

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

KNUST - SCHOOL OF BUSINESS

AN EXPLORATION OF THE USE OF INFORMATION SYSTEMS (IS) FOR
EFFICIENT HUMAN RESOURCES MANAGEMENT PRACTICES: A CASE
STUDY OF SELECTED ORGANISATIONS IN KUMASI METROPOLIS

KNUST
BY

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DECLARATION

I hereby declare that this submission is my own work towards the award of masters of Business Administration and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of University, except where due acknowledgement has been made in the text.

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ABSTRACT

This study explored the use of information Systems (IS) for efficient human resources management practices in selected organisations in the Kumasi metropolis. The study used a multiple case study approach, and employed a mixed-method methodology in order to help find out the efficient use of Information Systems for Human Resource Management practices in some selected organizations. Questionnaires and interviews were the main data collection tools used to generate data from employees and managers of the selected organisations. The study revealed that Information Systems usage is common among all the organisations selected for this study because of its enormous benefits to them. Furthermore, the result shows that IS plays a major role in HRM practices in the organisations such as recruiting, training and the development of staff. The study indicated that the use of IS in HRM practices helped the organisations in terms of efficiency, quality and consolidation of information, and transparency within organizations. The study recommends that organisations should use HR Information Systems.

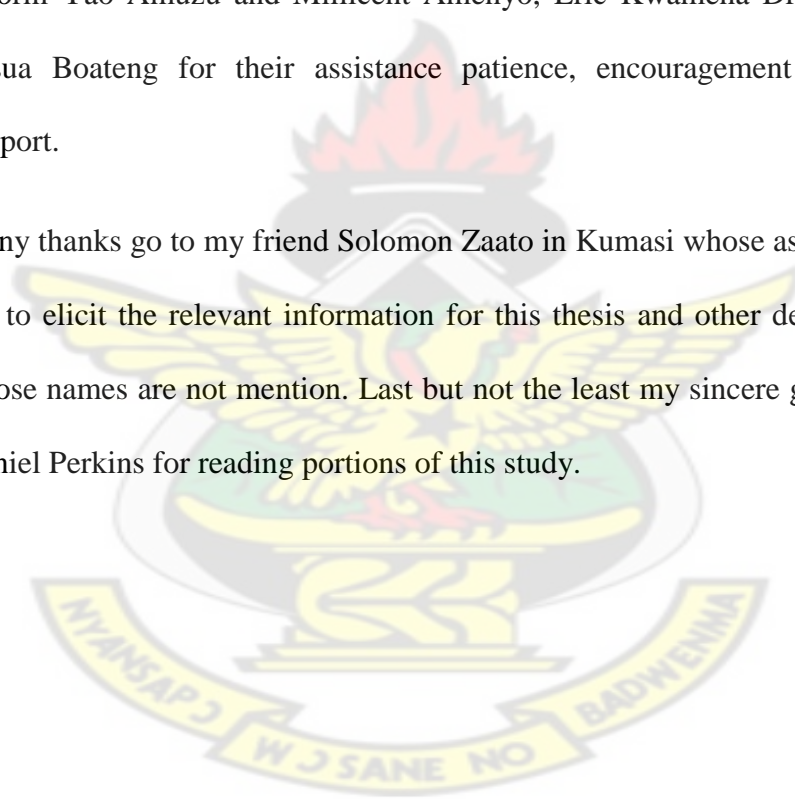
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DEDICATION

With much passion I dedicate this thesis to my parents; Professor Dominic Setsoafia Amuzu, and mum Gertrude Simpi Amuzu, Dominic Selorm Yao Amuzu, Eric Kwamena Dradu and Emma Fosua Boateng whose pieces of advice have kept me this far.

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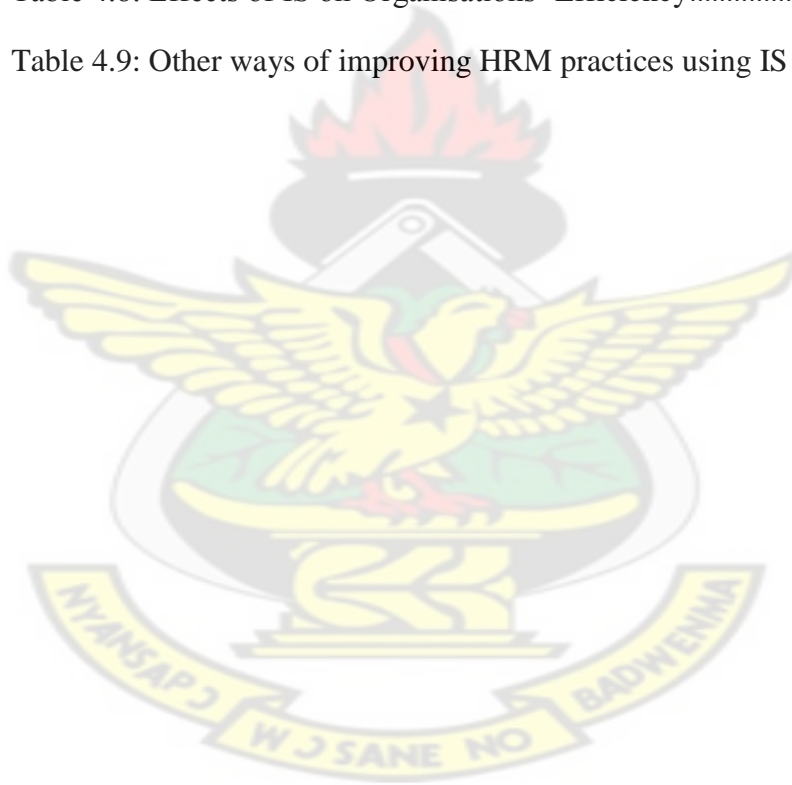
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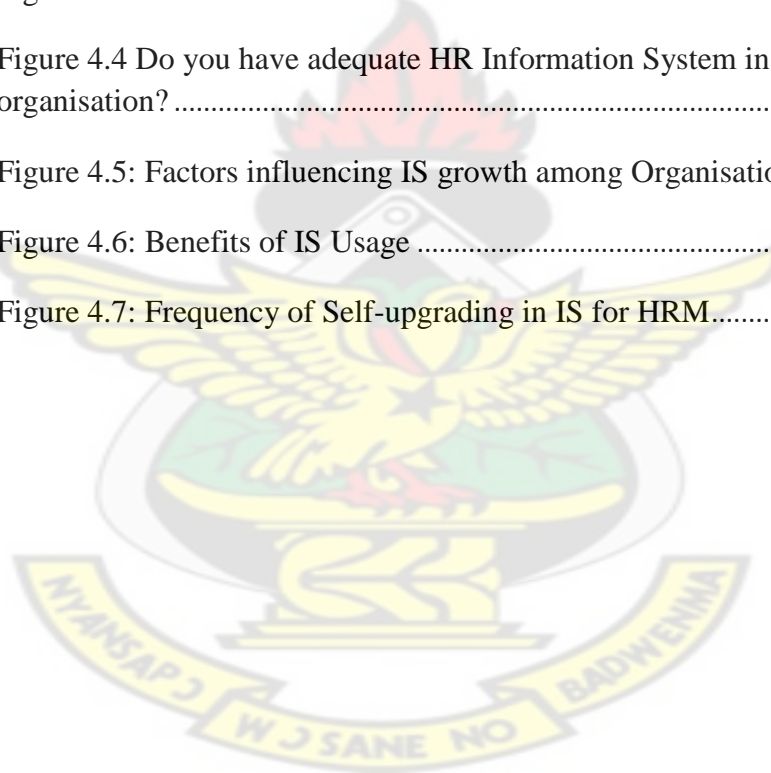
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LIST OF ABBREVIATIONS

ANOVA	- Analysis of Variance
CAAD	- Computer-Assisted Administrating
CD	- Compact disk
DSS	-Decision support systems
DVD	- Digital Versatile Disc
EIS	- Employee Information System
ERP	- Enterprise Resource Planning
ESS	- Executive support systems
FAS	- Financial Accounting System
HCM	- Human Capital Management
HR	- Human Resources
HRM	-Human Resources Management
HRMS	- Human Resource Management System
ICT	- Information and Communication Technology
LAN	- local Area Network
MIS	- Management Information System
MS-Project	- Microsoft Project
PC	- Personal Computers
RDBMS	- Relational Database Management Systems
SPM	-Software Project Monitoring
SPSS	- Statistical Package for Social Science
TPS	- Transaction processing systems

Note: In this study Information Systems and Information and Communication Technology were used interchangeable.

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Today's organizational strategic performance depends a great deal on the performance of human resource management (HRM) (Lippers and Swiercz, 2005; Troshani et al., 2011). Furthermore, Human Resource Management (HRM) has recently turned its concentration on knowledge sharing.

This change in HRM practices is partly attributed to technologies enablers, such as human resource information systems (HRIS) which consists of systematic procedures and functions to acquire, store, retrieve, analyze, manipulate, and disseminate relevant information concerning organizational HR (Lippers and Swiercz, 2005; Troshani et al., 2011).

To increase the efficiency of HRM, organizations are becoming more and more dependent

on HRIS (Ball, 2001; Lippert and Swiercz, 2005; Troshani, et al., 2011). At the functional level, HRIS can keep track of employees', applicants', and contingent workers' qualifications,

demographics, Performance Appraisal, professional development, payroll, recruitment and

Selection (Harris and Desimone, 1995; Troshani et al., 2011). With HRIS, the administrative efficiency maintains faster information processing, improved employee communications, and greater information accuracy (Overman, 1992),

lower HR costs and overall HR productivity improvements (Beadles *et al.*, 2005; Dery *et al.*, 2009; Wiblen *et al.*, 2010; Troshani *et al.*, 2011).

Web-based technologies can be used to improve employees' working environment: these guarantee instant access to a huge sum of resources, customized programs and instant support, while overcoming the restrictions of place and time.

It follows therefore that ICT has taken over the world of communication helping in trade and industry, education and other forms of services. In business organizations, many secretarial and management duties specifically HRM practices referred to as office automation such as Recruitment, evaluations, payroll timesheets, leaves management and so on are now carried out using computers with the aid of web-based and server-based HR software programs such as CommonOffice, HR Office, SuccessFactors, iVantage, Dynamics, GP Enterprise, Sapient, Halogen PCRecruiter, Epicor, Taleo, Silkroad just to mention a few. It guarantees instant access to a huge amount of resources, customized programs and instant support, while overcoming the restrictions of place and time. The question one may ask is whether in Ghana today, employees' especially Human resource managers are equally equipped with the requisite computer skills for effective and efficient management of the organization to achieve organizational goals.

1.1 Statement of the Problem

The knowledge of computing and the use of its skills acquired have undoubtedly become pre-requisites on every career or occupation, hence the great importance given to the study of IS for efficient HRM practices. As it has been stated earlier

however, it has been these employees who have been exposed to the gains derived from the use of ICT skills acquired for beneficial HRM practices. Since employees especially HR managers are not aware of the advantages of the acquisition of computer skills as a tool, very useful to keep people informed, they lack interest in the study of IS as a tool for efficient HRM.

Unfortunately, it has been observed that only few studies have been conducted so far on the causes and effects of this apparent lack of awareness on the benefits employees will derive from the knowledge gained, the interest developed and the use of IS for efficient HRM practices.

It has therefore been observed that encouraging employees to develop skills in the use of IS has not been given adequate attention. As a result, many employees are denied the benefits they could derive from the use of IS skills for efficient HRM practices in organisations. Through observation and interaction with employees and corporate executives, it could be stated that inadequate use of IS for HRM practices lead to the following deficiencies.

1.2 Objectives of the Study

The objectives of the study are in two (2) folds. These are the general objective and the specific objectives.

1.2.1 General Objective

The objective of this study is to determine how Information System (IS) is used to aid Human Resources Management practices at UBA, GOIL, DataScience and KNUST.

1.2.2 Specific Objectives

- (a) To identify the various Human Resources Management practices available at UBA, GOIL, DataScience and KNUST that is carried out with the aid of Information Systems.
- (b) To identify the strengths and weaknesses associated with the use of IS for HRM practices.
- (c) To determine ways which can help sustain employees' interest in using IS for Human Resources Management practices at UBA, GOIL, DataScience and KNUST.
- (d) To make effective and efficient recommendations to improve the use of IS for Human Resources Management practices.

1.3 Research Questions

Accurate data collection is absolutely a necessary tool for a reliable and relevant result. The researcher thus developed these series of questions for clinical analysis and investigation on the problem for a successful outcome. The research questions are as follows:

- 1) What are the various Human Resources practices available at UBA, GOIL, DataScience and KNUST which are undertaken with the aid of IS?
- 2) What are the strengths and weaknesses associated with the use of the IS for efficient HRM practices at UBA, GOIL, DataScience and KNUST?
- 3) How will employees' interest be sustained with the use of IS for Human Resources Practices at UBA, GOIL, DataScience and KNUST?
- 4) In what ways can the use of IS for Human Resources Management practices be improved at UBA, GOIL Data Science, and KNUST?

1.4 Significance of the Study

The study is focused on the relevance of IS to both employees and managers. The intention of the study is to explore the use of IS efficiently for HRM practices which will support organisational goals and objectives to sustain competitive advantage.

It should be possible to take into consideration the role of those who take part in the formation and implementation of strategic planning of the organisation for efficiency of HRM practices using IS and to bring a positive change in the attitude of employees towards the achievement of organisational goals.

In addition, the findings may be used as a contribution for future research, for example the study could be a basis for developing hypotheses to be tested on.

This study may also be useful to people who are interested in the study of IS for HRM practices. Moreover, this study offers information and suggestions on IS for HRM best practices to these selected organisations. Thus, the study will contribute to the growth and development of these organisations and the national economy when the recommendations of the study are implemented. This study will help organisations that plan to use IS in their HRM practices to anticipate the likely benefits and challenges they may face.

