



University of Nairobi

School of Computing and Informatics

**A FRAMEWORK FOR ADOPTION OF HUMAN RESOURCE MANAGEMENT
INFORMATION SYSTEM IN SMALL AND MEDIUM ENTERPRISES IN
MANUFACTURING SECTOR IN KENYA**

BY

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SCIENCE DEGREE IN INFORMATION SYSTEM**

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DECLARATION

This research project is my own original work and has never been presented for any degree other than Master of Science in information systems of the University of Nairobi in the school of computing and informatics.

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This research project has been undertaken by the student under my supervision and the submission is hereby made to the University of Nairobi School of computing and informatics with my approval as the student's supervisor.

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Date_____

ABSTRACT

The main purpose of this study is to identify major factors that influence effective adoption of HRMIS in manufacturing SMEs in Kenya. To achieve this, a survey was undertaken, from registered firms operating within Nairobi. A structured questionnaire was constructed, modified and translated to capture data from 150 HRM system users in manufacturing SMEs in Kenya. The information gathered from 117 out of 150 respondents, was analyzed using statistical package for social sciences (SPSS) which generated the frequency tables, bar graphs, pie charts, standard deviation, mean, Spearman correlation coefficient and cronbach's alpha. Results revealed that employees training variables (HRMIS skills, innovation in HRMIS, and competence), organisational size variables (HRMIS department and job specialization), organisational strategy variables (HRMIS objectives, decision-making, and management support), and HRMIS facilitating conditions (infrastructure/ICT facilities, financial support, and security measures) are major factors included in the framework. In order to address the grievances of employees on time, the government should consider using this framework which can serve as a blueprint to standardize, authenticate and validate HRMIS services in SMEs. The manufacturing SMEs in Kenya can benefit from this model because IT-based HRM systems can off-load administrative tasks freeing up HRM professionals for more value-adding duties.

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DEDICATION

This project is dedicated to my family and all those who supported me spiritually, academically and financially.

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LIST OF ABRIVIATIONS

- AI/ES:** Artificial intelligence/Expert systems
- BPO:** Business Process Outsourcing
- CD:** Compact Disc
- CEO:** Chief Executive Officer
- DSS:** Decision support systems
- EASSy:** East African Submarine Cable System
- EPZs:** Export Processing Zones
- ERP:** Enterprise Resource Planning.
- HRMIS:** Human Resource Management Information Systems.
- HR:** Human Resource.
- HRP:** Human resource planning
- IT:** Information Technology.
- ICT:** Information and Communications Technology.
- KAM:** Kenya Association of Manufacturers.
- M:** Million
- MIS:** Management information systems
- SMEs:** Small and Medium Enterprises
- MSME:** Micro, Small and Medium Enterprise.
- PC:** Personal Computer
- TAM:** Technology Acceptance Model
- TPS:** Transaction processing systems
- UTAUT:** Unified Theory of Acceptance and Use of Technology

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The manufacturing SMEs in Kenya are expected to play a critical role in propelling the economy a 10 per cent growth rate, in line with the aspirations of Vision 2030 and in supporting the country's social development agenda through the creation of jobs, and by attracting foreign direct investment. There is fast growth of manufacturing SMEs in Kenya, and therefore the number of employees both permanent and temporally within this sector is growing at an alarming rate, yet there is no policy framework for the human resource management to address their employment issues. This has led to poor working relations between employees and the management staff in manufacturing SMEs, for example EPZ has been downing their tools from time to time because their grievances are not addressed on time. Therefore there is need to examine major factor that influence the effective HRMIS adoption in manufacturing SMEs in Kenya that can assist in addressing work related issues of employees. Otherwise, this may pose a serious problem to economic growth of the country because in the context of manufacturing SMEs in Kenya, personnel/ HRM and the types of ICT their practitioners use have largely been neglected.

Since the adoption of HRMIS in SMEs in Kenya confronts many problems and challenges as it is the case in manufacturing sector, this study seek to achieve important objectives; first to investigate the effect of employees training on effective adoption of HRMIS in manufacturing SMEs in Kenya, second to examine the impact of organizational size on effective adoption of HRMIS in manufacturing SMEs in Kenya, third to investigate the effect of organizational strategy on effective adoption of HRMIS in manufacturing SMEs in Kenya, and fourth to examine the impact of HRMIS facilitating conditions on effective adoption of HRMIS in manufacturing SMEs in Kenya. It is assumed that this study is expected to contribute to the knowledge at practical level by helping HRM practitioners to have a better understanding of the current benefits and challenges in HRMIS adoption in manufacturing SMEs so that they can better manage HR department in future.

1.1.1 Human Resource Management Information System

Torrington & Hall (1989), defined Human Resources Management Information System (HRMIS) as an integrated system designed to provide information used in HRM decision making. Human Resource (HR) department helps to manage, train, and employ staffs in an organization. Managers in HR develop policies and procedures concerning recruiting, hiring, layoffs, employee evaluation, promotion, transfers, salaries, job description and responsibilities, training and affirmative action and equal employment opportunities. Human resource department must communicate company policies and procedures to all employees and help to maintain a safe workplace. Human resource information systems provide managers with information relating to all human resource functions stated above.

The most basic ICT tool is having communication capabilities through fixed lines or mobile phones. SMEs may then use a personal computer with basic software for simple information processing needs such as producing text or keeping track of accounting items. Internet access enables SMEs to have advanced communication capabilities such as email, web browsing and launching a website. Manufacturing SMEs can benefit from more advanced HRMIS tools such as Enterprise Resource Planning (EPR) or inventory management, but SMEs within Kenya are slow in adopting HRMIS in their HR departments as they face major constraints such as poor telecommunication infrastructure, limited ICT literacy, inability to integrate ICT into business processes, high costs of ICT equipment, and a poor management. So there is need to investigate major factor which influence the adoption of HRMIS in manufacturing SMEs in Kenya.

The common benefits of HRMIS frequently cited in studies include;

- i. Support HR functional applications such as employee selection and placement, payroll, pension and benefits management, intake and training projections.
- ii. Improved accuracy and save costs.
- iii. Provide timely and quick access to information.
- iv. Increase competitiveness and productivity by improving HR practices.

1.1.2 Definition of SME

The term SME covers a wide range of definitions and measures, varying from country to country and between the sources reporting SME statistics. Although there is no universally agreed definition of SME, some of the commonly used criteria are the number of employees, value of assets, value of sales and size of capital. Among them the most common definitional basis used is employees because of the comparatively ease of collecting information and here again there is variation in defining the upper and lower size limit of an SME. In Kenya, the MSME bill 2009 has used 2 criteria to define SMEs in general; number of people/employees and the company's annual turnover. For enterprises in the manufacturing sector, the definition takes into account the investment in plant and machinery as well as the registered capital. This SME definition is therefore summarized in table 1.1

Table 1.1 Definitions of SMEs, source: Micro, Small and Medium Enterprise (MSME) bill 2009

Entity (trade, service, industry/business activity)	Number of people/employees	Annual turnover limit	Investment in plant/machinery + registered capital	Equipment investment + registered capital
Micro enterprise	Less than 10 people	Not exceeding Ksh500,000	Not exceeding Ksh10M	Not exceeding Ksh5M
Small enterprise	More than 10 but less than 50	Between Ksh500,000 to Ksh5M	More than Ksh10M but less than Ksh50M	More than Ksh5M but less than Ksh20M
Medium enterprise	More than 50 but less than 100	Between Ksh5M to Ksh8M	<i>Not specified in the draft bill</i>	<i>Not specified in the draft bill</i>
Micro, Small and Medium Enterprise (MSME)			Not less than 100	

1.1.3 Manufacturing SMEs in Kenya

The role of SMEs in the manufacturing sector is acknowledged and has been a subject of debate in developing and developed countries alike. Small industries are seen to deserve support especially in sectors where modern production methods are not immediately applied. (KAM Newsflash 2010) outlined the emergence of wholly modern small-scale and medium-scale Kenyan industries are likely to be a prerequisite for any enduring industrialization in the country. The current study focuses on the formal manufacturing SMEs, most of whom are members of Kenya Association of Manufacturers. (KAM Directory 2003) KAM has most of its members drawn from formal sector industries comprising of small, medium and large enterprises. All together, the members constitute of different industrial sectors. More than 80 per cent of the members are based in the capital city Nairobi, with the rest spread out in other major towns and regions. To consolidate its membership, KAM has developed regional chapters at the Coast, Nyanza, Western, Nakuru, Eldoret and Athi River. Other major towns like Thika and Nyeri also have a fairly high concentration of industries.

Membership is structured into three categories of ordinary, associate, and affiliate membership (KAM Directory 2003). Ordinary membership according to (KAM Directory 2003) is open to companies that are directly involved in processing, manufacturing or any other productive methods that have direct inputs into the expansion of industries. Associate membership is extended to firms which have direct interest in the expansion of industry either through the provision of services or other inputs. Also included in this category are companies offering specialized consultancy services to industry. Finally, affiliate membership is reserved for small associations within industry. Membership fees are based on a company's annual turnover and are renewable every year (KAM Directory 2003). Kenya is facing a big challenge to manage its human resource in many aspects especially for small business management. Small business constitutes major part in an economy which can play key role in developing country's economy but how and what are the ways which lead to that development is still unidentified especially in manufacturing sector.

1.2 Problem statement

Currently Kenya is experiencing fast growth of SMEs in manufacturing sector and therefore the number of employees both permanent and temporally is increasing dramatically, yet there is no policy framework for the HRMIS to address work related issues of these employees. Manufacturing SMEs in Kenya have been slow in adopting HRMIS as they face major challenges such as poor telecommunication infrastructure, limited ICT literacy, inability to integrate ICT into organisational processes, high costs of ICT equipment, and lack of government policies among others. This study pays attention to one big challenge which is lack of HRMIS adoption framework which has been a major hindrance for manufacturing SMEs to manage employees' details. The employees out there want to be assured of the confidentiality of their data once employed, and those confidentiality statements should be backed by a legal policy. The Government of Kenya has been working on this and has reported that they are completing the policy (Ministry of Information and Communication, 2007), but the level of preparedness in terms of policies, legal frameworks and regulations remain low. These concerns call for collective action in dealing with HRMIS adoption challenges in manufacturing SMEs in Kenya including developing appropriate conceptual framework.

1.3 Significance of the study

The study will provide the management in manufacturing firms with a reference point in their implementation of HRMIS to mainstream the role of human resources in attaining their operational, tactical and strategic objectives. Also it will provide the human resource management team with a conceptual framework on how to solve employees' problems using HRMIS.

Research outcomes from this study will be of relevance to the government ministry and the policy making bodies in charge of the manufacturing SMEs, because they will be able to know factors to consider in facilitating the adoption of HRMIS so as to boost the performance of HR department in managing the manufacturing activities in SMEs in Kenya. Also it will provide empirical data on which researchers with interest in HRMIS can use to further this line of inquiry.

1.4 Research objectives

This study has the following objectives;

1. To investigate the effect of employees training on effective adoption of HRMIS in manufacturing SMEs in Kenya.
2. To examine the impact of organizational size on effective adoption of HRMIS in manufacturing SMEs in Kenya.
3. To investigate the effect of organizational strategy on effective adoption of HRMIS in manufacturing SMEs in Kenya.
4. To examine the impact of HRMIS facilitating conditions on effective adoption of HRMIS in manufacturing SMEs in Kenya.

