HR employees in the universities.

4.4.6.5: HR is an active participant in an organization's renewal, change, and transformation activities

Table 4.10a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	16	5.2	5.3	5.3
	Disagree	30	9.8	9.9	15.2
	Not applicable	37	12.1	12.3	27.5
	Agree	159	52.0	52.6	80.1
	Strongly agree	60	19.6	19.9	100.0
	Total	302	98.7	100.0	
Missing	System	4	1.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.10b: HR is an active participant in an organization's renewal, change, and transformation activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	3.6	3.6	3.6
	Disagree	12	3.9	3.9	7.6
	Not applicable	17	5.6	5.6	13.2
	Agree	156	51.1	51.3	64.5
	Strongly agree	108	35.4	35.5	100.0
	Total	304	99.7	100.0	
Missing	System	1	.3		
Total		305	100.0		

Country B = Nigeria (n=305)

The rationale for this information is to determine whether the HR department in the institution is an active participant in the organization's renewal, change, and transformation. It is to establish the positive impact and value adding benefits of E-HRM for HR staff members through the renewal, change, and transformation activities in the universities. In country A, 5.2% of respondents strongly disagreed with this assertion, and 9.8% of respondents disagreed with the statement, totalling 15% (5.2% plus 9.8%). A total of 52% of respondents agreed with the statement and 19.6% of respondents strongly agreed with the statement, making a total of 71.6% (52% plus 19.6%). A total of 1.3% of respondents did not answer this question.

However, in country B, 3.6% of respondents strongly agreed that the HR department is an active participant in the organization's renewal, change and transformation, and 3.9% of respondents disagreed, totalling 7.5% (3.6% plus 3.9%). A total of 51.1% of respondents agreed with the statement, and 35.4% of respondents strongly agreed with the statement, making a total of 86.5% (51.1% plus 35.4%). A total of 0.3% of respondents did not answer the question. The skewness is indicative that most of the responses occurred within the categories of strongly agreed and agreed. The general response of the respondents to the question regarding HR staff members participating in active renewal, change, and transformation activities was positive. This shows that value adding benefits of E-HRM for HR staff members through the renewal, change, and transformation activities in the

universities, are positive. The table below shows data on how HR works to reshape behaviour, and helps to anticipate future employees' needs.

4.4.6.6: HR works to reshape behaviour and helps to anticipate future employees' needs

Table 4.11a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	19	6.2	6.3	6.3
	Disagree	58	19.0	19.1	25.3
	Not applicable	45	14.7	14.8	40.1
	Agree	136	44.4	44.7	84.9
	Strongly agree	46	15.0	15.1	100.0
	Total	304	99.3	100.0	
Missing	System	2	.7		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.11b: HR works to reshape behaviour and helps to anticipate future employees' needs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	3.3	3.3	3.3
	Disagree	20	6.6	6.6	9.9
	Not applicable	18	5.9	5.9	15.8
	Agree	164	53.8	54.1	70.0
	Strongly agree	91	29.8	30.0	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

Country B = Nigeria (n=305)

The above question was to establish if HR works to reshape behaviour, and to help anticipate future employees' needs. The uses of E-HRM will enable HR practitioners to reshape the behaviour of their colleagues, and help them to anticipate the future needs of their colleagues. This can be achieved through the use of E-HRM; remoulding and renewing the mind-set of the HR employees technologically. Table 4.11a indicates that 6.2% of respondents strongly

disagreed with the fact that the HR department works to reshape behaviour and to help anticipate future employees' needs, while 19% respondents disagreed, which totalled to 25.2% (6.2% plus 19%). A total of 44.4% of respondents agreed with the statement and 15% of respondents strongly agreed, making a total of 59.4% (44.4% plus 15%) who agreed with the statement. A total of 14.7% of respondents were not sure of the statement. In country B, 3.3% of respondents strongly disagreed with the statement and 6.6% of respondents disagreed with the statement, making a total of 9.9% (3.3% plus 6.6%). About 53.8% of respondents agreed with the statement, and 29.8% of respondents strongly agreed with the statement, making a total of 83.6% (53.8% plus 29.8%) who agreed with the statement. A total of 5.9% of respondents were not sure of the statement.

The above result is positive in the agreed section. A majority of the university employees strongly agreed and agreed with the above question. This indicates that reshaping the behaviour of the HR workers and helping to anticipate their future needs will remould and renew their mind-set, which is a value adding benefit for the HR department. HR employees make use of E-HRM for their administrative functions, which is discussed below.

4.4.6.7: HR employees make use of E-HRM for the administrative functions of this university

Table 4.12a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	4.9	5.0	5.0
	Disagree	27	8.8	9.1	14.1
	Not applicable	86	28.1	28.9	43.0
	Agree	137	44.8	46.0	88.9
	Strongly agree	33	10.8	11.1	100.0
	Total	298	97.4	100.0	
Missing	System	8	2.6		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.12b: HR employees make use of E-HRM for the administrative functions of this university

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	28	9.2	9.3	9.3
	Disagree	45	14.8	14.9	24.2
	Not applicable	61	20.0	20.2	44.4
	Agree	127	41.6	42.1	86.4
	Strongly agree	41	13.4	13.6	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

Country B = Nigeria (n=305)

Questions were asked regarding the use of E-HRM for administrative functions, which HR employees of the university participate in. This is to know if the employees make use of E-HRM, and if they do, to what extent is the usage. It will be of interest to know that in country A, 4.9% of respondents strongly disagreed that HR employees make use of E-HRM for administrative functions, and 8.8% of respondents disagreed, making a total of 13.7% (4.9% plus 8.8%). A total of 44.8% of respondents agreed that the HR employees of their university make use of E-HRM for administrative functions in there university, and 10.8% of respondents strongly agreed with the statement, making a total of 55.6% (44.8% plus 10.8%). About 28.1% of respondents maintained that they were not sure of the statement. In country B, 9.2% of respondents strongly disagreed that the HR employees make use of E-HRM for administrative functions in their university, and 14.8% of respondents disagreed, making a total of 24% (9.2% plus 14.8%). About 41.6% of respondents agreed, and 13.4% of respondents strongly agreed with the statement, making a total of 55% (41.6% plus 13.4%). A total of 20% were not sure of the statement. A majority of the sample that represented the university staff members agreed that they make use of E-HRM for administrative functions of the university. It could be assumed that 55% of the respondents utilize the system. The availability of E-HRM software for HR staff use follows below.

4.4.6.8: E-HRM software is available for HR staff to use

Table 4.13a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	18	5.9	6.1	6.1
	Disagree	23	7.5	7.8	13.9
	Not applicable	115	37.6	38.9	52.7
	Agree	112	36.6	37.8	90.5
	Strongly agree	28	9.2	9.5	100.0
	Total	296	96.7	100.0	
Missing	System	10	3.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.13b: E-HRM software is available for HR staff to use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	24	7.9	8.1	8.1
	Disagree	63	20.7	21.1	29.2
	Not applicable	75	24.6	25.2	54.4
	Agree	114	37.4	38.3	92.6
	Strongly agree	22	7.2	7.4	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

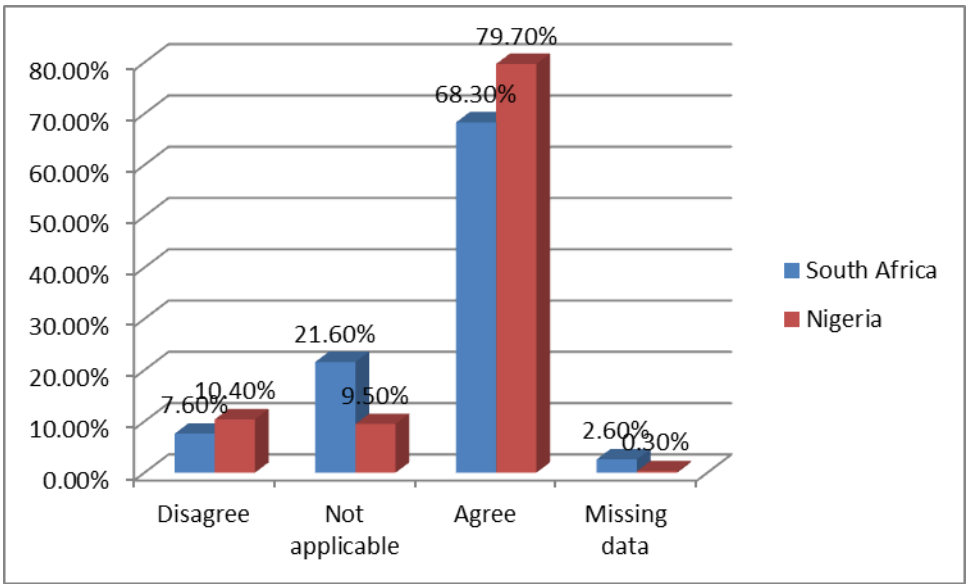
Country B = Nigeria (n=305)

Results in Table 4.13a reveal that from a total of 305 respondents in country A, 5.9% respondents strongly disagree that E-HRM software is made available for use for HR staff members of the university. A total of 7.5% of respondents disagreed with the statement, making a total of 13.4% (5.9% plus 7.5%). A total of 37.6% of respondents said that they were not sure if the HR staff members make use of E-HRM software in their workplace. A total of 36.6% of respondents agreed with the statement, and 9.2% respondents strongly agreed with the statement, making a total of 45.8% (36.6% plus 9.2%) who agreed that the human resource staff members of the university were provided with E-HRM software for their work functions. A total of 3.3% of respondents did not complete this section.

In country B 7.9% of respondents strongly disagreed that E-HRM software is made available for use in their workplace, and 20.7% of respondents disagreed with the statement, totalling 28.6% (7.9% plus 20.7%). A total of 37.4% of respondents agreed with the statement and 7.2% of respondents strongly agreed, making a total of 44.6% (37.4% plus 7.2%) who agreed that the HR staff members were provided with E-HRM software for their work functions. A total of 24.6% of respondents were not sure of the statement. A total of 2.3% of respondents did not complete this section. Based on the responses, it can be said that many university employees who participated in the survey were not really aware of whether or not their institution have E-HRM software available for their human resource functions. Although, 45% of respondents agreed that they have E-HRM software available for their human resource functions. The availability of E-HRM software shows that the universities have E-HRM related enabling capacities for human resource management functions. This software can be used in the absence of E-HRM in the universities for human resource management functions. The second category is the use of electronic planning in the universities.

4.4.7 Category 2: Electronic Planning (E-Planning)

4.4.7.1: Electronic planning provides tools that could effectively manage the university's strategic human resources



(n=306 + 305)

Fig. 4.6: Electronic planning provides tools that could effectively manage the university's strategic human resources

Electronic planning provides tools that could effectively manage the university's strategic human resources, according to literature. Questions were asked about this to gauge if this is true. In the South African universities, 2.0% of respondents strongly disagreed that electronic planning provides tools that could effectively manage the university's strategic human resources, and 5.6% of respondents disagreed, totalling 25.6% (2.0% plus 5.6%). A total of 52% of respondents agreed with the statement and 16.3% of respondents strongly agreed, making a total of 68.3% (52% plus 16.3%). A total of 21.6% of respondents said that they were uncertain about the statement, and 2.6% of respondents did not complete this section.

In the Nigerian universities, 5.2% of respondents strongly disagreed that electronic planning provides tools that could effectively manage the university's strategic human resources and 5.2% of respondents also disagreed with the statement, making a total of 10.4% (5.2% plus 5.2%). A total of 59% of respondents agreed with the above statement and 20.7% of respondents strongly agreed with the statement, making a total of 79.7% (59% plus 20.7%) who agreed that electronic planning provides tools that could effectively manage the university's strategic human resources. A total of 9.5% of respondents were uncertain about the statement, while there was 0.3% of missing data. The general responses from respondents regarding E-planning providing tools that could effectively manage the university's strategic human resources were positive. Hence, it can be said that the utilization of E-HRM has led to the use of E-planning, which provides tools that could effectively manage the university's strategic human resources. The high positive response could also indicate that the human resource (HR) employees in the universities make use of E-planning to support their human resource management functions. The high percentage in the responses of 68% and 80%, respectively, shows the high use of E-planning in the universities.

4.4.7.2: E-planning ensures an adequate balance of solid performance and high potential at this university

Table 4.14a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	8	2.6	2.7	2.7
	Disagree	24	7.8	8.2	10.9
	Not applicable	85	27.8	28.9	39.8
	Agree	150	49.0	51.0	90.8
	Strongly agree	27	8.8	9.2	100.0
	Total	294	96.1	100.0	
Missing	System	12	3.9		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.14b: E-planning ensures an adequate balance of solid performance and high potential at this university

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	22	7.2	7.4	7.4
	Disagree	19	6.2	6.4	13.8
	Not applicable	44	14.4	14.8	28.5
	Agree	172	56.4	57.7	86.2
	Strongly agree	41	13.4	13.8	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

Country B = Nigeria (n=305)

One of the functions of E-planning is to ensure to adequate balance of solid performance and high potential in the organization, according to literature. The essence of asking this question was to gauge if the universities used this function. In country A, 2.6% of respondents strongly disagreed that E-planning ensures an adequate balance of solid performance and high potential in their university, and 7.8% of respondents disagreed, making a total of 10.4% (2.6% plus 7.8%). A total of 49% of respondents agreed that E-planning ensures an adequate balance of solid performance and high potential in their university, and 8.8% of respondents strongly agreed with the statement, making a total of 57.8% (49% plus 8.8%). A total of 27.8% of respondents said that they were not sure if their university makes use of E-planning, while 3.9% of respondents did not complete this section.

However, in country B, 7.2% of respondents strongly disagreed that E-planning ensures an adequate balance of solid performance and high potential in their university and 6.2% of respondents disagreed, making a total of 13.4% (7.2% plus 6.2%). A total of 56.4% of respondents agreed with the statement and 13.4% of respondents strongly agreed, making a total of 69.8% (56.4% plus 13.4%). The high positive response reveals that E-planning ensures an adequate balance of solid performance and high potential in their university. A total of 14.4% of respondents were not sure of the statement and 2.3% of respondents did not complete this section.

The above reveals that the universities make use of E-planning, and this ensures an adequate balance of solid performance and high potential in the universities. In addition, the use of E-planning supports the business goals of all human resource management functions. The next category is the use of E-recruitment in the universities by HR staff members.

4.4.8 Category 3: Electronic Recruitment (E-Recruitment)

4.4.8.1: There are online advertisements for vacancies at my workplace

Table 4.15a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	.7	.7	.7
	Disagree	8	2.6	2.6	3.3
	Not applicable	14	4.6	4.6	7.8
	Agree	148	48.4	48.4	56.2
	Strongly agree	134	43.8	43.8	100.0
	Total	306	100.0	100.0	

Country A = South Africa (n=306)

Table 4.15b: There are online advertisements for vacancies at my workplace

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	38	12.5	12.7	12.7
	Disagree	46	15.1	15.4	28.1
	Not applicable	44	14.4	14.7	42.8
	Agree	98	32.1	32.8	75.6
	Strongly agree	73	23.9	24.4	100.0
	Total	299	98.0	100.0	
Missing	System	6	2.0		
Total		305	100.0		

Country B = Nigeria (n=305)

The researcher posed questions concerning the use of online advertisements for vacancies in their university to gauge if E-HRM is used for the above function by the HR staff members. In the South African universities, the response were 0.7% of respondents who strongly disagreed that there are online advertisements for vacancies in their university, and 2.6% of respondents disagreed that online advertisements were used for vacancies in their workplace, making a total of 3.3% (0.7% plus 2.6%). But 48.4% respondents agreed with the statement and 43.8% respondents strongly agreed with the statement, making a total of 92.2% (48.4% plus 43.8%). A total of 4.6% respondents were not sure if their institution makes use of online advertisements.

In the Nigerian universities 12.5% of respondents strongly disagreed that online advertisements are used to advertise vacancies in their workplace, and 15.1% of respondents disagreed with the statement, making a total of 27.6% (12.5% plus 15.1%). A total of 32.1% of respondents agreed that online advertisements are used in their workplace to advertise for vacancies and 23.9% of respondents strongly agreed, making a total of 56% (32.1% plus 23.9%). A total of 14.4% of respondents were not sure if online advertisements are used to advertise vacancies in their workplace. The result indicates that 92.2% of respondents agreed that they use online advertisements for vacancies in their workplace in South Africa, while 56% of respondents agreed in Nigerian universities. The reason for the variances among respondents between South Africa and Nigerian universities could be as a result of poor Internet service in Nigeria. Table 6.30b reveals that respondents from the Nigerian university indicated that there is a need for additional basic IT skills in their workplace. Hence, the poor

supply of electricity can also contribute to the poor Internet service, hence the effect on Nigerian university employees using online advertisements.

4.4.8.2: Recruitment and selection are done online at this institution

Table 4.16a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	38	12.4	12.6	12.6
	Disagree	53	17.3	17.6	30.2
	Not applicable	55	18.0	18.3	48.5
	Agree	103	33.7	34.2	82.7
	Strongly agree	52	17.0	17.3	100.0
	Total	301	98.4	100.0	
Missing	System	5	1.6		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.16b: Recruitment and selection are done online at this institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	45	14.8	15.5	15.5
	Disagree	87	28.5	30.0	45.5
	Not applicable	70	23.0	24.1	69.7
	Agree	62	20.3	21.4	91.0
	Strongly agree	26	8.5	9.0	100.0
	Total	290	95.1	100.0	
Missing	System	15	4.9		
Total		305	100.0		

Country B = Nigeria (n=305)

The rationale for this information was to find out whether recruitment and selection are done online in these institutions. In the South African universities, 12.4% of respondents strongly disagreed that online recruitment and selection were done in their institution, and 17.3% of respondents disagreed with the statement, making a total of 29.7% (12.4% plus 17.3%). A total of 33.7% of respondents agreed that recruitment and selection were done in their institution, and 17% of respondents strongly agreed with the statement, making a total of 50.7% (33.7% plus 17%), while of 1.6% of respondents did not answer the question.

Though in the Nigerian universities, 14.8% of respondents strongly disagreed with the statement and 28.5% of respondents disagreed with the statement, making a total of 43.3% (14.8% plus 28.5%). A total of 20.3% of respondents agreed with the statement and 8.5% of respondents strongly agreed with the statement, making a total of 28.8% (20.3% plus 8.5%) who agreed that recruitment and selection is done online in their university.

The above data showed that 50.7% of respondents agreed that their institution uses online recruitment and selection to recruit new employees, and 28.8% respondents agreed at the Nigerian universities. The reason could be the unavailability of the software to conduct online recruitment and selection. Another reason could be the poor supply of electricity, as suggested above. This could hinder online recruitment and selection in the Nigerian universities. Category four gauges the use of E-performance management in the universities by HR staff members.

4.4.9 Category 4: Electronic Performance Management (E-Performance Management)

4.4.9.1: Online performance management is used to evaluate employee performance at my workplace

Table 4.17a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	62	20.3	20.6	20.6
	Disagree	85	27.8	28.2	48.8
	Not applicable	84	27.5	27.9	76.7
	Agree	58	19.0	19.3	96.0
	Strongly agree	12	3.9	4.0	100.0
	Total	301	98.4	100.0	
Missing	System	5	1.6		
Total		306	100.0		

Country A= South Africa (n=306)

Table 4.17b: Online performance management is used to evaluate employee performance at my workplace

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	48	15.7	15.9	15.9
	Disagree	78	25.6	25.9	41.9
	Not applicable	83	27.2	27.6	69.4
	Agree	72	23.6	23.9	93.4
	Strongly agree	20	6.6	6.6	100.0
	Total	301	98.7	100.0	
Missing	System	4	1.3		
Total		305	100.0		

Country B = Nigeria (n=305)

It was necessary for the researcher to determine if human resource (HR) employees evaluate their employees' performance online. In the South African universities, 20.3% of respondents strongly disagreed that the HR employees evaluate their employees' performance management online in their workplace, and 27.8% of respondents disagreed, making a total of 48.1% (20.3% plus 27.8%). A total of 19% of respondents agreed and 3.9% of respondents strongly agreed, making a total of 22.9% (19% plus 3.9%). A total of 1.6% of respondents did not answer the question.

Although in the Nigerian universities, 15.7% of respondents strongly disagreed that HR employees evaluate their employees' performance management online in their workplace and 25.6% disagreed, making a total of 41.3% (15.7% plus 25.6%) who disagreed. A total of 23.6% of respondents agreed and 6.6% respondents strongly agreed, making a total of 30.2% (23.6% plus 6.6%) who agreed that HR employees use online performance management to evaluate employees' performance. A total of 1.3% of respondents did not answer the question.

In both the South African universities and Nigerian universities the respondents disagreed that online performance management is used to evaluate employee performance in their workplace. A reason could be the poor implementation of the performance management system. Also, insufficient skilled HR practitioners to conduct the online performance management may be lacking in these universities.

4.4.9.2: E-performance management facilitates an interactive performance management process in our institution

Table 4.18a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	63	20.6	21.2	21.2
	Disagree	70	22.9	23.6	44.8
	Not applicable	96	31.4	32.3	77.1
	Agree	54	17.6	18.2	95.3
	Strongly agree	14	4.6	4.7	100.0
	Total	297	97.1	100.0	
Missing	System	9	2.9		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.18b: E-performance management facilitates an interactive performance management process in our institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	26	8.5	8.6	8.6
	Disagree	71	23.3	23.6	32.2
	Not applicable	84	27.5	27.9	60.1
	Agree	101	33.1	33.6	93.7
	Strongly agree	19	6.2	6.3	100.0
	Total	301	98.7	100.0	
Missing	System	4	1.3		
Total		305	100.0		

Country B = Nigeria (n=305)

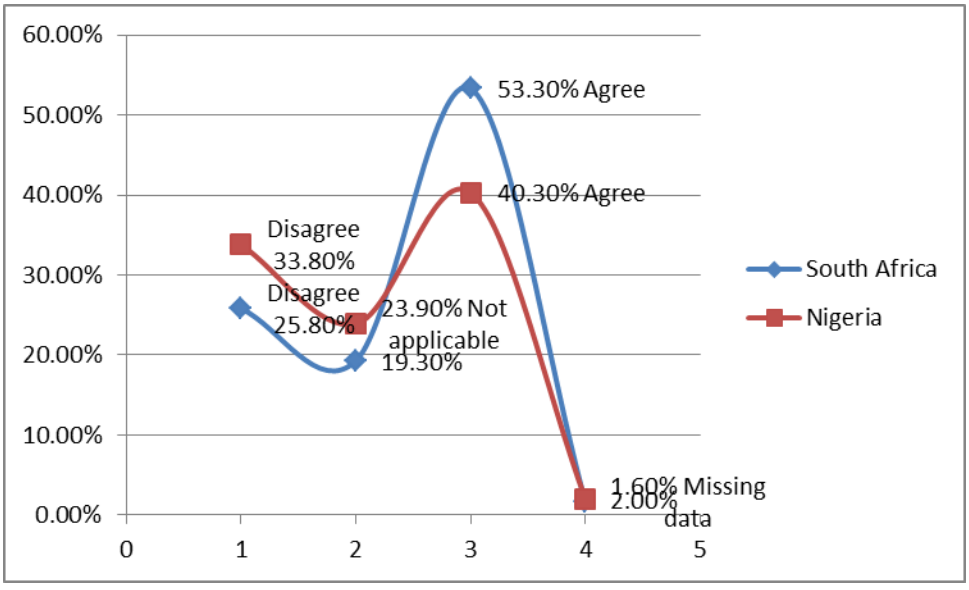
Table 4.18a shows country A's data, which indicates that out of 306 respondents, 20.6% of respondents strongly agreed that E-performance management facilitates an interactive performance management process in their institution, while 22.9% of respondents disagreed, making a total of 43.5% (20.6% plus 22.9%). A total of 17.6% of respondents agreed with the statement and 4.6% respondents strongly agreed with the statement, totalling 22.2% (17.6% plus 4.6%) who agreed that E-performance management facilitates an interactive performance management process in their workplace. A total of 31.4% of respondents were not sure of the statement, and 2.9% of respondents did not answer to the question.

Nevertheless in country B, 8.5% of respondents strongly disagreed with the statement and 23.3% of respondents disagreed with the statement, totalling 31.8% (8.5% plus 23.3%). A total of 33.1% of respondents agreed with the statement and 6.2% of respondents strongly agreed with the statement, totalling 39.3% (33.1% plus 6.2%) who agreed that E-performance management facilitates an interactive performance management process in their university. A total of 27.5% of respondents were not sure of the statement, and 1.3% of respondents did not answer the question.

More respondents in the South African universities disagreed that E-performance management facilitates an interactive performance management process in their institutions, while in the Nigerian universities, more respondents agreed, though the response was poor in both the agreed and disagreed categories. This could be as a result of the respondents not being sure if the system is available in their institution. In addition, it could be that the E-performance management system does not measure the right element owing to poor implementation of the system. The use of E-training is the next category that is discussed below.

4.4.10 Category 5: Electronic Training (E-Training)

4.4.10.1: Employees can book individual training courses and record course information online at my workplace



(n=306 + 305)

Fig. 4.7: Employees can book individual training courses and record course information online at my workplace

Among the benefits that the electronic human resource management (E-HRM) system offers employees in the workplace, is allowing employees to book training courses and to record course information online. The researcher wanted to gauge if this statement is true or false. In the South African universities, 9.5% of respondents strongly disagreed that E-HRM has made it possible for them to book training online and record their course information. About 16.3% of respondents disagreed with the statement, making a total of 25.8% (9.5% plus 16.3%). It is interesting to note that 35% of respondents agreed with the statement and 18.3% of respondents strongly agreed with the statement, making a total of 53.3% (35% plus 18.3%) who agreed that E-HRM has enabled them to book training courses online and record course information online in their workplace. A total of 19.3% of respondents were not sure of the statement and 1.6% of respondents did not answer this question.

In the Nigerian universities, 11.5% of respondents strongly disagreed that E-HRM has enabled employees to book training courses online and record course information online in their workplace. A total of 22.3% of respondents disagreed, making a total of 33.8% (11.5% plus 22.3%). A total of 31.1% of respondents agreed with the statement and 9.2% of respondents strongly agreed with the statement, making it a total of 40.3% (31.1% plus 9.2%) who agreed that E-HRM has enabled university staff members to book training courses online, and to record their course information online. A total of 23.9% of respondents were not sure of the statement and 2.0% did not answer the question.

The sample of the respondents was poor both in the agreed and disagreed categories in the two countries universities. This could be as a result of the respondents not being sure of the availability of this system in their workplace. Once more, poor Internet technology skills in terms of using the E-training system would have contributed to the poor result.

4.4.10.2: The use of electronic training management has reduced training costs at my workplace

Table 4.19a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	30	9.8	10.1	10.1
	Disagree	44	14.4	14.9	25.0
	Not applicable	124	40.5	41.9	66.9
	Agree	68	22.2	23.0	89.9
	Strongly agree	30	9.8	10.1	100.0
	Total	296	96.7	100.0	
Missing	System	10	3.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.19b: The use of electronic training management has reduced training costs at my workplace

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	29	9.5	9.8	9.8
	Disagree	83	27.2	28.0	37.8
	Not applicable	84	27.5	28.4	66.2
	Agree	84	27.5	28.4	94.6
	Strongly agree	16	5.2	5.4	100.0
	Total	296	97.0	100.0	
Missing	System	9	3.0		
Total		305	100.0		

Country B = Nigeria (n=305)

The basis for this question was to ascertain if the university workers have experienced a reduction in costs for their training and development courses through the use of E-training management. In the South African universities, 9.8% of respondents strongly disagreed that the use of electronic training management has reduced training costs in their workplace, and 14.4% of respondents disagreed, making a total of 24.2% (9.8% plus 14.4%). A total of 22.2% of respondents agreed with the statement and 9.8% of respondents strongly agreed with the statement, making a total of 32% (22.2% plus 9.8%). A total of 40.5% of respondents said that it was not applicable to them, and 3.3% of respondents did not answer the question.

In the Nigerian universities, 9.5% of respondents strongly disagreed with the statement and 27.2% respondents disagreed with the statement, making a total of 36.7% (9.5% plus 27.2%). A total of 27.5% of respondents agreed with the statement, and 5.2% strongly agreed, making a total of 32.7% (27.5% plus 5.2%) who agreed that the use of electronic training management has reduced training costs in their workplace. A total of 27.5% of respondents said that it was not applicable to them, and 3% did not answer the question.