1.5 Overview of Research Methodology

The method employed was mixed method strategy, this method was employed so that one source of information (Interviews) can be used to enrich the other source of information (questionnaires) in the study, that is triangulation approach as explained by Spratt *et al* (2004). The study was conducted based on both primary and secondary data sources. The former was in the form of questionnaires. An

unstructured face-to-face interview with the staff, the head of Human Resource, as well as interaction with management of the selected cases was conducted. The latter was acquired based on annual reports on Human Resource Management of the institutions, corporate plan, the internet, books and other publications were used to gather information on the cases in this study. Various data analysis tools within the **Statistical Product and Service Solutions (SPSS)** package were used to analyse the data for easy interpretation and discussion.

1.6 Scope of the Study

The study is limited in scope; it considered the use of IS for HRM practices in organisations located in the Kumasi metropolis therefore its findings cannot be generalized in other parts of the globe.

Data was collected from the HRM departments at the head offices of UBA, GOIL, DataScience and KNUST. The study specifically focused on the use of IS for HRM practices efficiently in the selected organisations.

1.7 Limitations of the Study

Firstly, availability of secondary information to be used for the study, the time span to complete the study is also a cause to worry about due to interviewee's busy schedules which will be mostly likely to affecting our meeting thus rescheduling. Funding of this project will be major problem due to financial constraints on the side of the researcher. Then again, as a result of confidentiality clauses in some organisations, access to data will be another major constraint. Since majority of the primary data will be carried out in the Ashanti Region, generalization cannot be applied to other regions in the country which will limit the study to a particular region. However, the researcher will make this study accurate as possible to reduce the levels of inaccuracies.

1.8 Organizations of the Study

This study is divided into five chapters. The first chapter is an introduction of the study. It presents the background of the study, statement of the problem, objectives of the study, research questions and significance of the study, overview of research methodology, scope and limitation of this study. The second chapter has the literature review section which generally reviewed past literature related to this study. The third chapter has the methodology of the research and organisational profile. The fourth chapter is the intervention design and its implementation. Finally, the last chapter gives a summary of the findings, conclusions and recommendations.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter highlights the sustainability of employee interest and Using Information and Communication Technology (IS) to improve Human Resources Management (HRM) Practices at the work place. In this chapter, we'll examine widely accepted findings of early research works in relation to interest and attitudes of employees towards computing. For the purposes of this work, it will be in the right direction to explain the terms Human Resources, HRM, HRM practices, IS, IS Human Resources Management Software.

2.1.1 Definition of Human Resources

Giant (1978) states that the context of "Human Resources" implies that people in a work organization are endowed with a range of abilities, talents and attitude necessary to influence productivity, quality and profitability.

According to Cowling (1998), Human resources are composed of individuals working for an organization, employed on a variety of contracts; some as "core" long-term staff, some as temporary staff, some as contracted staff but collectively making up the most important of an organization's resources. Human resource practices serve as the processes used to transform existing human resource inputs within the human resource system (Lado and Wilson, 1994 cited in Ferguson, 2009).

Armstrong, (2000), added that HR is essentially crucial in today's contemporary organisations because it induce high-performance management through the use of employees; by enhancing their levels of customer's service, productivity, growth, profits and quality control. Lado and Wilson (1994, p 701) outlined a separate interconnected activities, roles, processes and other aspects that are aimed to attracting, maintaining, and developing the firm HR activities in contemporary organisations, such as: 1) planning; 2) recruitment and selection 3) training; 4) performance management; 5) benefits and rewards; 6) compensation; 7) and 8) career development (Banhegyi et al., (2008) and (Robbins & Coulter, (2002).

Giant (1978) contended that the concept of human resources refers to the supply of physical labour, technical and professional skills which are germane to the development policies, programmes, projects and daily activities.

2.1.2 Human Resources Management (HRM)

HRM is the process of managing people in organizations in a structured and thorough manner. This covers the fields of staffing (hiring people), retention of people, pay and perks setting and management, performance management, change management and taking care of exits from the company to round off the activities. The HRM team is also responsible for overseeing organizational leadership and culture, and ensuring compliance with employment and labor laws. In circumstances where employees desire and are legally authorized to hold a collective bargaining agreement, HR will typically also serve as the company's primary liaison with the employees' representatives (usually a labor union). As noted by Wali (June, 2010), HRM is about the utilization of human resources to accomplish an organization's objectives as effectively and efficiently as possible.

The only resource that can help one to have a competitive advantage over one's competitors is human resources which are unique and cannot be imitated unlike other resources like technology and capital. According to Rundle (1997) one needs to bear in mind that people (managers), not the firm, are the adaptive mechanism in determining how the firm will respond to the competitive environment. Khatri (1999) argues that people are one of the most important factors providing flexibility and adaptability to organizations.

However, several scholars have noted that managing people is more difficult than managing technology or capital (Barney (1991), Lado and Wilson (1994). Yet still Wright et al., (1994) asserts that firms that have learnt how to manage their human resources soundly would have an advantage over their competitors in the long run since acquiring and deploying human resources effectively is cumbersome and takes much longer.

2.1.3 The Human Resource Management Functionalities

Many researchers have discussed the issue of HRM and its functionalities. For example, Martinsons (1997) and Beulen, (2009) investigated the issue of HRM functionalities and commented that distinguishing these functionalities arises from the perspective of organizational and employee-centric view. They added that the strategic dimension for organizational continuity and prosperity relies immensely on value and importance of the human capital which identifies the knowledge as a significant part of this capital. These functions are human

resource planning, staff development and regulatory compliance, benefits administration, performance appraisal, and recruitment and selection.

Human Resource Planning: the process of making a decision about what positions inside the firm to fill and how to fill them (Martinsons, 1997). It is also the process of identifying current and future HR needs for an organization to achieve its goals as well as forecasting a firm's future demand and supply (Beulen, 2009). This function serves as a link to the overall strategic plan of an organization. Human resource planning is a continuous process that works on both long-term and short term. *Staff development:* Development of existing staff needs to be maintained as different industries and sectors continue to implement new technologies. Supporting employees in identifying their professional development options and targets is the purpose of education and training tools (Beulen, 2009). As such, it contributes radically to retention management. HRIS can be used in a staff development and facilitating employees identification and enrollment of adequate or required training courses that are related to their current job or to develop their skills and abilities that enable them to carry out new jobs (Martinsons, 1997; Beulen, 2009).

Benefits Administration: Benefits administration is considered an important function for human resource management, since; it is part of retention management and can be used to motivate employees. It involves the creation and management of employee benefits, as well as providing means for employees to be trained in understanding how the benefits work (Dessler, 2013). It also involves what types of standards employees must meet in order to qualify for the benefits (Dessler, 2013).

Performance Appraisal: Performance appraisals are used for administering remunerations and salaries, and identifying individual employee strengths and weaknesses (Mathis and Jackson, 2010). It is variously called employee rating, employee evaluation, performance review, or result appraisal. It is used to assess an employee's performance and provide feedback about past, current, and future performance expectations (Beulen, 2009).

2.1.4 Human Resources Management Practices

According to Tiwari (2012), HRM practices refers to organizational activities directed at managing the pool of human resources and ensuring that the resources are employed towards the fulfillment of organizational goals. He states further that Human Resource is the most important asset for any organization and it is the source of achieving competitive advantage. Managing human resources is very challenging as compared to managing technology or capital and for its effective management as stated earlier; an organization requires effective Human resources management system. Human resources management system should therefore be backed up by sound HRM practices.

Chandler and McEvoy (2000) , also argue that , one of the lingering questions in HRM research is whether or not there is a single set of policies or practices that represents a 'universally superior approach' to managing people.

According to some scholars, Human resource practices comprise five main constructs: staffing, job design, performance appraisal systems, reward and Evaluation.

Theories on best practices or high commitment theories suggest that generally, certain HRM practices, either independently or in combination are associated with better organizational performance. Those well-paid, well motivated workers, working in an atmosphere of mutuality and trust, generate higher productivity gains and lower unit costs quite a lot of attempts have been made from time to time (Boxall, 1996; Lowe and Oliver, 1991, Pfeffer, 1994).

Redman and Matthews (1998) also identify HRM as a bundle of key practices which support service organizations' quality strategies, these being:

- 1) Careful recruitment and selection, for example, 'total quality recruitment', 'zero defects recruitment', 'right first time recruitment'.
- 2) Extensive remuneration systems, for example, bonuses available for staff willing to be multi-skilled.
- 3) Team working and flexible job design, for example, encouraging a sense of cohesiveness and designing empowered jobs.
- 4) Training and learning, for example, front line staff having enhanced interpersonal and social skills.
- 5) Employee involvement, for example, keeping employees informed of key changes in the organization.
- 6) Performance appraisals with links to contingent reward systems, for example, gathering customer feedback to recognize the work by employees over and above their expected duties, which in turn is likely to lead to a bonus for staff.

Saxena and Tiwari (2009) also examined the HRM Practices implemented by leading IT Companies such as TATA, Infosys and Wipro in India. They developed the 3cTER Framework of HRM practices and identified Training and Development, Employer-Employee Relations, Recognition through Rewards, Culture building, Career Development, Compensation and Benefits as important HRM Practices. Pfeffer (1994) identified sixteen (16) practices which denote best practice. This was later refined to the following seven practices: employment security, selective hiring, Self-managed teams/team working, high compensation contingent on organizational performance, extensive training, reduction in status difference and sharing information.

Currently, Sharma (2012) has also identified top ten (10) HR Practices that can help an organization achieve goals every year which are as follows:

1. Safe, Healthy and Happy Workplace to ensure that employees feel homely and stay with your organization for a very long time.
2. Open Book Management Style such as sharing information about contracts, sales, new clients, management objectives, company policies, employee personal data etc. this ensures that the employees are as enthusiastic about the business as the management. This helps in building trust and motivates employees.
3. Performance linked Bonuses which can be both an incentive and disillusionment, based on how it is administered and communicated. Furthermore, the team's success and the individual's performance should be considered. Thus bonuses should be paid based on performance, unless it is a statutory obligation.

4. The 360 Degree Performance Management Feedback System solicits feedback from seniors (including the boss), peers and subordinates, has been increasingly embraced as the best of all available methods for collecting performance feedback. This helps in identifying leaders for higher level positions in an organization.
5. Fair Evaluation System for Employees which links individual performance to corporate business goals and priorities empowers employees. This should be based on the records of periodic counseling & achievements of the employee, tracked over the year. Each employee should be screened by the next higher level for higher objectivity (often called a Reviewer) that is Cross - functional feedback, if obtained by the immediate boss from another manager. A relative rating of all subordinates reporting to the same manager is another tool for fairness of evaluation. Normalization of evaluation is yet another dimension of improving fairness.
6. Knowledge Sharing Adopting ensures that knowledge management supports strategy. Thus storing knowledge in databases to provide greater access to information posted either by the company or the employees on the knowledge portals of the company and sharing essential knowledge with others when an employee returns after attending any competencies or skills development program. Innovative ideas too are good to be posted on these knowledge sharing platforms. In contrast, what to store and how to maintain a Knowledge base should be strategic to avoid clutter.

7. Highlighting performers making these visible through company intranet, display boards and so on encourages others to put in their best, thus creating a competitive environment within the company.
8. Open house discussions and feedback mechanism is essential since employees are the biggest source of ideas. Open house discussions, employee-management meets, suggestion boxes and ideas capture tools such as Critical Incidents diaries are the building blocks which can help the Managers to identify and develop talent.
9. Reward Ceremonies since just recognizing talent does not work one needs to couple it with ceremonies where recognition is broadcast.
10. Delight Employees with the Unexpected such as reward, a gift or a well-done certificate. One should reward not only the top performers but also a few others who are in need of motivation to exhibit their potential.

Owing to globalization, the world has become a single market; companies have crossed the boundaries of their countries of origin and opened their operations in other countries which has created a challenge for the organization in terms of management of human resources. Some companies have tried to transfer the HRM practices from one country to another but it has been found that some practices can be transferred across nations almost without any change but some must be modified to become workable in another setting and some are more deeply culture-specific and may not always be transferable. Tayeb (1998) supports the argument that multinational companies' HRM practices are more prone to local cultural influences than are their overall policies and strategies. Moreover, some of the practices which a company imports from abroad have to

be modified to make them workable, given its local cultural and non-cultural context.

2.2 Human Resource Information Systems

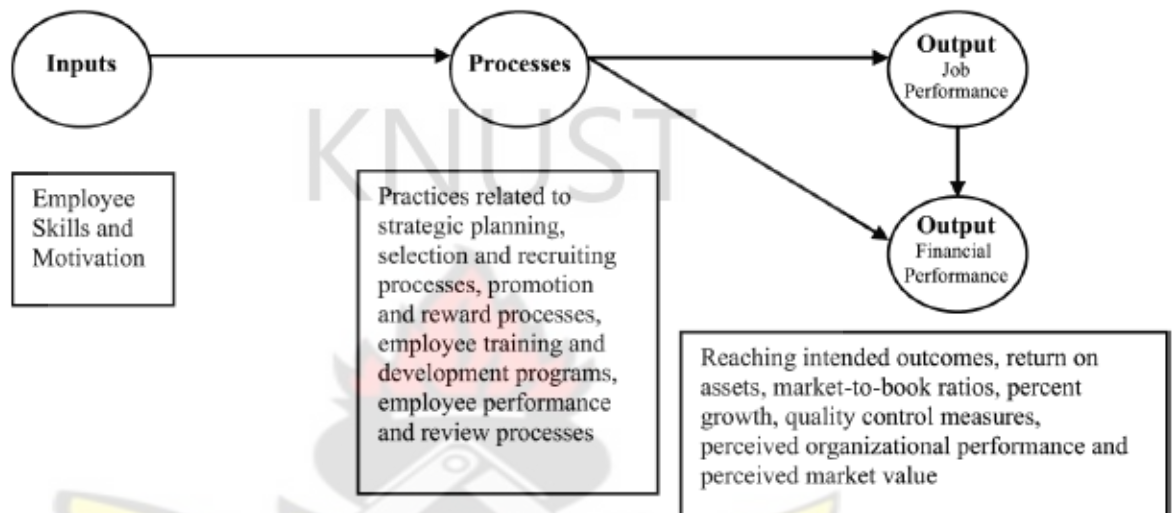
Human resource system is defined as a set of distinct, yet interrelated activities, functions, and processes that are directed at attracting, developing, and maintaining a firm's human resources (Lado & Wilson; 1994 cited in Obeidat, 2012). One of the impacts of IT is that it enables the creation of an IT- based workplace, which leads to what should be a manager's top priority thus strategic competence management, Mishra & Akman (2010) concurred.