1.5 Research questions

The overall research question is “what should the major factors of HRMIS adoption framework for manufacturing SMEs in Kenya entail”. In order to answer this question the study sought to answer the following research sub-questions;

1. What impact does employees’ training have on effective adoption of HRMIS in manufacturing SMEs?
2. What effect does the organizational size have on effective adoption of HRMIS in manufacturing SMEs?
3. Does the organizational strategy influence the adoption of HRMIS in manufacturing SMEs?
4. How does HRMIS facilitating conditions influence effective adoption of HRMIS in manufacturing SMEs?

1.6 Limitations of the research

Certain Limitations were encountered in the course of this study but the key one was that, the number of small and medium manufacturing enterprises in Nairobi is large thus collecting data from all of them to be able to make a conclusive generalization of the study objective was not possible.

1.7 Assumptions of the research

The following assumptions were made in the course of this study.

- i. The sample population selected represents the targeted population.
- ii. The data provided by the respondents would be accurate and reliable.
- iii. The key players would be willing to participate in the study.

1.8 Definition of important terms

For this research, the following definitions were adopted:

Small and medium enterprises is defined as those entrepreneurial units in business operations which operate and serve at a limited scale in limited vicinity, with limited means for operations, usually owned and controlled by single individual as owner-manager and sometime owned as family business. This study used a sample from the SMEs of manufacturing and exporting sector in Kenya. SMEs are usually enterprises that employ not more than 250 employees.

Human resource management information system is defined as a system which is used to acquire, store, manipulate, analyze, retrieve and distribute information about an organization's human resources.

Information and Communications Technology is broadly defined as technology that can be used for transmitting and/ or processing information.

1.9 The research outline

This study appraises knowledge, awareness and practices in SMEs HR management. The main arguments in adoption of HRMIS in SMEs research practices are reviewed. Chapter 1 introduces the area of research. Chapter 2 looks into literature related to this study, and a framework for effective adoption of HRMIS in SMEs is proposed for manufacturing sector in Kenya. Chapter 3 outlines the methodology used in the research study and the description of the research model used. Chapter 4 tackles data analysis, presentation and discussion of the research findings. Chapter 5 represents a summary of the findings and discusses theoretical implication of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of related literature and relevant citation of what other scholars have written on the research area with an aim of pointing out the existing gaps such as knowledge gap on the management of human resource in manufacturing SMEs in the country. The chapter starts by discussing the evolution of Information Technology in HRM, the concept of a HRMIS, functions of HRMIS, examination of HRMIS adoption in SMEs in other countries notably- Mauritius and Spain, and lastly it looks into the existing HRM systems in SMEs framework with a view of recommending the adoption of HRMIS in manufacturing SMEs in Kenya.

2.2 The Evolution of Information Technology in HRM

Martinson (1994), traced the use of computers in HRM to the 1960s, when personnel management functions of payroll, benefits administration and other transaction processing applications, such as employee record holding were automated. At this time the information was held on a mainframe in flat file format with the databases being interrogated via simple keyword searches. Torrington & Hall (1989), noted that computer use in human resources has been characterized by alternating periods of slow and rapid growth, partly because of the strategic focus in HR and advances in IT.

Torrington & Hall (1989), predicted that the adoption of IT in human resource management system would transform HR section into an information center, internal consultant and change agent. Suggestions of a perceived increase in the strategic influence of HRM and continued devolution of human resource practice in line with Martinson (1994), implied a central role for HRMIS in supporting the human resources function and increasing its value to the organization through intranets and expert systems. This shifted to a “harder” focused HR department was also identified by Ihanainen & Rantapuska (2008), who found that whilst organizations concentrated their rhetoric on the soft, commitment model, their employees reported that they were subject to harder, more quantified forms of control. The next section examines the nature of contemporary HRMIS and explains how they are more compatible with harder HRMIS model.

2.3 The Concept of a human resource management information system

According to Tannenbaum (1990), HRMIS is defined as a system which is used to acquire, store, manipulate, analyze, retrieve and distribute information about an organization's human resources. In practice, there is a dichotomy in the analysis of HRMIS adoption, with literature predicting that there are at least two extremes of use. First the Human Resource Management Information System (HRMIS) being a software or online solution for the data entry, data tracking, and data information needs of the human resource, payroll, management, and accounting functions within an organization. Second the HRMIS may be packaged as a database with different capabilities. An organization is therefore supposed to select HRMIS based on capabilities and needs of the organization. With an appropriate HRMIS the employees are able to do their own updates and address changes, thus freeing HR staff for more strategic functions.

2.4 Functions of HRMIS

Kovach & Cathcart (1999), noted that a HRMIS could be used, first, for administrative purposes to reduce costs and time and, second, for more analytical decision support. Similarly, Martinsons (1994) classified different types of HRMIS usage according to its degree of sophistication. He argued that payroll and benefits administration, and the keeping of employee and absence records electronically was unsophisticated, because of its electronic replication of the contents of the HR department's filing cabinet, and are best described as simple minded automation. On the other hand, use of IT in recruitment and selection, training and development, HR planning and performance appraisal was characterized as sophisticated, because of the information generated to provide support for decisions which involve expert judgment, and more advanced manipulation of information about the human resource. This study adopts a similar stance in relation to the analysis of information usage data, classifying it as either administrative or analytical in character.

2.4.1 Planning process

Human Resource Planning (HRP) process reviews human resources requirements to ensure that the organization has the required number of employees, with the necessary skills, to meet its goals, also known as employment planning. According to Martinsons (1994), the HRMIS is used as a decision support system to perform tasks such as forecasting demand for labour considering organizational strategic and tactical plans, economic conditions, competitive trends, social concerns, and technological changes.

2.4.2 Recruitment process

Deseller (2002), defined recruitment as the process of searching for, and attracting an adequate number of qualified job candidate, from whom the organization may select the most appropriate to field its staff needs. HRMIS may be used to post vacant positions on the internet. The steps in recruitment process include identification of job openings, requirements, and generating a pool of qualified recruits. Job openings are identified through human resource planning (HRP) and requirements are determine.

2.4.3 Selection process

Cole (2003) defined selection as the process of choosing individuals with relevant qualifications to fill existing or projected vacancies. Data and information about applicants regarding current employees, whether for a transfer or promotion, or outside candidates for the first time position with the firm are collected and evaluated by use of HRMIS. Each step in the selection process, from preliminary applicant reception and initial screening to the hiring decision, is performed under legal, organizational, and environmental constraints that protect the interests of both applicant and organization.

2.4.4 Career planning and development process

It is the deliberate process through which persons become aware of personal career related attributes and the lifelong series of activities that contribute to their career fulfillment. Individuals accept responsibility of own career, assess interests, skills, and values, seek out career information and resources, establish goals and career plans, and utilize development opportunities.

2.4.5 Orientation, training and development process

Employee orientation is defined as the procedure of providing new employees with basic background information about the firm and the job Cole (2003). The aim of orientation is to prepare current employees for future jobs within the organization. Training focuses on skills and competencies needed to perform employees' current jobs. Training and development processes include job requirement analysis, instructional design, validation, implementation, and evaluation and follow-up.

2.4.6 Performance appraisal process

Performance appraisal is defined by Cole (2003), as any procedure that involves setting work standards, assessing employee's actual performance relative to these standards, and providing feedback to the employee with the aim of motivating the worker to eliminate performance deficiencies. Processes in performance appraisal involve defining performance expectations, appraising performance, and providing feedback. Some of the appraisal methods include graphic rating scale, alternation ranking, paired comparison, forced distribution, and critical incident methods.

2.4.7 Employee Compensation and benefits process

According to Deseller (2002), employee compensation involves all forms of pay or rewards accrued to employees and arising from their employment. However, legal considerations in compensation, union influences, compensation policies, and equity and its impact on pay rates are the four basic considerations influencing the formulation of any pay plan. The employee benefits include supplementary health and life insurance, vacation, pension, education plans, and discounts on say company products.

2.4.8 Occupational health and safety process

Occupational health and safety process aims at protecting the health and safety of workers by minimizing work-related accidents and illnesses. Laws and legislations to ensure and observe general health and safety of all employees must be adhered to through use of checklist, selection and screening of employees regularly.

2.5 Technology characteristics

This section focuses on the information technology from a management point of view, the background of technology implementations and adoption of MIS in SMEs in order to see what kind of technology is currently available, that can be used by manufacturing SMEs in Kenya. It also covers different types of systems, which form background of technology implementations and adoption of ICT in any SME. Therefore by investigating various levels of technologies available, it will be possible to identify where SMEs in manufacturing sector in Kenya fit in. Stair & Reynolds (1999) used figure 2.1 to identify various levels of systems within an organization. The following acronyms used in figure 2.1 are explained briefly in order to clearly understand what these levels are and how they fit into SMEs in the adoption of in HRMIS in manufacturing SMEs in Kenya.

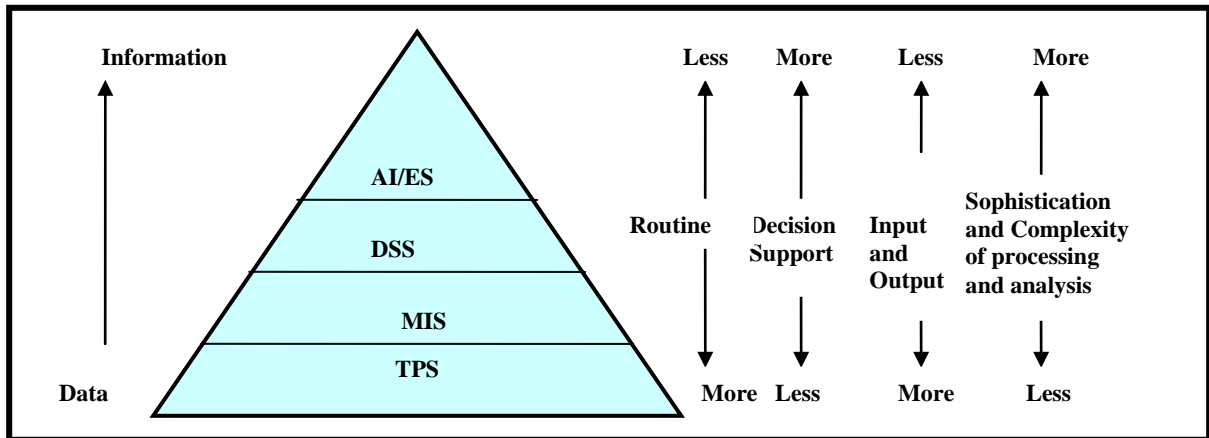


Figure 2.3 TPS, MIS, DSS and AI/ES in perspective (Stair & Reynolds, 1999)

Transaction processing systems (TPS) contain detailed data which are used to perform routine functions which are basic to all SMEs while Management information systems (MIS) provide reports which managers use during decision-making. At this stage systems tend to become more expensive, therefore not all SMEs go into this level or past this level especially manufacturing SMEs in Kenya due to lack of financial support. Decision support systems (DSS) and Artificial intelligence/Expert systems (AI/ES) are used in decision making and in strategic planning which require intelligence, so developing such systems is very expensive for SMEs in Kenya. One of the biggest deciding factors when investigating HRMIS adoption by SMEs is the cost involved, and for this reason, it is evident that most of manufacturing SMEs in Kenya would only reach the MIS level.

2.6 Adoption of HRMIS in SME in other countries

This section looks at the situation in other countries how they manage human resources in their organizations and what SMEs in manufacturing sector in Kenya can learn from them so as to overcome challenges they face during the adoption of HRMIS.