The respondents from both the South African and Nigerian universities appeared negative in the agreed and disagreed categories. A reason could be that the uses of electronic training management have not reduced their training costs in their workplace. Furthermore, it could mean that there is available E-training management that reduces the training costs' but that the university employees do not make use of the system because they do not possess the necessary skills to record and book their training courses online. The sixth category is the effect of the use of E-HRM for HR practitioners.

4.4.11 Category 6: The Effect of E-HRM for HR Practitioners

4.4.11.1: E-HRM has led to less administrative tasks and less administrative positions in this university

Table 4.20a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	19	6.2	6.4	6.4
	Disagree	49	16.0	16.6	23.1
	Not applicable	121	39.5	41.0	64.1
	Agree	83	27.1	28.1	92.2
	Strongly agree	23	7.5	7.8	100.0
	Total	295	96.4	100.0	
Missing	System	11	3.6		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.20b: E-HRM has led to less administrative tasks and less administrative positions in this university

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	28	9.2	9.4	9.4
	Disagree	68	22.3	22.7	32.1
	Not applicable	70	23.0	23.4	55.5
	Agree	111	36.4	37.1	92.6
	Strongly agree	22	7.2	7.4	100.0
	Total	299	98.0	100.0	
Missing	System	6	2.0		
Total		305	100.0		

Country B = Nigeria (n=305)

The researcher expected that E-HRM would lead to less administrative tasks and less administrative positions in the universities. This question was set to gauge if E-HRM has led to less administrative tasks and less administrative positions in the universities. In country A, 6.2% of respondents strongly disagreed with the statement and 16% of respondents disagreed with the statement, making a total of 22.2% (6.2% plus 16%). A total of 27.1% of respondents agreed with the statement and 7.5% respondents strongly agreed with the statement, making a total of 34.6% (27.1% plus 7.5%). A total of 39.5% of respondents said that it was not applicable to them, while 3.6% of items were missing.

However, in country B, 9.2% of respondents strongly disagreed and 22.3% of respondents disagreed, making a total of 31.5% (9.2% plus 22.3%). A total of 36.4% of respondents agreed with the statement and 7.2% of respondents strongly disagreed with the statement, making a total of 43.6% (36.4% plus 7.2%) who agreed that E-HRM has led to less administrative tasks and less administrative positions in the university. A total of 23% of respondents said that it was not applicable to them and 2% of respondents did not answer the question.

It is important to note that none of the sample that was collected, both in the agreed and disagreed categories, amounted to 50%. This could be as a result of poor usage of the E-HRM system for administrative tasks in their workplaces. Some respondents noted that only a few departments in their university use the system, while the rest still use traditional methods to

do administrative tasks. This means that the unavailability of the E-HRM system in most departments has contributed to the poor results in this category.

4.4.11.2: HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace

Table 4.21a

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	14	4.6	4.7	4.7
	Disagree	40	13.1	13.5	18.2
	Not applicable	87	28.4	29.4	47.6
	Agree	119	38.9	40.2	87.8
	Strongly agree	36	11.8	12.2	100.0
	Total	296	96.7	100.0	
Missing	System	10	3.3		
Total		306	100.0		

Country A = South Africa (n=306)

Table 4.21b: HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	25	8.2	8.4	8.4
	Disagree	43	14.1	14.4	22.8
	Not applicable	55	18.0	18.5	41.3
	Agree	137	44.9	46.0	87.2
	Strongly agree	38	12.5	12.8	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

Country B = Nigeria (n=305)

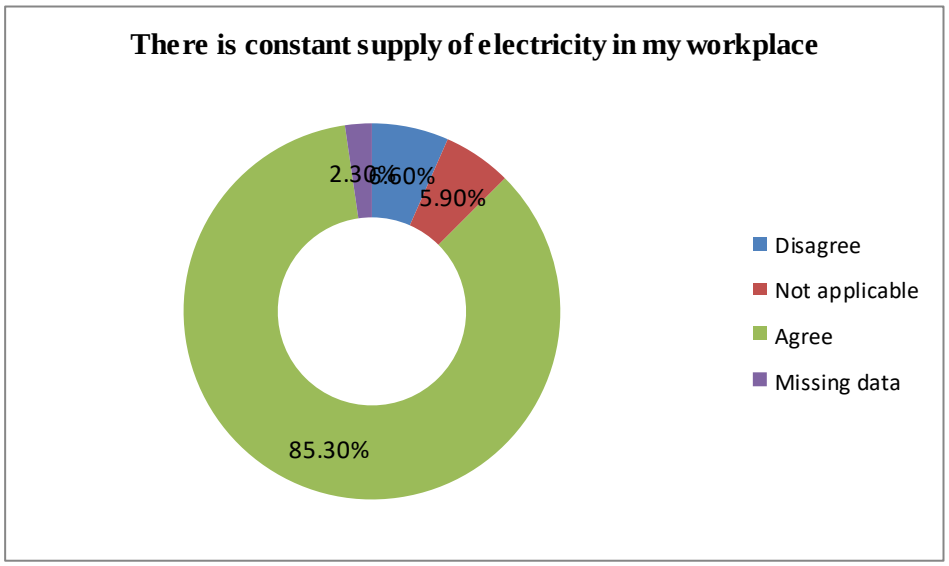
Questions were asked regarding HR practitioners being able to provide adequate, accurate and fast information through the use of E-HRM in their workplace. Results in Table 4.21a above reveal that from a total of 306 respondents, 4.6% of respondents strongly disagreed that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplaces, and 13.1% of respondents disagreed with the statement, making a total of 17.7% (4.6% plus 13.1%). A total of 38.9% of respondents agreed with the statement

and 11.8% of respondents strongly agreed with the statement, making a total of 50.7% (38.9% plus 11.8%) who agreed that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplaces. A total of 28.4% of respondents were not sure of this statement, and 3.3% of respondents did not answer the question.

Though in the Nigerian universities, 8.2% of respondents strongly disagreed with the statement and 14.1% of respondents disagreed with the statement, making a total of 22.3% (8.2% plus 14.1%). A total of 44.9% of respondents agreed with the statement and 12.5% of respondents strongly agreed with the statement, making a total of 57.4% (44.9% plus 12.5%) who agreed that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplaces. A total of 18% of respondents said that it was not applicable to them, and 2.3% of respondents did not answer the question.

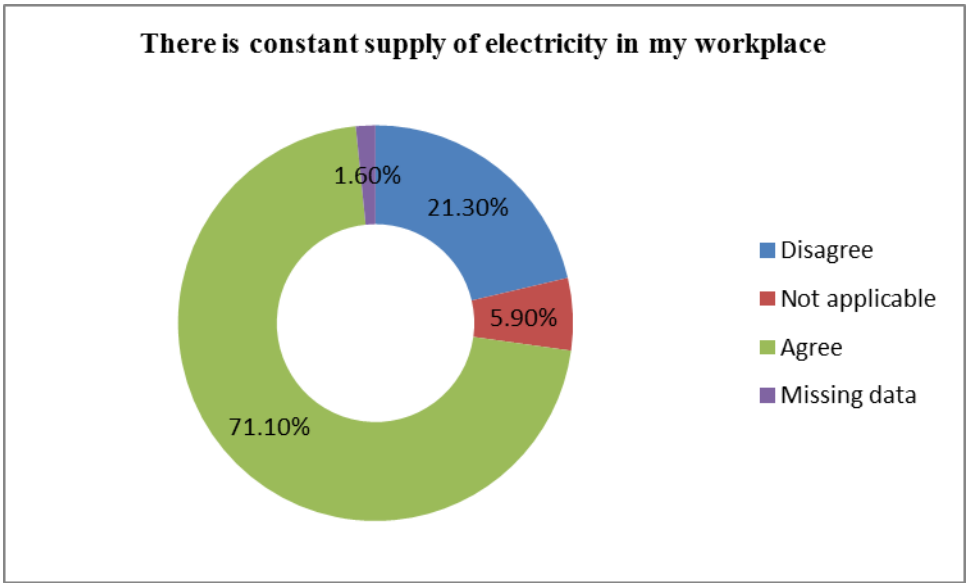
The above results showed that more respondents agreed that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplaces. However, the percentage that agreed is not too high. A reason could be that the respondents that agreed might have visited the HR department on a regular basis, while the others did not, hence they did not know that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM system in their workplaces. HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplaces only when there is a constant supply of electricity.

4.4.11.3: There is a constant supply of electricity in my workplace



Country A = South Africa (n=306)

Fig. 4.8a: There is a constant supply of electricity in my workplace



Country B = Nigeria (n=305)

Fig. 4.8b: There is a constant supply of electricity in my workplace

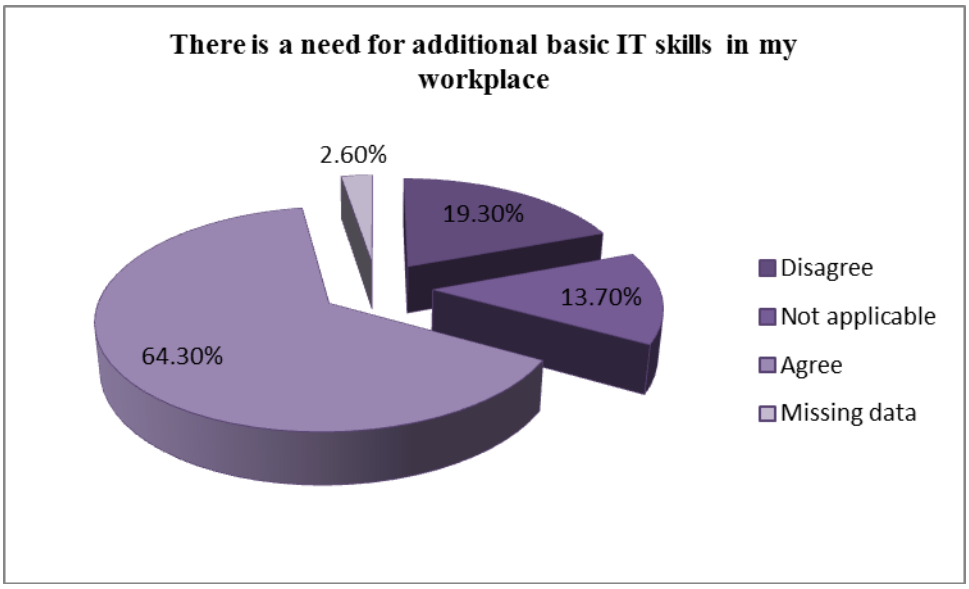
The researcher chose to ask this question bearing in mind that there might be a possibility of a lack of power supply in some areas, which could affect the use of E-HRM. Results in Figure 4.8a above reveal that out of 306 respondents, 2% of respondents strongly disagreed that there is a constant supply of electricity in their workplace, and 4.6% of respondents disagreed, making a total of 6.6% (2.0% plus 4.6%). A total of 41.8% of respondents agreed and 43.5% of respondents strongly agreed, making a total of 85.3% (41.8% plus 43.5%) who agreed that

there is a constant supply of electricity in their workplace. A total of 5.9% of respondents said that they were not sure of the statement, and 2.3% of respondents did not answer the question.

In the Nigerian universities, 7.2% of respondents strongly disagreed with the statement and 14.1% disagreed with the statement, making a total of 21.3% (7.2% plus 14.1%). A total of 39.3% respondents agreed to the statement and 31.8% of respondents strongly agreed with the statement, making a total of 71.1% (39.3% plus 31.8%) who agreed that there is a constant supply of electricity in their workplaces. A total of 5.9% of respondents were not sure of the statement and 1.6% of respondents did not answer the question.

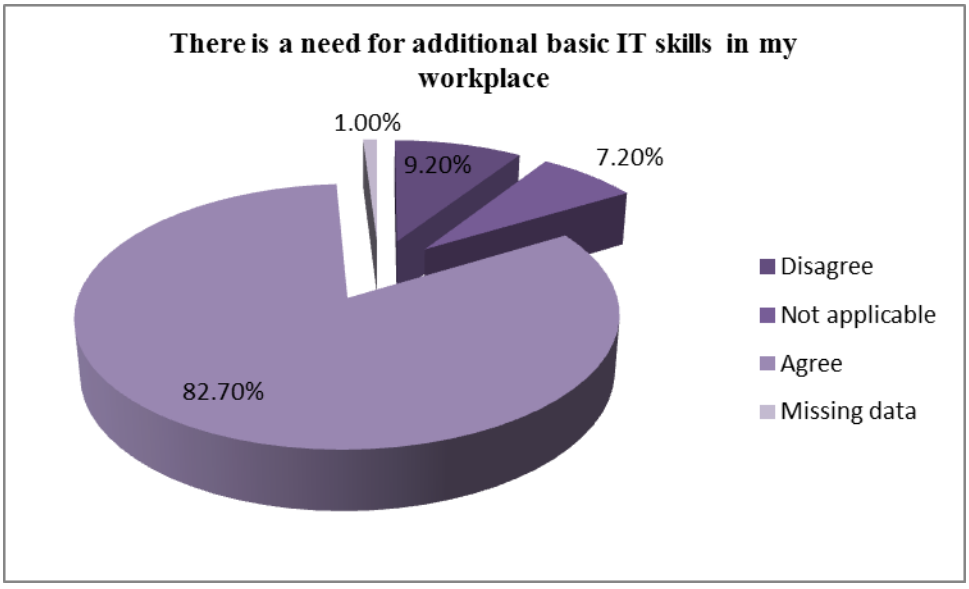
A majority of respondents from the two country's universities agreed that there is a constant supply of electricity in their workplaces with a high percentage of agreement. This indicates that the use of E-HRM in these universities will be effective if it is installed and implemented well. Regular power supply serve as an E-HRM enabling capacity for the human resource management functions in South African and Nigerian universities. It is important to note that power supply in the Nigerian universities is via a generator/plant, which is usually switched off immediately after work from Monday to Friday. This means that it is not reliable, and the E-HRM system can develop problems at any time if the electricity is always switched off when it is busy. A constant supply of electricity encourages the use of IT facilities in the workplace.

4.4.11.4: There is a need for additional basic IT skills in my workplace



Country A = South Africa (n=306)

Fig. 4.9a: There is a need for additional basic IT skills in my workplace



Country B = Nigeria (n=305)

Fig. 4.9b: There is a need for additional basic IT skills in my workplace

In the South African universities, 4.9% of respondents strongly disagreed with the fact that there is a need for additional basic IT skills in their workplace and 14.4% of respondents disagreed with the statement, making a total of 19.3% (4.9% plus 14.4%). A total of 33.3% of respondents agreed with the statement and 31.0% of respondents strongly agreed, making it a total of 64.3% (33.3% plus 31.0%) who agreed that there is a need for additional basic IT skills in their workplace. A total of 13.7% of respondents were not sure of the statement and 2.6% of respondents did not answer the question.

In the Nigerian universities, 4.9% of respondents strongly disagreed with the statement and 4.3% of respondents disagreed with the statement, making a total of 9.2% (4.9% plus 4.3%). A total of 40.7% of respondents agreed with the statement and 42.0% of respondents strongly agreed with the statement, making a total of 82.7% (40.7% plus 42.0%) who agreed that there is a need for additional basic IT skills in their workplace. A total of 7.2% of respondents said that they were not sure of the statement and 1.0% of respondents did not answer the question.

The positive responses in the two countries showed that there is a need for additional basic IT skills in the two countries. But the percentage of agreed responses was more in the Nigerian universities than in the South African universities. A reason could be that South Africa is more developed than Nigeria, and has more IT specialists than Nigeria. IT skills are required in the two countries because it is an enabling capacity for the use of E-HRM. An analysis of the interview questions with the use of content analysis follow below.

4.5 Qualitative Data Analysis

This is a method of analysing collected data through in-depth interviews (Mouton, 2006:169). This section shows analyses of the findings of the interviews with 47 HR directors and managers who participated in the study. The findings were interpreted, and are presented below.

4.5.1 Do You Have an E-HRM System in Your Workplace?

The HR directors and managers in the South African universities stated that they do have E-HRM and that the system is used to support administration such as storing information, reporting and complying with relevant regulatory requirements. It is also used to keep staff data in an easily accessible and retrievable system, and for decision making and online reports for management. Some interviewees reported that they also use integrated technical systems in addition to E-HRM.

In the Nigerian universities the HR directors and managers stated that they have E-HRM and it is used to manage the workforce, as it makes work a lot easier and faster and exposes HR employees to modern technological advancements.

4.5.2 Does the Utilisation of E-HRM Tools by HRM Employees Affect their Attitude Towards their Job Functions?

HR directors and managers in the South African universities reported that the utilization of E-HRM tools by HR employees have affected their attitude towards their job functions. They noted that the employees have become dependent on the system because it gives them up-to-date information and enables them to respond quickly to their clients. Also, the interviewees stated that the utilization of E-HRM had made their work easier and also reduced paper. They pointed out that they had often lost important information through manual filling. Furthermore, the system makes retrieving information quite easy and enables the HR staff members to give feedback to staff queries immediately. Efficiency of work is achieved, which enables HR employees to function efficiently.

In the Nigerian universities the HR directors and managers stated that the utilization of E-HRM enables HR staff members to gather information, which is required for decision making within a short period of time. They also noted that it enhances efficiency of work, improves fastness, saves time and aids productivity. In addition, the HR workers are more enthusiastic about their work as their activities are less cumbersome and tedious. It motivates HR staff members to perform their tasks faster and to meet deadlines.

4.5.3 What Types of Software are Used in the HRM Functions in this Institution? How Do You Apply them as Employees?

The interviewees noted that the types of software that is used in their institution in South Africa included Oracle, Integrated Technology Software (ITS), training software used by the learning and development unit of the HR departments and E-recruitment software. They noted that the ITS system is used to support administration. The peromness job evaluation system is used to grade jobs. The decision Tree system is used to grade jobs and database packages are used to handle training and recruitment data. The HR directors and managers also mentioned that they have other software such as “Discovery and MIS”, which they use for reporting purposes.

In the Nigerian universities the HR directors and managers stated that the types of HR software used in their institution included Integrated Technology Software (ITS), payroll

system and training software. They also noted that their payroll system was integrated with other modules, which made it easy for the HR workers to process monthly and daily salaries and wages by the click of a button. In addition, salaries and wages are computed automatically.

4.5.4 What are the Effects of Using E-HRM in HR Practice in this University?

It was pointed out by the HR directors and managers of the South African universities that the effect of using E-HRM in their human resource practices include easy access to information; managing information; writing reports; improving efficiency and effectiveness; data integrity; eliminating errors; and for legislation compliance (EE Stats). Again, E-HRM is an improved and reliable source of information. It improves turnaround time, efficiency and immediacy of feedback to staff queries and decision making. Moreover, the system is an effective management tool and aids in management decision making.

In the Nigerian universities the HR directors and managers mentioned that the effect of using E-HRM in the human resource practices in Nigerian universities include gathering data; analysing capabilities; and improving record keeping. In addition, it brings about accuracy and efficiency, and encourages faster decision making. E-HRM, according to the interviewees, enhances HR service delivery, and makes it easy for HR workers to locate files in the system. Again, storing of information does not consume much space in the offices as they are now stored on the system. E-HRM helps the HR workers to increase their output and versatility in their field of work.

4.5.5 Does the Use of E-HRM Have an Impact on the Performance of the Staff?

The use of E-HRM has greatly impacted on the performance of the HR staff members of the South African universities, according to the HR directors and managers of the South African universities. The performance of the HR practitioners has improved, as there is increased workflow, and outputs can be monitored with ease. Again, it improves performance, morale

and user experience of the HR staff members. The HR staff members are able to deliver their jobs faster. They have become more effective and less costly to manage. They also mentioned that the use of E-HRM has a negative impact on HR workers in the area of service delivery. It was noted that since the system is limited to functionality, it can frustrate HR practitioners and negatively affect their service delivery.

In the Nigerian universities it was noted that the use of E-HRM has an impact on the performance of HR staff members in their workplaces. It was stated that it improves the performance of HR staff members, overall, and that employees are more efficient in their work.

4.5.6 How are E-HRM Used for Various HRM Functions in this Institution?

The respondents from the South African universities stated that E-HRM is used for administration; storing database; reporting; and compliance. Others said that it is used to store the following staff data: staff biographical data; conditions of service, (including benefits and salaries); qualifications; skills set; leave; and medical aid, details. Also, the system is used for staff appointments and staff payments. It is used to compile reports on employment equity and targets, qualifications and to promote self-service.

Respondents in the Nigerian universities noted that Electronic Human Resource Management (E-HRM) used for payroll administration (E-payment) and E-learning (E-training). It is also used for record keeping, capturing of personal data and E-recruitment.

4.5.7 In Which Areas in Your Institution Do You Normally Apply E-HRM as a Decision-Making Tool?

Respondents from the South African universities stated that E-HRM is applied as a decision making tool for leave administration, and appointments of both permanent and temporary staff members. It is also used as a decision making tool in the setting and monitoring of employment equity matters and in strategic development matters. It is applied as a decision

making tool in the approval of positions as replacements, validation of headcount, approval of job grades, and in other HR processes (redesign). Some respondents added that it is applied in payroll matters and in the analysis of information such as reporting capabilities.

Respondents from the Nigerian universities stated that E-HRM is applied in the following areas in their workplace: as a decision making tool; in promotions and confirmations; salary advancements; and annual leave. E-HRM is also used as a decision making tool in performance appraisal, posting, recruitment and capturing of personal data in the Nigerian universities.

4.5.8 How Do the Decision-Support Tools Provided by E-HRM Affect the Quality of Decision-Making in Your Workplace?

The HR directors and managers noted that there is stability and maturity in the HR processes, and shift processes have been changed from transactional to strategic. It helps in the smooth process of auditing. They also noted that since data integrity is critical in decision–making, the reliability of the data influences decisions, which are made in the HR Department. Additionally, they mentioned that the turnaround time in the processing of documents is reduced.

In the same light, the respondents in the Nigerian universities mentioned that the decision-support tools, which are provided by E-HRM affect the quality of decision-making in their workplace by helping HR staff members and managers to make a precise and fast decision in connection with their work, and it enhances accuracy of decision making amongst HR staff members. It also reduces the need for managers to interact with the other staff members.

4.5.9 What Mediators Affect the Relationship between E-HRM Information Tools and the Decision-Making Quality in Your Institution?

Most respondents in the South African universities indicated that information that is not imputed into the system can be a mediator that affects the relationship between E-HRM information tools and decision-making quality. In the Nigerian universities the interviewees noted that poor Internet/network knowledge and availability of updated information and tools

can be mediators that affect the relationship between E-HRM information tools and decision-making quality. Again, the interviewees mentioned that personal opinion of employees in management positions and the overall objectives of the HR processes can affect the relationship between E-HRM information tools and decision-making quality in their institutions.

4.5.10 What Challenges are Faced by HRM Staff in this Institution with regard to the Use of E-HRM?

The management stated that there is a need for data analysis expertise in the South African universities' HR departments. Again, there is inadequate knowledge about data integrity and technical expertise in their respective departments. New staff members need to be trained on the use of E-HRM to enable them to operate the system better. Also, the system is costly to upgrade. They also noted that the system is limited in function and has a half-manual and half-system approach. Additionally, it requires a licence to be able to operate it, hence the E-HRM software needs customizing, which takes much valuable time and it is reliant on a few staff members for operation. More challenges include management support in the use of the system, and a lack of skills on the side of HR practitioners, as there could be requests for data, which are not clear.

In the Nigerian universities the respondents mentioned that they face challenges to manage HR staff members in technological change and adopting new systems. There is a possibility of the institution getting software that is not updated. Hence, there is poor Internet access, poor knowledge of the system, and inadequate power supply, which hinder the use of this system in Nigerian universities.

4.5.11 What are Your Recommendations Regarding the Use of E-HRM for HRM Functions in this Institution?

It was suggested by the respondents that there is a need for management support in terms of the use of the system in South African universities. Also, they noted that the managements of the universities should invest in a state-of-the-art system that is home grown, rather than software that is ill-suited to the higher education environment such as using a manual form of

administration as opposed to an advanced system that would improve the output of HR staff members. Furthermore, the respondents suggested that the use of the system should be improved in most of the South African universities to improve the work functions of the HR staff members, and increase their efficiency in the HR departments of these universities.

The respondents in the Nigerian universities suggested that the HR employees should be adequately trained through workshops, conferences, and in-service training regarding the use of E-HRM. Moreover, they also suggested that more E-HRM systems should be introduced to enable HR staff members to learn how to use them, and at the same time conduct training on the use of the system. This would also enable information, decision-making and communication to be done electronically. Other respondents advised that all HR staff members should embrace the use of E-HRM, and that more systems should be adopted as they become available in order to keep improving the skills of the HR practitioners.

4.5.12 Do You Have any other Information Regarding the Use of E-HRM within HRM Functions in this Institution?

The respondents advised that E-recruitment software has functionalities that are useful for human capital planning; for example, it is possible to draw reports on the profile of potential candidates, their skills set, nationality, education level and experience. Again, they noted that the South African universities are too big to use manual processing for HR job functions, but should embrace the use of E-HRM, as it is crucial for HR job functions in the South African universities.

There was no comment from the Nigerian university respondents regarding this question.

4.5.13 Emerging Trends

The overall findings from the content analysis show that E-HRM was used to support administration in the South African and Nigerian universities such as storing information, reporting and complying with relevant regulatory requirements. It is used to keep staff data in an easily accessible and retrievable system. Hence, the utilization of E-HRM tools by HR practitioners has affected their attitude towards their work functions. The HR practitioners

have become dependent on the system because it gives them up-to-date information and enables them to respond quickly to their clients. This system has made their work easier and reduced paper work as opposed to losing important information through manual filing. In addition, the software used in their institutions includes integrated technology software (ITS) and training software. The effects of this system on HR functions include easy access to information, managing information, writing reports and improving efficiency and effectiveness of their work.

It was also found that the utilization of E-HRM has improved the performance of HR practitioners as there is increased workflow, and outputs can be monitored with ease. E-HRM can be applied as a decision-making tool in the leave administration of university staff members, and appointments of both permanent and temporary staff members. It is also used in the setting and monitoring employment equity matters and in strategic development matters of the universities. Again, there is stability and maturity in the HR processes, and shift processes have been changed from transactional to strategic.

Although E-HRM has brought many advantages, it also has disadvantages and challenges, which include inadequate knowledge of data integrity and technical expertise in the HR departments of the universities that were used for this study. Furthermore, new HR staff members should be trained in the use of this system to enable them to perform their functions better. The system is limited in terms of functions and has a half-manual and half-system approach. It was also found that there is a lack of skills on the part of HR practitioners in the use of this system. Finally, there is a need to train HR practitioners in the use of this system. All HR practitioners should embrace the use of E-HRM.

4.6 Limitations

The researcher had difficulty in obtaining permission to access the universities for the survey. Some departments in the universities were not allowed to participate because of their workloads at the time of the survey. Other staff members were off sick at the time of the survey and some were on casual leave. The researcher had a poor response rate of 33.3% of human resource (HR) employees at the universities that were used for the research, though

this did not affect the results. In addition, the survey was delayed in some of the Nigerian universities as a result of the ASUU (Academic Staff Union of Universities) strike, which was later called off. There was also a delay in returning the completed questionnaires as a result of some university staff members trying to meet the deadline to complete their weekly/monthly reports. Furthermore, missing data was found after data collection, as no responses were given for the data. Though this was negligible, it did not affect the other responses. Lastly, the interviewees did not answer some interview questions, and simply left blank space.

Comparative Data Analysis

4.7 Cronbach's Alpha Test

Exploratory analysis was used in this chapter to analyse the data in order to develop a picture of what is occurring, and to determine the reliability and validity of the data that was obtained. Cronbach's alpha is used to objectively measure the reliability of an instrument. It is an index of reliability. Cronbach's alpha provides a measure of the internal consistency of the likert scale items (Saunders, Lewis & Thornhill, 2009:68). It is expressed as a number between 0 and 1. The closer the data gets to 1, the better the reliability of the data (Parumasur, 2011:48). Cronbach's alpha is also used to test the validity and reliability of research. The values of cronbach's alpha can be affected by the number of items tested, items inter-relatedness and dimensionality. The acceptable value for cronbach's alpha is between the values of 0.60 to 0.90. The reliability scores of less than 0.6 are considered to be poor, scores in the 0.7 range are acceptable, and figures above 0.8 are good and so on. The related table is shown below.