The use of technology in Human Resource (HR) functionalities has expanded spectacularly and is continuing to change HR management activities with executives, managers, and employees (Mathis and Jackson, 2010 cited in Obeidat, 2012). HRIS (Human Resource Information Systems) is now used not only for administrative purposes but also for strategic and business decision-making purposes (Obeidat, 2012). When the HRIS function is computerized, fast decision-making takes place in the development, planning, and administration of HR because data become much easier to store, retrieve, update, classify, and analyze. In addition, an HRIS can strengthen an organization's character in general Obeidat concurred.

He continued to acknowledge that tracking information concerning an applicant's or an employee's qualifications and demographics, recruitment, professional

development, performance evaluation, payroll, and retention, are essential for success at the HR functional level.

Figure 1-1



(Source: adapted from Ferguson, 2009)

HUMAN RESOURCE MANAGEMENT SYSTEM

2.2.1 IS Tools that aid HRM Practices

According to S C Mittal and Sanjay Kumar (2012), **Human Resource Management System (HRMS)** is a web based enterprise solution developed in-house for better corporate governance. It is a suite of twenty five (25) applications, which covers the whole life cycle of an employee that is to say from induction till his final settlement and even post-retirement benefits. The pre-recruitment stage covers vacancy generation (based on Organisational chart and existing strength, category wise that is SC/ST, minority, handicapped, women etc), selection process (including online resume acceptance) and placement. This

software aids in succession planning and organisational chart review and recreation. The business rules and processes are built-in in this software and each change in this software is centralized. Each application covered in Human Resource Management System is safely integrated with another and also with **Financial Accounting System (FAS)** such as.

1. Employee Information System (EIS) helps employees to query their information linked to personnel details, provident fund and payment / recovery, nominations, time office details, loan details, payroll.

2. Management Information System (MIS) empowers diverse layers of management in monitoring, control, decision making, planning and legal action for exception reporting. StrIS three (3) level security has been adopted (at first level User code and password to login to a particular application, second level for access of a particular form or report and third level for the particular access over form that is select, insert, update, delete) Software is on 3tier architecture with Oracle 8i/9i as RDBMS on a variety of platforms like UNIX/LINUX, Oracle 9iAS as application server on Win NT/2000. A **front end application** is a Developer 6i suite and case tool which uses Designer 6i. Other software used is **MS-Project** for project management, **TOAD** for debugging and **MS VSS** for software source version control. In house software **SPM (Software Project Monitoring)** is developed in Lotus Notes Domino for change requests, management, bugs reporting and enhancement compliance.

3. Database System

a. research preparatory work

- b. reduce the programming stress for filing and updating data and other information in the organisation.
- c. enhance data security and recoverability
- d. eliminate to some extent data redundancy or preventing the duplication of data through data editing.
- e. promote data communication through intra and inter-network between top managers, middle managers, shop level within and across organisations.
- f. reduce production errors and operator intervention
- g. increase the integrity of data and data accessibility.

4. Computer-Assisted Administrating (CAAD)

This is used for:

- a. Managing organisational activities
- b. Preparing, monitoring and facilitating employees
- c. Record keeping through interconnectivity of micro-computers in the offices of supervisors and departments
- d. Preparing duty roaster if the work schedule software is obtained
- e. Career counselling and cohort advising of employees without employees physically visiting one's office
- f. keeping employees cumulative data and other organisational records.

According to Gireesh Sharma (2012) **EmpXtrack'** is a composite HR solution which helps in the organizationalization of most of HRM best practices by

utilizing software tools. EmpXtrack team is always available to provide an organisation with systems which are synchronized with HR processes.

In addition to the above one should note that there are resources for human resources Software such as Employee Scheduling Software, Performance Appraisal Software, and Staffing Software and so on. Generally, human resources practices can be automated. That is to say that automated human resources processes offers many benefits and can ultimately save time and money. Many organisations can find the solution they are looking for by utilizing human resources software.

Human resources software is available from quality providers who can furnish an organization with software solutions for all the organizations human resources requirements. Software applications can help with such human resources functions as payroll processing, employee information management and training and development and so on. Using software to automate the organizations human resources practices allows the organizations to get more accomplished in less time. This will also be able to manage the organizations human resources processes more efficiently and with greater insight.

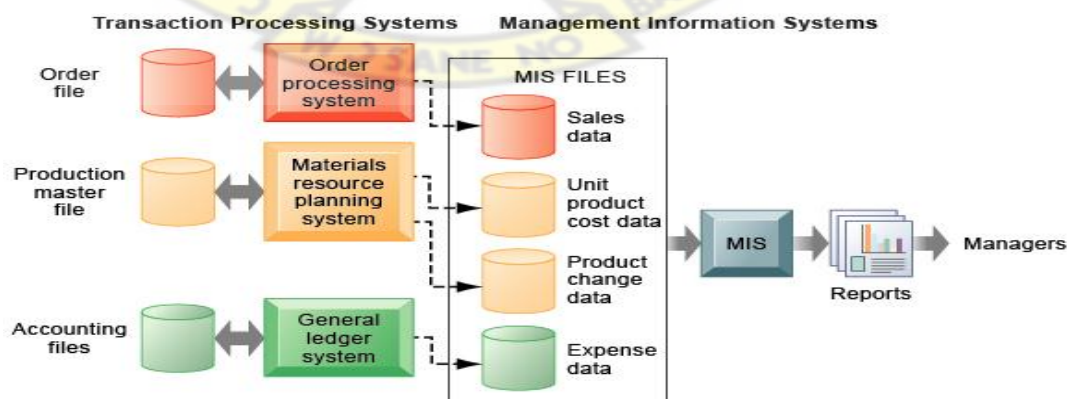
According to Laudon and Laudon (2007) Human resources information systems can be used to maintain employee records, track employee skills, job performance and training, and support planning for employee compensation and career development. One of the most commonly used systems to support HRM activities found in the literature was ERP systems. The value of ERP is its ability to integrate other functions with HR under a single vendor and common technology standards. In the leading ERP systems some of the HRMS

components permit the use of the internet to reduce transaction costs (Mishra & Akman, 2010).

Laudon and Laudon (2007) further state that there are four (4) main categories of systems from a constituency perspective which are;

1. **Transaction processing systems (TPS)** are basic business systems that serve the operational level of the organization by recording the daily routine transactions required to conduct business, such as payroll and sales receipts.
2. **Management information systems (MIS)** serve middle managers' interests by providing current and historical performance information to aid in planning, controlling, and decision making at the management level. MIS typically compress TPS data to present regular reports on the company's basic operations.

Figure 2-1



Source: laudon & laudon-Management Information Systems (2007)

FIGURE 2-1 HOW MANAGEMENT INFORMATION SYSTEMS OBTAIN THEIR DATA FROM THE ORGANIZATION'S TPS

In the system illustrated by this diagram, three TPS supply summarized transaction data to the MIS reporting system at the end of the time period. Managers gain access to the organizational data through the MIS, which provides them with the appropriate reports.

Consolidated Consumer Products Corporation Sales by Product and Sales Region: 2007

PRODUCT CODE	PRODUCT DESCRIPTION	SALES REGION	ACTUAL SALES	PLANNED	ACTUAL versus PLANNED
4469	Carpet Cleaner	Northeast	4,066,700	4,800,000	0.85
		South	3,778,112	3,750,000	1.01
		Midwest	4,867,001	4,600,000	1.06
		West	4,003,440	4,400,000	0.91
		TOTAL	16,715,253	17,550,000	0.95
5674	Room Freshener	Northeast	3,676,700	3,900,000	0.94
		South	5,608,112	4,700,000	1.19
		Midwest	4,711,001	4,200,000	1.12
		West	4,563,440	4,900,000	0.93
		TOTAL	18,559,253	17,700,000	1.05

Source: laudon & laudon-Management Information Systems (2007)

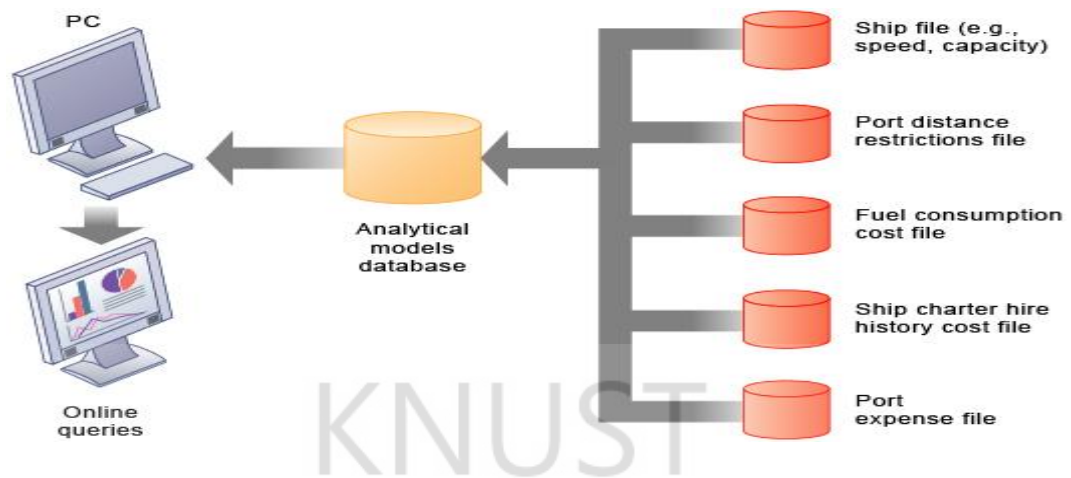
FIGURE 2-2 SAMPLE MIS REPORT

This report showing summarized annual sales data was produced by the MIS in

Figure 2-2

3. **Decision support systems (DSS)**, or business intelligence systems, help managers with non-routine decisions that are unique, rapidly changing, and not easily specified in advance. DSS are more analytical than MIS, using a variety of models to analyze internal and external data or condense large amounts of data for analysis.

Figure 2-3



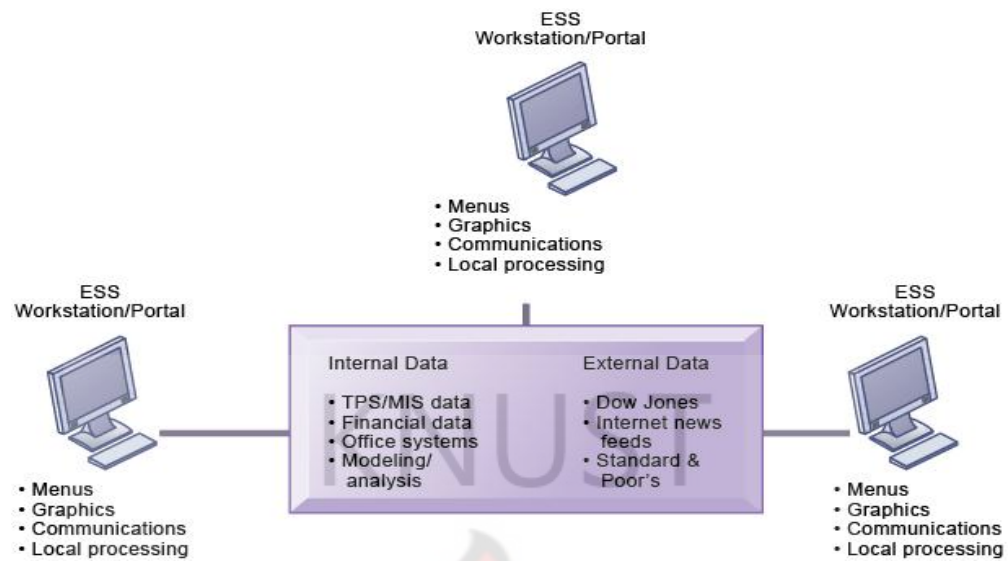
Source: laudon & laudon-Management Information Systems (2007)

FIGURE 2-3 VOYAGE-ESTIMATING DECISION-SUPPORT SYSTEM

This DSS operates on a powerful PC. It is used daily by managers who must develop bids on shipping contracts.

4. **Executive support systems (ESS)** provides a generalized computing and communications environment that helps senior managers address strategic issues and identify long-term trends in the firm and its environment. ESS addresses non-routine decisions requiring judgment, evaluation, and insight because there is no agreed-on procedure for arriving at a solution. ESS present graphs and data from many internal and external sources through an interface that is easy for senior managers to use. Often the information is delivered to senior executives through a portal, which uses a Web interface to present integrated personalized business content.

Figure 2-4



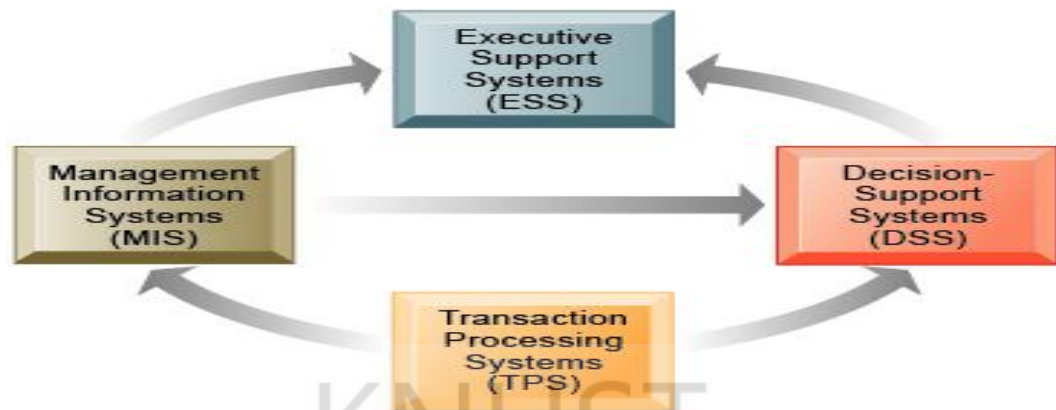
Source: laudon & laudon-Management Information Systems (2007)

FIGURE 2-4 MODEL OF AN EXECUTIVE SUPPORT SYSTEM

This system pools data from diverse internal and external sources and makes them available to executives in an easy-to-use form.