2.6.1 Mauritius SMEs and ICT adoption and usage

This study considers Mauritius as an example to Kenya in the adoption of information technology because in Africa, Mauritius was the best ranked country at 53rd while Kenya was ranked 109th according to the global information technology report of 2012 (Daily Nation April 17, 2012). Most SMEs perceived the barriers of implementing IT into their business operations as expensive, risky, complex procedure, lack of technical expatriate, and customer services. The SMEs in Mauritius adopted the ICT, to perform the potential commercial functions which include, marketing themselves both locally and globally and conducting electronic transactions. HRMIS in Kenya is facing big challenges due to the slow implementation of technology by SMEs, but it should learn from these other African countries like Mauritius how to improve implementation of these ICT systems. So it is important in this study to examine the conceptual model which is used by SMEs in Mauritius as shown in Figure 2.2 and see which variables can fit in SMEs in Kenya.

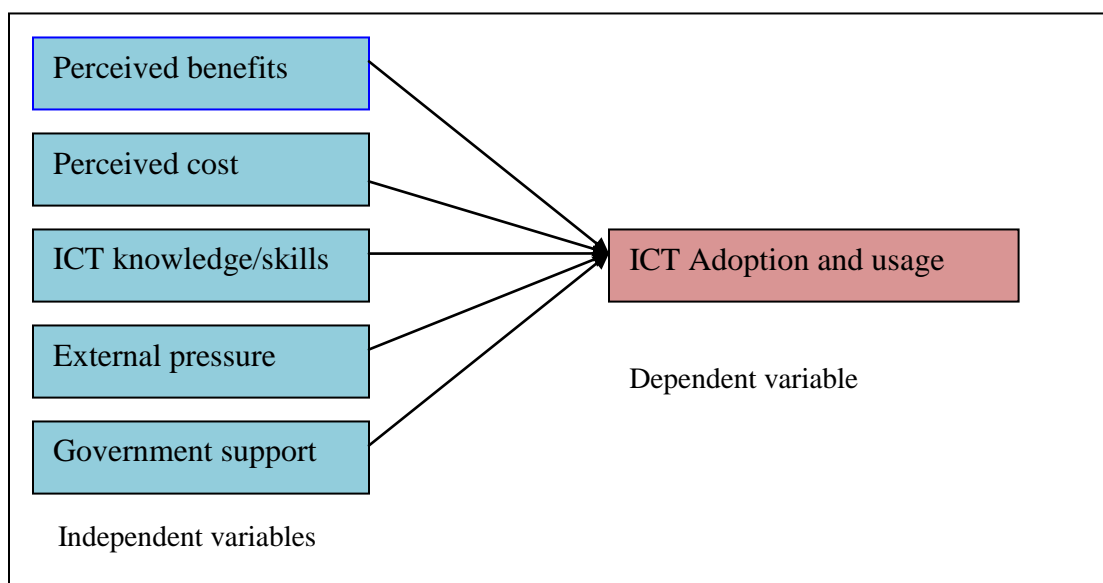


Figure 2.2 Conceptual model for ICT adopted by Mauritius SMEs

Source: Vol. 4, No. 2 *International Journal of Business and Management*

The figure above shows the relationship between dependent and independent variables. In this situation, five independent variables were tested which were perceived benefit of ICT, perceived cost of adoption, ICT knowledge and skill of the employees, external pressure, and government support that are believed to have some influences towards the dependent variable (ICT adoption and usage) either in positive or negative way.

Perceived benefits: Nowadays SMEs have recognized the positive impacts of ICTs such as computer terminals, e-mail and Internet to the organization level as well as their applications on business performance. Therefore, perceived benefits are taken into consideration as one of the factor that affects ICT adoption and usage in SMEs.

Cost: Generally, there is direct and significant relationship between cost and adoption of technology. The lower the cost of adoption the higher the new innovation such as the ICT will be applied by the company and vice versa.

ICT knowledge and skill: Lack of knowledge based employees might hinder or prevent technology application if the owner believes that this technology can only be employed using specialist staff. The lack of suitable technical and managerial staff with sufficient ICT expertise is a major barrier for SMEs in using ICT.

External pressure: Pressure from business trading partners is one of the important predictor that has strong influence on adoption and usage of ICT. When a major supplier or customer adopts IT, the small business owner is more likely to adopt. In most cases small businesses are often forced to use IT by large companies. So this could be a factor driving the use of web-commerce if their trading partners force them to use it.

Government support: The government is committed to accessible e-commerce for SMEs, and has decided that some intervention was necessary to make participation affordable, particularly for small and remote businesses. This has strong industry support with most of the major e-commerce service providers now established in country. The government has placed support of the ICT industry by initiating the financial base.

2.6.2 Determinants of the adoption of HRMIS in SMEs in Spain

Research on HRMIS in SMEs in Spain shows that there is a great diversity of HRMIS practices among small businesses, and firm size is a major determinant of their adoption and formalization (Cassell, Nadin, Gray, & Clegg, 2002). Other organizational contextual variables such as ownership type, organizational strategy and planning also influence the adoption of HRMIS in SMEs. For example, organizations with business plan have implemented more formal use of HRMIS. Kok & Uhlaner (2001), proposed a conceptual model (shown below in figure 2.3) of how organization contextual variables may influence the formalization of HRMIS in SMEs.

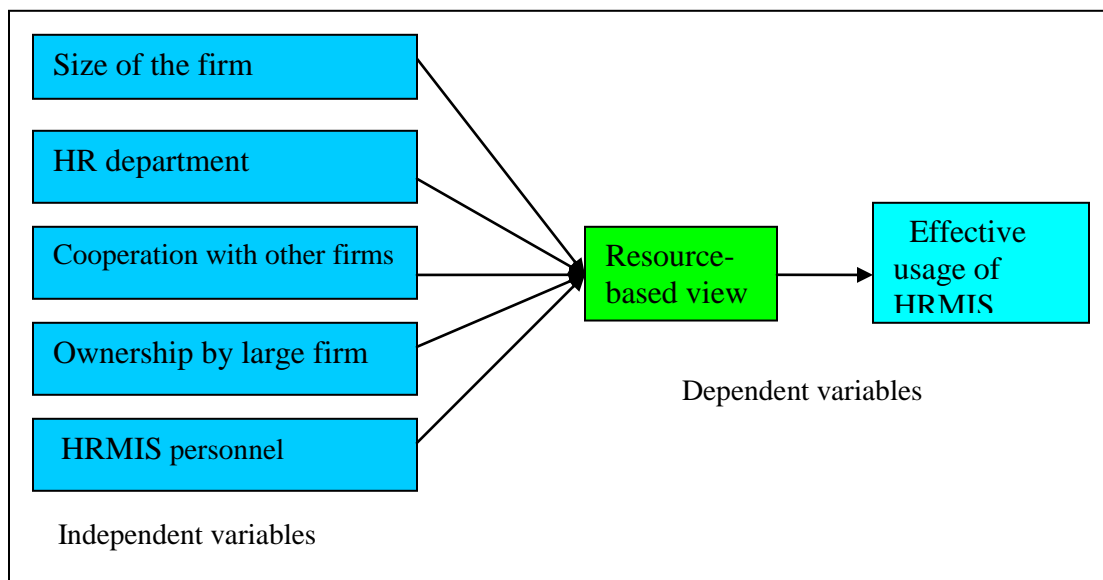


Figure 2.3 Conceptual model adopted by Spain (Adopted from Kok and Uhlaner, 2001)

Resource-based view: Drawing upon resource-based view of the firm, it was argued that the condition of resource poverty might be an impediment for the adoption and usage of HRMIS in SMEs. Therefore, following Kok & Uhlaner (2001), the assumption was that if SMEs possessed the necessary resources they implemented HRMIS effectively. Resource based-view theory, suggests that firm resources are of crucial importance for firm activities and growth, for achieving high profits and for gaining sustained competitive advantage. However, firms may be constrained by lack of resources when implementing HRMIS approaches and this is the case of SMEs in Kenya.

Firm size: Larger firms possess the resources necessary to design or acquire HRMIS instruments such as screening tests, but small firms may experience financial problems to acquire the necessary resources and therefore might be less likely to adopt/use HRMIS.

The presence of HR department: Research shows that owner-managers tend to keep key personnel responsibilities in their own hands, even after shifting the personnel responsibilities to a specialist person (HR manager). Resource based-view provides rationale for the influence of the existence of HR department on the usage of HRMIS. However, smaller firms are less likely to have HRMIS specialists familiar with HRM.

Cooperation with other organizations: Smaller companies cooperating with a larger firm may benefit from its resources in order to implement more formalized HRMIS. For example, smaller companies cooperating with another company may gain access to HRMIS programs implemented by that company such as an appraisal instrument or a training module. Such cooperation reduces the development costs and the resources required for the adoption and usage of more formalized HRMIS in SMEs.

Ownership by a larger company: Subsidiaries or spin-offs of parent companies might benefit from parent's activities for selection and training employees. For example, small firms that are part of larger groups are likely to be subject to policies made elsewhere and would therefore be more likely to have formalized personnel policies.

Characteristics of HR personnel: The knowledge about current human resource management trends will affect the extent to which HRMIS are implemented, used, and formalized in SMEs. However, smaller companies are less likely to have HRMIS specialists familiar with human resource management. HR manager's knowledge and skills depend on his/her experience and education and/or training in HRMIS.

2.7 The situation of HRMIS in manufacturing SMEs in Kenya.

The manufacturing sector in Kenya is expected to play a critical role in propelling the economy a 10 per cent growth rate, in line with the aspirations of Vision 2030 and in supporting the country's social development agenda through the creation of jobs, the generation of foreign exchange, and by attracting foreign direct investment. To meet these goals, the manufacturing sector has to become more efficiency driven, raising productivity per unit of input especially of labour and capital. This sector is therefore expected to use HRMIS that is both efficient and environmentally-friendly in an effort to make Kenya a dynamic industrial nation, but it faces major challenges such as Strategic human resource management and ICT skills are not developed in a well-structured and coordinated manner, and are virtually absent in manufacturing SMEs. There is also a mismatch between available ICT skills and job market demands due to poor linkages between training institutions and the industry. That is why there are many unemployed Kenyans who are educated, professionally trained but they lack ICT skills.

In Kenya for example, Business Process Outsourcing (BPO) includes call centers, animation, software development, knowledge processing, data processing and transcription (Ihanainen, & Rantapuska, 2008). A case in point is the Telkom Kenya which recently retrenched more than ten thousand employees. A number of those employees who had unique and specialized skills in telecommunications, but who could not be retained under the new management as full time employees were asked to form companies from which the corporation could outsource the services it needed (Telkom Kenya Records, 2006). Safaricom, a mobile telephone service provider in Kenya have also made a strategic decision to outsource their call centers (Safaricom Records, 2008).

The improvement of electronic communication has accelerated the emergence of the call centre concept which has been necessitated by the need to provide continuous service using few staff that is cheaper to maintain. In Kenya the call centre approach has been challenged by the fact that the internet services is slow, expensive and relies on satellites.

However the country is putting in place a fibre optic undersea cable referred to as East African Submarine Cable System (EASSy) expected to be operational soon Ministry of Information and Communication, 2008). EASSy is an initiative to connect countries of Eastern Africa to the rest of the world. It is expected that with the installation of this cable the prices of internet connectivity will go down drastically and this will make companies operate more efficient.

In Kenya's Export Processing Zones (EPZs) located in Athi River and in Ruaraka, has played a great role in achieving the economic objectives of job creation. Hart & Hannan (2004) noted that by 1995, EPZs had created 5000 new jobs since their inception in 1990. Fink & Disterer, (2006) noted that EPZs implement the labour laws with a lot of flexibility. For example the law does not impose a minimum wage on EPZs. Lax government supervision and opposition to labour unionization and union activities are common in EPZs. This has led to employee relations issues with managers in EPZs downing their tools from time to time. Therefore there is need to adopt an effective HRMIS in manufacturing SMEs in Kenya in order to address such work related issues.