4.7.1 Internal Consistency

Table 4.22: Internal Consistency

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent (High-stakes testing)
$0.7 \leq \alpha < 0.9$	Good (Low-stakes testing)
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

4.7.2 Cronbach's Alpha

Table 4.23: Cronbach's Alpha

Factor	Items	Cronbach's Alpha
General questions	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	0.770
E-planning	Q11, Q12	0.705
E-recruitment	Q11, Q12	0.503
E-performance management	Q13, Q14	0.774
E-training	Q15, Q16	0.744
Effect of E-HRM for HR Practitioners	Q17, Q18	0.684

A low alpha value indicates either a low number of questions, or poor inter-relatedness between the items used. If the alpha is low owing to poor correlation between the items, some of the items should be revised or discarded. If the cronbach's alpha is too high, it can be assumed that some items are redundant. A bivariate correlation test was conducted to investigate the inter-correlations of all the items with each other before carrying out the reliability. For the group of items in this research to be sufficiently inter-correlated, the alpha value should be from 0.60 to 0.90. From the Cronbach's Alpha shown in the table above, all the items are statistically sufficiently inter-correlated except E-recruitment, which has a low alpha value. Regarding the frequency table for E-recruitment, the research found the South African respondents agreeing to the use of an E-recruitment system with 155 (103 + 52) responses, while Nigerian respondents agreed with 88 (62 + 26) responses. This shows a big difference statistically. A low alpha value shows that there is poor inter-relatedness in the use of E-recruitment between the South African universities and the Nigerian universities. This shows that there is significant difference between the use of E-recruitment in the South African and Nigerian universities, with 155 respondents agreeing in the South African universities and 88 respondents agreeing in the Nigerian universities.

4.8 T-Test

A T-test is used to determine if there is a significant difference in the means of two groups (countries in this case)**.**

4.8.1 T-test table

Table 4.24: T-Test Table: Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
General questions	South Africa	306	3.5264	.65479	.03743
	Nigeria	305	3.5979	.68695	.03933
E-planning	South Africa	300	3.6667	.76649	.04425
	Nigeria	305	3.7459	.89416	.05120
E-recruitment	South Africa	306	3.8007	.81349	.04650
	Nigeria	302	3.0993	1.07140	.06165
E-performance management	South Africa	301	2.5980	1.06749	.06153
	Nigeria	302	2.9238	.97774	.05626
E-training	South Africa	301	3.2292	1.05148	.06061
	Nigeria	301	2.9850	1.00114	.05770
E-Effect of E-HRM	South Africa	297	3.2778	.88404	.05130
	Nigeria	301	3.2542	.98710	.05690

To determine if there is a significant difference between the mean of the two groups (countries), a comparative study was conducted using the mean of the two countries to compare. From the general questions section in the above table, the South African universities have a mean of 3.5264 in the general utilization of E-HRM as a decision making tool, while the Nigerian universities have a mean of 3.5979 in the general utilization of E-HRM as a decision making tool within their human resource management functions. This reveals that in the general utilization of E-HRM, the Nigerian universities use E-HRM more than the South African universities with a slight difference of 0.0715. This could be as a result of the number of items selected or the items selected that led to the difference in the mean. Once more, the Nigerian universities use E-planning more than the South African universities with a difference of 0.0792 (3.7459-3.6667), which is not significant.

The mean in the utilization of E-recruitment shows that the South African universities utilize E-recruitment more than the Nigerian universities with a statistically significant difference of 0.7014 (3.8007-3.0993). However, it was revealed in the above table that the Nigerian universities utilize E-performance management more than the South African universities, with a statistically significant difference of 0.3258 (2.9238-2.5980). Still, another statistical difference was revealed in E-training, where the South African universities were shown to

utilize E-training more than the Nigerian universities with a statistically significant difference of 0.2442 (3.2292-2.9850).

In addition, the South African universities were shown to have a mean of 3.2778 and the Nigerian universities a mean of 3.2542 in the effect of utilizing E-HRM as a decision making tool in their human resource management functions. The South African universities have been proven to have more positive effects in the utilization of these systems more than the Nigerian universities with a statistical difference of 0.0236.

4.9 Levene's Test of Equality of Variance

Levene's test of equality of variance tells us whether we have satisfied the homogeneity of variance assumption (Burns & Burns, 2008:268). It tests whether the factors have equal variances for each of the levels of the categories. It is assumed that if Levene's test is p-value < 0.05 it is assumed to be "equal variances not assumed"; but if the p-value is 0.05, it is assumed to be "equal variances assumed". This test was carried out by using data from two countries universities: South Africa and Nigeria. The test results show the variance in the use of electronic human resource management (E-HRM) as a decision-making tool in these universities. See the table below for details of the results.

4.9.1 Levene's Test of Equality of Variance

Levene's test of equality of variance was conducted for this study to test the equality of variance of the different items, which were used to measure the utilization of E-HRM in the universities such as E-planning, E-recruitment, E-performance management, E-training and so on.

Table 4.25: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	p-value	t	df	p-value (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
General questions	Equal variances assumed	1.344	.247	-1.318	609	.188	-.07156	.05429	-.17819	.03507
	Equal variances not assumed			-1.318	607.409	.188	-.07156	.05430	-.17819	.03508
E-planning	Equal variances assumed	1.037	.309	-1.169	603	.243	-.07923	.06776	-.21231	.05384
	Equal variances not assumed			-1.171	591.972	.242	-.07923	.06767	-.21215	.05368
E-recruitment	Equal variances assumed	15.061	.000	9.098	606	.000	.70132	.07709	.54992	.85271
	Equal variances not assumed			9.081	561.554	.000	.70132	.07722	.54963	.85300
E-performance Management	Equal variances assumed	6.685	.010	-3.909	601	.000	-.32583	.08336	-.48955	-.16212
	Equal variances not assumed			-3.908	596.074	.000	-.32583	.08337	-.48958	-.16209
E-training	Equal variances assumed	1.351	.245	2.918	600	.004	.24419	.08368	.07984	.40853
	Equal variances not assumed			2.918	598.562	.004	.24419	.08368	.07984	.40854
E-Effect of E-HRM	Equal variances assumed	6.118	.014	.308	596	.758	.02362	.07666	-.12694	.17419
	Equal variances not assumed			.308	590.502	.758	.02362	.07661	-.12683	.17408

The results in F from the above table are the ratio of the two sample variances, and if the F value is not equal to 1, it is assumed that there is a difference in the population variances. If the p-value is less than 0.05, we conclude that there is a difference in variances observed from the two samples, and it can be said that equal variance is assumed. Hence, if the p-value is greater than 0.05, we can check if the means is statistically significantly different.

4.9.2 Analysis of the Levene's Test of Equality of Variance

4.9.2.1 E-Recruitment

The F-value is 15.061; this value is greater than 1 and it is too high, which shows that there is an underlying difference in the population variances, so equal variances cannot be assumed. The p-value is 0.000, which shows statistically significant difference, hence, equal variances cannot be assumed. The t-value is 9.098, with 38 degrees of freedom with a two-tailed statistical significance of 0.000. Hence, the mean difference of the two samples is 0.70132. At 95 per cent level of confidence, the difference between the population means is found

between 0.54992 minutes and 0.85271 minutes. Since the two data sets include the value 0, it can be said that the population means are not equal.

The above statement implies that from the E-recruitment data regarding the use of E-HRM, the values indicate that there is a statistically significant difference between the use of E-HRM in the recruitment of South African and Nigerian universities. The difference is statistically significant with the value of the mean difference of 0.70132.

4.9.2.2 E-Performance Management

The F-value is 6.685; this value is greater than 1 and it is too high, which shows that there is an underlying difference in the population variances, so equal variances cannot be assumed. The p-value is 0.010, which is less than 0.05. This shows that there is a statistically significant difference, hence, equal variances cannot be assumed. The t-value is -3.909 with 38 degrees of freedom with a two-tailed statistical significance of 0.000. Hence, the mean difference of the two samples is -0.32583. At 95 per cent level of confidence, the difference between the population means is found between -0.48955 minutes and -0.16212 minutes. Since the two data sets include the value of 0, it can be said that the population means are not equal.

The above statement implies that from the E-performance management data regarding the use of E-HRM, the values indicate that there is a statistically significant difference between the use of E-HRM in the performance management of South African and Nigerian universities. The difference is statistically significant with the value of the means difference of -0.32583.

4.9.2.3 E-Training

The F-value is 1.351; this value is equal to 1, which shows that there is no statistically significant difference in the population variances, so equal variances can be assumed. The p-value is 0.245, which means that it is greater than 0.05, which means that equal variances can be assumed. The t-value is 2.918, with 38 degrees of freedom with a two-tailed statistical significance of 0.004. Hence, the mean difference of the two samples is 0.24419. At 95 per cent level of confidence, the difference between the population means is found between 0.07984 minutes and 0.40853 minutes. Since the two data sets include the value 0, it can be said that the population means are not equal.

The above statement implies that from the E-training data on the use of E-HRM, the values indicate that there is a statistically significant difference between the use of E-HRM in employee training at the South African and Nigerian universities. The difference is statistically significant with the value of the means difference of -0.24419.

4.9.2.4 Effect of E-HRM

The F-value is 6.118; this value is greater than 1 and it is too high, which shows that there is an underlying difference in the population variances, so equal variances cannot be assumed. The p-value is 0.014, which shows a statistically significant difference, hence, equal variances cannot be assumed. The t-value is 0.308, with 38 degrees of freedom with a two-tailed not statistically significant of 0.758. Hence, the mean difference of the two samples is 0.02362. At 95 percent level of confidence, the difference between the population means is found between -0.12694 minutes and 0.17419 minutes. Since the two data sets include the value of 0, it can be said that the population means are not equal.

The above statement implies that from the effect of the use of the E-HRM data, the values indicate that there is a statistically significant difference between the effect of the use of E-HRM in the South African and Nigerian universities. The difference is statistically significant but little in the value of the mean difference of 0.02362.

From the above result, Levene's test for the equality of variances revealed that there is a statistically significant difference in the utilization of electronic human resource management (E-HRM) for electronic recruitment (E-recruitment), E-performance management, E-training and in the effect of E-HRM. The general questions and E-planning in the use of E-HRM by HR practitioners are not significant.

4.10 Comparative Data Analysis Using the Research Objectives

The objectives of this research were used in this section for the comparative analysis. The objectives are as follows:

- To determine the extent of the utilization of electronic- human resource management (E-HRM) amongst selected universities in South Africa and Nigeria;

- To determine the effect of utilizing human resource software to support well-articulated and aligned business goals across all human resource functions in both South African and Nigerian universities;
- To investigate the value adding benefits of E-HRM to the human resource functions of the selected South African and Nigerian universities;
- To identify E-HRM related enabling capacities for human resource functions in South African and Nigerian universities;
- To assess the effect and efficiency of information and decision-support tools of decision-making for HR practitioners in the South African and Nigerian universities;
- To evaluate mediators that have affected the relationships between E-HRM information tools and decision-making quality; and
- To propose a comprehensive model for proper implementation and utilization of E-HRM as a decision-making tool for human resource management functions in universities

The comparative analysis of the research is shown below:

4.10.1 Extent of Utilisation of E-HRM Systems amongst Selected Universities in South Africa and Nigeria

Table 4.26: Utilisation of E-HRM in South African and Nigerian Universities

Questions	**South African universities**		**Nigerian universities**	
	Agree	**Disagree**	**Agree**	**Disagree**
HR employees make use of E-HRM for the administrative functions of this university	55.6%	13.7%	55%	24.1%
E-planning provides tools that could effectively manage the university's strategic human resources	68.3%	7.6%	79.7%	10.4%
There are online advertisements for vacancies in my workplace	92.2%	3.3%	56%	27.6%
Employees can book individual training courses and record course information online at my workplace	53.3%	25.8%	40.3%	33.8%
I received quick service from the human resource employees on visiting to their office	68%	13.1%	52.8%	31.2%

The above table shows that 55.6% of respondents agreed that HR employees make use of E-HRM for administrative functions in South African universities, and 13.7% of respondents disagreed, while 55% of respondents agreed that HR employees make use of E-HRM for administrative functions in Nigerian universities, and 24.1% of respondents disagreed. The above table showed that the South African universities utilize E-HRM more than the Nigerian universities with 0.6% difference. Although, some of the university employees in the two countries noted that their university does not have all the software that is used for E-HRM. Hence, they could not agree that they make use of the system because they do not have the required E-HRM software. This could be the reason for variances in the disagreed section.

A total of 68.3% of respondents agreed that E-planning provides tools that could effectively manage the university's strategic human resources in the South African universities, and 7.6% of respondents disagreed, while 79.7% of respondents agreed in the Nigerian universities and 10.4% respondents disagreed. The percentage that agreed in the Nigerian universities is more than that of the South African universities by 11.4% (79.7% - 68.3%). This could mean that the E-planning software is being used in the Nigerian universities more than in the South African universities. The percentages that disagreed in both countries universities are insignificant.

A total of 92.2% of respondents agreed that there are online advertisements for vacancies in the South African universities and 3.3% respondents disagreed, while 56% of respondents agreed that there are online advertisements for vacancies in the Nigerian universities, and 27.6% of respondents disagreed. The percentage that agreed in the South African universities was more with 36.2% (92.2% - 56.0%), which is significant. This means that the South African universities use online advertisements for vacancies more than the Nigerian universities. It could be said that the South African universities use a lot of online advertisements, since the percentage that agreed is high. This could be as a result of the availability of a constant supply of electricity and Internet/technology. The knowledge of the university employees who were available during the survey concerning online advertisements could be a contributing factor why there is variance in the agreed section.

A total of 53.3% respondents agreed that their employees can book individual training courses and record course information online in the South African universities and 25.8% of respondents disagreed, while 40.3% of respondents agreed in the Nigerian universities, and 33.8% respondents disagreed. This means that employees in the South African universities can book individual training courses and record course information online, but not always, because the percentage in not high, and in the Nigerian universities the percentage rate that agreed was poor. This means that Nigerian university staff members rarely book training programs online. This could be as a result of a lack of available E-training software in the institution, or it could be that they lack skills to use the E-training system to record their training courses and course information online. It is important to note that 53.3% of South African university employees agreed that they book their individual training courses online, because they have the available resources to do so, while 40.3% of Nigerian university staff members agreed. This could be as a result of the resources not always being available for them, for instance, power supply is only available during working hours after which it is switched off. This means that they will not be able to book for their training courses online after working hours, which reduces the possibility of respondents agreeing to the question.

Furthermore, 68% of respondents agreed that they receive quick service from human resource employees on visiting their offices in the South African universities, and 13.1% of respondents disagreed, while 52.8% of respondents agreed that they receive quick service from human resource employees on visiting their offices in the Nigerian universities, and 31.2% of respondents disagreed. This reveals that E-HRM is used more in the South African universities than in the Nigerian universities, since the percentage is more in the South African universities than in the Nigerian universities. This could be as a result of a lack of E-HRM enabling capacities in the Nigerian universities, though they are using the system, but not as much as the South African universities. The availability of the staff members during this survey would have contributed to the responses received in this case. However, the respondents answered the questions depending on their experience. It could be that those that agreed to this question are those who have actually received quick service from human resource employees.

4.10.2 Effect of Utilising HR Software to Support Well-Articulated and Aligned Business Goals across all HR Functions in South African and Nigerian Universities

Table 4.27: Effect of Utilising E-HRM to Support HR Functions

Questions	South African universities		Nigerian universities	
	Agree	Disagree	Agree	Disagree
E-planning ensures adequate balance of solid performances and high potential in this university	57.8%	10.4%	69.8%	13.4%
HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace	50.7%	17.7%	57.4%	22.3%
Using E-HRM would increase the performance of HR staff members	66%	10.2%	84.3%	10.5%

It was found that of the 306 respondents from the South African universities, 57.8% of them agreed that electronic planning (E-planning) ensures adequate balance of solid performances and high potential and 10.4% of respondents disagreed; while 69.8% of respondents agreed that E-planning ensures adequate balance of solid performances and high potential in the Nigerian universities, and 13.4% of respondents disagreed. It is shown in the above table that South African and Nigerian university staff members make use of E-planning in their institutions. Although, the percentage of the respondents that agreed in the Nigerian universities tend to be more than the percentage that agreed in the South African universities. This could be as a result of some South African university participants not being sure of the availability of E-planning software in their institution. A majority of the staff members agreed that E-planning has ensured adequate balance of solid performances and high potential in their workplace. This shows that E-HRM supports their business goals.

The above result reveal that 50.7% of respondents agreed that human resource (HR) practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in the South African universities, and 17.7% of respondents disagreed, while 57.4% of respondents agreed that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in the Nigerian universities, and 22.3% of respondents

disagreed. It can be said that South African and Nigerian universities staff members use E-HRM, and that it is able to provide adequate, accurate and fast information in their workplaces. It can also be said that E-HRM supports their business goals by helping the universities' HR staff members to provide adequate, accurate and efficient information for their staff members, students and other external stakeholders.

A total of 66% of respondents agreed that using E-HRM system would increase the performance of HR staff members in the South African universities and 10.2% of respondents disagreed. While 84.3% of respondents agreed that using E-HRM system would increase the performance of HR staff members in the Nigerian universities, and 10.5% respondents disagreed. This shows that more respondents in the Nigerian universities believe that using E-HRM would increase the work performance of HR staff members than in the South African universities. Although, a good percentage of the South African respondents also agreed that using E-HRM would increase the work performance of HR staff members in their universities. The variances in the agreed section between the South African and Nigerian universities could be as a result of the awareness of participants regarding the use of this system and the number of people who were available at the time of the survey.

The business goal of the HR staff members should be to increase their work performance. The above results indicate that most of the respondents from the two universities agreed that using E- HRM would increase the work performance of HR staff members at the universities.

4.10.3 The Value-Adding Benefits of E-HRM for HR Functions in the Selected South African and Nigerian Universities

Table 4.28: The Value-Adding Benefits of E-HRM for HR Functions

Questions	**South African universities**		**Nigerian universities**	
	Agree	**Disagree**	**Agree**	**Disagree**
I normally receive effective and efficient services from the HR staff members	65.4%	22.6%	57.4%	27.5%
HR is an active participant in an organization's renewal, change, and transformation activities	71.6%	15%	86.5%	7.5%

HR works to reshape behaviour and helps to anticipate future employees' needs	59.4%	25.2%	83.6%	9.9%
I received quick service from the human resource employees on visiting their offices	68%	13.1%	52.8%	31.2%

Table 4.28 above indicates that 65.4% of respondents agreed that they receive effective and efficient services from the HR staff members at the South African universities, while 22.6% of respondents disagreed. A total of 57.4% of respondents agreed that they receive effective and efficient services from the HR staff members at the Nigerian universities, while 27.5% of respondents disagreed. More respondents agreed in the South African universities than in the Nigerian universities. This could be as a result of the South African universities utilizing E-HRM and software's more than the Nigerian universities, according to Table 4.28 above. In this case, the value adding benefits is that the HR staff members of the universities are able to provide effective and efficient services to their colleagues, students and external customers through the use of E-HRM.

In addition, 71.6% of respondents agreed that HR is an active participant in an organization's renewal, change and transformation activities with regard to the South African universities, and 15% respondents disagreed. A total of 86.5% of respondents agreed in the Nigerian universities, and 7.5% respondents disagreed. This result shows that more respondents agreed in the Nigerian universities than in the South African universities. This could be as a result of the environment in which they live. South Africa is more developed than Nigeria, and Nigeria trying to develop their country may have seen the changes done by the HR department in their institution easier than those in South Africa, which is more developed. However, the percentage of respondents agreeing in both the South African and Nigerian universities was big. The value adding benefits of E-HRM in this case is that the system enables HR employees to participate actively in the institution's renewal, change and transformation activities through the use of E-HRM. The E-HRM system enables the HR employees to capture, store, retrieve and analyse data at any time, which enables the HR employees to bring active change and transformation of the systems and software that are used for administrative functions in the other departments within the university.

Moreover, 59.4% of respondents agreed that HR works to reshape behaviour and helps to anticipate future employees' needs in the South African universities, and 25.2% of respondents disagreed. While 83.6% respondents agreed in the Nigerian universities, and 9.9% respondents disagreed. More respondents agreed in the Nigerian universities than in the South African universities. The use of E-HRM has enabled the HR employees to help to reshape behaviour and anticipate future employees' needs through the use of E-performance management. The HR employees can monitor the activities of their employees through the use of E-performance management, informing employees of where they have gone wrong, and also finding out the needs of the employees. In addition, E-HRM reshapes the behaviour and helps to anticipate future needs of staff members at the university. The use of E-HRM helps employees to concentrate on their work because any distraction may lead to them losing the data that they are capturing, and hence will not be able to retrieve them when they are needed. It also reduces the time limit that they use to complete a project or an assignment, thereby enabling them to complete more projects and assignments in a limited time.

Furthermore, 68% of respondents agreed that they receive quick service from the human resource (HR) employees on visiting their offices in the South African universities, and 13.1% of respondents disagreed. About 52.8% of respondents agreed in the Nigerian universities and 31.2% of respondents disagreed. More respondents agreed from the South African universities than in the Nigerian universities. This could be as a result of available resources such as a lack of information technology skills and a poor supply of electricity, which is made available for use in the HR departments of Nigerian universities. The benefit of using E-HRM within the human resource functions in the universities is that it enables HR staff members to deliver quick services to their colleagues, students and external stakeholders.

4.10.4 E-HRM Related Enabling Capacities for HR Functions in the Selected South African and Nigerian Universities

Table 4.29: E-HRM Related Enabling Capacities for HR Functions

Questions	South African universities		Nigerian universities	
	Agree	Disagree	Agree	Disagree
There is a constant supply of electricity in my workplace	85.3%	6.6%	71.1%	21.5%
There is a need for additional basic IT skills in my workplace	64.3%	19.3%	82.7%	9.2%
Technology and people capacity are managed concurrently to encourage the implementation and use of E-HRM in this institution	16.7%	50%	77.2%	11.5%
E-HRM software is available for HR staff to use	45.8%	13.4%	44.6%	28.6%
There are enough computers for HR employees to use in my in my workplace	50%	16.7%	65.7%	22.8%

A total of 85.3% of respondents agreed that there is a constant supply of electricity in the South African universities and 6.6% of respondents disagreed. While 71.1% of respondents agreed in the Nigerian universities and 21.5% respondents disagreed. More respondents agreed in the South African universities than in the Nigerian universities. This could be as a result of development. South Africa is more developed than Nigeria economically, socially and otherwise, and also has a more constant supply of electricity. Again, the respondents from the Nigerian university noted that their power supply is artificial. This means that they have power supply through generators/plants and the power supply is only during work hours before the generator is switched off. Hence, South African universities use power supply from Eskom, which is the original power supply, and this cannot be compared to Nigeria's artificial power supply of electricity, which can develop problems at any time. The power supply in Nigeria may not be able to carry all the systems, depending on the voltage. This can hinder the use of some E-HRM software in the Nigerian universities. However, the two countries have a high percentage of power supply which enables the use of E-HRM for the human resource management functions.

A total of 64.3% of respondents agreed that there is a need for additional basic IT skills in the South African universities and 19.3% of respondents disagreed. While 82.7% respondents

agreed in the Nigerian universities and 9.2% respondents disagreed. More respondents agreed that there is a need for additional basic IT skills in the Nigerian universities than in the South African universities, which could be as a result of poor availability of technology equipment in the Nigerian universities. It is believed that South Africa is more technologically developed than Nigeria, and this could have contributed to the poor IT skills in the Nigerian universities. However, there is a need for additional basic IT skills in both the South African and Nigerian universities, as seen from the above table with 64.3% and 82.7% of respondents agreeing. This would enable the use of E-HRM for the human resource (HR) functions in the two countries' universities.

Furthermore, 45.8% of respondents agreed that E-HRM software is available for HR staff to use and 13.4% of respondents disagreed. While 44.6% respondents agreed in the Nigerian universities and 28.6% respondents disagreed. This shows that when comparing the South African and Nigerian universities, the result is almost the same. The result proves that there is a need for more E-HRM software for HR staff to use. It was noted by the respondents that they have a little E-HRM software available for their use, but not all the software is available in their universities. This could be a reason why the above result is poor.

4.10.5 Effect and Efficiency of Information and Decision-Support Tools for Decision-Making by HR Practitioners in South African and Nigerian Universities

Using content analysis, the respondents in the South African universities noted that the use of E-HRM as a decision making tool has enabled HR employees and managers to appoint both permanent and temporary staff members in the university. They also noted that the decision-support tools provided by E-HRM has affected the quality of their decision –making by turning around the time frame of processing documents, and has also reduced the time frame of processing documents. Once more, E-HRM as a decision-making tool is used to set and monitor employment equity matters and strategic development. Again, it is used for the approval of positions as replacement, validating of headcount, and approval of job grades.

While in the Nigerian universities, the respondents noted that this system improves their administrative work, provides step-by-step information on recruitment, promotions, salary advancement, performance appraisal and posting.

4.10.6 Mediators that Have Affected the Relationship between E-HRM Information Tools and Decision-Making Quality

Table 4.30: Mediators that have affected the relationships between E-HRM information tools and decision-making quality

Questions	**South African universities**		**Nigerian universities**	
	Agree	**Disagree**	**Agree**	**Disagree**
Employees can book individual training courses and record course information online at my workplace	53.3%	25.8%	40.3%	33.8%
E-performance management facilitates an interactive performance management process in our institution	22.2%	43.5%	39.3%	31.8%

The above table reveals that 53.3% of respondents agreed that employees can book individual training courses and record course information online at South African universities, and 25.8% of respondents disagreed. While 40.3% respondents agreed in the Nigerian universities and 33.8% respondents disagreed. More respondents agreed in the South African universities than in the Nigerian universities. This could be as a result of a lack of training systems in the Nigerian universities, and also the total number of people who were available for training at the time. The respondents in the Nigerian universities agreed that employees can book individual training courses and record course information online in their universities, but the response was not high. This shows that there may be a lack of training systems in the Nigerian universities. It could be said that E-training is not available in some South African and Nigerian universities; this could be a reason for the low percentages shown in the above table. The absence of this system leads to poor training, which leads to poor decision-making. Hence, the mediators that have affected the relationships between E-HRM information tools and decision-making quality in the South African and Nigerian universities include a lack of E-training systems and poor training.

Furthermore, 22.2% of respondents in the South African universities agreed that E-performance management facilitates an interactive performance management process in their institution and 43.5% of disagreed. While 39.3% respondents agreed in the Nigerian universities and 31.8% respondents disagreed. More respondents agreed in the Nigerian universities, although the results from the two countries' universities were poor. This could mean that some South African and Nigerian universities do not have E-performance management in their institutions. Some respondents from some universities in South Africa and Nigeria noted that they do not have E-performance in their respective institutions.

A lack of E-performance management can affect the relationship between E-HRM information tools and the decision-making quality of HR staff members at the universities.

In addition, it was noted in the interview questions from the South African universities that information that is not imputed into the system can be a mediator that affects the relationship between E-HRM information tools and decision-making quality. Furthermore, in the Nigerian universities, the interviewees noted that poor Internet/network knowledge and availability of updated information and tools can be mediators that affect the relationship between E-HRM information tools and decision-making quality.

4.11 Chapter Summary

In summary, the researcher has analysed the data that was collected by outlining the opinions of the university staff members and their experiences in the utilization of electronic human resource management (E-HRM) in their workplaces. The data was processed and analysed to enable the researcher to ascertain answers from both the questionnaires and the research questions. Self-administered questionnaires were used, which comprised two sections: demographic and closed –ended questions. The first consisted of questions in the areas of gender, age, race, employment type, qualifications and work experience, while the latter consisted of closed-ended questions, which used research likert scales (1 - Strongly disagree, 2- disagree. 3- Not applicable, 4- Agree, and 5- Strongly agree).

Tables, charts and graphs were used in this chapter to show the results of the questionnaires. Finally, the HR directors and managers' responses to the interview questions were presented. The following chapter discusses the comparative study of this research.

The comparative data analysis in this chapter revealed that the South African universities utilize electronic human resource management (E-HRM) more than the Nigerian universities. The percentage of agreed respondents was more in the South African universities than in the Nigerian universities. The results showed that there is a lack of E-HRM enabling capacities in the Nigerian universities more so than in the South African universities. Furthermore, there is artificial power supply in the Nigerian universities, which may not favour the use of some systems. In addition, there is poor Internet supply and technological knowledge in the Nigerian universities.

Chapter five
DISCUSSION OF RESULTS

5.1 Introduction

This chapter discusses the outcomes and results of the data analysis, and clarifies issues that were highlighted in the problem statement, research questions and research objectives. It also interprets information which was obtained from the self-administered questionnaires and semi-structured interviews. The ways in which effective utilization of electronic human resource management (E-HRM) would assist the universities' human resource management department to optimize the value of their functions to their communities and clients are discussed, amongst others. To achieve the above, different broad headings were adopted from the research objectives to analyse and discuss the findings. This discussion of the results is based on the research objectives.