Ideally, these constituency-based systems are interrelated. TPS are typically a major source of data for other systems, whereas ESS is primarily a recipient of data from lower-level systems and external sources.

Figure 2-5



Source: laudon & laudon-Management Information Systems (2007)

FIGURE 2-5 INTERRELATIONSHIPS AMONG SYSTEMS

The various types of systems in the organization have interdependencies. TPS are major producers of information that is required by many other systems in the firm, which, in turn, produce information for other systems. These different types of systems are loosely coupled in most business firms, but increasingly firms are using new technologies to integrate information that resides in many different systems.

CHAPTER THREE

RESEARCH METHODOLOGY AND PROFILE OF STUDY CASES

3.0 Introduction

This chapter is made up of two parts, the first part highlights and outlines the methodology used in exploring how Information Systems (IS) is used for Human Resource Management (HRM) practices in some selected organisations in Ashanti Region. In considering the methodology for this study, research design, strategy of the study, sampling procedures, validity and reliability, ethical considerations and data collection methods will be used as determining factors.

The second part of this chapter gives a succinct description of the profile of the study area, that is, GOIL, UBA, DataScience and KNUST.

It gives an insight into the Sampling and sampling techniques used as well as the Measures employed for data collection. The method employed was mixed method strategy, this method was employed so that one source of information (Interviews) can be used to enrich the other source of information (questionnaires) in the study, that is triangulation approach as explained by Spratt *et al* (2004).

A multi case study research approach was used because it provided the researcher with the opportunity to thoroughly analyse the phenomena being studied (Yin, 1994). Moreover, the case study approach, was used in order to generalise the findings of the study and it also (Saunders *et al*, 2007) allowed an empirical investigation into the perceptions of management and staff alike towards the efficient use of Information Systems in HRM practices

3.1 Sources of Data

This research will use two sources of data collection which are the primary and secondary sources. According to Saunders et al. 2009, a primary data is usually gathered directly from the organization by the researcher while a secondary data is the data which is written or collected by other people, and it is normally for other purposes.

3.1.2 Primary Data Source

Primary data is collected for a specific project at hand; which makes a research consistent and objective. In this study, the researcher used the primary data to make the analysis. The primary sources of data collection in this research are questionnaires and interviews.

3.1.2 Secondary Data Source

Secondary data is usually already available and has helpful information. A secondary data is easily analyzed which makes it more authentic than the primary data. The secondary sources of data in this study are journals, annual reports on HRM in the organisations, corporate plan, organization studies and reports, text books, internet sites and web pages, articles, magazines, and other published data.

3.2 Population

The target population of the study was of all employees and management whose organisations were being studied comprising of managers and employees especially those in the Human Resource Management Department from GOIL, UBA (United Bank of Africa), DataScience and KNUST(Kwame Nkrumah

University of Science & Technology). In all some selected Managers from both IT and HR departments were interviewed and questionnaires were administered to employees of the four selected organisations within Kumasi metropolis. The sample size of the study comprised of 90 participants who were both managers and employees of the four selected organisations.

3.3 Sampling techniques

The sampling technique for the study is purposive sampling. The rationale for choosing this strategy is to select the cases that make up the sample since all these organisations had different degrees of IS for HRM practices and tools which in turn promoted a comparative study. This was used so that accurate data was obtained from accurate sources for answering the research questions. These organisations were selected because they were easily accessible to the researcher and belong to different industries. The researcher therefore considered a sample size of 90 participants in the study. For an adequate result, questionnaires and interviews were used to collect data from both managers and employees of the organisations especially those in the HRM and IT departments.

3.4 Data collection instruments

The following are the research instruments used for the study.

3.4.1 Questionnaire

A questionnaire is a "structured technique for data collection" which consists of a series of questions (Malhotra, 1993). Collis and Hussey (2003) further explains the definition of a questionnaire by stating that a questionnaire consists of a list of

structured questions selected and developed with the aim to draw out reliable responses from the chosen sample.

This questionnaire will be administered to employees in the selected organizations that is those in the Human resources department and some randomly selected employees who will be present in the organisation at the time the questionnaires will be administered. While the questionnaire will be filled by respondents, the interviewer will be available to keep the interviewees interest and give guidance when the need arises in order to reduce margin errors.

The following were some areas outlined in the questionnaire: demographic characteristics of respondents, information on human resources management practices available in the selected organisations which IS is used to facilitate, strengths and weaknesses associated with the use of IS for efficient HRM practices and ways that can help improve the use of IS for human resources management practices.

Few probing questions will be used while some closed ended questions will also be used. Close ended questions are the ones where the respondent's answer is selected from predetermined alternatives (Collis and Hussey 2003). Furthermore some open ended questions will be used on a small pilot base on randomly selected employees before it will be for the main sample. The pilot study will provide an adequate in-depth of information and will be of a suitable timeframe to both the researcher and interviewees, the questions will be forwarded into the main study unmodified.

This was done in order to evaluate effectiveness of the intervention designed to address employees' use of IS for human resources management practices. These questionnaires had been prepared with a brief introduction explaining its purpose.

3.4.2 Interviews

Kvale (1996), states that, an interview allows the interviewee to describe the world as they experience it. An interview serves as an extension of ordinary conversation and allows for interaction “to achieve richness and depth of knowledge of understanding” as viewed by Rubin and Rubin (1995). This study therefore is supposed to explore how managers and employees especially those in the Human Resource Management Department recognize the effect of IS on Human Resource Management practices and its impact on the organisation as a whole. It was as a result significant to use this tool to gather data because most of the perceptions and ideas from managers and employees especially those in the Human Resource Management Department which could not be captured in the questionnaire. Thus the interview was conducted together with the questionnaire.

3.5 Data Analysis techniques

For the researcher to evaluate the effect of IS on HRM practices, organisations which use IS tools most were compared with those with low number of IS tools for efficient HRM practices.

The statistical Package for Social Science (SPSS) was used to analyse data from respondents and it was presented by the descriptive statistical analysis.

3.6 Validity

The credibility of every study significantly depends on its validity and reliability. (Saunders *et al.* 2009). Validity indicates that the research can be adapted to a use or purpose for which it was meant to measure. For obtaining the valid data, the interview questions are designed carefully, which relate to the topic of the theories used.

3.7 Reliability

A reliable research is a study which is appropriate or fit to be relied on. This also indicates that it is dependable as a result gives the same result on successive trials by another researcher. To ensure that the data collection instruments were actually measuring intended objectives (i.e. validity) initial queries and consultations were made with the IT and HR managers, course mates and research supervisor who actually defined most of the variables. The questionnaires were also pre-tested among target group to fine-tune them, albeit on a limited scale. The questionnaires were tested for consistency (i.e. reliability) with the aid of Statistical Product and Service Solutions (SPSS) program.

3.8 Ethical Considerations

One should never forget about Ethical issues when considering a research work. Organizations and individuals should be contacted before one gathers data, analyses of data and reports information gathered. Hence, a research work should involve or express moral approval. In other words, a research should be subjected to disapproval or conforming to accepted standards of conduct.

In this research work therefore, respondents willingly took part in the study though they also had the right to withdraw from the research. Protection of

confidential data given by identifiable respondents and their anonymity and reactions of respondents was also observed. A comprehensible account of the rationale and type of access required was therefore provided.

3.9 Profile of Case Study Organizations

3.9.1 Profile of UBA

United Bank for Africa (Ghana) Limited was initially incorporated and registered as Standard Trust Bank Ghana Limited at the Registrar General's Department.

In December 2004, the Bank of Ghana issued the then Standard Trust Bank Ghana Limited with a license to operate as a universal bank making them the first bank to be licensed under the Banking Act 2004 (Act 673) and the nineteenth bank to be licensed in Ghana. With an initial capitalization of US \$10 million, UBA is the first bank, with Nigerian majority shareholding, to open shop in Ghana and in less than four years, the bank has pushed banking in the country to higher performance levels, where competition and innovation are now responding to the growing needs of consumers. UBA (Ghana) is a subsidiary of United Bank for Africa (UBA) Plc, which is West Africa's largest financial services group with assets in excess of US\$14 billion. It is jointly owned by Ghanaian and Nigerian Individuals and corporate investors. The bank started with the initial capital base of US \$10,000,000 (ten million US dollars), which is far in excess of the Bank of Ghana requirement for a Universal Banking License. The objective of UBA Ghana is to democratize banking with excellent customer driven solutions. The bank seeks to bring financial services to a majority of the Ghanaian populace and make it a basic entitlement for all. UBA(Ghana)

Limited is a subsidiary of the United Bank for Africa PLC which is one of the Africa's leading financial organisations offering services to more than 7 million customers across 750 branches and over 2000 ATMs in 19 African countries. UBA Ghana has a footprint of 26 fully -networked branches and 40 ATMs (VISA enabled) spread across Accra, Tema, Kumasi, Takoradi and Aflao.

The bank's vision is to be the undisputed leading and dominant financial services organisation in Africa. With presence in New York, London and Paris, UBA is connecting people and businesses across Africa through retail and corporate banking and our innovative Africa Trade Platform - a seamless payments and collections initiative to facilitate and ease settlement and encourage trade across Africa.

UBA has set broad objectives to create an organisation that competes effectively in the global financial market place in a manner that showcases the best of African enterprise. This African Global Bank aspiration is borne out of a collective vision to become the bank of choice for transactions involving Africans and African Businesses, and being the leading provider of offshore correspondent banking services to financial organisations and corporations in Africa.

The Bank's corporate Identity rest on four fundamental values with the acronym HEIR which has been explained as follows;

H - Humility which states that UBA sees and relates with customers as the essence of their corporate being.

E - Empathy which means do unto others as you would be done by.

I - Integrity which means they are transparent in their relationship with their customers.

R - Resilience which means they seek to evoke their entrepreneurial spirit to excel in all challenging situations. (www.mail:infoghana@ubagroup.com)

3.9.2 KNUST

In December, 1960, the Government of Ghana appointed a University Commission to advise it on the future development of University Education in Ghana, in connection with the proposal to transform the University College of Ghana and the Kumasi College of Technology into an independent University of Ghana.

Following the report of the commission which came out early 1961, Government decided to establish two independent Universities in Kumasi and at Legon near Accra. The Kumasi College of Technology was thus transformed into a full-fledged University and renamed Kwame Nkrumah University of Science and Technology by an Act of Parliament on 22nd August, 1961.

The University's name was changed to University of Science and Technology after the Revolution of 24th February, 1966. The University of Science and Technology was officially inaugurated on Wednesday, 20th November, 1961.

However, by another act of Parliament, Act 559 of 1998, the University has been renamed Kwame Nkrumah University of Science and Technology, Kumasi.

KNUST Strategic Mandate

The Act of establishing the University defines its mandate, which essentially is to provide higher education, undertake research, disseminate knowledge and foster

relationships with the outside persons and bodies. The strategic mandate of the University is derived from Science and Technology in its name.

KNUST Vision

To be globally recognised as the Premier Centre of excellence in Africa for teaching in Science and Technology for development; producing high calibre graduates with knowledge and expertise to support the industrial and socio-economic development of Ghana and Africa.

In summary, the vision can be stated as "Advancing knowledge in Science and Technology for sustainable development in Africa".

KNUST Mission

To provide an environment for teaching, research and entrepreneurship training in Science and Technology for the industrial and socio-economic development of Ghana, Africa and other nations.

KNUST also offers service to community, is opened to all the people of Ghana and positioned to attract scholars, industrialists and entrepreneurs from Africa and other international communities.

KNUST Core Values

1. Leadership in Innovation and Technology
2. Culture of Excellence
3. Diversity and Equal Opportunity for All

4. Integrity and Stewardship of Resources (www.knust.edu.gh).

3.9.3 DataScience

DataScience started in Ghana since 2010 and had offices in Accra and Kumasi. DataScience makes sure marketing research firms are talking to all the right people. The company's sample services help clients minimize research risk, reduce costs, and improve research quality by identifying the best subjects of a company for a market survey. DataScience can screen potential respondents by age, sex, ethnic background, income, and other demographic criteria as well as interests and lifestyle. It also provides highly defined samples for business or market surveys. DataScience has more than 1,800 clients nationwide that use its services for Internet, telephone, and mail polls and surveys (although 85% of DataScience's business derives from the Internet and the market surveys conducted by the company). DataScience has more than 15 satellite offices in the country since its inception in 2010.

Core values of DataScience

To provide qualitative market research for firms with a focus on technology and online research.

To be the leading eMarketer-thus provide Internet market statistics about companies, news and reports. Focus on comparing its market data results with those published by other well-known consulting groups. As a matter of fact DataScience has not yet develop its website and it's yet to come out with one.

3.9.4 GOIL GHANA

A dynamic company at the service of the nation, GOIL was incorporated as a private limited liability company on June 14, 1960 as AGIP Ghana Company Limited with the objective of marketing petroleum products and related products particularly fuels, liquefied petroleum gas (LPG), lubricants, bitumen, and speciality products in Ghana. The shareholders were AGIP SPA of Italy and SNAM S.P.A.

On the 16th of December 1968, SNAM S.P.A. transferred its 10% shareholding representing 95,000 shares to Hydrocarbons International Holdings of Zurich, Switzerland.

The Government of Ghana in 1974 acquired the shares of AGIP SPA and Hydrocarbons International Holdings in AGIP Ghana Company Limited and by a special resolution in 1976 changed the name of the Company to Ghana Oil Company Limited.