Again jobs within manufacturing sector in Kenya are becoming more temporary and this has forced workers to remain adaptable as changing demand alters occupational knowledge and does away with stable career paths. In a number of manufacturing companies in Kenya, there is a tendency to use part time workers more rather than having full time staff. These companies have found this arrangement effective because they pay the part time workers for only the days or hours worked, which is cheaper than having full time workers who are expensive to maintain. Again, with the need to have competitive advantage over others, there is a need for manufacturing organizations to be cost effective and offer products which are quality and low priced. Since part time workers represent a wide and good percentage of the workforce today in manufacturing SMEs in Kenya, then they need a HRMIS in their place of work for managing all employees' details effectively.

Kenya has not been able to reap the benefits of globalization because of the presence of labour with low level skills in information, communication and technology and lack of advanced technology in human resource management in manufacturing SMEs. One of the major challenges in Kenya has been lack of an Information, Communication and Technology (ICT) policy which has been a major hindrance for application of HRMIS in manufacturing SMEs, to receive outsourced workers who want to be assured of confidentiality of their data once they are outsourced and those confidentiality statements should be backed by a legal policy. The Government of Kenya has been working on this issue and has reported that they are completing the policy (Ministry of Information and Communication, 2008). In this study, factors affecting adoption of HRMIS in manufacturing SMEs in Kenya are poor investment in employees' training activities (HRMIS skills, innovation in HRMIS, competence in HRMIS), lack of organizational size activities (by not establishing HRMIS department and not practicing job specialization), poor organizational strategy activities (not achieving HRMIS objectives, not providing management support and poor decision making), and failure to invest and provide adequate facilitating conditions (infrastructure/ICT facilities, financial support and security). All these factors compare relatively to the factors influencing adoption and usage of HRMIS in Mauritius and Spain as discussed in the literature review.

2.8 Relevant ICT adoption and usage models

This section looks at ICT adoption and usage models which can help SMEs to know which technology suits their business models the best. There are different ICT adoptions and usage models that exist but this study selects two which are Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). The reason why these two models are chosen is because of their impact on the social aspects of ICT adoption and usage, and the fact that the unified model already contains most of the important aspects of the other models. These models are compared so as to find the best concepts that can be used to build a HRMIS adoption conceptual framework for manufacturing SMEs in Kenya.

2.8.1 Technology acceptance model (TAM)

According to Wikipedia (Technology acceptance model online, 2009) TAM was developed by Davis in 1989. TAM's main focus was perceived usefulness and perceived ease of use. TAM was specifically designed to be applied in the adoption and use of new technologies. Again, it focused on attitude, the end user's attitude, which clearly focused on the social side of ICT adoption. Lu, Yu, Liu, & Yao (2003), noted that TAM was the model most likely to be used for ICT adoption in small businesses due to the social approval of this model. Lu, Yu, Liu, & Yao (2003), defined Davis' TAM theory of ease of use and usefulness as Perceived ease of use (extent to which a system can be used without any mental effort) and Perceived usefulness (extent to which a system would enhance the job performance).

The primary "belief" of TAM was that all ICT adoption related to ease of use and usefulness although the attitude was deciding factor of the intention to adopt and use a specific system. In Kenya the ease of use, easy to work with, job relevance, HRMIS goals and cost are the most important aspect of why SMEs will adopt and use HRMIS. This is a clear indication that certain parts of TAM are used as the basis for HRMIS adoption within SMEs such as ease of use, which is the main reason for technology adoption and use within the Kenyan manufacturing sector. Figure 2.4 introduces the TAM model:

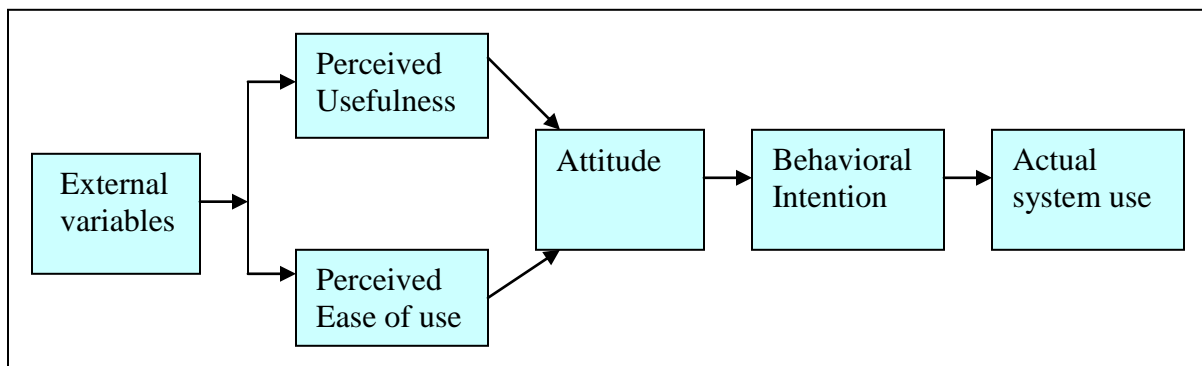


Figure 4.4 Technology acceptance model (after Davis 1993). Lu, Yu, Liu, & Yao (2003)

2.8.2 Unified theory of acceptance and use of technology

Venkatesh, Morris, & Davis (2003), conducted a study to create a unified acceptance model which took eight prominent adoption models into consideration and proposed the UTAUT model as shown in figure 2.5.

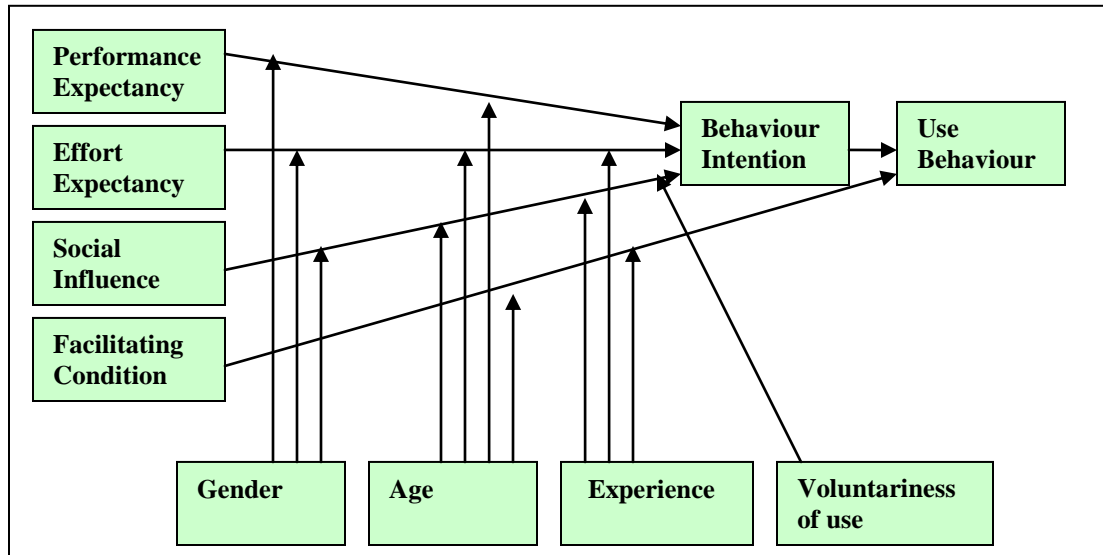


Figure 2.5 UTAUT Research model, Venkatesh, Morris, & Davis, (2003)

Performance expectancy: Based on the various models, there are five constructs which form part of the performance expectancy. These constructs are “Perceived usefulness, job-fit, extrinsic motivation, relative advantage and outcome expectations” (Venkatesh, Morris, & Davis, 2003). This means that performance expectancy relates to the way in which a person believes that a specific technology will be of benefit in day to day activities. Also gender and age determines the way in which a system is perceived to enhance the performance of the individual.

Effort expectancy: Relating to the easy usage of a system, there are three constructs which were used to compile effort expectancy and these are perceived ease of use, complexity and ease of use. However, Venkatesh, Morris, & Davis, (2003) stated that effort expectancy will only play a role during introduction of new technology and will be overshadowed as time goes by and experience is gained. It is noted that older individuals tend to find the processing and focusing on system more difficult and thus have influence on the perceived ease of use, as it is the case with manufacturing SMEs in Kenya.

Social influence: Venkatesh, Morris, & Davis, (2003) stated that social influence is based on the individual's perception of what others think of him after using the system. Most of the time these "others" are influencing the individual's behaviour especially, as these influences are from the more senior staff. As is the same with effort expectancy, this social influence will only come into play during the early stages of adoption. It is noted that women are more sensitive and the intention to use technology, based on the social influence, becomes more relevant. However, this effect declines with experience.

Facilitating conditions: "The degree to which an individual believes that technical infrastructure exists to support use of the system" (Venkatesh, Morris, & Davis, 2003) "Perceived behavioral control, facilitating conditions and compatibility" are the three constructs used to generate facilitating conditions. Factors such as control over system, necessary knowledge in using the system, available guidance and compatibility to a specific function within the organisation are issues that play a role in this construct.

2.9 The conceptual framework adopted in this study

The number of employees within manufacturing sector in Kenya is growing at an alarming rate and therefore, there is need to enact a conceptual framework in order to address their employment terms of services. The HRMIS factors used in this study aim to investigate if they have any impact on adoption of HRMIS in performing HRM functions in manufacturing SMEs in Kenya. The major factors (employees training, organizational size, organisational strategy and HRMIS facilitating condition) are discussed below and summarized into a conceptual model (figure 2.6). The selection of these factors was based on three point criteria as stated below and used in a previous study on HRMIS adoption and usage in SMEs in other countries. First, they have been used in previous studies in the literature review. Second, they are relevant to manufacturing SMEs in Kenya, and third they reflect recent development of HRMIS practices in manufacturing SMEs Kenya. Therefore, the role of this framework is to support personnel in manufacturing SMEs in Kenya in their decision making with regards to the use of HRMIS in performing human resource functions.