5.2 Extent of Utilisation of E-HRM amongst Selected Universities in South Africa and Nigeria

Utilization of electronic human resource management (E-HRM) in the universities has to do with the different functions that are performed in the HR departments. Few of these functions have been discussed to show the extent of the utilization of this system in selected South African and Nigerian universities. These include: E-administration, E-planning, E-recruitment, E-performance management and E-training.

5.2.1 Electronic Administration

The advent of globalization introduced and saw the utilization of electronic human resource management (E-HRM) in South African and Nigerian universities. However, effective human resource management has a competitive advantage over other departments in the university. E-HRM is defined as the administrative support of the HR function in organizations by using Internet technology (Voermans & Van Veldhoven, 2007:887). It is also said to be a way of implementing HR strategy, policies and practices in organizations through conscious and directed support and/or with the full use of web-technology-based channels (Ruel *et al*., 2004:368). E-administration has enabled HR practitioners to update employee information,

post job specifications and help them to make changes in their policies and procedures (Panayotopoulou *et al*., 2007:284). Moreover, human resource management practitioners are keen to use E-HRM, as it helps them with decision making that would lead to the organization's success (Urien, 2011:60). In addition, the use of E-HRM for administrative functions in the universities can be made more strategic, flexible, cost-efficient, and customer-oriented.

It is important to note that electronic human resource management (E-HRM) is an application of information technology for both networking and supporting human resource staff members in their shared performance of HR activities. It is, therefore, the responsibility of HR practitioners to management and employees of the universities to carry out their functions effectively in order to achieve the university's goals. HR employees access these functions through the intranet or other web-technology channels. The utilization of E-HRM empowers HR practitioners to perform their functions by focusing more on the strategic aspect of HR and allowing them to lighten administrative loads. As mentioned previously, there are three (3) types of E-HRM: operations, relational and transformational. These three types of E-HRM helps in different aspects of HR activities improving the functions of HR employees. Operational E-HRM is concerned with the administrative functions of HR employees such as payroll, and employee personal data. Relational E-HRM is used to support business processes through training, performance management and recruiting new employees. Transformational E-HRM is used for strategic HR activities such as knowledge management and strategic orientation. Every university has the right to choose from any of these three types of E-HRM to pursue E-HRM policies in their institution. Electronic administration in the universities is meant to improve the services of HR employees for their clients, employees and the managements of the respective institutions. This can be achieved through improved efficiency and cost effectiveness within the HR department, which will allow them to become strategic in their decision-making in order to achieve the university's goals. It also improves the global orientation of human resource practitioners.

However, owing to the average percentage of respondents agreeing to use E-HRM for the administrative functions of HR staff members at the universities, the researcher was able to establish that the HR staff members at South African and Nigerian universities make use of E-

HRM for administrative functions in their universities. Emanating from the analysed data, the researcher found that human resource (HR) staff members at the universities make use of electronic administration in their HR functions. Truss (2003:50), and De Souza Freitas, Jabbour & Santos (2011:226) state that South African universities are in a constant state of evolution and change, which involves the introduction of E-HRM into their work functions. Again, regarding Nigerian universities, Urien (2011:60) mentions that the use of E-HRM is fast becoming a significant aspect of HRM as it enhances productivity within the human resources department. The interviewees presented in 4.5.1 of this study noted that E-HRM is used to support administration such as storing information, reporting and complying with relevant regulatory requirements.

Findings from the data analysis strongly emphasise that HR staff members in the South African universities make use of E-administration in their administrative functions. Table 4.12a showed that 55.6% of respondents from the South African universities agreed that HR employees make use of E-HRM for administrative functions in their universities. It was interesting to note that Table 4.12b also revealed about 55% of respondents agreed that HR employees make use of E-HRM for administrative functions in the Nigerian universities. Few respondents disagreed within the South African and Nigerian universities in this regard. This might be as a result of few university employees who still lack awareness of the use of E-HRM and the value that it brings to HR functions, and the institution as a whole. Thus, in both countries' (South Africa and Nigeria) universities there is a need for human resource management practitioners to receive training on basic information technology (IT) skills that would enable them to utilize this system effectively.

5.2.2 E-Planning

Electronic human resource management (E-HRM) is designed for human resource professionals and executive managers who need support to manage their workforce, monitor changes and gather information, which is required for decision-making in the universities. Human resource (HR) employees use E-HRM to process and keep track of relevant information. In addition, it is used by the university management to plan their functions for a long period ahead of time. It also gives management direction in their decision-making. E-HRM provides support for future planning and also for policy formulations. It helps HR

professionals to form a basis for the entire personnel planning and development application; it enables them to facilitate analysis of the university's organizational structure; and it also allows them to develop actual planning, and to propose personnel development. Below is a presentation of the collected data findings.

Levene's test and T-test results revealed that there was no statistically significant difference in the use of E-planning in South African and Nigerian universities. In addition, Table 4.14a showed that 57.8% of respondents agreed in the South African universities that E-planning ensures an adequate balance of solid performance and high potential in their universities. Hence, Table 4.14b showed that respondents agreed in the Nigerian universities that E-planning ensures an adequate balance of solid performance and high potential in their universities. One of the most striking results was shown in Figure 4.6, namely that South African respondents agreed (68.3% of respondents) that E-planning provides tools that could effectively manage the university's strategic human resources, while the Nigerian respondents agreed (79.7% of respondents) that E-planning provides tools that could effectively manage the university's strategic people resources. This figure reveals that more Nigerian respondents agreed than South African respondents with 11.4% difference.

Swanepoel *et al*. (2007:775) mention that E-planning enables human resource (HR) practitioners in South African universities to estimate future labour supply and demand electronically. They also add that E-HRM is a way of implementing HR strategies, policies, and practices in organizations through the use of web-technology-based channels. Moreover, E-planning through web-technology enables HR practitioners to identify the best strategic way of co-ordinating the university's HR departments and other staff members in the university (DPSA, 2008:1). Regarding Nigerian universities, Milkovich and Boudreau (1998) cited in Danlami (2012:10), state that a good career planning system would enable university employees to take more responsibility for their own skills development in the organization. They add that HR employees in the Nigerian universities are motivated when there is a good career development system with internal advancement opportunities, which are based on merits. The above results proved that the South African and Nigerian universities make use of E-planning, but there is not much statistically significant difference between the use of E-planning amongst South African and Nigerian universities.

5.2.3 E-Recruitment

The growth of Internet recruitment has led to HR professionals embracing Internet recruitment. It has turned recruitment problems into a faster, simpler, and more effective process. E-recruitment can be used for: posting job vacancies on the company's website or intranet; do online candidate applications; online job boards; shortlisting; testing/ assessment of applicants; and contracting applicants. This has led to recruiting talented applicants and the right people for the right position. The benefits of E-recruitment include: time saving, cost saving and an increased quality candidate pool. HR professionals advertise job vacancies on-line and take applicants from prospective candidates. Employers also search for job candidates on-line via the Internet. E-recruitment provides functions that HR practitioners need to work through the entire recruitment process. It also contains an entire range of powerful recruitment strategy such as: issuance of recruitment requests; selection process of applicants; applicant pool administration and notification to applicants. An exploratory analysis was conducted in order to deduce the extent of the utilization of E-recruitment in the various universities that were used for this study.

With regard to the utilization of E-recruitment by HR staff members at the universities, the researcher deduced that E-recruitment software is available for use in the South African universities. It is also used for the appointment of staff members and to promote self-service. In the Nigerian universities, the interviewees noted in paragraph 4.56 of Chapter 4 that E-HRM system is used for record keeping, capturing of personal data and for E-recruitment. In addition, in paragraph 4.5.12 the interviewees mentioned that E-recruitment software has functionalities that are useful for human capital planning, which draws reports on the profiles of potential candidates, their skills set, nationality, education level and experience. The data analysis, as illustrated in Table 4.15a, indicates that 92.2% of respondents agreed that there are online advertisements for vacancies in the South African universities, while 56% of respondents agreed that there are online advertisements for vacancies in the Nigerian universities. This could be as a result of a poor supply of electricity and Internet services in the Nigerian universities. Once more, 50.7% of respondents from the South African universities agreed that recruitment is done online, while only 28.8% of respondents from the Nigerian universities agreed that recruitment is done online at their institutions.

Furthermore, 29.7% of South African university respondents disagreed that recruitment is done online at their institutions, while 40.3% of respondents from the Nigerian universities disagreed. It is important to note that more respondents agreed in the South African universities that recruitment and advertisements for vacancies are done online in the South African universities, while more respondents disagreed in the Nigerian universities. This proves that there is an E-recruitment and selection system in the South African and Nigerian universities, but that the South African university HR staff members use the system more than Nigerian university HR staff members. Again, Levene's test of equality of variances and the T-test tables showed that there is a statistically significant difference between the use of E-recruitment in the South African and Nigerian universities.

E-recruitment is a popular, cost-effective, easy and fast means of reaching thousands of potentially suitable candidates in South Africa. E-recruitment has paved a new way to attract, recruit and select candidates by HR practitioners in South African universities, and has contributed to organizational effectiveness. However, E-recruitment was introduced in Nigeria in 2005 when public service reform recommended the use of online recruitment to hire applicants in the public sectors (Sanusi & Martadha, 2011:616). Moreover, E-recruitment was adopted in Nigeria because it has a tendency to attract a large number of applicants, and it was preferred to that of the traditional or paper type of recruitment process (Bumah, 2008:8).

5.2.4 E-Performance Management

Electronic performance management is a system that uses a web-based appraisal system to evaluate employees' skills, knowledge and performances. HR practitioners should use technology to streamline processes in their workplaces. Technology applications such as use of the Internet and company intranets are used to support performance management in the universities. Enterprise resource planning enables HR employees to manage and track employee performances in the universities. HR practitioners also engage with employee performance through the use of online appraisal forms. The utilization of E-HRM has enabled HR practitioners to conduct performance appraisals online, where the process is done through an automated and computerised system. This has led to the process of performance management in universities being standardised, and is done remotely by employees and HR managers. Hence, all information can be submitted directly to the human resource management departments electronically from university staff members.

Research that was conducted found that E-performance management is not being used as effectively as it is supposed to be. This is because these universities lack IT specialists who can train HR practitioners on how to use E-HRM to conduct employee performance management. Again, the system is not installed properly for use. Some respondents in both the South African and Nigerian universities actually agreed that E-performance management is used in their institutions. Some HR directors and managers revealed that the utilization of E-performance management has greatly impacted on the performance of HR staff members at their universities. This has led to increased workloads and outputs and has also improved the performances, morale and user experience of HR staff members in the institutions. Besides, the use of E-performance management has enabled HR staff members to deliver on their jobs faster and manageable.

The data analysis in Tables 4.17a and b showed a negative result. More respondents disagreed with the use of online performance management. Table 4.17a revealed that only 22.9% of respondents in the South African universities agreed that online performance management is used to evaluate employee performance in their workplace, while 48.1% of respondents disagreed. In Table 4.17b only 30.2% of respondents agreed in the Nigerian universities online performance management are used to evaluate employee performance in their workplace, while 41.3% of respondents disagreed. This could be because the system is being used by HR employees only, and not by general staff members. Some respondents mentioned that they complete their performance management evaluation form manually and send it to the HR Department, where it is captured and evaluated by using E-performance management. This means that the few staff members that agreed must have been HR staff members who make use of the system. Likewise, in Table 4.18a, only 22.2% of respondents from the South African universities agreed that E-performance management facilitates an interactive performance management process in their institution, while 43.5% of respondents disagreed. In Table 4.18b only 39.3% of respondents from the Nigerian universities agreed that E-performance management facilitates an interactive performance process in their universities, while 31.8% of respondents disagreed. Apart from the reason given above, the number of the university staff members that were available during the survey could have affected the result.

Shane (2009:48) indicates that E-HRM is used by HR practitioners in the South African universities to conduct performance management appraisals online through the intranet. Also, E-performance management allows HR practitioners to access data from any computer that has Internet and at any time (Kavanagh & Thite, 2008: 36). In the Nigerian universities the HR staff members use E-performance management to streamline the performance management process into web-based solutions, and to cut the organization's costs (Dauda & Akingbade, 2011:34). This shows that E-performance management is used only by HR staff members, and there is a probability that some other staff members in the universities may not be aware of the use of performance management by the HR practitioners. The Levene's test of equality of variance and the T-test show a statistically significant difference in the use of performance management between South African university HR staff members and Nigerian universities HR staff members. This proves that E-performance management is being used more in South African universities than in Nigerian universities.

5.2.5 E-Training

Electronic training (E-training) has enabled university HR practitioners to conduct training within their institutions through online training. This helps to reduce the cost of organising training such as paying instructors, printing materials for the training and buying/hiring training facilities, which include direct costs, and travel time, lodging and travel expenses, which include indirect costs. E-training enables HR practitioners to always avail training materials at any time for university staff members. This system also provides a basis for extending and updating employees' skills and knowledge.

Emanating from the interviews, it was evident that the South African universities' staff members and the Nigerian universities' staff members make use of E-training management. The interviewees indicated that the types of E-HRM software that is available in the South African universities include oracle, Integrated Technology Software (ITS), and training and recruitment softwares used by the learning and development units of the HR Department refer to paragraph 4.5.3 of this study. Whereas, in the Nigerian universities, the interviewees mentioned that the types of E-HRM system software that is available include Integrated Technology software (ITS), payroll system and training software. As indicated in Figure 4.7, 53.3% of respondents from the South African universities agreed that employees can book

individual training courses and record course information online at their workplace, while 25.8% of respondents disagreed. Likewise, Figure 4.7 showed that about 40.3% of respondents from the Nigerian universities agreed that employees can book individual training courses and record course information online at their workplace while 33.8% of respondents disagreed. Respondents from the South African universities who agreed with the statement were more than those in the Nigerian universities that agreed. This could be associated to Information Technology skills lacking in Nigeria, or it could be because South Africa is more advanced and developed in technology. Additionally, Table 4.19a revealed that 32% of respondents from the South African universities agreed that the use of electronic training management has reduced training costs at their workplace, while 24.2% of respondents disagreed. Also, in Table 4.19b, 32.7% of respondents agreed that the use of E-training management has reduced training costs at their workplace, while 36.7% of respondents disagreed. This shows poor results from the two countries' university respondents. A reason could be poor IT skills and poor Internet services, which were at the universities used for the survey.

5.3 Effect of Utilising HR Software to Support Well-Articulated and Aligned Business Goals across all HR Functions in both South African and Nigerian Universities

The study has showed that there are effects in the utilization of human resource (HR) software to support well-articulated and aligned business goals across all human resource functions in both the South African and Nigerian universities. The effects include: using HR software for training and developing both new and old staff members at the universities. This makes it possible for the HR practitioners to download their training materials online for easy access for the trainees. HR software enables HR staff members of the universities to make use of electronic administration in their administrative functions, making work easier and faster. They can also capture, store and retrieve their data at their convenience. The utilization of human resource software has also enabled HR staff members to write efficient and effective reports through the use of Management Information Systems software. In addition, HR software (payroll software) has enabled HR workers to process monthly and daily salaries/wages on time.

This has been proved from the interviews that were conducted with the HR directors and managers of both the South African and Nigerian universities (refer to paragraph 4.5.3 of this study). The question was "*What are the types of software used in the human resource management (HRM) functions of their university? How do you apply them as employees*" The following were the answers to these questions: Respondents from the South African universities noted that the types of software used in their universities for HR function include Oracle, Integrated Technology Software (ITS), training software which is used by HR's learning and development unit and E-recruitment sofware. They added that ITS systems are used to support administration, while peromness job evaluation systems are used to grade jobs. Furthermore, decision-making systems are used to grade jobs and the database packages are used to handle training and recruitment data in their universities. However, HR directors and managers also mentioned that they have other software such as "Discovery and MIS", which are used for reporting purposes. Conversely, in the Nigerian universities, the HR directors and managers gave the following answers: They stated that the types of HR software used in their institution include Integrated Technology Software (ITS), payroll system and training software. They also noted that their payroll system is integrated with other modules hence it is easy for the HR workers to process monthly and daily salaries and wages at the mere click of a button. In addition, salaries and wages are computed automatically (refer to paragraph 4.5.3 of this study).

Notwithstanding, a second question was posed to the HR directors and managers, which proves that the utilization of HR software supports well-articulated and aligned HR business goals in their workplace. The question was: *"Does the utilization of electronic human resource management (E-HRM) tools by the human resource management employees affect their attitude towards their job functions?"* The answers were the following: HR directors and managers in the South African universities reported that the utilization of E-HRM tools by HR employees have affected their attitudes in their job functions. They noted that the employees have become dependent on the system because it gives them up-to-date information and enables them to respond quickly to their clients. Also, the interviewees stated that the utilization of E-HRM has made their work easier and has reduced paper work and the loss of important information through manual filling. Furthermore, the system makes retrieving of information quite easy and enables HR staff members to provide feedback to

staff queries immediately. Efficiency of work is achieved, which enables HR employees to function efficiently (refer to paragraph 4.5.2 of this study).

In the Nigerian universities the HR directors and managers stated that the utilization of E-HRM enables HR staff members to gather information, which is required for decision making within a short period of time. They also noted that it enhances efficiency of work, improves fastness, saves time and aids productivity. In addition, the HR workers are more enthusiastic about their work, as their activities are less cumbersome and tedious. It motivates them to do their job faster in order as to meet deadlines (refer to paragraph 4.5.2 of this study).

5.4 Ways in Which Effective Utilisation of E-HRM Would Assist the Universities' HRM Departments to Optimise the Value of their Functions for their Communities/Clients

There are different ways by which effective utilization of E-HRM can assist the universities' human resource management (HRM) departments to optimize the values of their functions for their communities/clients. Below are some few examples.

5.4.1 The Use of E-HRM Assists the HR Department to Deliver Effective and Efficient Services to their Colleagues, Students and Stakeholders

The use of electronic human resource management (E-HRM) varies and includes delivering effective and efficient services to customers and stakeholders. E-HRM had been defined as a way of implementing human resource management strategies, policies, and practices in the universities through the use of Internet channels (Sanayei & Mirzaei, 2008:79). Once more, it is defined as the planning, implementation and application of information technology to support HR practitioners to perform their HR activities (Strohmeier, 2007:19). The use of E-HRM has increased the effectiveness of recording and management of absence across the universities. It makes the process of recruitment more efficient and effective. Hence, it automates and speeds up the communication process in the HR Departments of the universities. In addition, the use of E-HRM enhances efficiency by reducing the cycle times to process paper-work, increases accuracy, and reduces human resources workforce in the

universities. Furthermore, it offers an easy-to-use electronic medium through which HR goals are accomplished faster.

Electronic human resource management (E-HRM) assists the HR Departments to deliver effective and efficient services to their colleagues, students and stakeholders. During the interviews some HR directors and managers indicated that the use of E-HRM enables HR staff members to gather data, analyse capabilities and improve record keeping. In addition, it brings about accuracy and efficiency and encourages faster decision-making. Furthermore, the use of E-HRM is an improved and reliable source of information. The HR directors and managers also noted that the use of E-HRM improves turnaround time, efficiency and immediacy of feedback to staff queries and decision making. In addition, they reported that the use of E-HRM enables HR managers to manage the workforce. Again, it makes work a lot easier and faster and exposes HR employees to modern technological advancement.

Findings from the data analysis strongly emphasise that university employees in the South African and Nigerian universities receive effective and efficient services from their HR staff members. This is reflected in Figure 4.4, which points out that 65.4% of respondents from the South African universities and 57.4% of respondents from the Nigerian universities agreed that they normally receive effective and efficient services from their university's HR staff members. The researcher was able to establish that the effective utilization of E-HRM assists universities' human resources management Departments to optimize the value of their functions for their communities/clients by delivering accurate and efficient services. It also assists the university's HR employees to gather and analyse data, and it improves record keeping. The researcher also deduced that the utilization of E-HRM by HR practitioners has brought about turnaround time, efficiency and immediacy in feedback for staff queries, and helps HR practitioners to make good decisions.

5.4.2 It Enables HR Practitioners in the Universities to Participate in Renewal, Change and Transformation Activities of the Universities

The author believes that HR Departments serve as active participants in the institution's renewal, change and transformation activities for the above mentioned reasons. Also, the

utilization of E-HRM has added value in the work functions of HR practitioners through developing Information Technology (IT) skills and improving HR practitioners' decision–making. It has also given HR practitioners an opportunity to create a motivated workforce through an integrated set of web-based tools that enables the workforce to develop by making strategic choices.

The analysed data revealed that HR Departments participate in the institution's renewal, change, and transformation activities. This includes the introduction, implementation and utilization of E-HRM into the organization. Thereby bringing change in employees' skills in the area of Information Technology (IT) skills, and improvement in the decision–making skills of the university's HR employees. The utilization of E-HRM has brought about employees' skills development and promotes strategic change throughout the institution. It is clear from Tables 4.10a and b that 71.6% of respondents from the South African universities and 86.5% of respondents from the Nigerian universities agreed that the HR Department serves as an active participant in institution's renewal, change, and transformation activities.

5.4.3 The Use of E-HRM Enables HR Practitioners in the Universities to Reshape the Behaviour of their Employees, and also to Anticipate Future Employees' Needs

The researcher was able to deduce from the study that human resource practitioners work to reshape the behaviour of the other staff members at the university, and help to anticipate the future needs of university employees. It is clear that the HR practitioners, through the utilization of E-HRM, have gone a long way towards restructuring the work functions of both HR employees and other university employees. They have introduced broadly defined jobs with a great focus on behaviours, values, and cultural fit over specific skills. Change management principles have been embedded in how all the university employees work, think and collaborate.

Results from Tables 4.11a and b show that 59.4% of respondents from the South African universities agreed that HR practitioners work to reshape behaviour, and help to anticipate future employees' needs, while 83.6% of respondents from the Nigerian universities agreed that HR practitioners work to reshape behaviour, and help to anticipate future employees' needs. This is in-line with the definition of Bondarouk and Ruel (2009: 507) who define E-

HRM as “an umbrella term covering all possible integration mechanisms and contents between HRM and information technologies aiming at creating value within and across organisations for targeted employees and implementation and application of information technology for both networking and supporting at least two individual or collective actors in their shared performing of human resource (HR) activities. The use of E-HRM has enabled HR practitioners at the universities to reshape the behaviour of their employees, and also anticipate future employees’ needs through the introduction of E-training and development, which is integrated into the everyday work of employees. Moreover, the rapid re-skilling of employees enables HR employees to work effectively in the different sections of their department.

5.4.4 The Use of E-HRM Enables HR Staff to Deliver Quick Services to their Colleagues and Clients

Previous research pointed out that the utilization of E-HRM allows human resource (HR) employees to do their work effectively in fewer hours than traditional methods (Lengnick-Hall & Moritz, 2003: 366). The authors also add that HR practitioners can process their paperwork and increase data accuracy in less time. From the data analysis it was revealed that 68% of respondents from the South African universities agreed that they receive quick service from HR staff members when visiting the HR offices. While, 52.8% of respondents from the Nigerian universities agreed that they receive quick service from the HR employees when visiting the HR offices. In addition, Table 4.21a reflects that 50.7% of respondents from the South African universities agreed that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplace. Table 4.21b reflects that 57.4% of respondents from the Nigerian universities accepted that the HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplace. It can be said that the utilization of E-HRM aims to provide quick service to both the HR practitioners and their customers. It also helps HR practitioners in the universities to capture accurate and timely information.

5.5 E-HRM Related Enabling Capacities for Human Resource Functions in South African and Nigerian Universities

The researcher found out that E-HRM related enabling capacities include a constant supply of electricity, basic IT skills, and E-HRM software, to mention but a few. This E-HRM related enabling capacities can enable E-HRM to function effectively, but their absence will retard or slow down the functions of the system. As indicated by the employees during the interviews, there are E-HRM related enabling capacities for the human resource management functions, because without it the system may be disabled or may not function effectively. Figures 6.8a and b showed that 85.3% of respondents from the South African universities agreed that there is a constant supply of electricity in their workplace, and 71.1% of respondents from the Nigerian universities agreed that there is a constant supply of electricity in their workplace. A constant supply of electricity is an E-HRM related enabling capacity. E-HRM can only function effectively where there is a constant supply of electricity, since the system needs electricity to function. The problem here is that 71.1% of respondents from the Nigerian universities agreed that there is a constant supply of electricity in their workplace, however, the power supply is artificial, which means that it is supplied through a generator. Also, this power supply is only for few hours, after which it ceases. The system might tend to develop problems or data could be lost when the system switches off automatically. It is an advantage for the South African universities that they have a constant supply of electricity in their workplaces.

Also, Figures 4.9a and 4.9b showed that 64.3% of respondents from the South African universities agreed that there is a need for additional basic Information Technology (IT) skills in their workplace. While 82.7% of respondents from the Nigerian universities agreed that there is a need for basic additional IT skills in their workplace. This result could contribute towards a problem in the utilization of E-HRM, since basic IT skills is needed to operate the system. Without basic IT skills, HR practitioners cannot use the E-HRM system. Basic IT skills are an enabling capacity in the use of E-HRM for human resource management functions. Still, some respondents agreed that E-HRM software is available for HR staff use with 45.8% of respondents from the South African universities agreeing (refer to table 4.13a). A total of 44.6% of respondents agreed in the Nigerian universities that there is E-HRM

software available for HR staff to use (refer to table 4.13b). This percentage is not encouraging, as the availability of this software enables E-HRM to function effectively.

5.6 How Information and Decision-Support Tools Provided by E-HRM Affect the Efficiency/Timeousness of the Decision-Making of HR Practitioners in South African and Nigerian Universities

The researcher was able to deduce from the study that the use of E-HRM has affected the efficiency/timeousness of decision-making of HR professionals by enabling information to be made possible at the mere press of a button and has led to the efficiency of information, reduction in costs and time, and analytical decision-making. The following human resource (HR) information has been improved through the use of E-HRM as a decision-supporting tool. The recording and management of absence; this has been done through the introduction of a system that records the start and finish times of employees. The automation and introduction of an E-recruitment system, which makes the recruitment process more efficient and effective, as it automates and speeds up the application process in the organization.

The interviewees noted that they apply E-HRM as a decision-making tool in leave administration, and appointment of both permanent and temporary staff members (refer to paragraph 4.5.7 of this study). They mentioned that it is used as a decision making tool in the setting and monitoring of employment equity matters and in strategic development matters. In addition, E-HRM is used as a decision-making tool in the approval of positions as replacements, validation of headcount, approval of job grades, and in other HR processes (redesign). Interviewees from the Nigerian universities added that E-HRM is used as a decision-support tool in promotions and confirmations, salary advancements, and annual leave. Furthermore, it is used in performing appraisals, posting, recruitment and capturing of personal data in the Nigerian universities (refer to paragraph 4.5.7 of this study).

The HR directors and managers noted that the utilization of E-HRM has affected the quality of decision-making in their workplace by bringing stability and maturity to the HR work

processes (refer to paragraph 4.5.8 of this study). The shift processes have been changed from transformational to strategic. Also, it enables the smooth process of auditing by HR practitioners. They also mentioned that the turnaround time in the processing of information and documents have been reduced. Likewise, decision-support tools provided by E-HRM affect the quality of decision-making in their workplace by helping HR staff members and managers to make precise and fast decisions in connection to their work, and it enhances accuracy of decision-making among HR staff members.

5.7 Mediators and Moderators that Can Affect the Relationship between E-HRM Information Tools and Decision-Making Quality

HR directors and managers indicated that information that is not imputed into the system can be a mediator that affects the relationship between E-HRM information tools and decision-making quality (refer to paragraph 4.5.9 of this study). They also stated that poor Internet /network knowledge and availability of updated information and tools can be mediators that affect the relationship between E-HRM information tools and decision-making quality. In addition, they said that the personal opinions of employees at management level and the overall objectives of the HR processes, can affect the relationship between E-HRM information tools and decision-making quality in their institutions. If the overall objectives of the HR processes in the institutions do not support the HR employees in using E-HRM information tools, it can affect employee decision-making in the institutions. However, Figure 4.8a shows that 85.3% of respondents from the South African universities agreed that there is a constant supply of electricity in their workplace. While figure 4.8b shows that 71.1% of respondents from the Nigerian universities agreed that there is a constant supply of electricity in their workplace. The utilization of E-HRM information tools require a constant supply of electricity to function effectively. Poor supply of electricity means that the system will not work effectively, hence affecting employee decision-making in the institutions.