By a shareholders resolution passed on August 1, 2007 the Company adopted new regulations and was converted into a public Company.

The Company's main business is marketing and distribution of petroleum products in Ghana. The biggest chunk of its sales comes from the sale of Diesel and Gasoline. The Company is manned by a ten member management team headed by the Managing Director. The marketing arms of the company are represented by four zonal offices namely:

- I. Zonal Office South (Accra)
- II. Zonal Office Middle Belt (Kumasi)
- III. Zonal Office West (Takoradi) and

IV. Zonal Office North (Tamale).

These offices also serve as distribution points for the company's products. However, the main distribution points for fuels are Liaison Office, Central Depot, and the Accra Plains Depot all within the Tema catchment area, and the Takoradi Depot.

GOIL has the largest retail network across the country. The company also has numerous consumer outlets throughout Ghana. The consumer outlets include companies, schools, hospitals, factories, hotels, and banks.

In addition, there are a number of other retail outlets established to market premix fuel and kerosene to rural areas. LP Gas filling plants have also been installed at some of the filling and service stations and at other locations in the country.

Mission of GOIL is to:

- I. Market quality petroleum and other energy products and services in all its branches in an ethical, healthy, safe, environmentally friendly and socially responsible manner.
- II. Produce and manufacture goods or provide services which enhance or support the marketing, distribution and sale of the Company's products and services

GOIL's Service provision are:

- I. Gaining in-depth knowledge of customer needs
- II. Professionally trained, high quality, motivated workforce, working as a team in an environment, which recognizes and rewards performance, innovation and creativity, and provides for personal growth and development
- III. Lowest cost operations and assured access to long-term and cost effective supply sources

- IV. Sustained growth in earnings in real terms
- V. Highly ethical, safe, environmentally friendly and socially responsible business practices
- VI. Focusing on newest technologies

GOIL's vision is to be a world-class provider of goods and services in the petroleum and other areas of the energy industry.

Currently, GOIL's technical partners are ENI SPA (AGIP) of Italy.

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CHAPTER 4

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

In this chapter, the researcher presents the findings of the study undertaken and an interpretation to the data obtained. This chapter will discuss into detail the field work carried out as well as the results obtained. These findings shed more light on Human Resources management practices in the selected organisations and how these can be carried out with the aid of IS tools. It also highlights some of the challenges generally faced by HR managers in their attempt to be efficient at their task through the use of Information and Communication Technology (IS). To help achieve this, questionnaires were administered alongside interviews to some employees of four selected organisations KNUST, GOIL, DataScience and UBA) in Kumasi the capital of the Ashanti region. The questionnaires were administered to a randomly selected sample size of 90 respondents out of which seventy-eight (78) were returned. A series of interviews and observations were also carried out for analysis.

4.2 Data Analysis

The analysis of the data obtained from the field was carried out with the use of two statistical software packages – Epidata and Statistical Package for Social Sciences (SPSS). Epidata is a program primarily designed for entering and documenting data along with a host of other functions. SPSS works similarly but goes beyond what Epidata does in terms of statistical analysis. Epidata was used for the data entry. This was done to speed up the process of data analysis. As it is

in SPSS and other statistical programs, Epidata allows coding of responses to suit the researcher's specifications. This also helps speed up data entry and in the long run enables the researcher to complete his work in good time. Epidata is compatible with several other statistical programs. Hence, the data entered in the Epidata program was exported as value labels into SPSS for statistical analysis.

This was done before the analysis of the data. The data was then screened and validated by a Statistician before statistical analysis was done. Data screening involved ensuring that the data set was clean. Data validation also involved ensuring that the outputs generated from the data (especially relational variables) were accurate and intact and corresponded with each other.

4.3.1 Background of Respondents

The survey was conducted in August 2012. The respondents – individuals in paid employment aged eighteen and above – were asked approximately 32 questions. In total, 78 respondents (44 men and 34 women) answered the questions about IS use at work and their competencies, their jobs, the HRM policies, software applications and other characteristics of their workplace. For the women, 12.8 per cent and 30.8 per cent were from the public and private sector respectively. For the men, 23.1 per cent and 33.3 per cent were also from public and private sector. In total, all of them (100%) used a computer or other computerized equipment at work. The men were on average 28.9 years of age (Std. dev. = 2.64 years; CI= [28.12, 29.68]) and the women 29.74 years (Std. dev. = 1.97 years; CI= [29.08, 30.40]).

Almost three-quarters live with a partner, slightly more men than women (75% vs. 69%). As regard family phase, relatively more men live in a family with

young children, and more women live in a family in which the children have already left home. On average, the men worked 37.7 hours per week and the women 29.3 hours. Table 1 and figures 1-3 below present a summary of the background of the respondents.

Table 4.1 Background of Respondents

Variable	Frequency (N = 78)	Percentage (%)
Age (years)		
18 – 25	23	29.5
26 – 33	36	46.2
34 – 41	16	20.5
>= 42	3	3.8
Total	78	100.00
Gender		
Males	44	56.4
Females	34	43.6
Total	78	100.00
Educational levels		
Second Degree (Masters)	15	19.2
First Degree	48	61.5
HND	13	16.7
SHS	2	2.6
Total	78	100.00
Department		
Human Resources	32	41.0
Accounting and Finance	7	9.0
Operations	29	37.2
Sales & Marketing	10	12.8
Total	78	100.00
Position		
Management Staff	12	15.4
Senior Staff	41	52.6
Junior Staff	25	32.1
Total	78	100.00
Sector of employment		
Public	28	35.9
Private	50	64.1
Total	78	100.00

Source: Field Survey, 2012

As depicted by figure 4.1 above, most of the men and women of this survey were between ages 26 to 33 years. The oldest among them were males who were 42 years and above.

Majority of the respondents (both males and females) were first degree holders. As seen in figure 4.2 above, there were more males with higher academic qualifications than there were females.

About 28.2 per cent of the female respondents were senior staffs as compared to 24.4 per cent of their male counterparts who were in the same position. In all, 52.6 per cent of the respondents were Senior Staffs in their respective organisations. There were also more male management members (12.8%) than there were females (2.6%).

This finding confirms Dolton & Makepeace, (2004) researches indicated that women use computers and other IS tools more than men and that of Falstead et al., (2002: 61) noted that women are expected to have a use of IS that is less complex and less diverse as compared to men. Yet, Steijn & Tijdens (2005) cited that IS use is dependent on the cognitive resources of people. Educational level is of course a good indication of these cognitive resources. The study revealed that most of the management members were highly educated employees who had easy access to some reserved IS tools. It seems therefore logical to assume that higher educated workers will have a more complex and diverse use of IS. It is less certain whether or not it will also be more intense, as higher educated workers will probably have more diverse tasks, including tasks that are not computer related.

4.2 IS in Human Resource Practices among Organizations

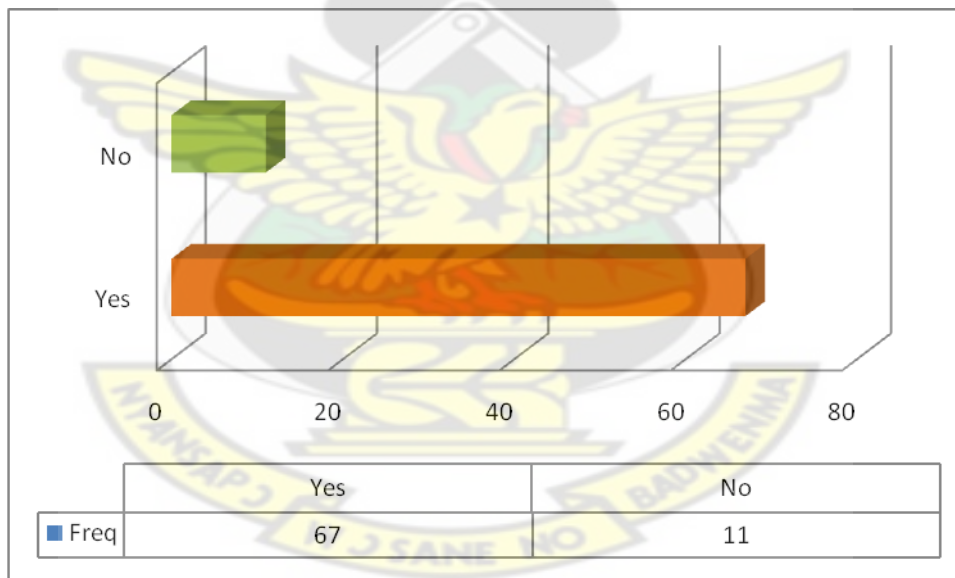
It was found that all the respondents (100%) used a computer or other computerized equipments at work. On the average, each of the selected organisations (UBA, KNUST, GOIL, and DataScience) had 6.93 Desktop Computers (almost 7 computers) with a Standard Deviation of 0.53 computers (95% C.I. = [6.81, 7.05]) in their Human Resources (HR) Departments. More than half of them (64.1%) had six (6) or more computers in their HR departments' while the remaining 35.9 per cent had between Two (2) to Five (5) computers in their HR departments. In addition to this, it was observed that all the organisations made use of other key components of IS such as Scanners, Cameras, Printers, Speakers, Laptops, POS (in some cases), Mobile Handsets, PDAs (in some cases), Telephone Lines, and internet Wireless.

This shows that IS plays a major role in HRM practices like recruiting, training of development of staffs in organisations and is in consonance with UNESCO (2002) which shares this view and description of Information and Communication Technology (IS) as it refers to IS as the term used to describe the tools and the processes to access, retrieve, store, organize, manipulate, produce, present and exchange information by electronic and other automated means. These means include hardware, software and telecommunication in the form of personal computers, scanners, digital cameras, phones faxes, moderns, CD (compact disk) and DVD (digital view disc) players and records, digitalized video, radio and TV programmes like database programmes and multimedia programmes

Usage of IS Tools

Even though IS tools were available in all the selected organisations, some of the organisations did not use them as often as expected. It was found that usage was limited and determined by a number of factors. Experience with IS tools, position and experience in the organisation played a key role in determining how, when and who uses these tools if they are available in the organisation. This was the situation with all the institutions where the employees captured in this survey mentioned that the usage of IS tools was highly influenced by one's position in their organisation. It is worth noting that this situation was not with all IS tools as almost all the staff had access to some basic IS tools.

Figure 4.2: Usage of IS tools (Do you use IS tools in your Department?)



Source: Field Survey, 2012

However, this was not always the case with all the selected organizations. In most cases, the departments in the organizations (especially the HR) 85.90% of the participants all indicated that they resorted to the use of computers, software

applications, and other IS tools when the need aroused as shown in figure 4.2.

This was the case with GOIL Ghana Limited, DataScience, UBA and KNUST where the randomly selected employees mentioned that they used IS tools when the need aroused.

They further stated that, it is the position in the organization where one finds himself/ herself that determines when and how much of IS should be used in its internal and external activities. They added that each organization has its own unique policies and plans in relation to this. And these determined the involvement of IS in enhancing its activities.

As found in several studies, Computer or IS use is not only influenced by demographic variables, but the motivation of workers to use computers can also play an important role. By motivation, we mean the availability of efficient IS tools for effective office practices. Beckers, (2003) contrast that several studies even show that some people are afraid of computers and that people who suffer from so called ‘computer anxiety’ will clearly be less motivated to use computers in their work. Of course, on a job one often has not much to choose: to certain extend people have to use the instruments that are provided to them. However, often they also have some possibilities to influence their own IS usage. We expect that a highly computer-motivated worker will be more inclined to use more complex, more diverse IS applications in a more intense way.

HR Software

The study revealed that the HR and other departments of the organizations surveyed did not restrict themselves to single software in carrying out their daily activities. Choice and usage of specific software was determined by the

environment and the purpose for which the software is to be used for. The respondents listed more than two or more software for all organizations. The most occurring one or dominant software used in carrying out HRM activities is highlighted for all organizations as shown in Table 4.3 below. In addition to the purchased software, all the listed organizations had internally developed software which was adapted to the culture and everyday activities of each organization. As explained by most of the respondents, this was to enable the organizations operate flexibly and in accord to the policies of the organization.

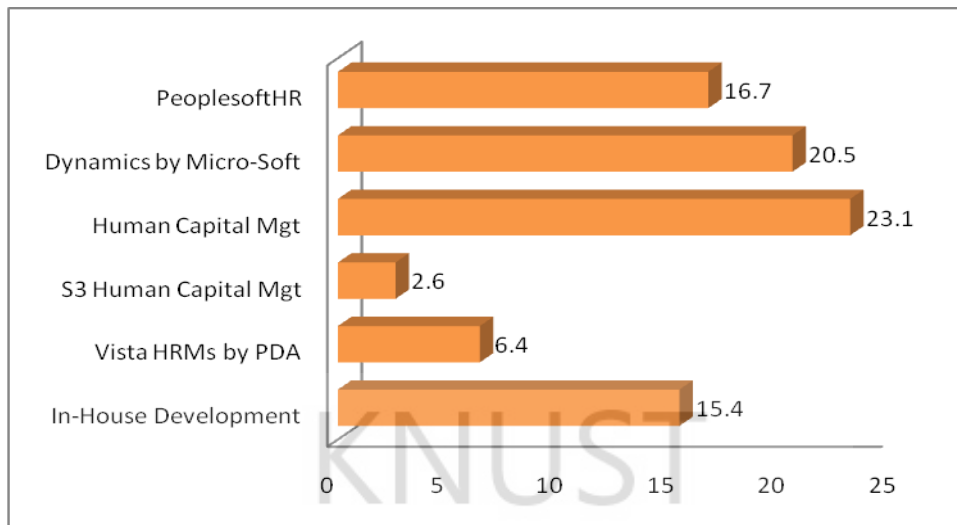
Table 4.3: Use of HRM Software

Organisation	Available Software
UBA	S3 Human Capital Management by Lawson Software, Human Capital Management by EPICOR , Vista HRMS by PDS, in-house developed software
GOIL	PeopleSoft Human Resources by ORACLE , Dynamics by MICROSOFT, Human Capital Management by EPICOR, In-house developed software
KNUST	PeopleSoft Human Resources by ORACLE, Dynamics by MICROSOFT, Human Capital Management by EPICOR , Vista HRMS by PDS, In-house developed software
DataScience	Dynamics by MICROSOFT , In-house developed software

Source: Field Survey, 2012

The figure below highlights the commonest or the most often HR software used by all the organisations captured in this survey.