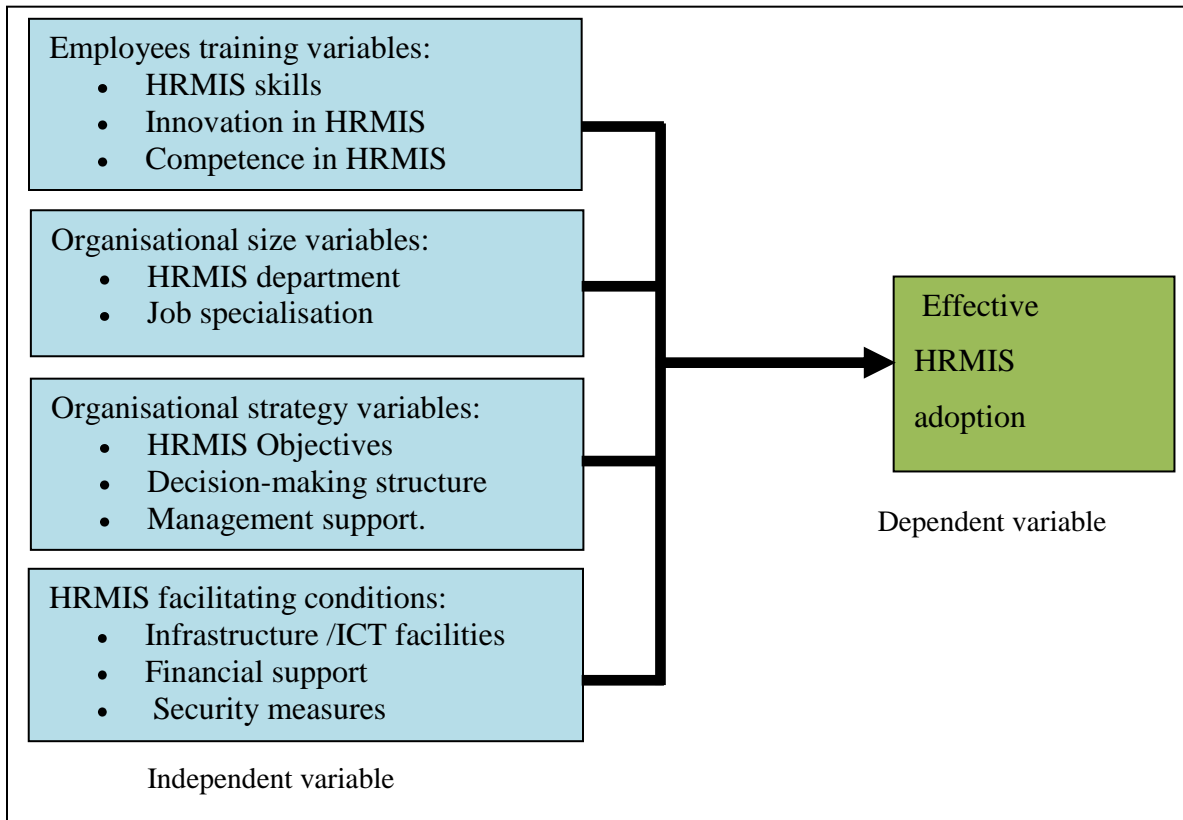


Figure 2.6 Conceptual framework

As the conceptual framework depicts, effective adoption of HRMIS is a function of employees training, organisational size, organisational strategy and HRMIS facilitating conditions variables. These functions are discussed below in detail on how they influence HRMIS adoption in performing HRM functions in manufacturing SMEs in Kenya.

Employees training: The most basic ICT skills are having knowledge on how to use computer, and other communication devices such as mobile phones. With these basic skills, SMEs may then use a personal computer with basic software for simple information processing needs such as producing text or keeping track of accounting items. If Employees training is intensified then SMEs in manufacturing can benefit from more advanced ICT skills such as Enterprise Resource Planning (EPR) or inventory management skills.

Organisational size: The main organisational size activities used in this study are HRMIS department, and job specialisation. In most cases Small firms are associated with resource poverty which does not permit adequate performance of certain activities such as sustaining the firm for long, and formalizing their firm processes. Small firms with scarce resources usually do not dispose with formal department or professionals dedicated to HRMIS practices (Cardon and Stevens 2004). In most cases small firms require owners and managers combine HRMIS functions with other duties avoiding specialization in their duties.

HRMIS department: The HRMIS department can be establishment when the firm has enough HRMIS skilled employees to run the department thus it depends on the size of the organization. Hornsby and Kuratko (2003) recognized the importance of organizational capital resources such as formal organizational structures and planning, controlling, and coordinating systems for the functioning of the firms. Hornsby and Kuratko (2003) identified the presence of personnel department in SMEs increases with firm size. HR department, that plans and implements HRMIS activities, can be considered as an important factor of firm processes formalization, which may influence decisions and actions regarding HRM. However, smaller companies are generally less likely to have HRMIS specialists familiar with HRM activities.

Job specialization: In small firms resources are likely to be scarce and this has increased difficulty in recruiting and retaining trained employees, so job specialization is not practiced. However, it is assumed that firm size determines the informality concerns for the management of its key resource leading towards an individual full time responsible for personnel management. Research shows that owner-mangers tend to keep key personnel responsibilities in their own hands, even after shifting the personnel responsibilities to a specialist person (HR manager).

Organisational strategy: The main HRMIS strategy variables used in this study are HRMIS objectives, decision-making structure, and management support. As mentioned earlier, one has to understand what the company's strategy is; namely vision, mission and objectives. Once the organisational strategy is known, one can incorporate the HRM processes which lead to the HRMIS strategy, thus ensuring that the adoption of HRMIS within the company becomes integrated with these HRMIS objectives. Therefore the company's strategy becomes essential factor in assisting the manufacturing SMEs in achieving effective adoption of HRMIS. Strategic HRM is designed to help companies best meet the needs of their employees while promoting company goals and in selecting HRM systems which can deal with any aspect of the firm that affects employees, such as hiring and firing, pay, work incentives, safety procedures, benefits, training and administration functions. Companies that work hard to meet the needs of their employees can cultivate a work atmosphere conducive to productivity. An effective adoption and usage of HRMIS is the best way to achieve this.

Decision-making structure is defined as the type of control or delegation of decision making authority throughout the organisation and the extent of participation by organisation members in decision making pertaining to HRMIS. Previous studies such those of Ihanainen & Rantapuska (2008), found that centralized organisational design can result in better management effectiveness for end user computing and is likely to produce more successful strategic information system applications. These ideas support the fact that decision-making structure is a factor that influences HRMIS adoption.

Management support is conceptualized as the involvement and participation of the executive or top-level management of the organization in HRMIS activities. Researchers have shown that management support is one of the organizational factors in HRMIS adoption success. Previous studies by Hart, & Hannan (2004), pointed out that management support facilitated successful deployment of strategic HRMIS applications while lack of management support inhibited the strategic use of HRMIS.

HRMIS facilitating conditions: The facilitating conditions used in this study are infrastructure/ ICT facilities, financial support and security. The HRMIS budget factor was studied by various Information System (IS) researchers (Venkatesh, Morris, & Davis, 2003), who found direct and significant relationship between budget and adoption of technology. The lower the cost of adoption the higher the new innovation such as the ICT can be adopted by the company and vice versa. SMEs are less likely to adopt ICT when its initial set-up cost is high. Any new technology like ICT may be considered too expensive to many SMEs because of their lack of financial resources. Security or the level of privacy a new technology provides is a significant factor influencing behaviour or intent to adopt a system (Lu, Yu, Liu, & Yao (2003). Trust level of a system especially HRMIS that is based on the internet, could enkindle or destroy the trust a user has for that technology, and alter intent to adopt HRMIS technology. The facilitating conditions are very important to this framework as manufacturing SMEs need to remember them when choosing the best technology to invest in. However, one shortfall at this stage is how one measures them to ensure that the right technology is chosen. As this study only introduces the framework, there is need for future research in order to develop a measurement instrument which could be used by someone who is not IT skilled.

2.10 Conclusion of literature review

Throughout this chapter various viewpoints from the literature which relates to SMEs and HRMIS adoption were discussed in a quest to see how SMEs would use technology as well as strategic focus areas which manufacturing SMEs in Kenya need to focus on when examining the possibilities of adopting new technologies. In this section, findings from the literature as well as the survey research have been combined to develop a conceptual framework which can be used by manufacturing SMEs in Kenya to ensure that they adopt the relevant technology and to ensure that they consider the major adoption factors identified when choosing HRM technology.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter focuses on the methodology proposed to answer the research questions posed in this study which is what should the factors for the HRMIS adoption framework for Kenyan SMEs in manufacturing sector consist of. This was done by describing the population of interest, sample design, the research design, and analysis.

3.2 The target population

The population of interest consisted of 150 selected users of HRMIS in manufacturing sectors that operate within Nairobi and its surroundings, and are members of KAM shown in appendix IV. The list of these manufacturing sectors was obtained from the KAM website with permission of the office, which maintains an online directory of all members. The research participants were identified based on the size of their business. The main participants involved in this research were the SME owners (in the case of small companies) as well as some operational staff, HR managers and ICT specialists. These participants were drawn from a range of manufacturing sub-sectors, which are: building and construction, commercial and allied, consultant and industrial service, energy, electricity and electronics, food, beverages and tobacco, metal and allied, pharmaceutical and medical, textiles and apparels, timber, wood products and furniture.

3.3 Research Design

The study used a survey design to examine major factors that determine adoption of HRMIS in manufacturing SMEs in Kenya. A survey research data was collected from users of HRMIS in manufacturing sectors that operate in Nairobi and its surroundings. The existing situation of HRM in manufacturing sector was examined by asking individual users of HRMIS about their perception, attitudes, and behaviour or values concerning the current system. The design identified employees training, organisational size, organisational strategy, and HRMIS facilitating conditions as major factors which highly influence the effective adoption of HRMIS in performing human resource functions in manufacturing SMEs in Kenya.

3.4 Sample Design

The study used a simple random sampling approach to determine the firms that were involved in examining the current situation of human resource management in manufacturing SMEs in Kenya. From a large population of firms that are members of KAM, the study selected randomly 150 employees from SMEs that are stratified by their sectors within manufacturing and allied industries sub-sector. These sub-sectors included wood, textiles, metals products among others as shown in appendix III. A sample of 150 employees from manufacturing SMEs was selected using the formula below.

The formula used was
$$n = \frac{t^2 * p(1-p)}{m^2}$$

Where n=required sample size,

t=confidence level at 95% (standard value of 1.96)

p=estimated prevalence of the project area, (in this case p is assumed to be 89.1 %)

m=margin of error at 5% (standard value of 0.05)

Using these standard values the calculations are
$$n = \frac{1.96^2 * 0.891(1-0.891)}{0.05^2} = 150$$

The required sample size = 150 employees from manufacturing SMEs.

The details on the use of this formula are found in appendix I

3.5 Data collection instruments

The study relied on primary data by respondents answering questions posed in the study and secondary data from review of documents and literature. The instrument used was a questionnaire (see appendix V) administered to personnel in HRM department. It consisted of five sections. Section1 required respondents to provide demographic data of the employees. Section2 focused on employees training, section3 focused on the organizational size, section4 focused on the organizational strategy, and section5 focused on HRMIS facilitating conditions. The questionnaire was semi-structured with open ended questions and closed questions that made it easier for the respondents to answer the questions giving the most specific response. This helped in isolation of external influences and therefore the respondents gave their views in unbiased manner. For the closed questions likert scale was provided.

The address and telephone numbers of the HRM managers of the firms were obtained from KAM website. Where necessary, appointments were made to secure an opportunity for interviews. This gave the researcher an opportunity to clarify issues that rose up during completion of the questionnaire. Where it was impossible to secure appointment, the questionnaires were dropped with a request that they were completed within three days and the researcher picked them up, after one week. The secondary data was collected from review of documents such as publications, articles and the Internet.

3.6 Pilot test

The questionnaire was subjected to a review by experts in the area of HRMIS who gave their contribution towards the content of the data collection tool. This was done to check whether the concepts in the questionnaire were clear. The input from this discussion was added to the questionnaires before distributing them to the respondents.

3.6.1 Validity

According to Cooper and Schindler, (2000) validity is extent to which a given finding shows what is believed to show. In order to confirm the validity of the research tool, the questionnaires were carefully examined to confirm proper coverage of the research objectives and to ensure content validity. Cooper and Schindler (2000), referred to content validity as that instrument comprising of a representative sample of all the possible items for each category area.

3.6 .2 Reliability

Reliability is that quality of measurement method which suggests that the same data will be collected each time in repeated observation of the same phenomenon (Chandran, 2004). The reliability of the questionnaire was determined through a pilot study. According to this study 6.8% of sample size was used for pilot testing involving 8 likert questions from the questionnaire. Cronbach's Alpha formula was used to estimate the internal consistency of the study tool. The reliability coefficient of 0.7 and above was recommended (cronbach, 1951).