Above all, Figure 4.9a shows that 64.3% of respondents from the South African universities agreed that there is a need for basic Information Technology (IT) skills in their workplace. While Figure 4.9b shows that 82.7% respondents from the Nigerian universities agreed that there is a need for basic IT skills in their workplace. A lack of IT skills can affect the

utilization of E-HRM, thereby affecting employee decision-making in the institutions. Moreover, Chapman and Webster (2003: 113) state that the utilization of E-HRM information tools is important, since it helps HR practitioners to make strategic decisions in their workplace such as collecting job information, recruitment, employee selection and training and performance management. Again, E-HRM was defined in the literature as the administrative support of human resource functions in organizations by using Internet technology (Voermans & Van Veldhoven, 2007:887).

5.8 Consequences and Problems Associated with the Use of E-HRM in the Universities

Despite the merits that the utilization of E-HRM system has brought, there are few consequences and problems attached to the use of this system. Below are some of them.

5.8.1 Consequences Associated with the Use of E-HRM in the Universities

Previous research notes that the use of E-HRM by HR practitioners in the universities has enabled them to effect strategic integration or strategic decision-making. Hussain, Wallace and Cornelius (2007:74), note that the use of E-HRM aids top management to make long term HR plans. They add that personnel development can be done through the use of E-HRM. Mayfield *et al*., (2003:139) state that E-HRM is used to enhance workers' skills and abilities, hence improving the quality of their work life. Again, they note that the use of E-HRM integrates inter-organizational communication and coordination of disparate organizational activities, including change. Moreover, Table 4.9a shows that 68% of respondents from the South African universities agreed that they receive quick service from HR practitioners on visiting to their offices. While Table 4.9b shows that 52.8% respondents from the Nigerian universities agreed that they receive quick service from the HR practitioners on visiting to their offices. This means that the utilization of E-HRM has enabled HR practitioners to deliver quick service to their colleagues in the universities, as well as their clients.

Again, Table 4.21a showed that 50.7% of respondents from the South African universities agreed that HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplace. Whereas, 57.4% of respondents from the

Nigerian universities agreed that the HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplace. This shows that HR practitioners, through the use of E-HRM are able to deliver adequate, accurate and fast information in their workplace.

5.8.2 Problems Associated with the Use of E-HRM Systems in the Universities

It should be noted that even though the use of E-HRM has many advantages, there are also problems associated with the use of this system. These problems include untimely supply of information by the system; and not all data that should be captured can be codified and collated by E-HRM, which may be necessary for the universities, as it may be difficult to capture. In addition, technology drives sometimes hinder decision-making, instead of enabling effective decision-making. Figure 4.9a revealed that 64.3% of respondents from the South African universities agreed that there is a need for additional basic IT skills in their workplace. While Figure 4.9b showed that 82.7% of respondents from the Nigerian universities agreed that there is a need for additional basic IT skills in their workplace. Hence, it could be said that a lack of basic IT skills can hinder the use of E-HRM in the universities.

Furthermore, Table 4.13a showed that 45.8% of respondents from the South African universities agreed that E-HRM software is available for HR staff to use. While in Table 4.13b, 44.6% of respondents from the Nigerian universities agreed that E-HRM software is available for HR staff to use. The researcher believes that the percentage of respondents that agreed with the statement was below average and therefore, it cannot be concluded that E-HRM software are available. From the interviews that were conducted, it was maintained that there is E-HRM software available for use for HRM functions. But the question is to what extent do HRM staff members make use of this software for their HR functions? The results showed a low percentage of respondents who agreed that E-HRM software is available for HR use, but some respondents noted that not all HR staff members use this software, and although certain software is available, it has not been installed for use for HR functions. This could be a reason for the low percentage of responses. This shows that some universities in South Africa and Nigeria may have E-HRM software, but do not make enough use of it, which can contribute to problems regarding the use of E-HRM.

5.9 Significance of the Research Results

This research has compared the utilization of E-HRM as a decision-making tool in selected South African and Nigerian universities. It has highlighted and explicated some utilization of E-HRM such as E-recruitment and selection, E-performance management, E-training and development and so on. It is important to note that there was a statistically significant difference in the utilization of E-HRM in the area of E-recruitment and selection, E-performance management and E-training and development. Also, there is a need for improvement in the utilization of E-HRM software and other facilities to enhance the use of E-HRM in South African and Nigerian universities. A lack of basic IT skills in these universities is a big concern as this can hinder the use of E-HRM in these institutions. Availability of power supply and the use of technology in these universities should be improved as it will enhance the use of this system. Again, there is a need for provision of high-tech equipment and Internet connectivity in the universities that were used for this research.

5.10 Research Model

The utilization of electronic human resource management (E-HRM) is crucial for human resource management staff members in the universities; hence it improves their work functions. In developing countries such as South Africa and Nigeria, university staff members believe that the use of E-HRM has enhanced their HR work functions. Though, not all E-HRM software has been installed in their various universities such as E-performance management software, and E-selection software. Again, some university staff members in the South African and Nigerian universities acknowledge the fact that there is a need for them to improve their information technology basic skills. The aim of this research was to assess the utilization of electronic human resource management (E-HRM) as a decision-making tool by selected South African and Nigerian universities. The variables that were used include E-performance management, E-administration, E-recruitment and selection, E-planning, E-compensation, E-communication and E-training and development. These were tallied with the types of E-HRM systems that are available in the institutions and the functions that they perform in the human resource (HR) departments of the different universities, which were used for the study; and, to find out the extent of utilization of E-HRM in the universities.

Conversely, few key factors were selected to show the benefits and effects of E-HRM in HRM functions such as improving administrative processes, enhancing client services, improving efficiency, recording and management of absenteeism, improving decision-making, and improving communication amongst staff members. The researcher believes that the use of E-HRM improves the decision-making of HR employees in their work functions, as shown in the research study's findings, which shows the researcher's proposed model.

5.10.1 A proposed model for proper implementation and utilization of E-HRM as a decision-making tool for human resource management functions at universities

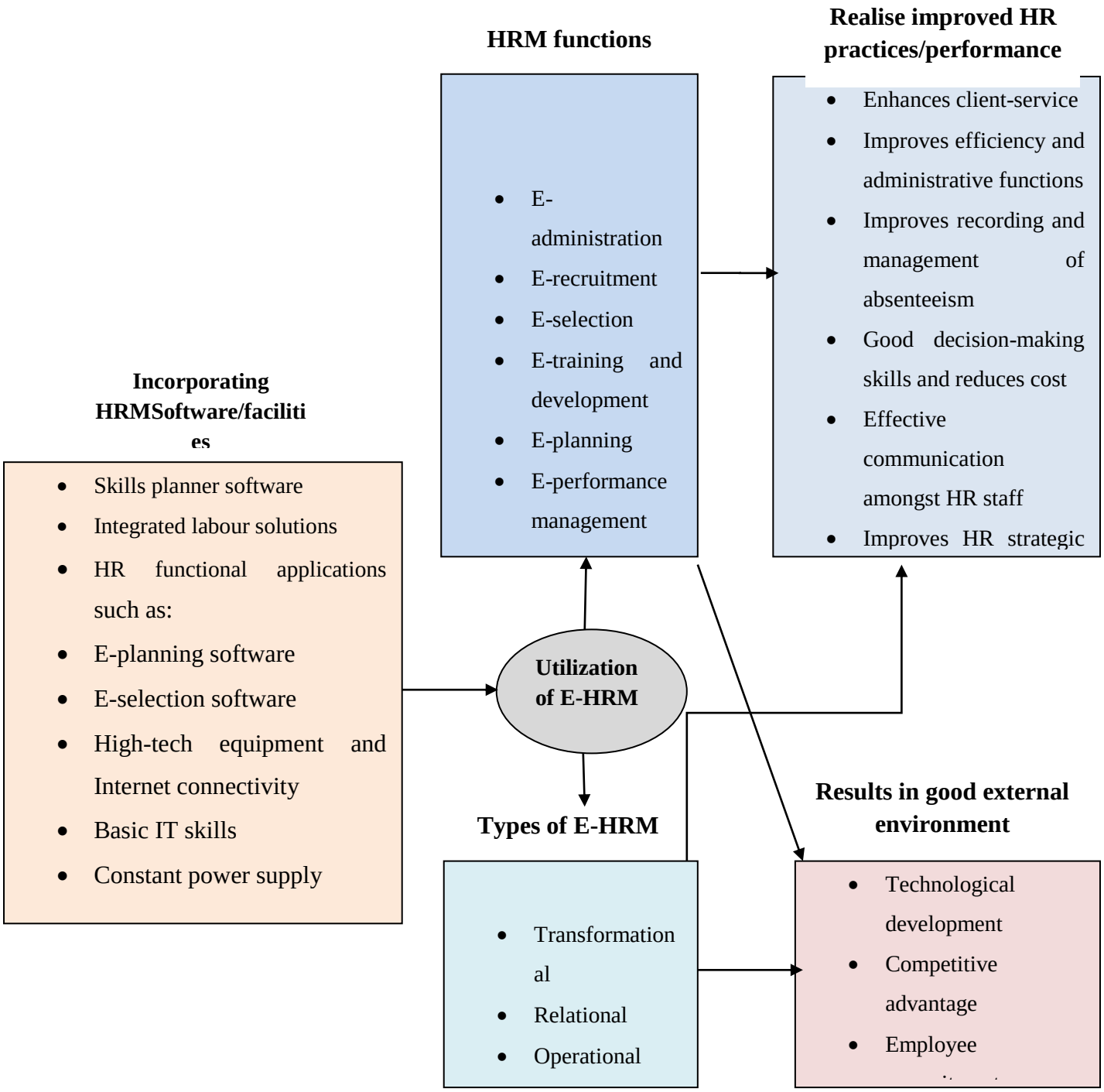


Fig. 5.1: A proposed model for proper implementation and utilization of E-HRM as a decision-making tool for human resource management functions in the universities

Source: Compiled by the researcher

5.10.2 Discussion of the Proposed Model

Decision-making is the process of identifying and choosing alternatives based on the values and preferences of the decision-maker (Harris, 2009:1). Parry (2009) cited in Torres-Coronas and Arias-Oliva (2009:110) believe E-HRM should be used as a decision-making tool in the following areas of human resource management functions: recording and management of absenteeism; the automation and introduction of an E-recruitment system; reviewing forms directly; recording employee absence; and making strategic plans for the department. These and more can be done by using E-HRM as a decision-making tool. It was the contention of this study that E-HRM should be properly implemented and utilized as a decision-making tool for human resource management functions in South African and Nigerian universities. A well designed model for proper implementation and utilization of E-HRM system will deliver the above mentioned views, as cited by Parry (2009), and will also improve human resource management work functions, in general. It will also enhance client services and improve HR strategic roles.

The above diagram symbolizes a model for proper implementation and utilization of E-HRM as a decision-making tool for human resource management functions in the universities. The model purports that incorporating human resource management (HRM) software and other facilities that are found lacking in the universities into the utilization of electronic human resource management as a decision-making tool for human resource management functions, will enable, human resource management (HRM) practitioners to realize improved HR practices and performances internally, and will also result in good external environment interactions such as technological development, competitive advantage, HR professional competence and so on. The listed HRM software/facilities that should be incorporated have been found missing by the researcher during the course of the study, and hence the researcher believes that if these are incorporated into the system, it will yield good HR performances. Again, the three types of E-HRM systems should be implemented to help diversify the functions within the HR department and enable the HR functions to be performed faster and more effective. This model is in line with Lepak and Snell's (1998) theory, which states that human resource management departments should be strategy-focused, flexible, efficient, and client-oriented. Also, HRM effectiveness is usually measured by work performances, productivity and quality of work output (Wright *et al*., 2005; Tsui and Wang, 2002).

Furthermore, there is a need to incorporate the utilization of E-planning software into the human resource management functions of South African and Nigerian universities, as this will allow human resource management practitioners to develop and implement strategic workforce plans to achieve their organizational goals. The utilization of E-HRM in HR functions include E-planning. This shows that integrating E-planning software into HRM functions will improve HR workers' administrative functions and efficiency. It will also enable the institutions to achieve a competitive advantage over the other institutions.

The factor: E-selection software- draws inspiration from the argument that as an example of the uses of E-HRM, it can improve HRM functions by improving the decision-making skills of HR practitioners. The E-selection process helps HR practitioners to identify the best job candidates with the right knowledge, skills and abilities for a particular job. It improves recording and managing absenteeism.

Different HR software that enables the utilization of E-HRM that was found absent in the universities, which were used for this study include skills planner software and integrated labour solutions. It is important that this software should be integrated into the use of E-HRM in the universities' HR functions in order to establish skills gaps and to track unit standard progress in these institutions. Skills planner software keeps track of the supply of job skills in the employer's workforce, and searches for matches between skill supply and the organization's demand for job skills. It is also used to support the institution's policy of promotion from within. Implementing integrated labour solutions will help HR directors and managers to assess the HR employee's compliance with the institution's policies, procedures and practices in line with employment relationships.

High-tech equipment, Internet connectivity, basic IT skills and constant power supply cannot be left behind. There is an abundance of evidence that shows that the above mentioned facilities are in great demand by HR practitioners, as they cannot carry out their HR functions effectively without the availability of these facilities. The HR employees' IT skills regarding the use of E-HRM should be developed to enable them to utilize the system effectively. High-tech equipment and Internet connectivity should be present in the selected universities to

improve the use of Internet in the HR functions. This would also improve communication amongst HR staff members and other staff members at the universities. Also, it would enhance HR client service delivery through the use of emails, telephones, faxes and others. Furthermore, HR practitioners' competences will improve as well as the universities' technology development.

Moreover, the types of E-HRM systems that are used in HRM functions have been listed as transformational, relational and operational. Depending on the E-HRM function that is performed, the uses of E-HRM have been allotted into different types. Operational E-HRM consists of functions that have to do with administration. These include E-administration functions such as salary administration (payroll), and personnel data administration, which enables HR employees to update their personal data with the use of the HR website. Operational E-HRM generally improves administrative functions and efficiencies, while relational E-HRM includes E-recruitment and selection, E-training and E-performance management. These improve HR business processes and enable HR practitioners to make better and timelier decisions. Transformational E-HRM comprises most HRM functions, including E-administration, E-recruitment, E-selection, E-training and development, E-planning and E-performance management. Because transformational E-HRM comprises most HRM functions, it will facilitate HR functions in the organization's change processes, strategic re-orientation, strategic competence management and strategic knowledge management. This will result in good decision-making, improved HR strategic roles and employee commitment.

5.11 Theoretical Framework

The above research model was deduced from the data that was collected and analyzed. The researcher also involved the system analysis approach (Figure 5.1) of problem solving as a guide to proposing the model. This approach involves analysis and design techniques for problem solving by using information technology, as shown below.

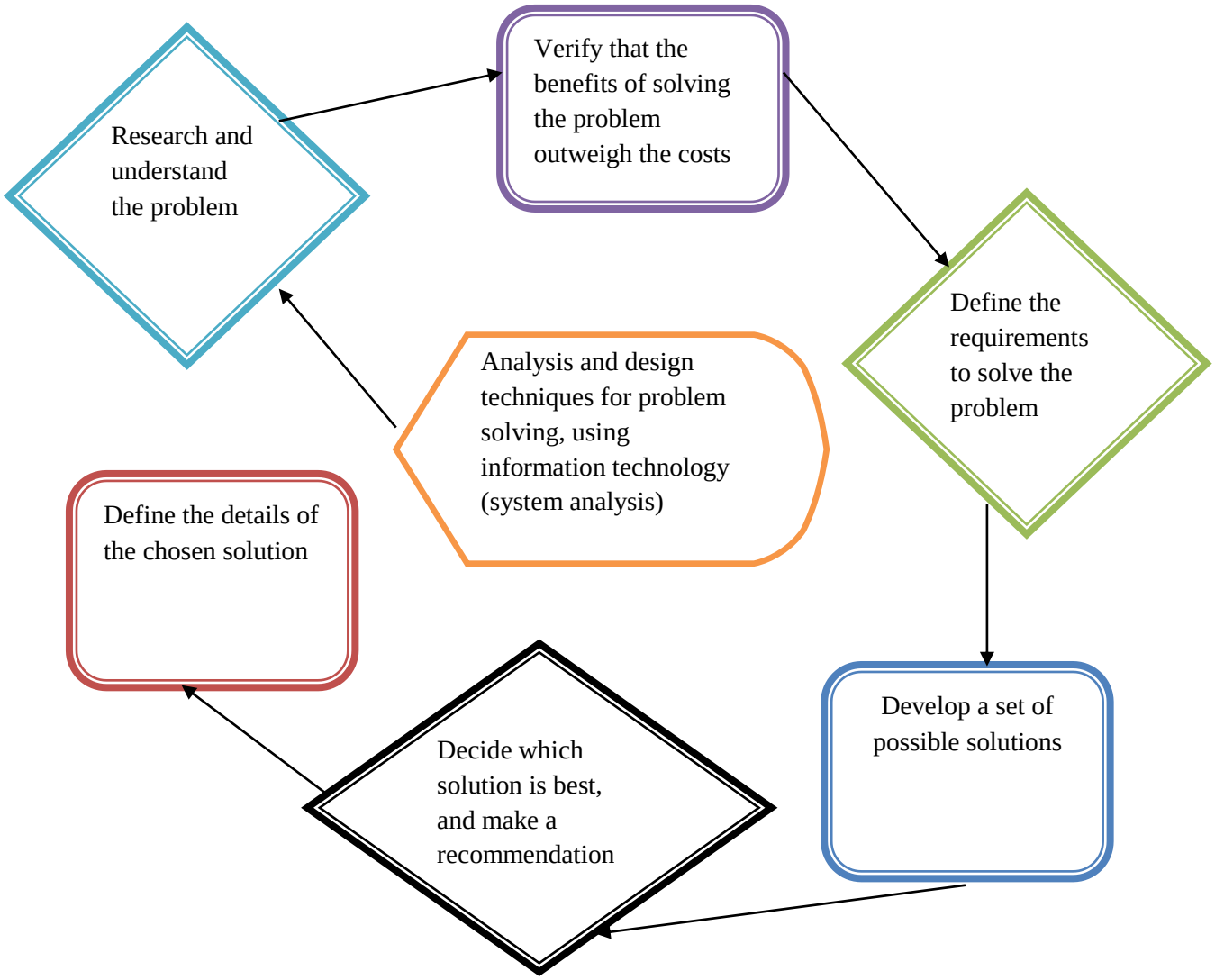


Fig. 5.2: Adapted from Satzinger,et al., 2007:5. Analysis and design techniques to problem solving, using information technology

The above diagram illustrates how the research was conducted. The researcher had to source relevant literature for the study in order to understand the problem at hand. Literature that was sourced included the use of electronic human resource management (E-HRM) in the South African and Nigerian universities. This was to verify the components lacking in the utilization of E-HRM in the universities that were used for the research. The components that were identified were used to propose possible solutions to solve the problems in the utilization of E-HRM in the universities. Furthermore, data was collected in the various universities that were used for the study and analyzed to enable the researcher to define requirements to solve the problems. A set of possible solutions was developed from which the best solution was

chosen and a model was proposed for proper implementation and utilization of E-HRM in the universities. Finally, details on how the proposed model would be implemented were stated, and possible solutions/results were listed.

5.12 Significance of the Model

The importance of the above model is that it identifies the omitted HRM facilities and software, which are essential for human resource management functions, and tries to suggest ways of implementing them. If employed, the model will enable human resource management practitioners to improve their work functions, in general. It will contribute to the ease of using E-HRM as a decision-making tool in the universities. Again, it will allow HR practitioners to develop and implement a strategic workforce plan to achieve their organizational goals. The model has created awareness that articulation of E-planning software, E-selection software, high-tech equipment, Internet connectivity, skills planner software, integrated labour solutions, basic IT skills and constant power supply; and modification of other inconsistences may reduce the likelihood of unintended misuse of E-HRM and other factors, which hinder the transformation of HR functions and the HR department, as a whole. Early identification of inconsistences in HR functions and in the facilities mentioned above may prevent some difficulties that are faced in the utilization of E-HRM, and reduce resistances to change.

5.13 Chapter Summary

This chapter discussed the research study's findings. The discussion was done by adopting different broad headings from the research objectives to analyse and discuss the findings. It took the form of descriptive and exploratory methods of research. Different tests were conducted in the previous chapters, namely the T-test and Levene's test, and these results were also used in the discussion to prove the reliability of the data. Electronic human resource management (E-HRM) is the application of information technology for networking, and to support human resource staff members in their shared performance of HR activities. These activities can be done through the use of electronic gadgets such as E-recruitment systems, E-performance management system, E-training and development systems, E-compensation and E-communication; whereby HR practitioners conduct recruitment, performance management, and communicate electronically. It was found that in some South African and Nigerian universities these systems are already used in place of traditional (paper) type of HR services.

Although, there is a need to upgrade the information technology (IT) skills of the HR practitioners and employees to enable them to use these systems effectively for their HR functions.

Again, poor power supply has affected some universities, as they have the systems but cannot effectively make use of them as a result of poor power supply. Furthermore, some of the systems have been purchased by the universities, but they have not been installed for use by the HR practitioners and employees. Therefore, there is a need to proffer mechanisms, which will help to mitigate and ease the challenges, which HR practitioners and employees face in the utilization of electronic human resource management (E-HRM) systems in universities. Hence, it was necessary to propose a model for proper implementation and utilization of E-HRM as a decision-making tool for human resource management functions within universities. This model proposed a better way of implementing and utilizing E-HRM that would yield better results and bring about better work performances among HR practitioners and employees. This study has suggested that when the listed HRM software and facility, which are lacking are introduced with the existing HRM software and facilities, and the three types of E-HRM are implemented and utilized fully, HR practitioners and employees will be able to deliver efficient and effective administrative functions, client services will be enhanced, recording and management of absenteeism will be improved, and other HR services will improve generally.

The next chapter concludes the study and offers some recommendations for further study.

Chapter Six
CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

Electronic human resource management (E-HRM) is the application of information technology (IT) into human resource (HR) practices for easy interactions within employees and employers. It also stores information regarding payroll, employee personal data, performance management, training management, training, recruitment and strategic orientation. Global business competition has compelled the South African and Nigerian universities to think speedily on how to implement and utilize E-HRM to improve their HR work functions. It is a powerful driving force that helps to reshape any organization, including universities. This has brought about a need for human resource professionals to incorporate a dynamic system that encourages technological development. It is against this background that this study was conducted in order to identify the level of utilization of E-HRM as a decision-making tool in universities with reference to selected South African and Nigerian universities.

It was noted that there are few computers available in most of the South African and Nigerian universities, which hinders the utilization of electronic human resource management (E-HRM). Therefore, it is necessary that the South African and Nigerian universities should purchase enough computers for their universities to encourage the use of E-HRM in order to improve the work functions of the HR practitioners and other administrative officers within the university environments. Once more, there are weaknesses, which are associated with the use of E-HRM as a result of a lack of computers, cultural beliefs, effectiveness and efficiency of use of E-HRM, and government legislations. In order to ensure achievement of these organization's goals, and to improve the use of E-HRM, the South African and Nigerian universities' managements should provide all that is necessary for better implementation and utilization of E-HRM for their human resource practitioners to ease their work and achieve the organizations' goals. The research study has made it possible for the following recommendations, based on the findings, to improve the quality of services that are offered by the staff members at the respective universities.

6.2 Recommendations

The utilization of electronic human resource management (E-HRM) in the South African and Nigerian universities demands that HR staff members should be trained on the use of E-HRM to improve the quality of their services, which they offer their clients and stakeholders. HR workers' skills should be improved and they should be engaged more in the use of E-HRM to help them to be conversant in the use of the system. Again, there is a need to familiarize HR practitioners with designing the E-HRM system to enable them to do their work effectively. More recommendations are discussed below.

6.2.1 HR skills should be improved

The managements of the South African and Nigerian universities should make an effort to improve the information technology (IT) skills of the HR practitioners and employees to enable them to fit into the new information technology age, and to be able to work with the new technological systems that are being introduced into their work functions and those that are yet to be introduced such as electronic human resource management (E-HRM). HR staff members at the universities do not only lack resources for the utilization of electronic human resource management in their human resource functions, but also lack human skills and knowledge that would fully integrate E-HRM into their HR functions (Krubu & Osawaru, 2011:3). This system has the ability to improve the activities and work functions of the HR practitioners and more, and hence cannot be ignored. Figure 6.9 of this research shows that 64.3% of respondents from the South African universities agreed that there is a need for additional basic IT skills in their workplace, and 82.7% of respondents from the Nigerian universities agreed that there is a need for additional basic IT skills in their workplace. It is advisable that the managements of these universities should emphasise and pay more attention to developing the skills of their HR practitioners and employees. Moreover, research into the application of technology in human resource management has only emerged recently owing to rapid technological advancements and their adoption. In addition, change is a feature of every institution and is present in every organization globally. Therefore, the IT skills of the HR practitioners should be developed to enable them to use web-based channels to deliver services, and also to think strategically about conducting their work functions.

6.2.2 HR workers should be trained in the use of E-HRM

In order to develop the abilities of the HR employees to satisfy their present and future needs; and to satisfy the needs of their clients and stakeholders, there is a need to train and develop them in the use of E-HRM. The use of E-HRM requires trained HR workers who would be able to install, maintain and support the system. Normally, in any organisation that wants to introduce a new system into the organisation, they should train their employees on the use of the system. Hence, the HR practitioners and employees should be trained on the use of E-HRM to enable them to use the system effectively and efficiently. This will ensure good execution of tasks and behavioural change on the part of the workers. It will also enhance the skills and abilities of the HR workers in their job performances. Again, it will improve the knowledge of the HR practitioners in using operation systems, application software, network administration and technicians would be trained to service and repair computer facilities, in case of any problems. Parry and Tyson (2011:5) suggest that it is important to train users, E-HRM as this will affect the outcome of E-HRM use. The latter authors also mention that the use of E-HRM would not provide the desired efficiency that it was meant for, if the users lack knowledge of how to use the system.

6.2.3 University HR staff should be more involved in the use of E-HRM

It is the responsibility of the university managements to make sure that the HR staff members utilize E-HRM in the HR functions of the university. They should try to build a motivated workforce that would embrace the use of E-HRM in their HR work functions. As mentioned above, HR practitioners experience difficulties with the use of E-HRM and should hence be trained on the use of the system. Again, for those that are accustomed to the traditional methods, the management should encourage them to use of E-HRM. This will help the universities to build better quality HR workers who are motivated to work as a team productively, effectively and satisfactorily.

6.2.4 There is a need to familiarize HR practitioners with the design of E-HRM systems

Different systems have different models and structures that they are made up of. It is necessary to purchase a system that uses a model that is user friendly, since the design of E-HRM is presumed to have been a hindrance for HR practitioners to use. Otherwise, as mentioned above regular training of the HR employees on the use of E-HRM would go a long way towards exposing them more to the design of the system, and would enable them to work with the system effectively. In addition, it is important to improve HR efficiencies in the E-HRM system design, but effort should be made to make the system more user-friendly, which will improve services that are offered by HR managers and employees (Keebler & Rhodes, 2002:59).

6.2.5 HR workers should be familiar with technology

A lack of technological knowledge on the part of HR practitioners can contribute to hindrances when using E-HRM. This means that HR practitioners and employees should be familiarized with technology by making sure that they make use of different technologies on a regular basis, including E-HRM, which would help them to use E-HRM and other technologies effectively. It is needful for HR practitioners and employees to embrace cultures, which readily accept the use of technologies; this would make it easier for them to use the system. Again, previous knowledge of information technology (IT) use may have resulted in different experiences with IT systems for different types of users, which can cause confusion in the use of E-HRM. Therefore, it is necessary for HR practitioners to be able to differentiate the method of using one system from another by constantly using E-HRM, which is of most importance in their work functions.

6.2.6 There is a need for enough equipment in South African and Nigerian universities to enable the use of E-HRM

There is a need for enough equipment in the HR departments at South African and Nigerian universities to enable HR practitioners to make use of E-HRM and other technologies, which are available for their work functions. As mentioned in the literature, there is a lack of basic infrastructure such as computers, photocopiers, computer software and hardware, as well as

other facilities (printers, papers, monitors, modem, extra disk drives and others), which are necessary for the use of E-HRM by HR staff members. The managements of the South African and Nigerian universities should make sure that required equipment is always available for use by their staff members, as the absence of such equipment would frustrate the efforts of users and contribute to delays in their work processes. In addition, it was mentioned in the literature that some universities lack capital (funds) to provide basic amenities, which are necessary for the use of E-HRM in their institutions. It is recommended that the South African and Nigerian universities should seek financial support from their government to enable them to purchase important facilities that enable the use of E-HRM and other technologies, since they are not merely working for the improvement of education in their country, but they also contribute to funds for the government through students' school fees and other taxes.