Figure 4.4: Use of Human Resource Software



Source: Field Survey, 2012

Human Capital Management by EPICOR was the widely used and known software among all the respondents. The next after Dynamics is the Human Capital Management software (figure 4.4).

Today's economy demands a more proactive, strategic role for the HR department. As competition for critical resources intensifies, managers, employees and candidates are demanding more from HR and human resource information systems (HRIS), moving beyond self-service to secure direct access to relevant information and processes whether in the office or on the road. Epicor® Human Capital Management (HCM) provides these capabilities and more, helping organizations to manage their globally dispersed workforce, improve human resource processes, and enhance employee satisfaction for greater efficiency and cost savings across the enterprise. According to the software's developers, Epicor Human Capital Management (HCM) is a fully-integrated HR and talent management suite - with anywhere, anytime access to

vital Human Resource data. Empicor HCM brings unequaled integration of Human Resource knowledge, industry experience and technology to improve utilization of human capital and achieve improved organizational effectiveness. With a web-operational system, the developers claim that HR professionals and line managers will have easy access to employee data using only a browser and the data is safe, secure and available from any computer, anywhere, anytime.

It is little wonder then that Epicor[®] Human Capital Management (HCM) is the widely used HR software among the selected organisations.

All the respondents were asked view point questions to find out their perception on the adequacy of the Human Resources Information Systems (HRIS) used in their organisations. As seen in figure 4.4 below, most of the respondents representing 72% were positive and convinced about the adequacy, efficiency and reliability of their HRISs.

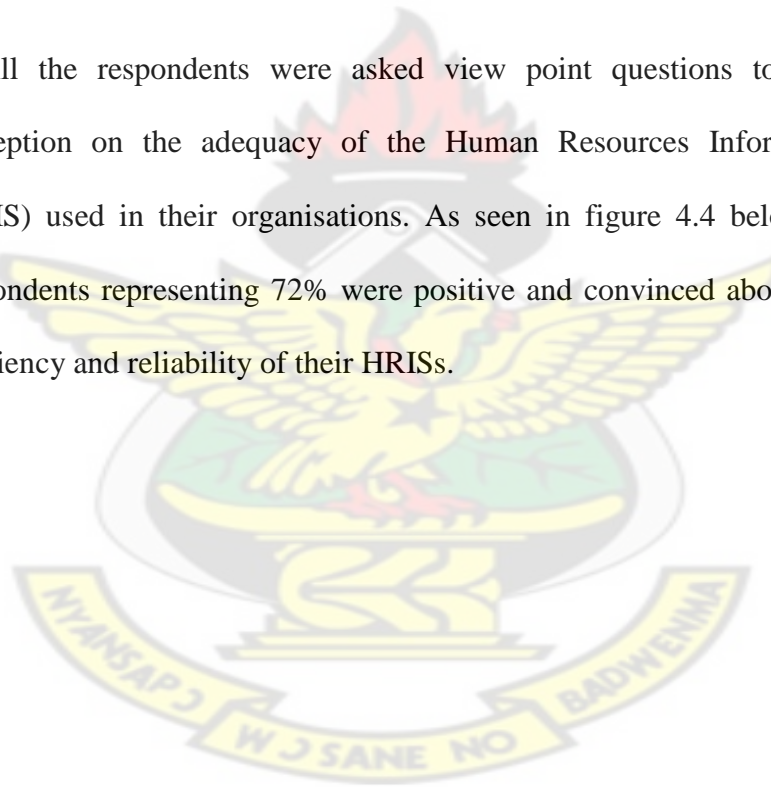
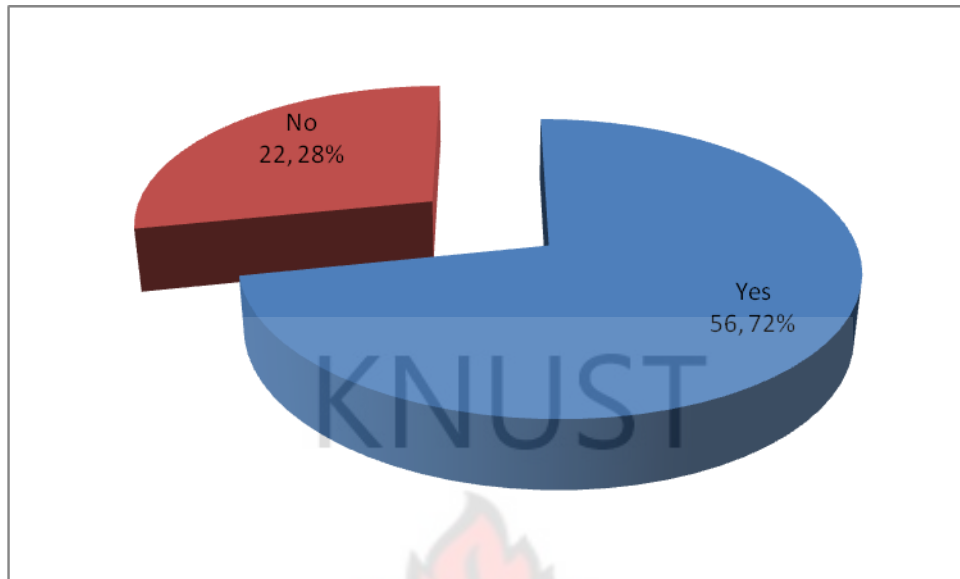


Figure 4.4 Do you have adequate HR Information System in your organisation?



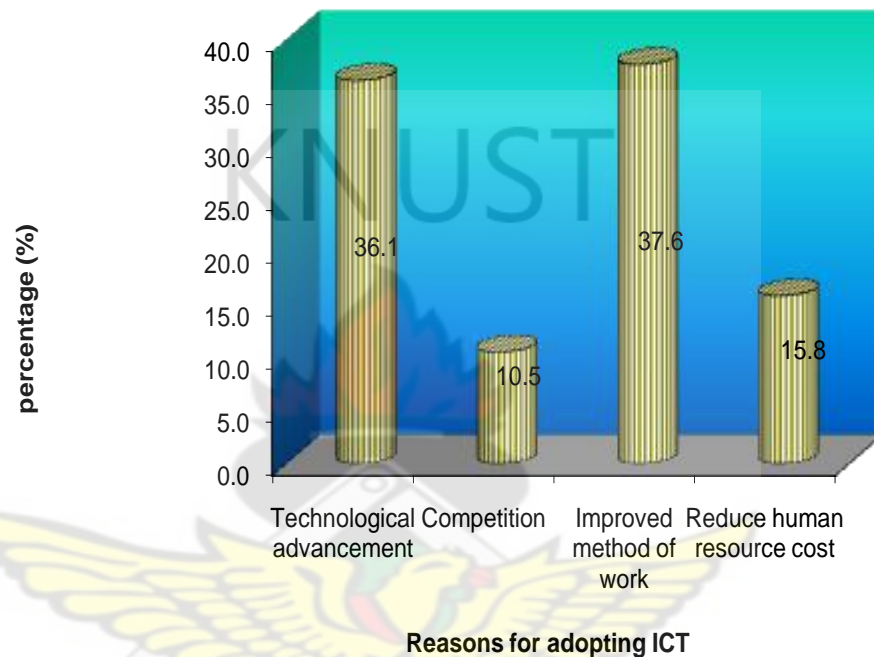
Source: Field Survey, 2012

Technological advancement, market competition, improvement in method of work and reduction in cost of human resource were mentioned as the underlining factors prompting many organisations to adopt IS in their activities today. As seen in figure 4.5 below, improvement in the activities of the organisations surveyed has been the main factor for which they have adopted IS in their organizational activities.

As mentioned earlier, every organization has its own unique policies. It is the organization that determines the type of Human Resource Information System (HRIS) it has to use. This is a choice based on the goals (including short and long term objectives) and the environment in which the organization finds itself. Employers who aim at improving their method of work or beating their competitors will make differing choices from employers whose singular goal is just to reduce costs associated with their human resource. The efficiency of an

organization's HRIS is significantly related to its HR practices. Employees on the other hand have not much choice than to learn to use whatever is provided to them by their employers.

Figure 4.5: Factors influencing IS growth among Organisations



Source: Field Survey, 2012

IS in HRM activities

The study showed that the organisations used IS for several HRM activities. These included training management, Provident fund payment/ recovery, employee scheduling, performance appraisal, staffing, monitoring and control, Planning and decision making. It also included querying employee information as depicted in Table 4.5 below. As important as IS was in the success of HRM activities, most of the organisations adopted IS to carry out some specific activities. The organisations were scored on their usage of IS for HRM activities

using their frequencies. The higher the frequency, the more frequent IS is used to carry out the activity involved.

The results as shown by Table 4.2 reveal that usage of IS for HRM activities varied across organisations. At its Human Resource department, UBA uses computer software packages mainly for employee performance appraisal and querying of employee information. The HR for Ghana Oil Limited (GOIL) depends on IS mainly for monitoring and querying of employee information. At the HR department of KNUST, software packages and other IS tools are mainly used for staffing and scheduling employees. Employee performance appraisal and monitoring are the main HR activities routinely carried out at the DataScience HR department. Table 4.5 below presents a summary of the HRM activities performed with the aid of IS in the organisations.

Table 4.5: IS in HRM activities among Organisations

HRM Activity	Organisation			
	UBA	GOIL	KNUST	DataScience
Querying employee information	14 (19.4%)	11 (17.7%)	9 (9.5%)	0 (0.0%)
Provident fund payment/ Recovery	4 (5.6%)	2 (3.2%)	7 (7.3%)	0 (0.0%)
Training Management	10 (13.9%)	6 (9.8%)	8 (8.4%)	6 (6.5%)
Employee Scheduling	8 (11.1%)	3 (4.8%)	13 (13.7%)	16 (17.2%)
Performance Appraisal	18 (25.0%)	10 (16.1%)	3 (3.2%)	21 (22.6%)
Staffing	4 (5.6%)	3 (4.8%)	19 (20.0%)	14 (15.1%)
Monitoring	2 (2.7%)	12 (19.4%)	11 (11.6%)	19 (20.4%)
Control	0 (0.0%)	3 (4.8%)	11 (11.6%)	0 (0.0%)
Decision making	4 (5.6%)	2 (3.2%)	2 (2.1%)	10 (10.8%)
Planning	8 (11.1%)	10 (16.1%)	12 (12.6%)	7 (7.5%)
Total	72 (100.0%)	62 (100.0%)	95 (100.0%)	93 (100.0%)

Source: Field Survey, 2012

More recently, researchers have found that “the major most asset of any organization is its manpower – how better an organization governs them, identify and cultivate their talent by providing necessary training, aligning them to corporate goals and visions is as important as the life of the organization” (Wright et al., (1994). An organization must periodically review and report employee performance, be transparent and help nurture outstanding performers. An organization must likewise apprise them about their weakness and help them to overcome them. An organization must take care of their personal and health problems. A good HR software is a tool which can enable this transformation to take place and thus help in achieving the organisational goal. However, it does not mean that while taking care of the workforce, organizations do not exercise any control on work discipline and expenses. By using the HR software mentioned above, the organisations surveyed made good use of IS. However, they will benefit to a large extent when they make extensive use of such software to cover all other areas that are directly or indirectly related to organizational goals.

This finding confirms Mittal & Kumar (IFFCO, 2010): that “The value of IT is not truly realized unless it touches everyday lives. In an enterprise environment, IT should be able to percolate all the way from the senior executives to the bottom, and make the job easier even for a shop-floor worker.”

Two-thirds of the respondents interviewed (66.7%) indicated that their organisations have a policy of reacting to environmental uncertainty such as competition, frequent and unpredictable changes in Human resource management

practices especially with the use of IS and more. The main objective of this is to achieve the following targets enumerated by the respondents in Table 4.6 below. These findings are in consonance with Mohammad Ahmad Wali (June 2010) key objectives in his book on IS & HRM as a means of Raising Performance & Lowering Costs.

Table 4.6: Reasons for Upgrading Software

Objective	Frequency (n)	Percent (%)
Achieve organizational goals effectively and economically	25	30.5
Achieve highest degree of the individual goals	6	7.3
Maintain the quality of work life	15	18.3
Enhance the welfare of the community through individual development	7	8.6
Develop better working relationships	11	13.4
Maintain policy and behaviour in an organization	6	7.3
Effective utilization of human resources	12	14.6
Total	78	100.0

Source: Field Survey, 2012

4.7 Strengths and Weaknesses with the Use of IS

More than half of the respondents saw the use of IS for Human Resources Management Practices as normal. According to the respondents, the use of IS increases the efficiency of employees and makes working in the HR department easier.

The study further examined barriers (both internal and external) to usage of IS for HRM practices in the selected organisations. Respondents listed a number of factors that hinder IS usage in their departments (check Table 4.7a & 4.7b). The factors were rated according to their frequency of occurrence across the

organisations. This was done to highlight the main factors that hinder IS usage in HR departments among the surveyed organisations. High scores imply the most occurring or dominating factor. As depicted in Table 4.7a, inadequate integration between different technologies in the banking business and resistance from domestic employees to the changing world of technology has been the key internal barriers to incorporating IS in HRM practices in UBA. Like UBA, employees' resistance to change in technology has played a major role hindering the use of IS for HRM practices at GOIL. Coupled with this is their inability to manage and harness data effectively. As seen in Table 4.7a, efforts to incorporate IS in HRM practices at KNUST and at DataScience is thwarted mainly by the heavy cost involved and also by the lack of IS skills on the part of their work force.