Table 3.1 Questionnaire reliability test summary

Section	Question number	Cronbach's Alpha	Cutoff	Comment
2	3.a	0.7988	0.7	Reliable
2	3.c	0.8063	0.7	Reliable
3	5	0.8219	0.7	Reliable
4	10	0.8081	0.7	Reliable
4	13	0.7874	0.7	Reliable
4	14	0.8192	0.7	Reliable
5	16	0.7949	0.7	Reliable
5	18	0.7920	0.7	Reliable

Table 3.1 shows that the Cronbach's Alpha for all items tested was above 0.7, hence the questionnaire reliability was suitable. The Cronbach's Alpha formula and calculation details are shown in appendix II.

3.7 Data Analysis

This being a survey study the researcher used descriptive statistics to analyze and present the findings of the study. Frequency table, bar graphs, pie charts, standard deviation, mean and cronbach's alpha were used to present the findings on the percent of firms that have used HRMIS, the length of time they have used the system, types of data stored in the HRMIS, tactical and strategic HR levels, the HR functions supported by the HRMIS, and the respondents perception of the relative importance of the various factors that influence adoption of human resources management information system in their firm.

3.8 Chapter summary.

This chapter has presented the methodology used during the research study and how the data was analyzed using descriptive statistics. Primary data was collected through questionnaires while secondary data was collected from review of documents and literature. Document analysis assisted in providing experts and official reports. The data collected from questionnaires provided direct quotations from respondents about their experience, opinions and knowledge of HRMIS adoption in manufacturing SMEs.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents, data analysis and discusses findings from the field research conducted from different companies in Nairobi on various aspects of the study on adoption of HRMIS in Manufacturing SMEs in Kenya. The information gathered through questionnaires, was analyzed using statistical methods such as frequency tables, graphs and cronbach's alpha among others in order to find what should the major factors of the HRMIS adoption framework for manufacturing SMEs in Kenya consist of.

4.1.1 Survey Questionnaire Response Rate

The survey study used simple random sampling explained in sample design of methodology to select small and medium manufacturing firms. The researcher administered the instruments, where the respondents were available to complete the instrument. Where informants could not provide an immediate response, the drop and pick method was used. This being a survey study the researcher used descriptive statistics to analyze and present the findings of the study. The use of percentages and averages provided the required measures of summary that reduced the data from 150 respondents in to a meaningful form. From 150 administered questionnaires only 117 usable questionnaires were returned and analyzed. This represented 78% response rate which compares favorably with previous studies such as Tanova (2003), who reported a response rate of 52% in an investigation of the use of HRMIS within banking industry in Kenya.

4.2 Demographic analysis of the respondents

In this section, a detailed analysis of the responses obtained from different companies that should not be labeled represent the manufacturing SMEs in Kenya are given. To make the data representative, the target group was segmented according to gender, age, level of education, work experience and level of income.

Gender distribution

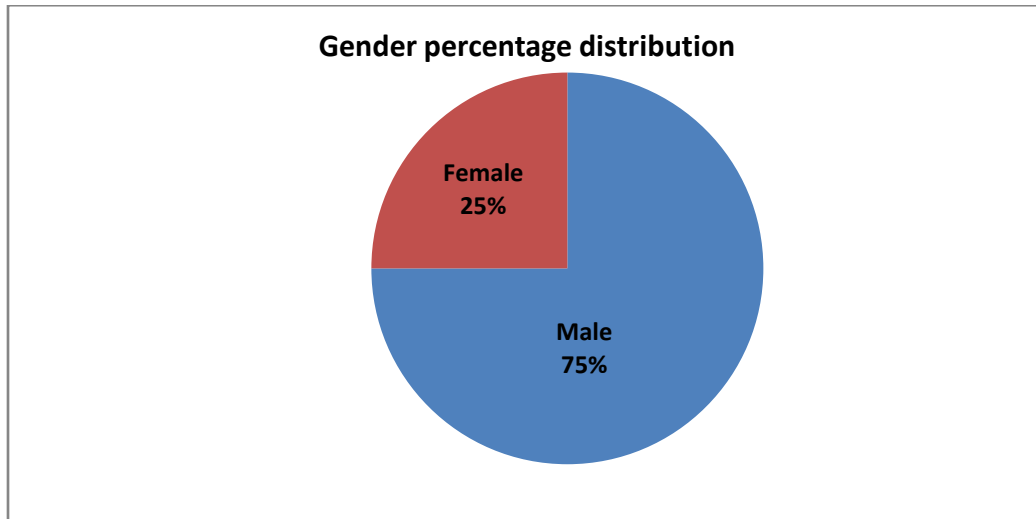


Figure 4.1 Gender distribution

The distribution of the questionnaires was balanced on the gender, but male respondents were more than female respondents. This perhaps is an indication that the field of HRMIS in manufacturing SMEs in Kenya requires men than women due to nature of the work. The representation based on gender is however not subject of the research.

Age distribution

Table 4.1 Age distribution

Years	Frequency	Percent	Valid Percent	Cumulative Percent
Below 30	18	15.4	15.4	15.4
31-50	66	56.4	56.4	71.8
Above 50	33	28.2	28.2	100.0
Total	117	100.00	100.00	

The data in Table 4.1 shows clearly that people of different age groups embrace the adoption of HRMIS in performing HRM functions in manufacturing SMEs differently. The age distribution tried to capture adults of various age groups. Majority were between 31 and 50 years. This actually justifies that the field of ICT is still young in Kenya and most of the employees are not experienced in this field.

Education level distribution

Table 4. 2 Education level distribution

Education level	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma and below	24	20.5	20.5	20.5
Degree	78	66.7	66.7	87.2
Masters and above	15	12.8	12.8	100.0
Totals	117	100.0	100.0	

Table 4.2 presents all levels of education with majority of the employees having holders of degree. This implies that the field of HRMIS in manufacturing SMEs requires people with higher level of education to be able to train in professional HRMIS skills.

Work experience in HRMIS field

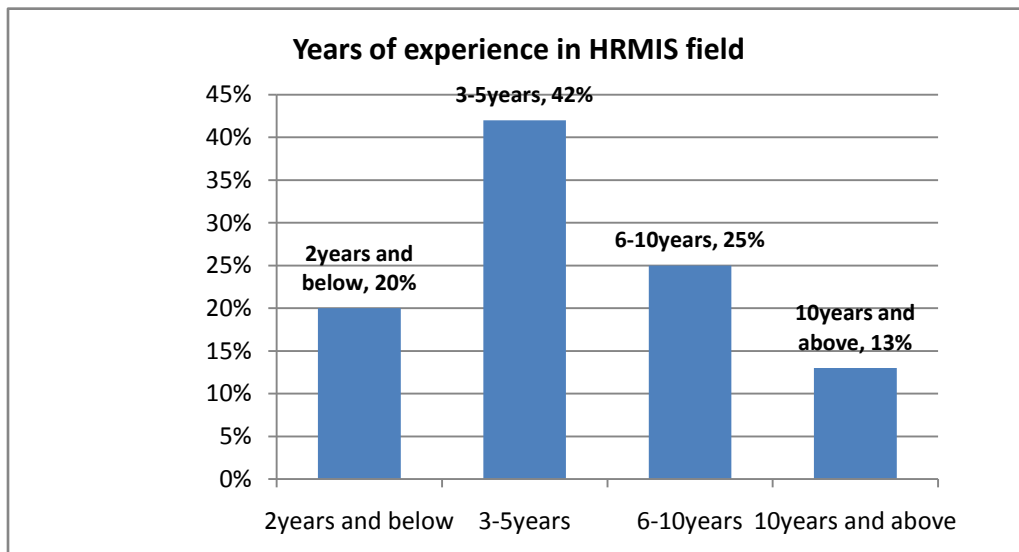


Figure 4.2 Work experience in HRMIS field

The data in figure 4.2 shows that majority of the employees have work experience of 3-5 years. This is an indicator that the field of HRMIS in manufacturing SMEs lacks experienced personnel who can provide adequate service and also involve themselves in innovative activities in HRMIS field.

Income level distribution

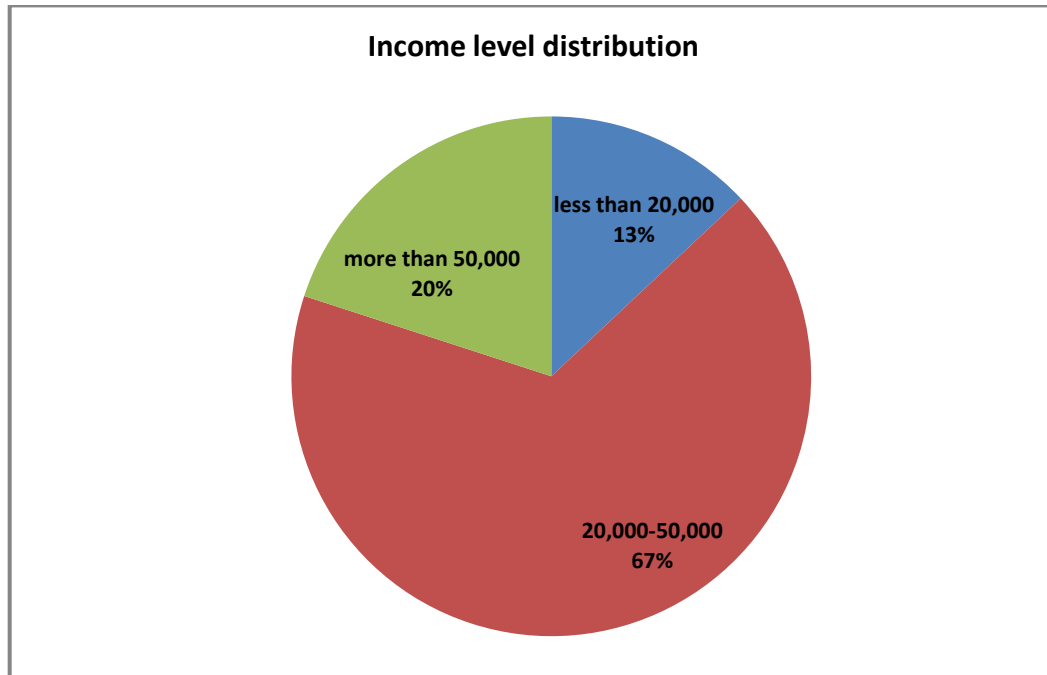


Figure 4.3 Income level distribution

The respondents present a varied income levels, for example the data indicates 80% earn Kshs50,000 and below per month. This can be interpreted to mean that the employees in the HRMIS section in manufacturing sector are not paid well and perhaps the reason why this field lack enough trained, qualified and experienced staff who can perform HRM activities such as HRMIS training, and choosing the best HRMIS that can be adoption by manufacturing SMEs in Kenya.

4.3 Employees training

The employees training variables used in study are HRMIS skills, innovation in HRMIS and competence in HRMIS. Lack of training on ICT has already been cited as one of the major challenges facing adoption of HRMIS in manufacturing SMEs.