6.2.7 Weak infrastructure should be replaced

Some infrastructure such as computers, printers, photocopiers, and others have been damaged owing to a shortage of power supply and a lack of maintenance. Some infrastructure does not work and cannot be used by HR practitioners and employees for their work functions. This situation has contributed a lot to the delay of HR work and has led to poor service delivery, decreasing the life span of these systems. The universities' managements should facilitate the repair of these infrastructures, or purchase new ones to help the HR practitioners and employees to improve their service delivery. Likewise, power supply is essential in the South African and Nigerian universities in the use of E-HRM, because without it the system cannot function efficiently, and it will become redundant in the institutions. Provision of stable and reliable power supply becomes a need to improve the use of E-HRM. Apart from the above mentioned recommendations, air conditioners should be provided to improve the life span of the systems.

Furthermore, telecommunication facilities contribute to restrictions on the use of electronic communication by human resource management employees. This means that the government, with the help of the university management, should make provision to install landlines (telephones) and make sure that they are connected in other to improve communication amongst HR staff members and the other university employees. In addition, Aduwa-

Ogiegbaen and Iyamu (2005: 109) assert that, initially, the cost of connecting landlines in the workplaces were high at $1500 (R16500), but have recently decreased to $148 (R1628).

6.2.8 Other HRM tools and software that are relevant for the utilization of E-HRM should be made available

It is evident that when all the necessary HRM tools and software are made available for HR staff members, they tend to work harder and faster. They are found to be loyal to their employers and they also enjoy their jobs more. It is imperative to empower the workers by making them feel that the company has a high regard for them by providing all that they need for their work as HR practitioners. The South African and Nigerian university managements should provide all human resource management tools and software which are required to motivate the employees to do their job functions well. Software developers should be employed by the university managements to help to develop some HR software that is required for HR work functions to improve their work processes.

6.2.9 Limited Access to the Internet

Some of the universities mentioned that they have a poor supply of Internet access, which hinders the use of E-HRM and leads to poor service delivery in the HR functions. The quality of the HR practitioners and employees' work can be improved if the university managements would establish a cost effective and consistent Internet connectivity to enable the utilization of E-HRM in their universities. It is important that Internet access should be made reliable and available at all times, since the absence of Internet deters the use of E-HRM, and can lead to a loss of important information for HR practitioners. Most respondents from the universities that were used for this research noted that the government does not provide enough funds to their universities to cater for all their needs, and this has led to an inadequate supply of high-tech equipment and Internet connectivity, which hampers the use of E-HRM. It is the researcher's opinion that the government should budget aptly for the universities in order to be able to cater for their needs and improve employees' performances in their workplaces.

6.2.10 Recommendation for the Proposed Model

The management of the universities should pay attention to the proposed model. The model has identified some software and facilities, which are missing in the universities that were used for this study. The model proposes that the university HR practitioners should be introduced to the use of E-HRM in their universities to enhance HR efficiency; reduce costs; decrease administrative burdens; facilitate HR planning; which allows HR practitioners to become strategic partners within the universities.

The following can serve as important recommendations for the university managements in the utilization of E-HRM as a decision-making tool within their HR function.

- It is critical that the management of these universities should be made aware of the weaknesses and challenges that the HR practitioners in their universities face in the use of E-HRM to enable them improve upon them.

- The researcher believes that E-HRM should be used as a decision-making tool in the following areas of human resource management functions in the universities: recording and management of absenteeism; the automation and introduction of an E-recruitment system; reviewing forms directly; recording of employee absence; and to make strategic plans for the department.

- The proposed model suggests that incorporating human resource management (HRM) software and other facilities that are found lacking in the universities into the utilization of electronic human resource management as a decision-making tool for human resource management functions will enable human resource management (HRM) practitioners to realize improved HR practices and performances internally, and will also result in good external environments such as technological development, competitive advantage, and HR professional competence.

- The proposed model is in line with Lepak and Snell's (1998) theory, which states that the human resource management department should be strategy-focused, flexible, efficient, and client-oriented.

6.3 Limitations and Suggestions for Further Research Study

This study acknowledges the following limitations, and proffers suggestions for further research.

- The researcher had a poor response rate of 33.3% of human resource (HR) employees at the universities that were used for the research, though this did not affect the results. Efforts were made to improve the response rate, but to no avail. This was as a result of poor support from the HR directors and managers in allowing their employees in participate in the survey. Therefore, further studies may be conducted in this area by using only the HR employees of any other organisation.

- Also, this study concentrated on the utilization of E-HRM for HR work functions. There are other software, which is used by HR employees in their work functions, which the researcher mentioned, but did not explore such as ACCsys personnel manager, Skills planner software, integrated labour solutions and others. Further studies may be carried out in these fields.

6.4 Conclusion

In conclusion, the utilization of E-HRM is a driving force that brings about efficiency and effectiveness in HR work functions. HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in their workplaces. It enables HR practitioners to deliver quick services to their clients and stakeholders, and improves HR performances. Despite the merits, which E-HRM has brought into HR functions, there are weaknesses and challenges that HR practitioners face in the utilization of this system. As mentioned in the problem statement, there are pitfalls to the utilization of E-HRM, as the South African and Nigerian universities are still in their first phase of adopting and utilizing this system. Hence, the success and failure of the system is indispensable. A positive aspect about the use of this system is that the South African and Nigerian universities' HR employees can learn from the mistakes of international organizations that have already implemented E-HRM. Based on these assumptions, the objectives of this study were to determine the extent of the utilization of electronic- human resource management (E-HRM) systems amongst selected universities in South Africa and Nigeria. The main aim was to

assess the utilization of Electronic Human Resource Management (E-HRM) systems as a decision-making tool by selected South African and Nigerian universities. To achieve the set objectives, different literature relating to the adoption, implementation and utilization of E-HRM were sourced, which led to insight and enabled points to be raised on how to effectively utilize the system. This research has relied on both qualitative and quantitative research methods. Different sources of information were consulted, namely the Internet, Published and unpublished university theses, textbooks, journal articles, and so on. This thesis is demarcated into nine chapters.

Chapter 1 of this research dealt with the introduction and background of the study; statement of the research problem and sub-problems; research objectives; a brief literature review; delineation of the research; significance of the study; and a brief description of the research methodology.

Chapters 2 of this research covered the literature review, where the researcher reviewed literature in order to ascertain the perceptions and opinions of university staff members as far as the utilization of E-HRM is concerned. Information was obtained from different sources, namely textbooks, current articles, the Internet, lecture notes, newspapers, and from different universities in South Africa and Nigeria. Major topics that were reviewed included E-recruitment, E-selection, E-compensation, E-communication, E-planning, E-training and development and E-performance management. These topics served as insight into the utilization of E-HRM in the universities.

On the part of South African universities, past literature on the use of E-HRM system suggested that effective human resource management has a competitive advantage over other systems that are used in the universities; but still lack awareness of the importance of E-HRM, which is linked to competitive advantage. The use of E-HRM in the South African universities include: e-recruitment, e-selection, e-performance management, and e-compensation, to mention but a few. Therefore, it is advisable for the South African university managements to encourage and enhance the use of E-HRM in their universities to enable HR practitioners to complete their work tasks on time and effectively. The importance of the use of E-HRM cannot be over-emphasised in the South African universities. These

include: employees being committed to their work; high competence; cost effectiveness; cost reductions; improved efficiency; and high congruence. Besides the advantages, there are challenges and problems that have emerged with the use of E-HRM in South African universities. These include: a lack of HR skills; poor training with the use of E-HRM systems; engagement with the E-HRM system; and employee familiarity with the use of the system. The South African universities managements should conduct regular training for their HR staff members to develop their information technology skills, which will help them to utilize E-HRM effectively. Also, the HR practitioners in the South African universities should make an effort to utilize E-HRM more often in order to promote and maximise benefits of using the system.

In the Nigeria universities the utilization of E-HRM is fast becoming a significant aspect of human resource management, which means that it is imperative for human resource (HR) practitioners to adopt the use of this system in their HR functions, as it will help them to achieve their organisation's goals more effectively and efficiently. It will also enhance the productivity and performances of the HR practitioners. In addition, the use of E-HRM will help HR practitioners in the Nigerian universities to make strategic decisions that will improve their work functions. Also, the use of E-HRM should be encouraged amongst the HR practitioners, since it has an ability to reduce administrative costs, increase productivity, speed response times, improve decision making and enhance customer service.

The many functions that this system offers should motivate HR practitioners to implement and use E-HRM. These functions include allowing HR practitioners to use online recruiting services; recording submitted applications online; and conduct performance management evaluations online by streamlining the performance management process into a web-based solution. These functions can help HR practitioners to deliver their work faster and more accurately. Again, electronic-training (E-training) management provides a facility that enables human resource managers to capture course information; book employees for specific courses; and record individual training history; while electronic-compensation systems introduce the use of automated salary payment to eliminate manual intervention, and allow HR practitioners to access information on compensation for direct reports from a central location such as salary, cash components and non-cash items. The uses of E-HRM by HR

practitioners have enabled them to make use of electronic mail and intranets for communication within and outside the institution.

Furthermore, HR managers in the Nigerian universities should be advised to use electronic human resource management (E-HRM), as it enables them to access information, conduct analysis, make decisions and communicate with other employees effectively. Regardless of these uses, some HR practitioners do not think strategically before using this system, which makes the system redundant in the institution. The more HR practitioners use this system, the better their work functions will become. It will also create an empowered workforce that will be willing to invest in themselves for the sustainable growth and development of the Nigerian universities. The use of electronic human resource management in the South African and Nigerian universities has contributed enormously to the effective and efficient functions of human resource management practitioners within the universities. Despite the challenges faced by the human resource management practitioners in the use of this system, the advantages cannot be overemphasized.

The research methods that were used were discussed in Chapter 3, which include different methodologies such as qualitative and quantitative research methods, which were found relevant to the study. This enabled the researcher to interpret and analyse the collected data. The population that was sampled was sizeable and enough for the data analysis. Different stages of collecting, capturing, presenting and analysing the data were also explained. Hence, discussions with the researcher's supervisors were deemed to be vital and contributed hugely to the data analysis process. Furthermore, the data was collected and analysed by the researcher to define the problem, background, aims and methodology of the research. In addition, three research designs were used, namely exploratory, explanatory and descriptive research, which enabled the researcher to analyse the collected data. The two research instruments, which were used, were interview questions and survey questionnaires, which were analysed by using content analysis and statistical inferences such as SPSS, chi square and bivariate methods. Hence, inferences were drawn from the analysis.

Chapter 4 of this research dealt with data analysis. Data was collected by way of interviews and questionnaires. The SPSS format was used to analyse quantitative data by using tables,

pie charts and bar charts to illustrate some of the percentage responses from the respondents. Collected data was also analysed by outlining the opinions of the university staff members and their experiences in the utilization of electronic human resource management (E-HRM) in their workplaces. The data was processed and analysed to enable the researcher to ascertain answers from both the questionnaires and the research questions. Self-administered questionnaires were used, which comprised of two sections: demographic and closed –ended questions. The first consisted of questions in the areas of gender, age, race, employment type, qualifications and work experience, while the latter consisted of closed-ended questions, which used a research likert scale (1 - Strongly disagree, 2- disagree. 3- Not applicable, 4- Agree, and 5- Strongly agree). Tables, charts and graphs were used to show the results of the questionnaires. In addition, the HR directors and managers were interviewed to answer the research questions.

The comparative analysis of the study was discussed in Chapter 4. The comparative data analysis section revealed that the South African universities utilize electronic human resource management (E-HRM) more than the Nigerian universities. This is as a result of the data that was represented in the survey. The percentage of agreed respondents is more in the South African universities than in the Nigerian universities. This shows that the Nigerian universities should properly implement and utilise E-HRM in their institutions. The results showed that there is more of a lack of E-HRM enabling capacities in the Nigerian universities than in the South African universities. Furthermore, there is artificial power supply in the Nigerian universities, which does not favour the use of E-HRM. Also, there is poor Internet supply and a lack of information technology knowledge in the Nigerian universities that also discourages the utilization of E-HRM. These findings should encourage both the South African and Nigerian universities managements to improve the utilization of E-HRM in their institutions.

Chapter 5 of this study discussed the research study findings. The discussion was done by adopting different broad headings from the research objectives to analyse and discuss the findings. It took the form of descriptive and exploratory methods of research. Different tests were done in the previous chapters, namely the T-test and Levene's test, and the results were also used in the discussion to prove the reliability of the data. Electronic human resource

management (E-HRM) is the application of information technology for both networking and supporting human resource staff members in their shared performance of HR activities. These activities can be done through the use of electronic gadgets such as E-recruitment systems, E-performance management systems, E-training and development systems, E-compensation, and E-communication; whereby the HR practitioners conduct recruitment, performance management, and communicate electronically. It was found that in some South African and Nigerian universities these systems are already being used in place of traditional (paper) types of HR services. Although, there is a need to upgrade the information technology (IT) skills of the HR practitioners and employees to enable them to use these systems effectively for their HR functions.

Again, irregular power supply has affected some universities, as they have the systems, but cannot effectively make use of them because of a poor constant power supply. Furthermore, some of the systems have been purchased by the universities but they have not been installed for use by the HR practitioners and employees. Therefore, there is a need to proffer mechanisms, which will help to mitigate and ease the challenges, which HR practitioners and employees face in the utilization of electronic human resource management (E-HRM) systems in the universities. Hence, the need to propose a model for proper implementation and utilization of E-HRM as a decision-making tool for the human resource management functions of the universities. This model proposed a better way to implement and utilize E-HRM, which would yield better results and bring about better work performance from HR practitioners and employees. This study suggests that when the listed HRM software and facilities, which are lacking are introduced with the existing HRM software and facilities, the three types of E-HRM will be implemented and utilized fully. HR practitioners and employees will be able to deliver efficient and effective administrative functions, client-services will be enhanced, recording and management of absenteeism will be improved, and other HR services will generally improve.

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Appendices

Appendix A: Research questions for human resource management employees

Department: Human Resource Management, Cape Peninsula University of Technology, Cape Town.

Researcher: Nnenna Ukandu

I am a doctoral student in the Human Resources Management Department at the Cape Peninsula University of Technology. My research study is "a comparative assessment of the utilization of electronic human resource management (E-HRM) systems as a decision-making tool by selected South African and Nigerian universities". I would like to ask your views on a number of different subjects concerning the use of electronic human resource management systems at your institution. Your input will be treated as strictly confidential; hence there is no need to disclose your name.

Participation in this questionnaire is voluntary, and you can withdraw at any time, in which case your data will be destroyed. Completion of the attached questionnaire will be considered to be your informed consent to participate in this project. The contents of this questionnaire must be kept absolutely anonymous.

Thank you

Appendix A: Research questions for human resource management employees

Section A: Demographic data

Please insert a cross (x) in the appropriate block that you choose as a suitable answer to the question posed.

1. What is your gender?

Male ☐ Female ☐ 1=Male, 2=Female

2. What is your age group?

Under 20 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐

40-44 ☐ 45-49 ☐ 50-54 ☐ 55-59 ☐ 60+ ☐

3. Which population group do you belong to?

White ☐ Black ☐ Coloured ☐ Indian ☐ Other: ……...specify

4. What is your marital status?

Married ☐ Single ☐ Divorced ☐ Common law husband and wife ☐

Widowed ☐

5. What is your highest level of education?

Primary ☐ Secondary ☐ Tertiary ☐

6. Which qualification have you obtained in (1.5) above?

Academic ☐ Non-Academic ☐

7. What is your position in the organization?

Senior manager ☐ Middle management ☐ Junior employee ☐

8. How many years of working experience do you have in human resource management?

Less than 1 year ☐ 1-2 years ☐ 3-5 years ☐ 6-9 years ☐

10-14 years ☐ 15years and more ☐

9. Which of the following best describes your type of employment?

Casual employment ☐ Part-time ☐ Full-time employment ☐

10. Period of electronic human resource management (E-HRM) system usage

Nil ☐ Less the 1 year ☐ 1-5years ☐ More than 5years ☐

11. Human resource management employees are normally trained to use E-HRM

Once a year ☐ More than once a year ☐ Have never received training ☐

Section B: General Questions on the use of electronic human resource management

Please read each statement clearly before answering. Tick the appropriate box and provide only one response for each statement.

Statements represent:

1 – Strongly disagree 2 – Disagree 3 – Not applicable 4 – Agree 5 – Strongly agree

Number	Category: Employees' attitude towards the use of electronic human resource management (E-HRM) systems	Strongly disagree	Disagree	Not applicable	Agree	Strongly agree
1	This institution has adopted the use of electronic human resource management (E-HRM) as part of their human resource management functions.	1	2	3	4	5
2	In my opinion, it is desirable to use E-HRM as part of our human resource functions.	1	2	3	4	5
	Category: Perceived ease of using E-HRM					
3	It was easy for me to become skilful in the use of E-HRM.	1	2	3	4	5
4	I found E-HRM easy to use and with which to interact.	1	2	3	4	5
	Category: Perceived usefulness of E-HRM for HR workers					
5	Using E-HRM will increase my performance and effectiveness in handling HR activities.	1	2	3	4	5
6	Using E-HRM has increased productivity in terms of handling HR activities.	1	2	3	4	5
7	I find E-HRM useful when handling HR activities.	1	2	3	4	5
	Category: Administrative functions					

8	The Human Resource Department develops processes and programs to link HR strategies in order to accomplish the organization's strategy.	1	2	3	4	5
9	HR is an active participant in the organization's renewal, change, or transformation activities.	1	2	3	4	5
10	HR works to reshape behaviour and to help anticipate future employee needs.	1	2	3	4	5
11	HR develops processes and programs to efficiently process documents and transactions.	1	2	3	4	5
12	E-Administration improves administrative efficiency and reduces costs.	1	2	3	4	5
13	HR employees make use of E-HRM for the administrative functions of this university.	1	2	3	4	5
	Category: Electronic Planning (E-Planning)					
14	Electronic Planning provides tools that could effectively manage the university's strategic people resources.	1	2	3	4	5
15	E-Planning ensures an adequate balance of solid performance and high potential at this university.	1	2	3	4	5
	Category: Electronic recruitment (E-recruitment)					
16	E-recruitment will improve the quality of candidates by ensuring proper recruitment profiles for this university.	1	2	3	4	5
17	There are online advertisements for vacancies at my workplace.	1	2	3	4	5
18	Recruitment and selection are done online at this institution.	1	2	3	4	5
19	The use of electronic tools for recruitment will provide a real time report for managers to monitor recruitment progress throughout the cycle.	1	2	3	4	5
20	Potential candidates' details are stored electronically.	1	2	3	4	5
	Category: Electronic performance management (E-Performance management)					
21	Online performance management is used to evaluate employees'	1	2	3	4	5

	performance at my workplace.					
22	E-performance management systems facilitate an interactive performance management process at our institution.	1	2	3	4	5
23	The use of E-performance management web-based system helps to reduce costs.	1	2	3	4	5
24	E-performance management has a direct influence on HR employees' performance.	1	2	3	4	5
	Category: Electronic Training (E-Training)					
25	Employees can apply for individual training courses and record course information online at my workplace.	1	2	3	4	5
26	E-training management has provided an efficient means of tracking employee training records at my workplace.	1	2	3	4	5
27	The use of electronic training management has reduced training costs in my departments.	1	2	3	4	5
28	Skill deficiencies have negatively impacted on productivity in my workplace.	1	2	3	4	5
29	The HR department focuses on people development more than incentive management.	1	2	3	4	5
	Category: The effects of E-HRM for HR practitioners					
30	E-HRM has led to less administrative tasks and less administrative positions at this university.	1	2	3	4	5
31	HR practitioners at my institution are more comfortable with the use of E-HRM in terms of their human resource functions.	1	2	3	4	5
32	HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM at my workplace.	1	2	3	4	5
33	The use of E-HRM in their HR functions has given HR practitioners enough time for strategic decision making.	1	2	3	4	5
	Category: Decision support tools					
34	Decision support tools provide employees with step-by-step information about human resource issues.	1	2	3	4	5

35	Decision support tools provide information, which necessary to make complex benefit decisions that can be used to drive strategy.	1	2	3	4	5
36	E-HRM software is available for HR staff use.	1	2	3	4	5
	Category: Challenges of using E-HRM					
37	There is a constant supply of electricity at my workplace	1	2	3	4	5
38	Our workplace's organizational culture supports the success of E-HRM tools.	1	2	3	4	5
39	There are enough computers for HR employees to use at in my workplace.	1	2	3	4	5
40	Technology and people capacity are managed concurrently to encourage the implementation and use of E-HRM at this institution.	1	2	3	4	5
41	There are competent HR practitioners that will ensure the success of E-HRM at my workplace.	1	2	3	4	5
42	There is a need for additional basic IT skills at my workplace.	1	2	3	4	5
43	Sufficient finances are made available for implementation of E-HRM at my workplace.	1	2	3	4	5

Thank you for your time and patience in answering the questions. Your contribution is highly appreciated.

Appendix B: Section C: Interview questions for HR directors and managers

The purpose of this research is to assess the utilization of electronic human resource management systems as a decision making tool for human resource management functions at the universities. The utilization of this electronic human resource management system enables human resource management staff to do their jobs more effectively and decisively. Please answer the following questions.

Do you have an electronic human resource management system at your workplace?

If yes, why?

_____

_____

_____

_____

_____

If no, what type of electronic system do you use at your workplace for administrative functions?

_____

_____

_____

_____

_____

Does the utilization of electronic human resource management (E-HRM) tools by human resource management employees affect their attitude towards their job functions?

If yes, why? (b.) If no, why not?

_____

_____

_____

_____

_____

What types of software are used in the human resource management (HRM) functions of this institution? How do you apply them as employees?

_____

_____

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_____

What are the effects of using E-HRM in the human resource practices of this university?

_____

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_____

Does the use of E-HRM have any impact on the performance of staff?

_____

_____

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_____

_____

How is the electronic human resource management (E-HRM) system used for various human resources management functions at this institution?

_____

_____

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_____

_____

In which areas at your institution do you normally apply E-HRM as a decision making tool?

_____

_____

_____

_____

_____

How do the decision-support tools that are provided by E-HRM affect the quality of decision-making at your workplace?

_____

_____

_____

_____

_____

What mediators affect the relationships between E-HRM information tools and decision-making quality at your institution?

_____

_____

_____

_____

_____

What challenges does human resource management staff face at this institution when using E-HRM?

_____

_____

_____

_____

_____

What are your recommendations for the use of electronic human resource management systems for human resource management functions at this institution?

_____

_____

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_____

Do you have any other information that you would like to share regarding the use of electronic human resource management systems in the human resource management functions at this institution?

_____

_____

_____

_____

_____

Thank you for your time and patience in answering the questions. Your contribution is highly appreciated.

Appendix C: Section D: Questionnaire for general academic and non-academic staff in the university

Department: Human Resource Management, Cape Peninsula University of Technology, Cape Town.

Researcher: Nnenna Ukandu

I am a doctoral student in the Human Resource Management Department at the Cape Peninsula University of Technology. My research study is "a comparative assessment of the utilization of electronic human resource management (E-HRM) systems as a decision-making tool by selected South African and Nigerian universities". I would like to ask your views on a number of different subjects concerning the use of electronic human resource management system at your institution. Your input will be treated as strictly confidential; hence there is no need to disclose your name.

Participation in this questionnaire is voluntary, and you can withdraw at any time, in which case your data will be destroyed. Completion of the attached questionnaire will be considered to be your informed consent to participate in this project. The contents of this questionnaire must be kept absolutely anonymous.

Section D (i): Demographic data

Please insert a cross (x) in the appropriate block that you choose as a suitable answer to the question posed.

1. What is your gender?

Male ☐ Female ☐ 1=Male, 2=Female

2. What is your age group?

Under 20 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-3 ☐

40-44 ☐ 45-49 ☐ 50-55 ☐ 56-59 ☐ 60+ ☐

3. Which population group do you belong to?

White ☐ Black ☐ Coloured ☐ Indian ☐ Other specify.....

4. What is your marital status?

Married ☐ Single ☐ Divorced ☐ Common law husband and wife ☐

Widowed ☐

5. What is your highest level of education?

Primary ☐ Secondary ☐ Tertiary ☐

6. Which qualification have you obtained in (1.5) above?

Academic ☐ Non-Academic ☐

7. What is your level of employment?

Senior manager ☐ Middle management ☐ Junior employee ☐

8. Which department do you work at the university?

Library ☐ Exams & Records ☐ Administration ☐ Other specify _____

9. How many years of work experience do you have at this university?

Less than 1 year ☐ 1-2 years ☐ 3-5 years ☐ 6-9 years ☐

10-14 years ☐ 5 years and more ☐

10. Which of the following best describes your type of employment?

Casual employment ☐ Part-time ☐ Full-time employment ☐

Section D (ii)

The aim of this section is to know the experiences of the services that are offered to staff in the university by human resource management employees.

Please read each statement clearly before answering. Tick the appropriate box and provide only one response for each statement.

Statements represent:

1 – Strongly disagree 2 – Disagree 3 – Not applicable 4 – Agree 5 – Strongly agree

Number	Category: General questions on the use of electronic human resource management (E-HRM)	Strongly disagree	Disagree	Not applicable	Agree	Strongly agree
1	I regularly use the services of the human resource department.	1	2	3	4	5
2	I normally receive effective and efficient service from HR staff.	1	2	3	4	5
3	I received quick service from human resource department employees on a recent visit to their office.	1	2	3	4	5
4	Using E-HRM will increase the performance of HR staff.	1	2	3	4	5
5	HR is an active participant in an organization's renewal, change, and transformation activities.	1	2	3	4	5
6	HR works to reshape behaviour and helps to anticipate future employees' needs.	1	2	3	4	5
7	HR employees make use of E-HRM for the administrative functions of this university.	1	2	3	4	5
8	E-HRM software is available for HR staff to use.	1	2	3	4	5
	Category: Electronic Planning (E-Planning)					
9	Electronic planning provides tools that could effectively manage the university's strategic people resources.	1	2	3	4	5
10	E-planning ensures an adequate balance of solid performance and high potential at this university.	1	2	3	4	5

	Category: Electronic recruitment (E-Recruitment)					
11	There are online advertisements for vacancies at my workplace.	1	2	3	4	5
12	Recruitment and selection are done online at this institution.	1	2	3	4	5
	Category: Electronic performance management (E-performance management)					
13	Online performance management is used to evaluate employee performance at my workplace.	1	2	3	4	5
14	E-performance management systems facilitate an interactive performance management process at our institution.	1	2	3	4	5
	Category: Electronic Training (E-Training)					
15	Employees can apply for individual training courses and record course information online at my workplace.	1	2	3	4	5
16	The use of electronic training management has reduced training costs at my workplace.	1	2	3	4	5
	Category: The effect of E-HRM for HR practitioners					
17	E-HRM has led to less administrative tasks and less administrative positions at this university.	1	2	3	4	5
18	HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM at my workplace.	1	2	3	4	5
19	There is a constant supply of electricity at my workplace.	1	2	3	4	5
20	There is a need for additional basic IT skills in my workplace	1	2	3	4	5

Thank you for your time and patience in answering the questions. Your contribution is highly appreciated.