Across all the selected organisations, it could be seen that the lack of adequate funds and the lack of IS skills among employees [with highest scores of (28 (19.9%)) and (25 (17.7%))] have been the two major internal hindrances to incorporating IS in HRM practices.

Table 4.7a: Main Internal Barriers to IS in HRM Practices in the Organisations

Factor	Organisation				Total
	UBA	GOIL	KNUST	DataScience	
Lack of IS knowledge in senior management	6 (15.8%)	5 (16.7%)	9 (17.3%)	4 (19.0%)	24 (17.0%)
Inadequate integration between different technologies in the business	10 (26.3%)	0 (0.0%)	2 (3.8%)	0 (0.0%)	12 (8.5%)
Cost constraints	2 (5.3%)	1 (3.3%)	18 (34.6%)	7 (33.3%)	28 (19.9%)
Inability to manage and harness data effectively	6 (15.8%)	10 (33.3%)	8 (15.4%)	0 (0.0%)	24 (17.0%)
Flawed project planning or implementation	4 (10.5%)	5 (16.7%)	2 (3.8%)	2 (9.5%)	13 (9.2%)
Lack of IS skills in workforce	2 (5.3%)	2 (6.7%)	13 (25.0%)	8 (38.1%)	25 (17.7%)
Employee resistance to change	8 (21.1%)	7 (23.3%)	0 (0.0%)	0 (0.0%)	15 (10.6%)
Total	38 (27.0%)	30 (21.3%)	52 (36.9%)	21 (14.9%)	141(100.0%)

Source: Field Survey, 2012

The study also revealed that public (potential employees) reaction (ramification) to job automation is a major challenge (barrier) to incorporating IS in HRM practices across all the selected organisations (see Table 4.7b). Automation is the use of machines, control systems, and information technologies to optimize productivity in the production of goods and delivery of services.

The correct incentive for applying automation is to increase productivity, and/ or quality beyond what is possible with current human labor levels so as to realize economies of scale, and realize predictable quality levels. The incorrect application of automation which occurs most often is an effort to eliminate or replace human labor.

In most cases, potential employees frown at this practice. This factor has a higher score across all organisations and also a higher cumulative effect (69 (32.7%)) as compared to all other external factors.

Second to the problem of automation is the poor IS infrastructure in some of the organisations. This is the second major external barrier to the use of IS in HRM practices at the KNUST and at DataScience.

Table 4.7b: External Barriers

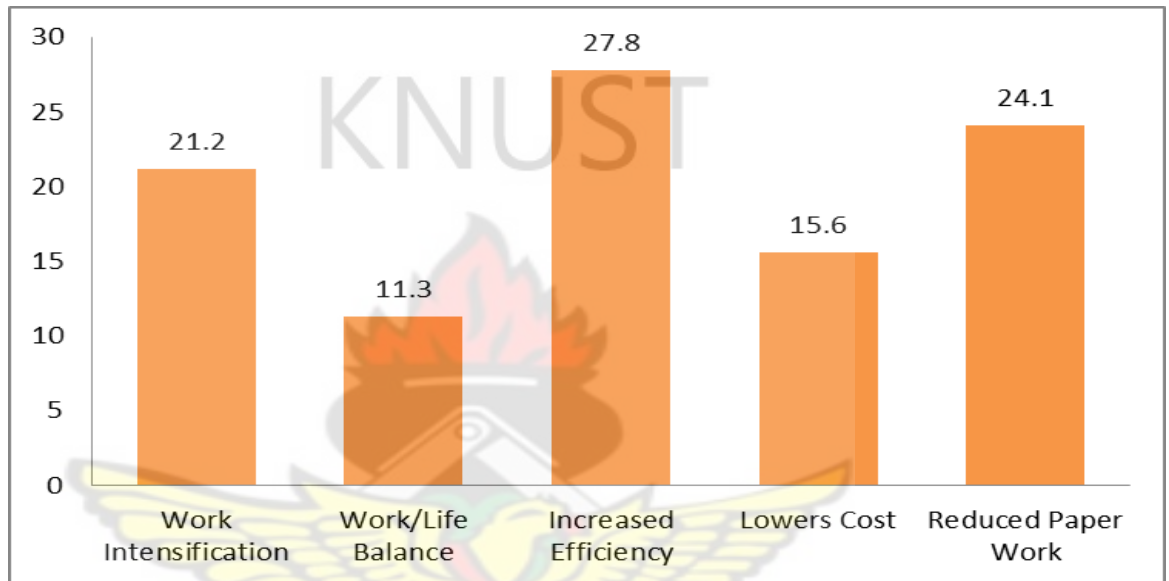
Factor	Organisation				Total
	UBA	GOIL	KNUST	DataScience	
Technology too often badly matched to business needs	8 (12.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (3.8%)
Lack of commonly adopted technology standards	4 (6.3%)	2 (5.9%)	3 (3.9%)	0 (0.0%)	9 (4.3%)
Poor IS infrastructure	4 (6.3%)	5 (14.7%)	15 (19.7%)	9 (24.3%)	33 (15.6%)
Lack of visibility of total cost of ownership for technologies	4 (6.3%)	0 (0.0%)	0 (0.0%)	6 (16.2%)	10 (4.7%)
IS skills shortage	0 (0.0%)	0 (0.0%)	12 (15.8%)	8 (21.6%)	20 (9.5%)
Pace at which technologies become obsolete	6 (9.3%)	0 (0.0%)	3 (3.9%)	0 (0.0%)	9 (4.3%)
Poor after-sales services from IS vendors	8 (12.5%)	4 (11.8%)	9 (11.9%)	0 (0.0%)	21 (10.0%)
Lack of incentives to foster innovation and IS investment	8 (12.5%)	5 (14.7%)	5 (6.6%)	0 (0.0%)	18 (8.5%)
Restrictive working practices	2 (3.1%)	6 (17.6%)	6 (7.9%)	0 (0.0%)	14 (6.6%)
Publicity ramifications of automating jobs	20 (31.2%)	12 (35.3%)	23 (30.3%)	14 (37.9%)	69 (32.7%)
Total	64 (30.3)	34 (16.1%)	76 (36.0%)	37 (17.6%)	211 (100.0%)

Source: Field Survey, 2012

Benefits Arising from the Use of IS

Irrespective of the challenges arising with the use of IS, most of the respondents listed the following (Figure 6) as benefits they have derived from the use of IS in their operational and HR practices.

Figure 4.6: Benefits of IS Usage



Source: Field Survey, 2012

The incorporation of IS in HR practices increases employees efficiency and the overall output of organisations as confirmed by many of the respondents (see Figure 4.6). The next benefit experienced by majority of the respondents, is the reduction of paper work at the departments. This brings about a cut in expenditure (a direct increase in profit) and an improved total output of an organisation.

The respondents noted the following (see Table 4.8) to elaborate the extent to which their organisations' use of IS for HRM practices which has been able to increase the efficiency of their organisations.

Table 4.8: Effects of IS on Organisations' Efficiency**ANOVA^b**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	10.489	6	1.748	28.320	.000 ^a
Residual	4.383	71	.062		
Total	14.872	77			

Source: Field Survey, 2012

a. Predictors: (Constant), Set targets are achieved on time, Less time retrieving information, Accurate database, Increased performance, Reduced staffing.

b. Dependent Variable: Do you think IS has effect on organisations efficiency?

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.456	.188		2.428	.018
Accurate database	-.385	.109	-.431	-3.537	.001
Less time retrieving information	.230	.087	.262	2.652	.010
Increased performance	.396	.068	.447	5.803	.000
Reduced staffing	-.092	.076	-.105	-1.219	.227
Set targets are achieved on time	.410	.069	.403	5.896	.000

Source: Field Survey, 2012

a. Dependent Variable: Do you think IS has effect on organizations efficiency?

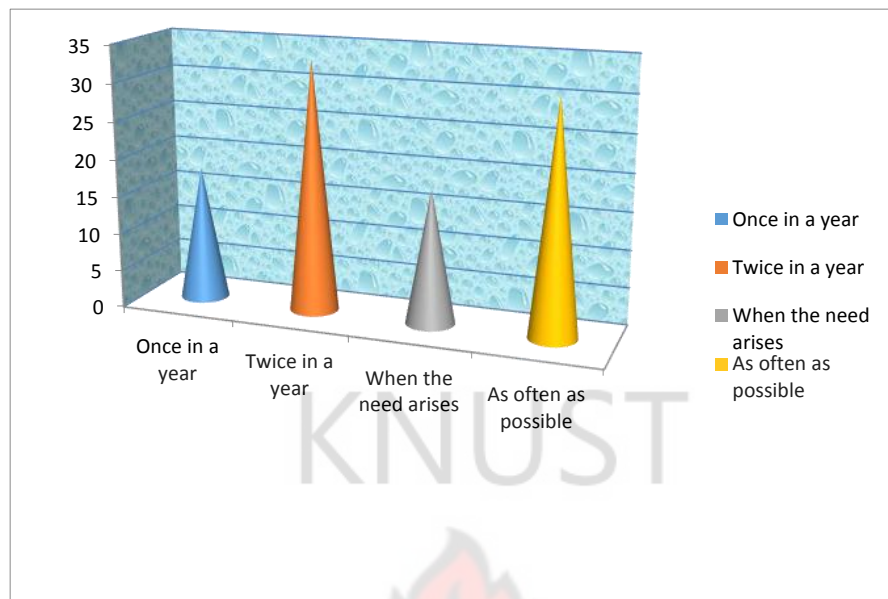
The correlation coefficients of 0.447, 0.403, 0.262, -0.431, and -0.105 from Table 8.10, suggests that IS has effect on organizations in the following areas; providing Accurate database, Less time retrieving information, Increased performance, Reduced staffing, and Set targets are achieved on time and have a strong (although barely so) linear relationship each other.

Further, the ANOVA produces p-values of .000, which, obviously, lies below all α values meaning that the use of IS increases or affects organizations significantly.

The regression equation obtained from the values in Table 4.8 is $y = 0.456 + .410x_1 + .396x_2 - 0.385x_3 + .230x_4$ which helps to further describe how significant the use of IS affects the efficiency of the selected organizations.

This finding agrees with Laudon and Laudon (2007) that human resources information systems can be used to maintain proper and accurate employee database record keeping, track employee skills, job performance and training, and support planning for employee compensation and career development. The study further revealed that getting extra training in the use of IS for HRM practices in addition to that provided by the organisations was not a usual practice for majority of the respondents from the organisations surveyed. Only half of the respondents were doing well in this area. Figure 4.7 below shows a distribution of the frequency at which employees were upgrading themselves.

Fig 4.7: Frequency of Self-upgrading in IS for HRM



Source: Field Survey, 2012

Majority of the respondents who sought for extra education (upgraded themselves) in the use of IS for Human Resources Management did that twice a year while a considerable part of them also did that as often as possible as seen in Figure 4.7 above.

The reasons given by respondents as key factors that discouraged and foiled many attempts made by employees to get extra training in addition to that provided by their organisations are due to the high Cost of money to acquire the ISs (money involved), time involved in IS Education, inadequate qualified IS experts to monitor the HRM IS systems, Lack of incentives to motivate HRM officers adopting IS, and at times managerial influence on the operations of the organization

Table 4.9: Other ways of improving HRM practices using IS

Strategy	Frequency (n)	Percent (%)
Providing adequate HRM IS software for employees	25	26.9
Formally reviewing IS suppliers on regular basis	18	19.4
Introducing incentives to promote innovation at all levels of the organisation	20	21.5
We offer incentives to encourage innovation at all levels of the business	19	20.4
Senior management should be regularly informed about emerging disruptive technologies	11	11.8
Total	93	100.0

Source: Field Survey, 2012

Respondents of the various organisations under this study indicated their responses (enlisted in Table 4.9 above) as other ways apart from training of employees using HRM practices. Majority of the respondents representing 26.9% chose by providing adequate HRM IS software for employees. Next to that was the need to get senior management regularly briefed on emerging disruptive technologies which represented a valid percent of 11.8%, 21.5% for the need to introduce incentives to promote innovation at all levels of the organisation and 19.4% on formally reviewing IS suppliers on regular basis.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

This chapter provides a brief summary of the research methods used in the study analysis of data and main findings. It also provides the conclusions and recommendations to the study. The main objective of this study was to examine or explore the use of IS in Human Resources Management (HRM) practices among selected organizations in the Kumasi Metropolis.

To achieve the objective, the study covered the Human resource management departments of the selected organizations to examine or explore the use of IS in Human Resources Management practices in their various departments. The researcher used both open and close ended questionnaire as the main instrument for the study and distributed the questionnaires personally to 90 people but only 78 were returned from the selected managers and employees of the four selected organisations. The data was presented using simple percentages, frequencies, chi-square and linear regression models and deductions from the data gathered to give a descriptive analysis and interpretation to the data.

5.2 Summary of Findings

The summary of the findings were done under the main areas of the study, such as background of respondents, common human resource management practices, IS in Human Resource Practices among Organizations, Usage of IS Tools, and the Use of HRM Software.

5.2.1 Background of Respondents

From the study, most of the men and women were within the ages of 26 to 33 years. The oldest among them were males who were 42 years and above. More males had higher academic qualifications than females.

The findings showed that, about 28.2 per cent of the female respondents were senior staff as compared to 24.4 per cent of their male counterparts who were in the same position. In all, 52.6 per cent of the respondents were Senior Staffs in their respective organisations.

5.2.2 Common Human Resource Practices

The results revealed that effective HRM practices were common among all organizations selected for this study. For instance in-depth interviews conducted on the managers from both IT and HR departments revealed that all organizations in this study have common HR practices in place. Some of the common practices were Recruitment & Selection, Performance Appraisal, Monitoring, staffing, Scheduling among others.

5.2.3 IS in Human Resource Practices among Organizations

The result shows that IS plays a major role in the HRM practices of the various organisations like recruiting, training and development of staff as they use most of the IS tools. This is consistent with UNESCO (2002) description of Information and Communication Technology (ICT) as the term used to describe the tools and the processes to access, retrieve, store, organize, manipulate, produce, present and exchange information by electronic and other automated means. These included the use of hardware, software and telecommunication in

the form of personal computers, scanners, digital cameras, phones faxes, CD (compact disk) and DVD players, database programmes, multimedia programmes among others.