Types of training offered by the firm

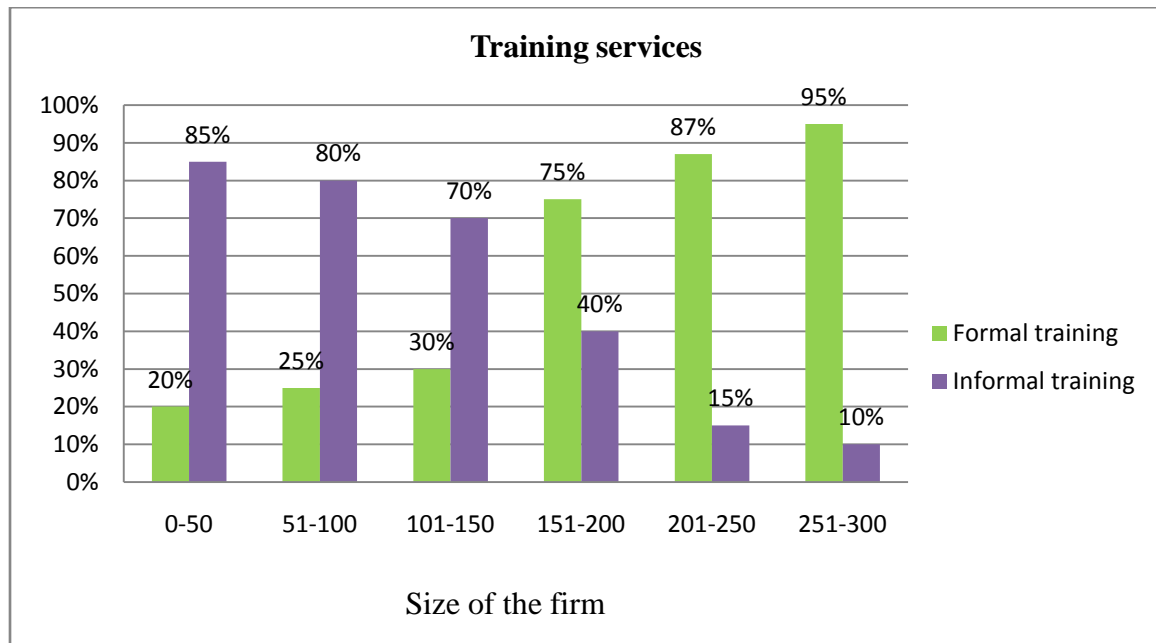


Figure 4.4 Training services provided by the firm

Figure 4.4 show that as the firms grows from small (0-50 employees) to large (over 200 employees), the formal HRMIS training increases from 20% to 95% while informal HRMIS training decreases from 85% to 10% respectively. This implies that small companies are more likely to do their own training because of “simpler” processes involved in their daily operations in running their firms. Also this could be due to the fact that small companies do not want to spend time and money on training staff as the larger firms will absorb these skilled staff in their firm through attractive terms of services. So small firms prefer to transmit the necessary skills required to perform duties by in-service training but this depends on the size of the firm. However, all small companies acknowledge the importance and necessity of HRMIS formal training. The medium and large companies also perform in-service training but mainly rely on formal training.

HRMIS skills

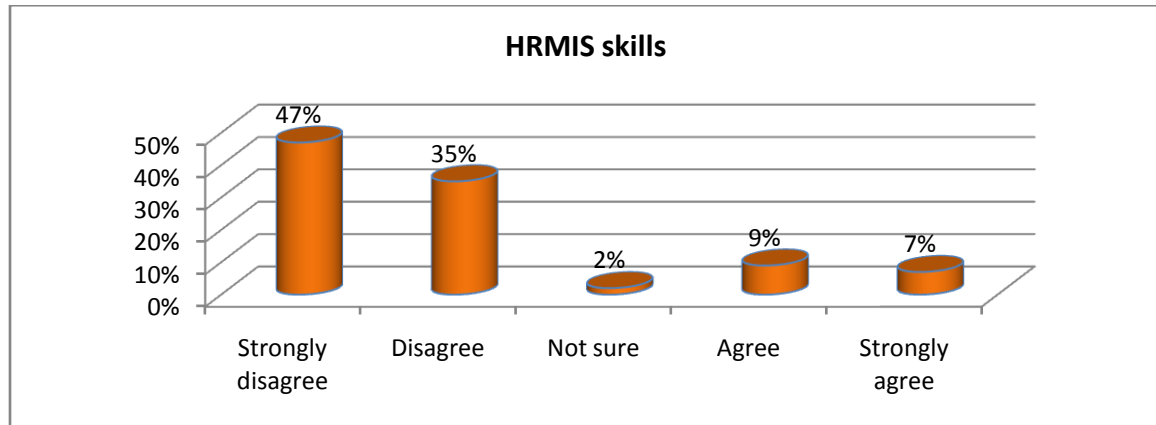


Figure 4. 5 HRMIS skills

Figure 4.5 shows that Majority (at 82%) disagree the employees have HRMIS skills. This implies that there are no enough skilled employees to perform HRMIS duties in manufacturing SMEs. This can be supported by poor payment (80% earn Kshs50,000 and below per month) as explained by income level distribution. Therefore there is need to increase HRMIS skills training in order to intensify the adoption of HRMIS in manufacturing SMEs.

Innovation in HRMIS

Table 4. 3 Innovation in HRMIS

Innovation in HRMIS	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	51	43.6	43.6	43.6
Disagree	33	28.2	28.2	71.8
Not sure	03	02.6	02.6	74.4
Agree	09	07.7	07.7	82.1
Strongly agree	21	17.9	17.9	100.0
Totals	117	100.0	100.0	

The data in Table 4.3 shows that, 72% of the respondents disagree that the firm supports employees who are innovative in HRMIS. This is an indication that innovative activities in HRMIS are missing in manufacturing SMEs although this is part of the key component in HRMIS employees training activities.

Competence in HRMIS

Table 4. 4 Staff competence

Competence in HRMIS	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	12	10.3	10.3	10.3
Disagree	09	07.7	07.7	18.0
Not sure	03	02.6	02.6	20.6
Agree	39	33.3	33.3	53.9
Strongly agree	54	46.1	46.1	100.0
Totals	117	100.0	100.0	

Figure 4.4 shows that Majority (at 79%) agree that competence of the employees determines effective adoption and usage of HRMIS. SMEs are more likely to adopt HRMIS, when the person responsible for HRMIS has previous experience and competence in similar positions. So there is need for the firm to provide regular training and education to their employees on HRMIS issues so that they can gain competence.

Employees training a key component of HRMIS service

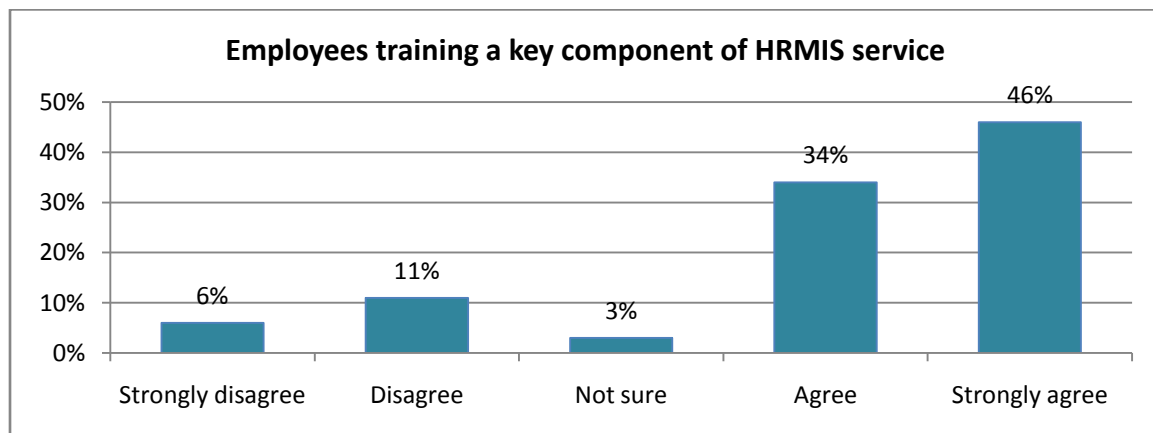


Figure 4. 6 Employees training a key component of HRMIS service

Figure 4.6 shows that 80% of the respondents agree that employees' training is a key component of providing HRMIS service, although it is not provided in manufacturing SMEs, as seen from the data on HRMIS skills, innovation in HRMIS and competence in HRMIS. This explains why the adoption of HRMIS in manufacturing SMEs lags behind. Therefore it can be assumed that intensifying HRMIS employees training variables will lead to effective HRMIS adoption in manufacturing SMEs in Kenya.

Mean, Standard Deviation and correlation values for employees training

Table 4. 5 Mean, Standard Deviation and correlation values for employees training

Variables	Mean	SD	1	2	3	4	5
1. Employees training (general)	3.6	1.0	1				
2. HRMIS skills	4.1	1.0	.70	1			
3. Innovation in HRMIS	3.7	1.0	.15	.28	1		
4. Competence in HRMIS	3.0	1.1	.36	.72**	.41*	1	
5. Effective HRMIS adoption	2.4	1.0	.64**	.68**	.59**	.63**	1

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Table 4.5 shows that there is significant correlation between employees training and effective HRMIS adoption ($\gamma=0.64$; $p<0.01$). This is supported by the correlation between effective HRMIS adoption and employees training variables which are HRMIS skills ($\gamma=0.68$; $p<0.01$), innovation in HRMIS ($\gamma=0.59$; $p<0.01$), and competence in HRMIS ($\gamma=0.63$; $p<0.01$).

Impact of Employees training on effective HRMIS adoption

Table 4. 6 impact of employees training on effective HRMIS adoption

Employees training	Low (1to 2) percent	Medium percent	High (4 to 5) percent	Total percent
HRMIS skills	8	23	69	100
Innovation in HRMIS	10	31	59	100
Competence in HRMIS	7	21	72	100

Nb: Percent related a five point likert scale (from 1-low to 5- high).

The results in table 4.6 confirm that majority of respondents believe that employees training variables namely HRMIS skills (69%), innovation in HRMIS (59%), and competence in HRMIS (72%) have a high impact on HRMIS adoption. These results have been confirmed by Spearman correlation coefficient of employees training and effective HRMIS adoption ($\gamma=0.64$; $p<0.01$).

4.4 Organisational size:

In this study it is important to know the details of the SMEs in manufacturing sector in Kenya in terms of their size in relation to establishment of HRMIS departments and HRMIS job specialization. These details are obtained through analyzing the results of respondents from questionnaire section 3.

The size of SMEs firms

Table 4.7 Size of SMEs firms Surveyed

Number of trained employees in a firm	Frequency	Percent	Valid Percent	Cumulative Percent
1 – 50	66	56.4	56.4	56.4
51 – 100	12	10.3	10.3	66.7
151 – 200	06	05.1	05.1	71.8
201 – 250	12	10.3	10.3	82.1
251 – 300	21	17.9	17.9	100.0
Total	117	100.0	100.0	

The data in Table 4.7 shows that, majority (at 56%) of the small and medium manufacturing firms employs between 1 to 50 trained employees. This implies that the number of trained employees is too small for the firm to establish HRMIS departments and to practice HRMIS job specialization. This is consistent with research by Hornsby and Kuratko, (2001), who stated that presence of personnel department in SMEs increases with firm size. Therefore it can be assumed that firm owners and managers tend to keep key personnel responsibilities in their own hands, even after shifting the personnel responsibilities to a specialist person such as human resource manager. Also it can be assumed that small firms may experience problems of acquiring the necessary resources and therefore are less likely to adopt HRMIS. This is in line with findings by Cardon and Stevens (2004), who stated that in small firms, where resources are likely to be scarce, there may be a very small number of formal human resource departments or professionals, leading to increased difficulty in recruiting and retaining employees.

HRMIS department

The HRMIS department can be established when the firm has enough trained employees to run the department thus it highly depends on the size of the organization.