Appendix D

Frequencies

[DataSet1] C:\@Data\Research\Research PostGraduate\DTech\CPUT\UkanduNnenna\EHRM Data.sav

Country = South Africa

Frequency Table

Institution[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	CPUT	115	37.6	37.6	37.6
	UCT	87	28.4	28.4	66.0
	UJ	104	34.0	34.0	100.0
	Total	306	100.0	100.0	

a. Country = South Africa

Gender[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	103	33.7	33.7	33.7
	Female	203	66.3	66.3	100.0
	Total	306	100.0	100.0	

a. Country = South Africa

Age group[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20	1	.3	.3	.3
	20 - 24	25	8.2	8.2	8.5
	25 - 29	48	15.7	15.7	24.2
	30 - 34	58	19.0	19.0	43.1
	35 - 39	44	14.4	14.4	57.5
	40 - 44	51	16.7	16.7	74.2
	45 - 49	34	11.1	11.1	85.3
	50 - 54	20	6.5	6.5	91.8
	55 - 59	18	5.9	5.9	97.7
	60 or more	7	2.3	2.3	100.0
	Total	306	100.0	100.0	

a. Country = South Africa

Population group[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	80	26.1	26.3	26.3
	Black	115	37.6	37.8	64.1
	coloured	88	28.8	28.9	93.1
	Indian	17	5.6	5.6	98.7
	Other	4	1.3	1.3	100.0
	Total	304	99.3	100.0	
Missing	System	2	.7		
Total		306	100.0		

a. Country = South Africa

Marital status[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	150	49.0	49.0	49.0
	Single	123	40.2	40.2	89.2
	Divorced	22	7.2	7.2	96.4
	Living together	5	1.6	1.6	98.0
	Widowed	6	2.0	2.0	100.0
	Total	306	100.0	100.0	

a. Country = South Africa

Education level[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	1	.3	.3	.3
	Secondary	45	14.7	14.8	15.1
	Tertiary	259	84.6	84.9	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

a. Country = South Africa

Qualification obtained[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academic	194	63.4	63.4	63.4
	Non-academic	112	36.6	36.6	100.0
	Total	306	100.0	100.0	

a. Country = South Africa

Level of employment[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Senior/Manager	19	6.2	6.3	6.3
	Middel management	99	32.4	32.8	39.1
	Junior employee	184	60.1	60.9	100.0
	Total	302	98.7	100.0	
Missing	System	4	1.3		
Total		306	100.0		

a. Country = South Africa

University department[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Library	37	12.1	12.3	12.3
	Exams & recoreds	7	2.3	2.3	14.6
	Administration	152	49.7	50.3	64.9
	Other	106	34.6	35.1	100.0
	Total	302	98.7	100.0	
Missing	System	4	1.3		
Total		306	100.0		

a. Country = South Africa

Work experience at university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than1 year	2	.7	.7	.7
	1 - 2 years	66	21.6	21.7	22.4
	3 - 5 years	76	24.8	25.0	47.4
	6 - 9 years	44	14.4	14.5	61.8
	10 - 14 years	57	18.6	18.8	80.6
	15 years or above	59	19.3	19.4	100.0
	Total	304	99.3	100.0	
Missing	System	2	.7		
Total		306	100.0		

a. Country = South Africa

Type of employment[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Casual employment	6	2.0	2.0	2.0
	Part-time employment	41	13.4	13.4	15.4
	Full-time employment	258	84.3	84.6	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

a. Country = South Africa

I regularly use the services of the human resource department[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	33	10.8	10.8	10.8
	Disagree	59	19.3	19.3	30.2
	Not applicable	37	12.1	12.1	42.3
	Agree	138	45.1	45.2	87.5
	Strongly agree	38	12.4	12.5	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

a. Country = South Africa

I normally receive an effective and efficient services from the HR Staff[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	18	5.9	5.9	5.9
	Disagree	51	16.7	16.7	22.5
	Not applicable	37	12.1	12.1	34.6
	Agree	168	54.9	54.9	89.5
	Strongly agree	32	10.5	10.5	100.0
	Total	306	100.0	100.0	

a. Country = South Africa

I received a quick service from the human resource employees on visit to their office[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	10	3.3	3.3	3.3
	Disagree	30	9.8	9.8	13.1
	Not applicable	57	18.6	18.7	31.8
	Agree	167	54.6	54.8	86.6
	Strongly agree	41	13.4	13.4	100.0
	Total	305	99.7	100.0	
Missing	System	1	.3		
Total		306	100.0		

a. Country = South Africa

Using E-HRM would increase the performance of HR Staff[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	10	3.3	3.4	3.4
	Disagree	21	6.9	7.1	10.5
	Not applicable	63	20.6	21.3	31.8
	Agree	132	43.1	44.6	76.4
	Strongly agree	70	22.9	23.6	100.0
	Total	296	96.7	100.0	
Missing	System	10	3.3		
Total		306	100.0		

a. Country = South Africa

HR is an active participant in organization's renewal, change, and transformation activities[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	16	5.2	5.3	5.3
	Disagree	30	9.8	9.9	15.2
	Not applicable	37	12.1	12.3	27.5
	Agree	159	52.0	52.6	80.1
	Strongly agree	60	19.6	19.9	100.0
	Total	302	98.7	100.0	
Missing	System	4	1.3		
Total		306	100.0		

a. Country = South Africa

HR works to reshape behavior and help anticipate future employees' needs[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	19	6.2	6.3	6.3
	Disagree	58	19.0	19.1	25.3
	Not applicable	45	14.7	14.8	40.1
	Agree	136	44.4	44.7	84.9
	Strongly agree	46	15.0	15.1	100.0
	Total	304	99.3	100.0	
Missing	System	2	.7		
Total		306	100.0		

a. Country = South Africa

HR employees make use of E-HRM for the administrative functions of this university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	15	4.9	5.0	5.0
	Disagree	27	8.8	9.1	14.1
	Not applicable	86	28.1	28.9	43.0
	Agree	137	44.8	46.0	88.9
	Strongly agree	33	10.8	11.1	100.0
	Total	298	97.4	100.0	
Missing	System	8	2.6		
Total		306	100.0		

a. Country = South Africa

E-HRM softwares are available for HR Staff use[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	18	5.9	6.1	6.1
	Disagree	23	7.5	7.8	13.9
	Not applicable	115	37.6	38.9	52.7
	Agree	112	36.6	37.8	90.5
	Strongly agree	28	9.2	9.5	100.0
	Total	296	96.7	100.0	
Missing	System	10	3.3		
Total		306	100.0		

a. Country = South Africa

Electronic planning provides tools that could effectively manage the university's strategic people resources[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	6	2.0	2.0	2.0
	Disagree	17	5.6	5.7	7.7
	Not applicable	66	21.6	22.1	29.9
	Agree	159	52.0	53.4	83.2
	Strongly agree	50	16.3	16.8	100.0
	Total	298	97.4	100.0	
Missing	System	8	2.6		
Total		306	100.0		

a. Country = South Africa

E-planning ensures adequate balance of solid performance and high potentials in this university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	8	2.6	2.7	2.7
	Disagree	24	7.8	8.2	10.9
	Not applicable	85	27.8	28.9	39.8
	Agree	150	49.0	51.0	90.8
	Strongly agree	27	8.8	9.2	100.0
	Total	294	96.1	100.0	
Missing	System	12	3.9		
Total		306	100.0		

a. Country = South Africa

There is online advertisement for vacancies in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	2	.7	.7	.7
	Disagree	8	2.6	2.6	3.3
	Not applicable	14	4.6	4.6	7.8
	Agree	148	48.4	48.4	56.2
	Strongly agree	134	43.8	43.8	100.0
	Total	306	100.0	100.0	

a. Country = South Africa

Recruitment/ selection are done online in this institution[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	38	12.4	12.6	12.6
	Disagree	53	17.3	17.6	30.2
	Not applicable	55	18.0	18.3	48.5
	Agree	103	33.7	34.2	82.7
	Strongly agree	52	17.0	17.3	100.0
	Total	301	98.4	100.0	
Missing	System	5	1.6		
Total		306	100.0		

a. Country = South Africa

Online performance management is used in evaluating employee performance in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	62	20.3	20.6	20.6
	Disagree	85	27.8	28.2	48.8
	Not applicable	84	27.5	27.9	76.7
	Agree	58	19.0	19.3	96.0
	Strongly agree	12	3.9	4.0	100.0
	Total	301	98.4	100.0	
Missing	System	5	1.6		
Total		306	100.0		

a. Country = South Africa

E-performance management system facilitates an interactive performance management process in our institution[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	63	20.6	21.2	21.2
	Disagree	70	22.9	23.6	44.8
	Not applicable	96	31.4	32.3	77.1
	Agree	54	17.6	18.2	95.3
	Strongly agree	14	4.6	4.7	100.0
	Total	297	97.1	100.0	
Missing	System	9	2.9		
Total		306	100.0		

a. Country = South Africa

Employees can book for individual training courses and record course information online at my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	29	9.5	9.6	9.6
	Disagree	50	16.3	16.6	26.2
	Not applicable	59	19.3	19.6	45.8
	Agree	107	35.0	35.5	81.4
	Strongly agree	56	18.3	18.6	100.0
	Total	301	98.4	100.0	
Missing	System	5	1.6		
Total		306	100.0		

a. Country = South Africa

The use of electronic training management have reduced training cost at my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	30	9.8	10.1	10.1
	Disagree	44	14.4	14.9	25.0
	Not applicable	124	40.5	41.9	66.9
	Agree	68	22.2	23.0	89.9
	Strongly agree	30	9.8	10.1	100.0
	Total	296	96.7	100.0	
Missing	System	10	3.3		
Total		306	100.0		

a. Country = South Africa

E-HRM have led to less administrative tasks and less administrative positions in this university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	19	6.2	6.4	6.4
	Disagree	49	16.0	16.6	23.1
	Not applicable	121	39.5	41.0	64.1
	Agree	83	27.1	28.1	92.2
	Strongly agree	23	7.5	7.8	100.0
	Total	295	96.4	100.0	
Missing	System	11	3.6		
Total		306	100.0		

a. Country = South Africa

HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	14	4.6	4.7	4.7
	Disagree	40	13.1	13.5	18.2
	Not applicable	87	28.4	29.4	47.6
	Agree	119	38.9	40.2	87.8
	Strongly agree	36	11.8	12.2	100.0
	Total	296	96.7	100.0	
Missing	System	10	3.3		
Total		306	100.0		

a. Country = South Africa

There is constant supply of electricity in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	6	2.0	2.0	2.0
	Disagree	14	4.6	4.7	6.7
	Not applicable	18	5.9	6.0	12.7
	Agree	128	41.8	42.8	55.5
	Strongly agree	133	43.5	44.5	100.0
	Total	299	97.7	100.0	
Missing	System	7	2.3		
Total		306	100.0		

a. Country = South Africa

There is a need for additional basic IT skills in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	15	4.9	5.0	5.0
	Disagree	44	14.4	14.8	19.8
	Not applicable	42	13.7	14.1	33.9
	Agree	102	33.3	34.2	68.1
	Strongly agree	95	31.0	31.9	100.0
	Total	298	97.4	100.0	
Missing	System	8	2.6		
Total		306	100.0		

a. Country = South Africa

Country = Nigeria

Frequency Table

Institution[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	UNILAG	118	38.7	38.7	38.7
	Conv. Univ	82	26.9	26.9	65.6
	Abia State Uni	105	34.4	34.4	100.0
	Total	305	100.0	100.0	

a. Country = Nigeria

Gender[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	169	55.4	55.8	55.8
	Female	134	43.9	44.2	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

a. Country = Nigeria

Age group[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 - 24	6	2.0	2.0	2.0
	25 - 29	30	9.8	9.9	11.9
	30 - 34	52	17.0	17.2	29.0
	35 - 39	55	18.0	18.2	47.2
	40 - 44	46	15.1	15.2	62.4
	45 - 49	36	11.8	11.9	74.3
	50 - 54	43	14.1	14.2	88.4
	55 - 59	25	8.2	8.3	96.7
	60 or more	10	3.3	3.3	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

a. Country = Nigeria

Population group[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White	5	1.6	1.7	1.7
	Black	295	96.7	97.6	99.3
	coloured	0	0	0	99.3
	Indian	2	.7	.7	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

a. Country = Nigeria

Marital status[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	238	78.0	78.3	78.3
	Single	58	19.0	19.1	97.4
	Living together	2	.7	.7	98.0
	Widowed	6	2.0	2.0	100.0
	Total	304	99.7	100.0	
Missing	System	1	.3		
Total		305	100.0		

a. Country = Nigeria

Education level[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	5	1.6	1.7	1.7
	Secondary	29	9.5	9.6	11.3
	Tertiary	268	87.9	88.7	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

a. Country = Nigeria

Qualification obtained[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academic	185	60.7	61.1	61.1
	Non-academic	118	38.7	38.9	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

a. Country = Nigeria

Level of employment[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Senior/Manager	111	36.4	37.2	37.2
	Middel management	118	38.7	39.6	76.8
	Junior employee	69	22.6	23.2	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

a. Country = Nigeria

University department[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Library	10	3.3	3.4	3.4
	Exams & recoreds	27	8.9	9.1	12.5
	Administration	118	38.7	39.9	52.4
	Other	141	46.2	47.6	100.0
	Total	296	97.0	100.0	
Missing	System	9	3.0		
Total		305	100.0		

a. Country = Nigeria

Work experience at university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 - 2 years	43	14.1	14.2	14.2
	3 - 5 years	55	18.0	18.2	32.3
	6 - 9 years	66	21.6	21.8	54.1
	10 - 14 years	42	13.8	13.9	68.0
	15 years or above	97	31.8	32.0	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

a. Country = Nigeria

Type of employment[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Casual employment	15	4.9	5.0	5.0
	Part-time employment	7	2.3	2.3	7.3
	Full-time employment	281	92.1	92.7	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

a. Country = Nigeria

I regularly use the services of the human resource department[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	24	7.9	8.0	8.0
	Disagree	45	14.8	15.1	23.1
	Not applicable	48	15.7	16.1	39.1
	Agree	144	47.2	48.2	87.3
	Strongly agree	38	12.5	12.7	100.0
	Total	299	98.0	100.0	
Missing	System	6	2.0		
Total		305	100.0		

a. Country = Nigeria

I normally receive an effective and efficient services from the HR Staff[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	16	5.2	5.3	5.3
	Disagree	68	22.3	22.6	27.9
	Not applicable	42	13.8	14.0	41.9
	Agree	143	46.9	47.5	89.4
	Strongly agree	32	10.5	10.6	100.0
	Total	301	98.7	100.0	
Missing	System	4	1.3		
Total		305	100.0		

a. Country = Nigeria

I received a quick service from the human resource employees on visit to their office[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	24	7.9	8.0	8.0
	Disagree	71	23.3	23.6	31.6
	Not applicable	45	14.8	15.0	46.5
	Agree	128	42.0	42.5	89.0
	Strongly agree	33	10.8	11.0	100.0
	Total	301	98.7	100.0	
Missing	System	4	1.3		
Total		305	100.0		

a. Country = Nigeria

Using E-HRM would increase the performance of HR Staff[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	14	4.6	4.6	4.6
	Disagree	18	5.9	6.0	10.6
	Not applicable	13	4.3	4.3	14.9
	Agree	135	44.3	44.7	59.6
	Strongly agree	122	40.0	40.4	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

a. Country = Nigeria

HR is an active participant in organization's renewal, change, and transformation activities[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	11	3.6	3.6	3.6
	Disagree	12	3.9	3.9	7.6
	Not applicable	17	5.6	5.6	13.2
	Agree	156	51.1	51.3	64.5
	Strongly agree	108	35.4	35.5	100.0
	Total	304	99.7	100.0	
Missing	System	1	.3		
Total		305	100.0		

a. Country = Nigeria

HR works to reshape behavior and help anticipate future employees' needs[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	10	3.3	3.3	3.3
	Disagree	20	6.6	6.6	9.9
	Not applicable	18	5.9	5.9	15.8
	Agree	164	53.8	54.1	70.0
	Strongly agree	91	29.8	30.0	100.0
	Total	303	99.3	100.0	
Missing	System	2	.7		
Total		305	100.0		

a. Country = Nigeria

HR employees make use of E-HRM for the administrative functions of this university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	28	9.2	9.3	9.3
	Disagree	45	14.8	14.9	24.2
	Not applicable	61	20.0	20.2	44.4
	Agree	127	41.6	42.1	86.4
	Strongly agree	41	13.4	13.6	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

a. Country = Nigeria

E-HRM softwares are available for HR Staff use[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	24	7.9	8.1	8.1
	Disagree	63	20.7	21.1	29.2
	Not applicable	75	24.6	25.2	54.4
	Agree	114	37.4	38.3	92.6
	Strongly agree	22	7.2	7.4	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

a. Country = Nigeria

Electronic planning provides tools that could effectively manage the university's strategic people resources[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	16	5.2	5.3	5.3
	Disagree	16	5.2	5.3	10.5
	Not applicable	29	9.5	9.5	20.1
	Agree	180	59.0	59.2	79.3
	Strongly agree	63	20.7	20.7	100.0
	Total	304	99.7	100.0	
Missing	System	1	.3		
Total		305	100.0		

a. Country = Nigeria

E-planning ensures adequate balance of solid performance and high potentials in this university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	22	7.2	7.4	7.4
	Disagree	19	6.2	6.4	13.8
	Not applicable	44	14.4	14.8	28.5
	Agree	172	56.4	57.7	86.2
	Strongly agree	41	13.4	13.8	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

a. Country = Nigeria

There is online advertisement for vacancies in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	38	12.5	12.7	12.7
	Disagree	46	15.1	15.4	28.1
	Not applicable	44	14.4	14.7	42.8
	Agree	98	32.1	32.8	75.6
	Strongly agree	73	23.9	24.4	100.0
	Total	299	98.0	100.0	
Missing	System	6	2.0		
Total		305	100.0		

a. Country = Nigeria

Recruitment/ selection are done online in this institution[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	45	14.8	15.5	15.5
	Disagree	87	28.5	30.0	45.5
	Not applicable	70	23.0	24.1	69.7
	Agree	62	20.3	21.4	91.0
	Strongly agree	26	8.5	9.0	100.0
	Total	290	95.1	100.0	
Missing	System	15	4.9		
Total		305	100.0		

a. Country = Nigeria

Online performance management is used in evaluating employee performance in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	48	15.7	15.9	15.9
	Disagree	78	25.6	25.9	41.9
	Not applicable	83	27.2	27.6	69.4
	Agree	72	23.6	23.9	93.4
	Strongly agree	20	6.6	6.6	100.0
	Total	301	98.7	100.0	
Missing	System	4	1.3		
Total		305	100.0		

a. Country = Nigeria

E-performance management system facilitates an interactive performance management process in our institution[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	26	8.5	8.6	8.6
	Disagree	71	23.3	23.6	32.2
	Not applicable	84	27.5	27.9	60.1
	Agree	101	33.1	33.6	93.7
	Strongly agree	19	6.2	6.3	100.0
	Total	301	98.7	100.0	
Missing	System	4	1.3		
Total		305	100.0		

a. Country = Nigeria

Employees can book for individual training courses and record course information online at my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	35	11.5	11.7	11.7
	Disagree	68	22.3	22.7	34.4
	Not applicable	73	23.9	24.4	58.9
	Agree	95	31.1	31.8	90.6
	Strongly agree	28	9.2	9.4	100.0
	Total	299	98.0	100.0	
Missing	System	6	2.0		
Total		305	100.0		

a. Country = Nigeria

The use of electronic training management have reduced training cost at my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	29	9.5	9.8	9.8
	Disagree	83	27.2	28.0	37.8
	Not applicable	84	27.5	28.4	66.2
	Agree	84	27.5	28.4	94.6
	Strongly agree	16	5.2	5.4	100.0
	Total	296	97.0	100.0	
Missing	System	9	3.0		
Total		305	100.0		

a. Country = Nigeria

E-HRM have led to less administrative tasks and less administrative positions in this university[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	28	9.2	9.4	9.4
	Disagree	68	22.3	22.7	32.1
	Not applicable	70	23.0	23.4	55.5
	Agree	111	36.4	37.1	92.6
	Strongly agree	22	7.2	7.4	100.0
	Total	299	98.0	100.0	
Missing	System	6	2.0		

Total		305	100.0		

a. Country = Nigeria

HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	25	8.2	8.4	8.4
	Disagree	43	14.1	14.4	22.8
	Not applicable	55	18.0	18.5	41.3
	Agree	137	44.9	46.0	87.2
	Strongly agree	38	12.5	12.8	100.0
	Total	298	97.7	100.0	
Missing	System	7	2.3		
Total		305	100.0		

a. Country = Nigeria

There is constant supply of electricity in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	22	7.2	7.3	7.3
	Disagree	43	14.1	14.3	21.7
	Not applicable	18	5.9	6.0	27.7
	Agree	120	39.3	40.0	67.7
	Strongly agree	97	31.8	32.3	100.0
	Total	300	98.4	100.0	
Missing	System	5	1.6		
Total		305	100.0		

a. Country = Nigeria

There is a need for additional basic IT skills in my workplace[a]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	15	4.9	5.0	5.0
	Disagree	13	4.3	4.3	9.3
	Not applicable	22	7.2	7.3	16.6
	Agree	124	40.7	41.1	57.6
	Strongly agree	128	42.0	42.4	100.0
	Total	302	99.0	100.0	
Missing	System	3	1.0		
Total		305	100.0		

a. Country = Nigeria

Appendix E: Reliability and T-Tests

One needs to investigate whether there is a underlying factor to a group of items (questions), before we can group these questions. To do this one should investigate the inter-correlations of all the items with each other. The test to do this can be bivariate correlations, but it is better to do a reliability analysis.

The reliability test done in this document calculates the Cronbach's Alpha coefficient. For the group of items to be sufficiently inter-correlated this alpha value needs to be 0.7.

Cronbach's alpha	Internal consistency
α ≥ 0.9	Excellent (High-Stakes testing)
0.7 ≤ α < 0.9	Good (Low-Stakes testing)
0.6 ≤ α < 0.7	Acceptable
0.5 ≤ α < 0.6	Poor
α < 0.5	Unacceptable

Groups with large numbers of items can also artificially inflate the Cronbah's Alpha (Cortina, 1993).

Report:

Factor	Items	Cronbach's Alpha
General Questions	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	0.770
E-Planning	Q11, Q12	0.705
E-Recruitment	Q11, Q12	0.503
E-Performance Management	Q13, Q14	0.774
E-Training	Q15, Q16	0.744
Effect of E-HRM for HR Practitioners	Q17, Q18	0.684

From the Cronbach's Alpha all the factors are significant except E-recruitment. From the crosstab for E-recruitment, we have South African respondents agreeing with 155 (103 + 52) responses and Nigerian respondents agreeing with 88 (62 + 26) responses. This shows a very big difference.

```
RELIABILITY
  /VARIABLES=S2Q1 S2Q2 S2Q3 S2Q4 S2Q5 S2Q6 S2Q7 S2Q8
  /SCALE('General Questions') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: General Questions

Case Processing Summary

		N	%
Cases	Valid	571	93.5
	Excluded[a]	40	6.5
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.770	8

```
RELIABILITY
  /VARIABLES=S2Q9 S2Q10
  /SCALE('E-Recruitment') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: E-Planning

Case Processing Summary

		N	%
Cases	Valid	589	96.4
	Excluded[a]	22	3.6
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.705	2

```
RELIABILITY
  /VARIABLES=S2Q11 S2Q12
  /SCALE('E-Perfomance management') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: E-Recruitment

Case Processing Summary

		N	%
Cases	Valid	588	96.2
	Excluded[a]	23	3.8
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.503	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
There is online advertisement for vacancies in my workplace	3.03	1.605	.337	.
Recruitment/ selection are done online in this institution	3.87	1.369	.337	.

```
RELIABILITY
  /VARIABLES=S2Q13 S2Q14
  /SCALE('E-Perfomance management') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: E-Perfomance management

Case Processing Summary

		N	%
Cases	Valid	597	97.7
	Excluded[a]	14	2.3
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.774	2

```
RELIABILITY
  /VARIABLES=S2Q15 S2Q16
  /SCALE('E-Training') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: E-Training

Case Processing Summary

		N	%
Cases	Valid	590	96.6
	Excluded[a]	21	3.4
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.744	2

```
RELIABILITY
  /VARIABLES=S2Q17 S2Q18 S2Q19 S2Q20
  /SCALE('Effect of E-HRM for HR Practitioners') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: Effect of E-HRM for HR Practitioners

Case Processing Summary

		N	%
Cases	Valid	587	96.1
	Excluded[a]	24	3.9
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.478	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E-HRM have led to less administrative tasks and less administrative positions in this university	11.32	4.897	.331	.356
HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace	11.04	4.360	.451	.232
There is constant supply of electricity in my workplace	10.45	5.528	.152	.521
There is a need for additional basic IT skills in my workplace	10.52	5.223	.199	.481

In this case where the Cronbach's Alpha is so low (0.478), we look at the following table to see which item can possibly left out (last column). This shows us that the third item (Q19) is the problem and that if it is left out the Cronbach's Alpha will increase to over 0.5 (in the "Acceptable" range).

```
RELIABILITY
  /VARIABLES=S2Q17 S2Q18 S2Q20
  /SCALE('Effect of E-HRM for HR Practitioners') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: Effect of E-HRM for HR Practitioners

Case Processing Summary

		N	%
Cases	Valid	589	96.4
	Excluded[a]	22	3.6
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.520	3

The Cronbach's Alpha increased to over 0.5; but the last item (Q20) is still a problem. If Q20 is left out the Cronbach's Alpha will increase to over 0.6.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E-HRM have led to less administrative tasks and less administrative positions in this university	7.33	2.974	.388	.331
HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace	7.05	2.666	.475	.174
There is a need for additional basic IT skills in my workplace	6.53	3.478	.170	.682

```
RELIABILITY
  /VARIABLES=S2Q17 S2Q18
  /SCALE('Effect of E-HRM for HR Practitioners') ALL
  /MODEL=ALPHA
  /SUMMARY=TOTAL.
```

Reliability

Scale: Effect of E-HRM for HR Practitioners

Case Processing Summary

		N	%
Cases	Valid	590	96.6
	Excluded[a]	21	3.4
	Total	611	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.684	2

I then calculated the means of each of these factors, based on the reliability results above:

```
COMPUTE General=Mean(S2Q1,S2Q2,S2Q3,S2Q4,S2Q5,S2Q6,S2Q7,S2Q8).
EXECUTE.
COMPUTE EPlanning=Mean(S2Q9,S2Q10).
EXECUTE.
COMPUTE ERecruitment=Mean(S2Q11,S2Q12).
VARIABLE LABELS  ERecruitment 'E-Recruitment'.
EXECUTE.
COMPUTE EPerformManage=Mean(S2Q13,S2Q14).
VARIABLE LABELS  EPerformManage 'E-Performance Management'.
EXECUTE.
COMPUTE ETraining=Mean(S2Q15,S2Q16).
VARIABLE LABELS  ETraining 'E-Training'.
EXECUTE.
COMPUTE EEffect=Mean(S2Q17,S2Q18).
VARIABLE LABELS  EEffect 'E-Effect of E-HRM'.
EXECUTE.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='C:\@Data\Research\Research PostGraduate\DTech\CPUT\UkanduNnenna\EHRM Data.sav'
  /COMPRESSED.
T-TEST GROUPS=Country(1 2)
  /MISSING=ANALYSIS
  /VARIABLES=General EPlanning ERecruitment EPerformManage ETraining EEffect
  /CRITERIA=CI(.95).
```

A T-test is used to determine if there is a significant difference in the means of two groups (i.e. Countries in this case)

T-Test

Group Statistics

	Country	N	Mean	Std. Deviation	Std. Error Mean
General Questions	South Africa	306	3.5264	.65479	.03743
	Nigeria	305	3.5979	.68695	.03933
E-Planning	South Africa	300	3.6667	.76649	.04425
	Nigeria	305	3.7459	.89416	.05120
E-Recruitment	South Africa	306	3.8007	.81349	.04650
	Nigeria	302	3.0993	1.07140	.06165
E-Performance Management	South Africa	301	2.5980	1.06749	.06153
	Nigeria	302	2.9238	.97774	.05626
E-Training	South Africa	301	3.2292	1.05148	.06061
	Nigeria	301	2.9850	1.00114	.05770
E-Effect of E-HRM	South Africa	297	3.2778	.88404	.05130
	Nigeria	301	3.2542	.98710	.05690

The Levene's Test of Equality of variances tests whether the factors have equal variances for each of the levels of the categories. (I.e. in this case is the variance of Professionalism for Males significantly different from the variance of Professionalism for Females). If the Levene's test p-value ≤ 0.05, you follow the row called: "Equal variances not assumed", but if the Levene's test p-value > 0.05, you follow the row called: "Equal variances assumed".

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	p-value	t	df	p-value (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
General Questions	Equal variances assumed	1.344	.247	-1.318	609	.188	-.07156	.05429	-.17819	.03507
	Equal variances not assumed			-1.318	607.409	.188	-.07156	.05430	-.17819	.03508
E-Planning	Equal variances assumed	1.037	.309	-1.169	603	.243	-.07923	.06776	-.21231	.05384
	Equal variances not assumed			-1.171	591.972	.242	-.07923	.06767	-.21215	.05368
E-Recruitment	Equal variances assumed	15.061	.000	9.098	606	.000	.70132	.07709	.54992	.85271
	Equal variances not assumed			9.081	561.554	.000	.70132	.07722	.54963	.85300
E-Performance Management	Equal variances assumed	6.685	.010	-3.909	601	.000	-.32583	.08336	-.48955	-.16212
	Equal variances not assumed			-3.908	596.074	.000	-.32583	.08337	-.48958	-.16209
E-Training	Equal variances assumed	1.351	.245	2.918	600	.004	.24419	.08368	.07984	.40853
	Equal variances not assumed			2.918	598.562	.004	.24419	.08368	.07984	.40854
E-Effect of E-HRM	Equal variances assumed	6.118	.014	.308	596	.758	.02362	.07666	-.12694	.17419
	Equal variances not assumed			.308	590.502	.758	.02362	.07661	-.12683	.17408

Report: The sections marked with yellow are significance. E-Effect of E-HRM is 0.758 which is excellent but others with 0.2 and 0.1 have poor results.

Appendix F: Crosstabs for the objectives

Crosstabs A

```
CROSSTABS
  /TABLES=S2Q7 S2Q9 S2Q11 S2Q15 S2Q3 BY Country
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```

HR employees make use of E-HRM for the administrative functions of this university * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
HR employees make use of E-HRM for the administrative functions of this university	Disagree	Count	42	73	115
		% within Country	14.1%	24.2%	19.2%
	Not applicable	Count	86	61	147
		% within Country	28.9%	20.2%	24.5%
	Agree	Count	170	168	338
		% within Country	57.0%	55.6%	56.3%
Total		Count	298	302	600
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	12.594[a]	2	.002
Likelihood Ratio	12.718	2	.002
Linear-by-Linear Association	3.208	1	.073
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 57.12.