5.2.4 Use of HRM Software

Respondents indicated that, Technological advancement, market competition, improvement in business or work processes and reduction in the cost of human resources were mentioned as the underlining factors prompting many organizations to adopt IS in their activities today.

The study showed that the most occurring one or dominant software used in carrying out HRM activities for all the organizations under the study was the Human Capital Management by EPICOR followed by the Dynamics software. In addition to the purchased software, all the listed organizations had internally developed software which was adapted to the culture and the unique requirements of the organizations in the study.

5.2.5 Usage of IS Tools

It was also revealed that, even though IS tools were available in all the selected organisations; some of the organisations did not use them as often as expected. It was found that usage was limited and determined by a number of factors. Experience with IS tools, position and experience in the organisation played a key role in determining how, when and who uses these tools if they are available in the organisation. This was the situation with UBA bank, KNUST and DataScience. As shown in Table 4.2, about 30 per cent and 34.6 per cent of UBA and KNUST employees captured in this survey indicated that usage of IS tools

was highly influenced by one's position in their organisation. It is worth noting that this situation was not with all IS tools as almost all the staff had access to some basic IS tools.

5.2.6 Information Systems in HRM Activities

The results as shown in Table 4.2 reveals that the usage of IS for HRM activities varied across organizations. At its Human Resource department, UBA bank uses computer software packages mainly for employee performance appraisal and querying of employee information. The HR for Ghana Oil Limited (GOIL) depends on IS mainly for monitoring and querying of employee information. At the HR department of KNUST, software packages and other IS tools are mainly used for staffing and scheduling employees. Employee performance appraisal and monitoring are the main HR activities routinely carried out at the DataScience HR department.

5.2.7 Reasons Organizations React to the Environmental Uncertainties

From the study, two-thirds of the respondents queried (66.7%) indicated that their organisations have a policy of reacting to environmental uncertainty such as competition, frequent and unpredictable changes in Human resource management practices especially with the use of Information Systems.

5.2.8 Strengths and Weaknesses with the Use of IS for HRM practices

The study indicated that the use of IS (e.g. Human Resource Management Information Systems) to HR practices in absolute terms have many intangible benefits which have been achieved in terms of efficiency, quality and consolidation of information, reduction in travel and communication cost, and

transparency within organizations. It was also indicted that, the use of IS has provided better corporate governance and employees have become aware that their movement, overtime, absenteeism, tours, and telephone calls are being monitored. This has also resulted in cutting down cost at the HR departments.

Respondents added that, the use of IS has helped to increase the efficiency of employees and makes working in the HR department easier.

However, the study further revealed the barriers (both internal and external) to the usage of IS for HRM practices in the selected organisations such as inadequate integration between different technologies in the banking business and resistance from domestic employees to the changing world of technology has been the key internal barriers to incorporating IS in HRM practices at UBA. Like UBA and GOIL Ghana Limited, employees' resistance to change in technology has played a major role hindering the use of IS for HRM practices. Coupled with this it is their inability to manage and harness data effectively. Furthermore, It was also revealed that efforts to incorporate IS in HRM practices at KNUST and at DataScience are thwarted mainly by the heavy cost involved as the implementation and the use of new technologies involve upgrading the skills of the workforce and the cost of ICT installation. The study also revealed that potential employees' reaction to job automation is a major barrier or challenge to incorporating IS in HRM practices across all the selected organisations. In most cases, potential employees frown at this practice especially among the aged. Unfortunately, most employees lack even basic ICT skills making upgrading a difficult task.

This factor has a higher score across all organizations and also a higher cumulative effect as compared to all other external factors coupled with the

problem of poor IS infrastructure in some of the organisations to receive the automation system.

5.2.9 Benefits of IS Usage

The result indicated that the incorporation of IS in HRM practices raises employee efficiency and the overall output of firms as confirmed by many of the respondent's as shown in figure 4.6. The next benefit derived by majority of the respondents, is the reduction of paper work at the HR departments.

The respondents noted the following (see Table 4.8) to elaborate the extent to which their organisations' use of IS for HRM practices has increased the efficiency of their organisations in areas like; providing accurate information, less time retrieving information, reduced staffing, and set targets are achieved on time and have a strong linear relationship to each other.

The study further revealed that, apart from training of employees using HRM practices there are other ways of improving HRM practices using IS such as; by providing adequate HRM IS for employees, the need to get senior management regularly briefed on emerging trends in HR Information Systems, the need to introduce incentives to promote innovation at all levels of the organisation and formally reviewing ICT supplies on regular basis. This finding is consistent with the literature for instance Laudon & Laudon (2007) that human resources information systems can be used to maintain proper and accurate employee database record keeping, track employee skills, job performance and training, and support planning for employee compensation and career development.

5.3 Conclusions

It was evident from the study that, the incorporation of IS in HRM practices elevated employee efficiency as confirmed by many of the respondents and also lead to the reduction of paper work at the HRM departments which had effect on expenditure and improved the total output of the organisations. The study further revealed some of the weaknesses in using IS for HRM practices which are; cost of acquiring software and hardware; cost of training and maintaining ICT professionals.

5.4 Recommendations

In view of the foregone findings and conclusions drawn and knowing that IS plays pivotal role in the HRM practices of organizations, the researcher recommends the following. The study revealed that based on the fact that organisations to practice Human Resource Management effectively they should use appropriate and efficient Human Resource Information Systems such as Human Capital Management software by EPICOR, ERP systems among others; they should also have alternatives such as in-house built systems which suits their unique HR processes like staffing, querying of employee information, monitoring and performance appraisal.

The study also recommends that, HR managers of organizations should be alert and react to environmental uncertainties such as market competition and changes in HRM practices regarding the use of ICT.

It is further recommended that in order to reduce the internal and external barriers to the use of IS for HRM practices in the selected organisations, there should be

adequate integration between the different technologies within the functional areas of the organisations.

It is also recommended that there should be frequent training and development of employees by management on the need to incorporate IS for HRM activities to avoid resistance to change in technology which has a major role to hindering the use of IS for HRM practices.

The researcher also recommends that management should incorporate IS in the HRM practices irrespective of the heavy cost involved in the implementation of ICT and the upgrading of employees skills by way of refresher courses to sharpen employees skills in IS and given the chance to upgrade themselves in the use of IS in HRM to avoid the inherent challenge of resistance in organisational change. Finally, it is recommended that organisations should intensify on the other things they do apart from training of employees using HRM systems by regularly getting senior management informed on emerging technologies of the HRM department, introduce incentives to promote innovation at all levels of the organisation formally reviewing ICT suppliers on regular basis.

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APPENDIX I
KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BUSINESS

TOPIC: Exploring the Use of IS for Efficient HRM Practices:
(A Case Study of Some Selected Organizations)

QUESTIONNAIRES FOR EMPLOYEES

Dear respondent, the purpose of this questionnaire is to investigate into the use of IS on the implementation of HRM practices in some selected organizations. Your response would help the researcher to advance the frontier of learning and offer some policy implications for these selected organizations. This is for academic purpose only and your confidentiality is assured. I shall therefore be grateful if you can take time off to provide frank responses to the questions provided below.

Please tick [☐] the appropriate response to indicate your views

PART ONE

Demographic Characteristics of Respondents

Please tick [☐] the appropriate response.

1. Age Group
(Please **tick** the appropriate box)

<input type="checkbox"/> 18 – 25 years	<input type="checkbox"/> 26 - 32 years
<input type="checkbox"/> 33 – 39 years	<input type="checkbox"/> 40 and above
2. Gender

<input type="checkbox"/> Male	<input type="checkbox"/> Female
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3. What is your highest level of education?
(Please tick the appropriate box)

<input type="checkbox"/> Doctorate degree (PHD)	<input type="checkbox"/> Master's Degree
<input type="checkbox"/> First degree	<input type="checkbox"/> Higher National Diploma (HND)
<input type="checkbox"/> Senior High School (SHS)	

Others please Specify
4. Which department do you belong?

<input type="checkbox"/> Human Resources Department	<input type="checkbox"/> Accounting and Finance Department
<input type="checkbox"/> Operations Department	<input type="checkbox"/> Sales and Marketing Department
5. Which of the following best describes your position in this organization?
(Please **tick** the appropriate box)

☐ Management staff ☐ Senior staff ☐
 Junior staff
 Others please specify

6. Indicate your years of experience in the following categories.

.....yrs with this organization

.....yrs overall business experience

7. Which sector does your organization belong?

☐ Public

☐ Private

KNUST

Part TWO

The list of questions below will help to identify the Human Resource Management Practices available in the selected organizations which IS is used to facilitate.

Please tick ☐ the appropriate response to indicate your views

1. Do you have Computers in your Organisation?

☐ YES

☐ NO

2. If you answered yes for 1 above, how often do you use them?

☐ When the need arises ☐ depending on your position

☐ Depending on your experience in the organisation

☐ depending on your experience in the in the use of IS

3. Do you use IS in the HR department?

☐ Yes

☐ No

4. Do you have adequate Human Resources Software in your organisation?

☐ YES

☐ NO

5. If yes which of the following software below are available?

☐ Czanne suite by Czanne Software

☐ PeopleSoft Human Resources by ORACLE

☐ Dynamics by MICROSOFT

☐ S3 Human Capital Management by Lawson Software

☐ Sage Abra HRMS by Sage Software

☐ UltiPro by Ultimate

- ☐ Human Capital Management by EPICOR
☐ iCON by UniCorn HRo, LLC
☐ Vista HRMS by PDS
☐ Exelys HCM by Exelsys
☐ MicroSiga Protheus by TOTVS S/A
 Others (please specify).....
6. If yes what factors prompted you to adopt IS?
- ☐ Technological advancement ☐ Improved method of work
☐ Competition ☐ To reduce cost on human resource
 Others please specify
7. If no what constraints prevented you from adopting IS in your organization?
- ☐ Cost of training employees ☐ Unreliable energy
☐ Resistant to change ☐ Hardware maintenance
 Others please specify
8. Which of the activities of HRM in your organization do you use IS for?
- ☐ Querying employee information linked to personal details, details, Timing
☐ Provident fund and payment / recovery ☐ Training Management
☐ Employee Scheduling ☐ Performance Appraisal
☐ Staffing ☐ Monitoring ☐ Control
☐ Decision making
☐ Planning (Compensation, Succession, Manpower)
 Others please specify
9. Does your organisation have a policy of reacting to environmental uncertainty such as competition, frequent and unpredictable changes in Human resource management practices especially with the use of IS and so on?
- ☐ Yes ☐ No
10. If yes what does it seek to achieve?
- ☐ Achieve the organizational goals effectively and economically
☐ Achieve the highest degree of the individual goals.
☐ Maintain the quality of work life

- ☐ Enhance the welfare of the community through individual development
- ☐ developing better working relationships
- ☐ Maintain policy and behaviour in an organization.
- ☐ Effective utilization of human resources
- Others please specify

PART THREE

The list of questions below will help to identify the Strengths and Weaknesses Associated with the Use of IS for Effective and Efficient HRM Practices in the selected organizations.

Please tick the appropriate response to indicate your views

- comments
1. What is your perception about using IS for Human Resources Management Practices?
☐ Very difficult ☐ Normal ☐ No
 2. Briefly state your reasons for your response to the question above.
.....
.....
.....
 3. What are the biggest internal barriers to IS use for your HRM practices?
(Respondents could provide a maximum of two answers)
☐ Lack of IS knowledge in senior management
☐ Business and IT executives not working together effectively
☐ Inadequate integration between different technologies in the business
☐ Cost constraints
☐ Inability to manage and harness data effectively
☐ Flawed project planning or implementation
☐ Lack of IS skills in workforce
☐ Employee resistance to change
Others please specify
 4. What are the main external barriers to the use of IS for your HRM practices?
☐ Technology too often badly matched to business needs
☐ Lack of commonly adopted technology standards
☐ Poor IS infrastructure
☐ Lack of visibility of total cost of ownership for technologies
☐ IS skills shortage

- ☐ Pace at which technologies become obsolete
- ☐ Poor after-sales services from IS vendors
- ☐ Lack of incentives to foster innovation and IS investment
- ☐ Restrictive working practices
- ☐ Publicity ramifications of automating jobs

Others please specify

What advantages do you derive from using IS for your HRM practices? It

- ☐ brings about work intensification and increase productivity with fewer employees
- ☐ brings about work/life balance ☐ raises performance
- ☐ lowers cost ☐ reduces a lot of paper work

5. Do you think IS has effect on the efficiency of your organisation?

- ☐ Yes ☐ No

6. To what extent has your company's use of IS for HRM practice been able to increase your organisations efficiency?

- ☐ Accurate database management ☐ Less time retrieving information
- ☐ Increased performance ☐ Reduced staffing
- ☐ Set targets are achieved on time

PART FOUR

The list of questions below will help to identify ways that can help Improve Employee's HRM practices with the Use of IS as a Tool.

Please tick ☐ the appropriate response to indicate your views

1. Does your organization make provision for training and development for its employees in IS especially for the Human Resources department?

- ☐ YES
☐ NO

Others please specify.....

If yes how often?

- ☐ Once in a year ☐ Twice in a year ☐ Once in two years
☐ When the need arises ☐ As often as possible

2. Do you up-grade yourself in the use of IS for Human

Resources Management Practices often apart from what your organization provides?

☐ YES ☐ NO

If yes how often

☐ Once in a year ☐ twice in a year ☐ Once in two years

☐ when the need arises. ☐ as often as possible

If No, what are the constraints?

3. Apart from training, which of these can improve HRM practices using IS? By

☐ Providing adequate HRM IS software

☐ Formally reviewing IS suppliers on regular basis

☐ Introducing incentives to promote innovation at all levels of the organisation

☐ Senior management should be regularly informed about emerging disruptive technologies

☐ Monitor the performance of IT department and service providers against service level agreements