E-planning provides tools that could effectively manage the university's strategic people resources * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
E-planning provides tools that could effectively manage the university's strategic people resources	Disagree	Count	23	32	55
		% within Country	7.7%	10.5%	9.1%
	Not applicable	Count	66	29	95
		% within Country	22.1%	9.5%	15.8%
	Agree	Count	209	243	452
		% within Country	70.1%	79.9%	75.1%
Total		Count	298	304	602
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	18.383[a]	2	.000
Likelihood Ratio	18.778	2	.000
Linear-by-Linear Association	1.803	1	.179
N of Valid Cases	602		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 27.23.

There is online advertisement for vacancies in my workplace * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
There is online advertisement for vacancies in my workplace	Disagree	Count	10	84	94
		% within Country	3.3%	28.1%	15.5%
	Not applicable	Count	14	44	58
		% within Country	4.6%	14.7%	9.6%
	Agree	Count	282	171	453
		% within Country	92.2%	57.2%	74.9%
Total		Count	306	299	605
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	100.904[a]	2	.000
Likelihood Ratio	110.294	2	.000
Linear-by-Linear Association	97.779	1	.000
N of Valid Cases	605		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 28.66.

Employees can book for individual training courses and record course information online at my workplace * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
Employees can book for individual training courses and record course information online at my workplace	Disagree	Count	79	103	182
		% within Country	26.2%	34.4%	30.3%
	Not applicable	Count	59	73	132
		% within Country	19.6%	24.4%	22.0%
	Agree	Count	163	123	286
		% within Country	54.2%	41.1%	47.7%
Total		Count	301	299	600
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	10.238[a]	2	.006
Likelihood Ratio	10.268	2	.006
Linear-by-Linear Association	8.990	1	.003
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 65.78.

I received a quick service from the human resource employees on visit to their office * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
I received a quick service from the human resource employees on visit to their office	Disagree	Count	40	95	135
		% within Country	13.1%	31.6%	22.3%
	Not applicable	Count	57	45	102
		% within Country	18.7%	15.0%	16.8%
	Agree	Count	208	161	369
		% within Country	68.2%	53.5%	60.9%
Total		Count	305	301	606
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	29.781[a]	2	.000
Likelihood Ratio	30.464	2	.000
Linear-by-Linear Association	24.357	1	.000
N of Valid Cases	606		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 50.66.

Crosstabs B

```
CROSSTABS
  /TABLES=S2Q14 S2Q8 S2Q10 BY Country
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```

E-performance management system facilitates an interactive performance management process in our institution * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
E-performance management system facilitates an interactive performance management process in our institution	Disagree	Count	133	97	230
		% within Country	44.8%	32.2%	38.5%
	Not applicable	Count	96	84	180
		% within Country	32.3%	27.9%	30.1%
	Agree	Count	68	120	188
		% within Country	22.9%	39.9%	31.4%
Total		Count	297	301	598
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	20.792[a]	2	.000
Likelihood Ratio	21.004	2	.000
Linear-by-Linear Association	18.747	1	.000
N of Valid Cases	598		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 89.40.

E-HRM softwares are available for HR Staff use * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
E-HRM softwares are available for HR Staff use	Disagree	Count	41	87	128
		% within Country	13.9%	29.2%	21.5%
	Not applicable	Count	115	75	190
		% within Country	38.9%	25.2%	32.0%
	Agree	Count	140	136	276
		% within Country	47.3%	45.6%	46.5%
Total		Count	296	298	594
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	25.004[a]	2	.000
Likelihood Ratio	25.442	2	.000
Linear-by-Linear Association	6.934	1	.008
N of Valid Cases	594		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 63.78.

E-Planning ensures adequate balance of solid performance and high potentials in this university * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
E-planning ensures adequate balance of solid performance and high potentials in this university	Disagree	Count	32	41	73
		% within Country	10.9%	13.8%	12.3%
	Not applicable	Count	85	44	129
		% within Country	28.9%	14.8%	21.8%
	Agree	Count	177	213	390
		% within Country	60.2%	71.5%	65.9%
Total		Count	294	298	592
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	17.437[a]	2	.000
Likelihood Ratio	17.673	2	.000
Linear-by-Linear Association	2.104	1	.147
N of Valid Cases	592		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 36.25.

Crosstabs C

```
CROSSTABS
  /TABLES=S2Q2 S2Q5 S2Q6 S2Q3 BY Country
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```

I normally receive effective and efficient services from the HR Staff * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
I normally receive an effective and efficient services from the HR Staff	Disagree	Count	69	84	153
		% within Country	22.5%	27.9%	25.2%
	Not applicable	Count	37	42	79
		% within Country	12.1%	14.0%	13.0%
	Agree	Count	200	175	375
		% within Country	65.4%	58.1%	61.8%
Total		Count	306	301	607
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	3.413[a]	2	.182
Likelihood Ratio	3.416	2	.181
Linear-by-Linear Association	3.256	1	.071
N of Valid Cases	607		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 39.17.

HR is an active participant in organization's renewal, change, and transformation activities * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
HR is an active participant in organization's renewal, change, and transformation activities	Disagree	Count	46	23	69
		% within Country	15.2%	7.6%	11.4%
	Not applicable	Count	37	17	54
		% within Country	12.3%	5.6%	8.9%
	Agree	Count	219	264	483
		% within Country	72.5%	86.8%	79.7%
Total		Count	302	304	606
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	19.260[a]	2	.000
Likelihood Ratio	19.594	2	.000
Linear-by-Linear Association	16.468	1	.000
N of Valid Cases	606		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 26.91.

HR works to reshape behavior and help anticipate future employees' needs * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
HR works to reshape behavior and help anticipate future employees' needs	Disagree	Count	77	30	107
		% within Country	25.3%	9.9%	17.6%
	Not applicable	Count	45	18	63
		% within Country	14.8%	5.9%	10.4%
	Agree	Count	182	255	437
		% within Country	59.9%	84.2%	72.0%
Total		Count	304	303	607
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	44.409[a]	2	.000
Likelihood Ratio	45.571	2	.000
Linear-by-Linear Association	39.789	1	.000
N of Valid Cases	607		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 31.45.

I received a quick service from the human resource employees on visit to their office * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
I received a quick service from the human resource employees on visit to their office	Disagree	Count	40	95	135
		% within Country	13.1%	31.6%	22.3%
	Not applicable	Count	57	45	102
		% within Country	18.7%	15.0%	16.8%
	Agree	Count	208	161	369
		% within Country	68.2%	53.5%	60.9%
Total		Count	305	301	606
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	29.781[a]	2	.000
Likelihood Ratio	30.464	2	.000
Linear-by-Linear Association	24.357	1	.000
N of Valid Cases	606		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 50.66.

Crosstabs D

```
CROSSTABS
  /TABLES=S2Q19 S2Q20 S2Q8 BY Country
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```

There is constant supply of electricity in my workplace * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
There is constant supply of electricity in my workplace	Disagree	Count	20	65	85
		% within Country	6.7%	21.7%	14.2%
	Not applicable	Count	18	18	36
		% within Country	6.0%	6.0%	6.0%
	Agree	Count	261	217	478
		% within Country	87.3%	72.3%	79.8%
Total		Count	299	300	599
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	27.872[a]	2	.000
Likelihood Ratio	29.138	2	.000
Linear-by-Linear Association	26.297	1	.000
N of Valid Cases	599		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.97.

There is a need for additional basic IT skills in my workplace * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
There is a need for additional basic IT skills in my workplace	Disagree	Count	59	28	87
		% within Country	19.8%	9.3%	14.5%
	Not applicable	Count	42	22	64
		% within Country	14.1%	7.3%	10.7%
	Agree	Count	197	252	449
		% within Country	66.1%	83.4%	74.8%
Total		Count	298	302	600
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	24.008[a]	2	.000
Likelihood Ratio	24.376	2	.000
Linear-by-Linear Association	21.963	1	.000
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 31.79.

E-HRM softwares are available for HR Staff use * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
E-HRM softwares are available for HR Staff use	Disagree	Count	41	87	128
		% within Country	13.9%	29.2%	21.5%
	Not applicable	Count	115	75	190
		% within Country	38.9%	25.2%	32.0%
	Agree	Count	140	136	276
		% within Country	47.3%	45.6%	46.5%
Total		Count	296	298	594
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	25.004[a]	2	.000
Likelihood Ratio	25.442	2	.000
Linear-by-Linear Association	6.934	1	.008
N of Valid Cases	594		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 63.78.

Crosstabs E

```
CROSSTABS
  /TABLES=S2Q15 S2Q14 BY Country
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL.
```

Employees can book for individual training courses and record course information online at my workplace * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
Employees can book for individual training courses and record course information online at my workplace	Disagree	Count	79	103	182
		% within Country	26.2%	34.4%	30.3%
	Not applicable	Count	59	73	132
		% within Country	19.6%	24.4%	22.0%
	Agree	Count	163	123	286
		% within Country	54.2%	41.1%	47.7%
Total		Count	301	299	600
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	10.238[a]	2	.006
Likelihood Ratio	10.268	2	.006
Linear-by-Linear Association	8.990	1	.003
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 65.78.

E-performance management system facilitates an interactive performance management process in our institution * Country

Crosstab

			Country		
			South Africa	Nigeria	Total
E-performance management system facilitates an interactive performance management process in our institution	Disagree	Count	133	97	230
		% within Country	44.8%	32.2%	38.5%
	Not applicable	Count	96	84	180
		% within Country	32.3%	27.9%	30.1%
	Agree	Count	68	120	188
		% within Country	22.9%	39.9%	31.4%
Total		Count	297	301	598
		% within Country	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	20.792[a]	2	.000
Likelihood Ratio	21.004	2	.000
Linear-by-Linear Association	18.747	1	.000
N of Valid Cases	598		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 89.40.

Appendix G: Crosstabs for EHRM data

```
CROSSTABS
  /TABLES=Gender AgeGroup PopulationGroup Marital Education Qualification Employment Department YearsExperience
EmploymentType S2Q1 S2Q2 S2Q3 S2Q4 S2Q5 S2Q6 S2Q7 S2Q8 S2Q9 S2Q10 S2Q11 S2Q12 S2Q13 S2Q14 S2Q15 S2Q16 S2Q17
S2Q18 S2Q19 S2Q20 BY Country
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ
  /CELLS=COUNT
  /COUNT ROUND CELL.
```

Note: 0.000 means that it is significance.

Crosstabs

Gender * Country

Crosstab

Count

		Country		Total
		South Africa	Nigeria	
Gender	Male	103	169	272
	Female	203	134	337
Total		306	303	609

Chi-Square Tests

	Value	df	p-value (2-sided)	Exact p-value (2-sided)	Exact p-value (1-sided)
Pearson Chi-Square	30.128[a]	1	0.000		
N of Valid Cases	609				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 135.33.
b. Computed only for a 2x2 table
c. p-value < 0.001

Age group * Country

Crosstab

Count

		Country		Total
		South Africa	Nigeria	
Age group	Under 20	1	0	1
	20 - 24	25	6	31
	25 - 29	48	30	78
	30 - 34	58	52	110
	35 - 39	44	55	99
	40 - 44	51	46	97
	45 - 49	34	36	70
	50 - 54	20	43	63
	55 - 59	18	25	43
	60 or more	7	10	17
Total		306	303	609

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	28.715[a]	9	.001
N of Valid Cases	609		

a. 2 cells (10.0%) have expected count less than 5. The minimum expected count is .50.

Population group * Country

Crosstab

Count

		Country		Total
		South Africa	Nigeria	
Population group	White	80	5	85
	Black	115	287	402
	Coloured	88	8	96
	Indian	17	2	19
	Other	4	0	4
Total		304	302	606

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	222.273[a]	4	.000
N of Valid Cases	606		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.99.

Marital status * Country

Crosstab

Count

		Country		Total
		South Africa	Nigeria	
Marital status	Married	150	238	388
	Single	123	58	181
	Divorced	22	0	22
	Living together	5	2	7
	Widowed	6	6	12
Total		306	304	610

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	66.581[a]	4	.000
N of Valid Cases	610		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.49.

Education level * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Education level	Primary	1	5	6
	Secondary	45	29	74
	Tertiary	259	268	527
Total		305	302	607

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	6.265[a]	2	.044
N of Valid Cases	607		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.99.

Qualification obtained * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Qualification obtained	Academic	194	185	379
	Non-academic	112	118	230
Total		306	303	609

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)	Exact p-value (2-sided)	Exact p-value (1-sided)
Pearson Chi-Square	.355[a]	1	.551		
N of Valid Cases	609				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 114.43.
b. Computed only for a 2x2 table

Level of employment * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Level of employment	Senior/Manager	19	111	130
	Middel management	99	118	217
	Junior employee	184	69	253
Total		302	298	600

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	119.023[a]	2	.000
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 64.57.

University department * Country

Crosstab

Count

		Country		Total
		South Africa	Nigeria	
University department	Library	37	10	47
	Exams & records	7	27	34
	Administration	152	118	270
	Other	106	141	247
Total		302	296	598

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	36.460[a]	3	.000
N of Valid Cases	598		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.83.

Work experience at university * Country

Crosstab

Count

		Country		Total
		South Africa	Nigeria	
Work experience at university	Less than1 year	2	0	2
	1 - 2 years	66	43	109
	3 - 5 years	76	55	131
	6 - 9 years	44	66	110
	10 - 14 years	57	42	99
	15 years or above	59	97	156
Total		304	303	607

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	26.147[a]	5	.000
N of Valid Cases	607		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 1.00.

Type of employment * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Type of employment	Casual employment	6	15	21
	Part-time employment	41	7	48
	Full-time employment	258	281	539
Total		305	303	608

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	28.916[a]	2	.000
N of Valid Cases	608		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.47.

I regularly use the services of the human resource department * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
I regularly use the services of the human resource department	Strongly Disagree	33	24	57
	Disagree	59	45	104
	Not applicable	37	48	85
	Agree	138	144	282
	Strongly agree	38	38	76
Total		305	299	604

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	4.798[a]	4	.309
N of Valid Cases	604		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 28.22.

I normally receive an effective and efficient services from the HR Staff * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
I normally receive an effective and efficient services from the HR Staff	Strongly Disagree	18	16	34
	Disagree	51	68	119
	Not applicable	37	42	79
	Agree	168	143	311
	Strongly agree	32	32	64
Total		306	301	607

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	4.831[a]	4	.305
N of Valid Cases	607		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.86.

I received a quick service from the human resource employees on visit to their office * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
I received a quick service from the human resource employees on visit to their office	Strongly Disagree	10	24	34
	Disagree	30	71	101
	Not applicable	57	45	102
	Agree	167	128	295
	Strongly agree	41	33	74
Total		305	301	606

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	29.816[a]	4	.000
N of Valid Cases	606		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.89.

Using E-HRM would increase the performance of HR Staff * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Using E-HRM would increase the performance of HR Staff	Strongly Disagree	10	14	24
	Disagree	21	18	39
	Not applicable	63	13	76
	Agree	132	135	267
	Strongly agree	70	122	192
Total		296	302	598

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	47.854[a]	4	.000
N of Valid Cases	598		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.88.

HR is an active participant in organization's renewal, change, and transformation activities * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
HR is an active participant in organization's renewal, change, and transformation activities	Strongly Disagree	16	11	27
	Disagree	30	12	42
	Not applicable	37	17	54
	Agree	159	156	315
	Strongly agree	60	108	168
Total		302	304	606

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	29.784[a]	4	.000
N of Valid Cases	606		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.46.

HR works to reshape behavior and help anticipate future employees' needs * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
HR works to reshape behavior and help anticipate future employees' needs	Strongly Disagree	19	10	29
	Disagree	58	20	78
	Not applicable	45	18	63
	Agree	136	164	300
	Strongly agree	46	91	137
Total		304	303	607

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	50.270[a]	4	.000
N of Valid Cases	607		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.48.

HR employees make use of E-HRM for the administrative functions of this university * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
HR employees make use of E-HRM for the administrative functions of this university	Strongly Disagree	15	28	43
	Disagree	27	45	72
	Not applicable	86	61	147
	Agree	137	127	264
	Strongly agree	33	41	74
Total		298	302	600

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	13.900[a]	4	.008
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.36.

E-HRM softwares are available for HR Staff use * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
E-HRM softwares are available for HR Staff use	Strongly Disagree	18	24	42
	Disagree	23	63	86
	Not applicable	115	75	190
	Agree	112	114	226
	Strongly agree	28	22	50
Total		296	298	594

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	28.614[a]	4	.000
N of Valid Cases	594		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 20.93.

Electronic planning provides tools that could effectively manage the university's strategic people resources * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Electronic planning provides tools that could effectively manage the university's strategic people resources	Strongly Disagree	6	16	22
	Disagree	17	16	33
	Not applicable	66	29	95
	Agree	159	180	339
	Strongly agree	50	63	113
Total		298	304	602

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	21.725[a]	4	.000
N of Valid Cases	602		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.89.

E-planning ensures adequate balance of solid performance and high potentials in this university * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
E-planning ensures adequate balance of solid performance and high potentials in this university	Strongly Disagree	8	22	30
	Disagree	24	19	43
	Not applicable	85	44	129
	Agree	150	172	322
	Strongly agree	27	41	68
Total		294	298	592

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	24.505[a]	4	.000
N of Valid Cases	592		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.90.

There is online advertisement for vacancies in my workplace * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
There is online advertisement for vacancies in my workplace	Strongly Disagree	2	38	40
	Disagree	8	46	54
	Not applicable	14	44	58
	Agree	148	98	246
	Strongly agree	134	73	207
Total		306	299	605

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	102.729[a]	4	.000
N of Valid Cases	605		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.77.

Recruitment/ selection are done online in this institution * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Recruitment/ selection are done online in this institution	Strongly Disagree	38	45	83
	Disagree	53	87	140
	Not applicable	55	70	125
	Agree	103	62	165
	Strongly agree	52	26	78
Total		301	290	591

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	29.307[a]	4	.000
N of Valid Cases	591		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 38.27.

Online performance management is used in evaluating employee performance in my workplace * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Online performance management is used in evaluating employee performance in my workplace	Strongly Disagree	62	48	110
	Disagree	85	78	163
	Not applicable	84	83	167
	Agree	58	72	130
	Strongly agree	12	20	32
Total		301	301	602

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	5.596[a]	4	.231
N of Valid Cases	602		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.00.

E-performance management system facilitates an interactive performance management process in our institution * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
E-performance management system facilitates an interactive performance management process in our institution	Strongly Disagree	63	26	89
	Disagree	70	71	141
	Not applicable	96	84	180
	Agree	54	101	155
	Strongly agree	14	19	33
Total		297	301	598

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	31.173[a]	4	.000
N of Valid Cases	598		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.39.

Employees can book for individual training courses and record course information online at my workplace * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
Employees can book for individual training courses and record course information online at my workplace	Strongly Disagree	29	35	64
	Disagree	50	68	118
	Not applicable	59	73	132
	Agree	107	95	202
	Strongly agree	56	28	84
Total		301	299	600

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	14.833[a]	4	.005
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 31.89.

The use of electronic training management have reduced training cost at my workplace * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
The use of electronic training management have reduced training cost at my workplace	Strongly Disagree	30	29	59
	Disagree	44	83	127
	Not applicable	124	84	208
	Agree	68	84	152
	Strongly agree	30	16	46
Total		296	296	592

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	25.631[a]	4	.000
N of Valid Cases	592		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 23.00.

E-HRM have led to less administrative tasks and less administrative positions in this university * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
E-HRM have led to less administrative tasks and less administrative positions in this university	Strongly Disagree	19	28	47
	Disagree	49	68	117
	Not applicable	121	70	191
	Agree	83	111	194
	Strongly agree	23	22	45
Total		295	299	594

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	22.464[a]	4	.000
N of Valid Cases	594		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 22.35.

HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
HR practitioners are able to provide adequate, accurate and fast information through the use of E-HRM in my workplace	Strongly Disagree	14	25	39
	Disagree	40	43	83
	Not applicable	87	55	142
	Agree	119	137	256
	Strongly agree	36	38	74
Total		296	298	594

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	11.735[a]	4	.019
N of Valid Cases	594		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.43.

There is constant supply of electricity in my workplace * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
There is constant supply of electricity in my workplace	Strongly Disagree	6	22	28
	Disagree	14	43	57
	Not applicable	18	18	36
	Agree	128	120	248
	Strongly agree	133	97	230
Total		299	300	599

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	29.789[a]	4	.000
N of Valid Cases	599		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.98.

There is a need for additional basic IT skills in my workplace * Country

Crosstab

Count

		Country		
		South Africa	Nigeria	Total
There is a need for additional basic IT skills in my workplace	Strongly Disagree	15	15	30
	Disagree	44	13	57
	Not applicable	42	22	64
	Agree	102	124	226
	Strongly agree	95	128	223
Total		298	302	600

Chi-Square Tests

	Value	df	Asymp. p-value (2-sided)
Pearson Chi-Square	30.109[a]	4	.000
N of Valid Cases	600		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.90.

Appendix H: CPUT ethical clearance

Cape Peninsula
University of Technology

P.O. Box 1906 • Bellville 7535 South Africa •Tel: +27 21 6801680 • Email: saliefa@cput.ac.za
Symphony Road Bellville 7535

Office of the Chairperson Research Ethics Committee	Faculty: **BUSINESS**

At a meeting of the Research Ethics Committee on 18 September 2012, ethics

Approval was granted to UKANDU, Nnenna Eme (206223439) for research activities

Related to the MTech/DTech: DTECH: Human Resource Management at the

Cape Peninsula University of Technology.

Title of dissertation/thesis:	A comparative assessment of the utilization of electronic Human Resources Management systems as a decision-making tool by selected South African and Nigerian Universities. Supervisor: Dr C.O.K Allen-Ile

Comments:

Decision: APPROVED

Signed: Chairperson: Research Ethics Committee	18 September 2012 Date
Signed: Chairperson: Faculty Research Committee	Date

Clearance Certificate No | 2012FBREC0083

Appendix I: UCT ethical clearance

UNIVERSITY OF CAPE TOWN

Faculty of Commerce
Ethics in Research Committee
Courier: Room 2.26 Leslie Commerce Building Upper Campus University of Cape Town
Post: University of Cape Town • Private Bag • Rondebosch 7701
Email: Harold.Kincaid@uct.ac.za
Telephone: +27 21 650 5041
Fax No.: +27 21 650 4396

UCT/COM/217/2013 9th July 2013

Nnenna Ukandu
University of Cape Town
nneukaeme2001@yahoo.com

Dear Researcher,

Project title: A comparative assessment of the utilization of electronic human resource management systems as a decision making tool by selected South African and Nigerian universities

This letter serves to confirm that the project entitled, **"A comparative assessment of the utilization of electronic human resource management systems as a decision making tool by selected South African and Nigerian universities"** as described in your final submitted protocol 2013, has been approved. You may proceed with the research.

Please note that if you make any substantial change in your research procedure that could affect the experiences of the participants, you must submit a revised protocol to the Committee for approval.

Best wishes for great success with your research.

Regards,

Harold Kincaid

Professor Harold Kincaid
Commerce Faculty Ethics in Research Committee

Appendix J: HR 194 access to UCT staff for research purposes form

HR194	ACCESS TO UCT STAFF FOR RESEARCH PURPOSES	UNIVERSITY OF CAPE TOWN IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

RECEIVED
17 JUL 2013
ED: HR OFFICE

NOTES

- Forms must be downloaded from the UCT website: http://www.uct.ac.za/depts/sapweb/forms/forms.htm
- This form must be completed by applicants who are requesting to access UCT staff for the purpose of research.
- A copy of the research proposal as well as the Ethics Committee approval must be attached.
- It is the **responsibility of the researcher/s to apply for ethical clearance** from the relevant Faculty's Research in Ethics Committee (RIEC).
- If you are requesting staff information, you are required to complete the HR Information Request Form (HR190) and submit it together with all the required documentation.
- The turnaround time for a reply is **approximately 10 working days unless specified as urgent.**
- Return the completed application form and all the above documentation to Joy Henry via email: joy.henry@uct.ac.za; or deliver to: For the Attention: Executive Director, Human Resources Department, Bremner Building, Room 214, Lower Campus, UCT.

SECTION A: APPLICANT DETAILS

Title	Ms	Name	Nnenna Eme Ukandu
Telephone number	+27731830735	Email address	nneukaeme2001@yahoo.com
Student number	206223439	Staff number	
Visiting researcher ID / passport number	A02190717		
Faculty Officer contact details	Ms Michelle Moller		
	Work number: 021 959 6911 (mollerm@cput.ac.za)		
University or institution at which employed or a registered student	A Doctorate student at Cape Peninsula University of Technology		
Faculty or department in which you are registered or work	Human Resource Management Department, Business Faculty		
Address (if not UCT)	Human Resource Management Department, Business Faculty, Cape Peninsula University		
	of Technology. Cape Town Campus		

SECTION B: SUPERVISOR DETAILS

	Title and name	Telephone number	Email address
Supervisor	Prof. Charles Allen Ile	021 460 3293	allenilec@cput.ac.za
Co-Supervisor	Dr Chux Iwu	021 460 9038	Iwuc@cput.ac.za

SECTION C: APPLICANT'S FIELD OF STUDY (if applicable) / TITLE OF RESEARCH PROJECT / STUDY

Degree	DTech Human Resource Management		
Research project or title	A comparative assessment of the utilization of electronic human resource management systems as a decision making tool by selected South African and Nigerian universities.		
Research proposal attached	☒ Yes	☐ No	
Target population (number of UCT staff)	HR Staff members and other UCT staff members (Academic and non-academic staff members) (one hundred staff members approximately both from HR department and other staff members))		
Amount of time required for an interview and/or questionnaire	Between 10 to 20 minutes for each person		
Lead Researcher details	Ms Nnenna Eme Ukandu		
Proof of ethical clearance status attached	☒ Yes	☐ No	

SECTION D: FOR OFFICE USE (Approval status to be completed by the Executive Director, Human Resources or Nominee)

Support or approval			Role	Signature	Date
Supported?	☑ Yes	☐ No	Joy Henry (Office Co-Ordinator)		16/7/13.
Approved?	☑ Yes	☐ No	Miriam Hoosain (Executive Director: HR)		17/07/13

Appendix K: Grammarian Certificate

GRAMMARIAN CERTIFICATE

SHAMILA SULAYMAN PROOF READING AND EDITING SERVICES

16 October 2014

Dear Sir / Madam

This proves that I have proof read and edited the research study entitled ***"A comparative assessment of the utilization of electronic human resource management (E-HRM) as a decision-making tool in selected South African and Nigerian universities",*** and that I have advised the candidate to make the required changes.

Thank you.

Yours faithfully

(Mrs) SHAMILA SULAYMAN
Communication Lecturer: CPUT
Professional Editor's Group
shamilasulayman@gmail.com
sulaymans@cput.ac.za
079-821-6221

GRAMMARIAN'S CERTIFICATION

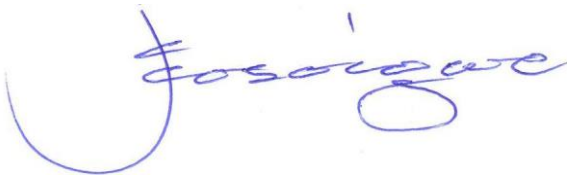
24th August, 2015

Dear Sir/Madam,

This is to certify that I have proofread this project research entitled ***'A comparative assessment of the utilisation of electronic human resource management (E-HRM) as a decision-making tool in selected South African and Nigerian universities',*** and consider it suitable for the award of the degree the candidate is seeking for.

Thank you.

Yours faithfully,



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