Table 4. 8 Presence of HRMIS department

Presence of HRMIS department	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	45	38.5	38.5	38.5
Disagree	36	30.8	30.8	69.3
Not sure	06	05.1	05.1	74.4
Agree	12	10.2	10.2	84.6
Strongly agree	18	15.4	15.4	100.0
Totals	117	100.0	100.0	

Table 4.8 shows that Majority (at 69%) disagree there are HRMIS departments in their firms. This implies that HRMIS departments are not well established in manufacturing SMEs. This can be supported by the organisational size that the number of employees in most of SMEs is very small to establish human resource departments. So it can be assumed that human resource department, that plans and implements HRMIS activities, is an important factor which influence decisions and actions regarding human resource management. This is consistent with research by Kok and Uhlaner (2001), who stated that smaller companies are generally less likely to have HRMIS departments with specialists who are familiar with HRMIS functions. Also it can be assumed that the use of human resource management information system within small firms vary according to the presence of human resource management department. This is supported by research done by Hart and Hannan (2004, who stated that presence of personnel department in SMEs increases with firm size. Therefore it is the job of HRMIS manager and/or department within any organization to define their human resource management function.

HRMIS job specialization

This study concentrates on job specialisation because the need to have specialist to perform different HRMIS functions among employees, increases in the process of organization expansion.

Table 4. 9 Job specialization

Designation	Frequency	Percent	Valid Percent	Cumulative Percent
Human Resource Manager	06	05.1	05.1	05.1
Human Resource Officer	39	33.3	33.3	38.4
IT Specialist	18	15.4	15.4	53.8
Accountant	21	18.0	18.0	71.8
Others	33	28.2	28.2	100.0
Total	117	100.0	100.0	

Table 4.9 shows that the respondents (at 38%) have HR designations, implying that HRMIS functions are carried out by some officers who do not have HR designations. The users of computers for HR related functions are spread across the firm employees. This is supported by the fact that SMEs in the manufacturing sector have not established HRMIS departments due to lack of trained personnel, hence they do not practice specialization in their duties. Also the data shows that the respondents (at 28%) perform HRMIS duties and have no HR orientation skills for example the accountants in small firms, who serve in administrative capacities, are also responsible for HRMIS functions. Specialization in HRMIS field is resources crucial for the successful implementation of HRMIS activities which require HR manager's knowledge and skills. However, smaller companies are generally less likely to have HRMIS specialists familiar with human resource management (Kok and Uhlaner 2001). Small firms with scarce resources usually do not dispose with professionals dedicated to HRMIS practices (Cardon and Stevens 2004). While larger organizations highly practice job specialization, small firms require owners and managers combine HRMIS functions with other duties (Hornsby and Kuratko 2001).

Mean, Standard Deviation and correlation values for organisational size.

Table 4.10 Mean, Standard Deviation and correlation values for organisational size

Variables	Mean	SD	1	2	3	4
Organisational size (general)	3.5 3	1.0 2	1			
HRMIS department	3.6 4	1.1 3	.69	1		
Job specialisation	2.7 3	1.1 2	.67**	.41*	1	
Effective HRMIS adoption	2.4 3	1.0 3	.61**	.73**	.71**	1

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Mean related a five point likert scale (from 1-low to 5-high)

SD: Standard deviations related a five point likert scale (from 1-low to 5-high)

The results shown in Table 4.10 indicate the mean and standard deviation ratings of organizational size on a five-point scale, with 5 being “very high” and 1 being “very low”. Most of variables have a mean rating more than 3 on the five-point scale based on participants' agreement on HRMIS adoption. This imply that the organizational size (mean of 3.5 at a rate of 3; SD of 1.0 at a rate of 2) highly influence the effective adoption of HRMIS. This is supported by HRMIS department (mean of 3.6 at a rate of 4; SD of 1.1 at a rate of 3), followed by job specialization (mean of 2.7 at a rate of 3; SD of 1.1 at a rate of 2) both reflecting influence on HRMIS adoption. Also table 4.10 shows that there is significant correlation between organisational size (general) and effective HRMIS adoption ($\gamma=0.61$; $p<0.01$). This is supported by the correlation between effective HRMIS adoption and organisational size variables: HRMIS department ($\gamma=0.73$; $p<0.01$), and job specialisation ($\gamma=0.71$; $p<0.01$).

Impact of organisational size on effective HRMIS adoption

Table 4.11 impact of organisational size on effective HRMIS adoption

Organisational size variables	Low (1 to 2) Impact percent	Medium(3) Impact percent	High (4 to 5) Impact percent	Total Impact percent
HRMIS department	11	25	64	100
Job specialisation	16	23	61	100

Nb: Impact Percent related a five point likert scale (from 1-low to 5- high).

The results in table 4.11 confirm that majority of respondents believe that organisational size variables namely, HRMIS department (64%) with the highest impact, followed by job specialisation (61%), both have high impact percentage (rating above 2) on adoption of HRMIS in manufacturing SMEs in Kenya. These results have been confirmed by Spearman correlation coefficient of organisational size and effective HRMIS adoption ($\gamma = 0.68$; $p < 0.01$). This suggests that expansion of organisational size (increase in number of trained employees) leads to high chances of adopting HRMIS effectively. This is because expansion of firm size is associated with increased number of trained employees who are needed in facilitating job specialization and establishing HRMIS department.

4.5 Organisational strategy

As mentioned earlier, it is important to understand what the organization's strategy is; namely vision, mission and objectives. Once the organisational strategy is known, it can be incorporated with HRM processes leading to HRMIS strategy formulation, and also ensuring that adoption of HRMIS within the organisation becomes integrated with the HRMIS objectives. Organizational strategy is considered as one of the main factors that influence adoption of HRMIS in manufacturing SMEs because the literature reviewed that organizations with business plan have implemented more formal HRM systems and are more likely to have well established HRMIS departments. Small firms pursuing growth strategy tend to adopt more formalized appraisal and training practices. The organizational strategy activities used in this study to examine its impact to effective HRMIS adoption are HRMIS objectives, decision-making structure and Management support.

Objectives

Figure 4.7 presents the proportion of informants concerning organisational objectives.

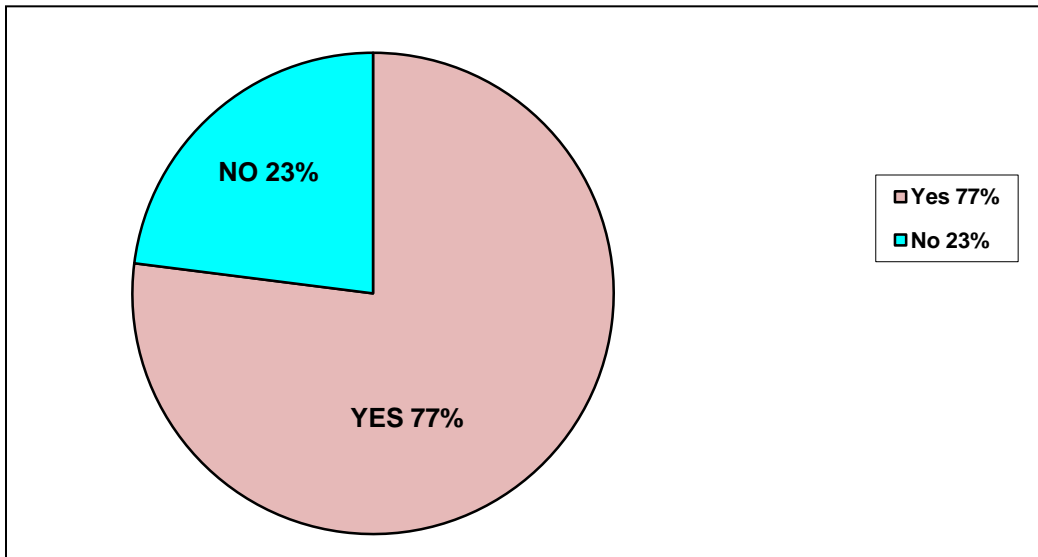


Figure 4.7 organisation objectives

Figure 4.7 shows that, 90 respondents out of 117 responded yes and 27 respondents out of 117 responded no. Thus 77% of the respondents agreed that organisation objectives must be considered when investing in HRMIS because it seems that each company is striving towards becoming better. The manufacturing SMEs surveyed, tend to realize the need to grow, but not all of them see that investing into information technology can help them. Therefore manufacturing SMEs need to have clearly defined objectives and methods on how to achieve these objectives with some kind of checklist as to the objectives being met. As the firm grows, these objectives change and need to be adapted to the new environment. The objectives provide a clear indication of what role IT plays in future growth, so they form part of the business strategies as Sandberg & Vinberg (2000) stated, organizational strategies incorporates an IT strategy. What is emerging is that HRMIS strategies need to be put in place so that SMEs know what they want to achieve. Based on these strategies and objectives, the best HRMIS to be adopted by manufacturing SMEs in Kenya can be identified.

HRMIS functions

Organizational objectives can be achieved by having a HRM system which can perform all HRM functions effectively as defined. Therefore it is important to collect data on functions performed by HRM system to see if it helps in achieving the defined objectives.

Use of Computers to Process HR Information

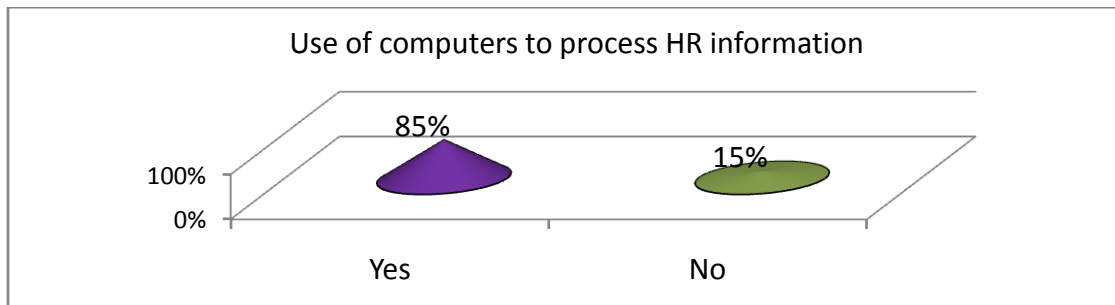


Figure 4.8 Use of computers in HRM tasks.

Figure 4.8 shows that 85 percent of the respondents surveyed in this study were users of computer for various HRM tasks in the manufacturing subsectors which they represented. This implies that the manufacturing SMEs were using basic HRMIS services in performing human resource management functions.

Types of information held in HRMIS database

Table 4.12 Types of information held in HRMIS database

Types of data in HRMIS database	Yes		No	
	Frequency	Percent	Frequency	Percent
Current Employment Details	105	89.7	12	10.3
Salary Structure	84	71.8	33	28.2
Jobs and Positions	81	69.2	36	30.8
Employee Relations	21	17.9	96	82.1

Table 4.12 suggests that HRMIS database hold 90 percent of the data on employment details, 72 percent on salary structure, and 69 percent on job positions. On the other hand only 18 percent of the data on employee relations is held by the HRMIS database. The results suggests that manufacturing SMEs need to adopt HRMIS to process more of payroll data and less of data on sophisticated processes like employee relations.

The key HRMIS Functions and processes

Information technology may be adopted and used in several human resource management processes. These processes include appraisal, attitude surveys, career counseling, development programs, computer aided interviews, computerized job evaluation, managerial assessment, recruitment, training and performance analysis (Deseller, 2002). Figure 4.9 presents the frequency of the need to adopt and use HRMIS in the HRM functions of manufacturing sector in SMEs surveyed.

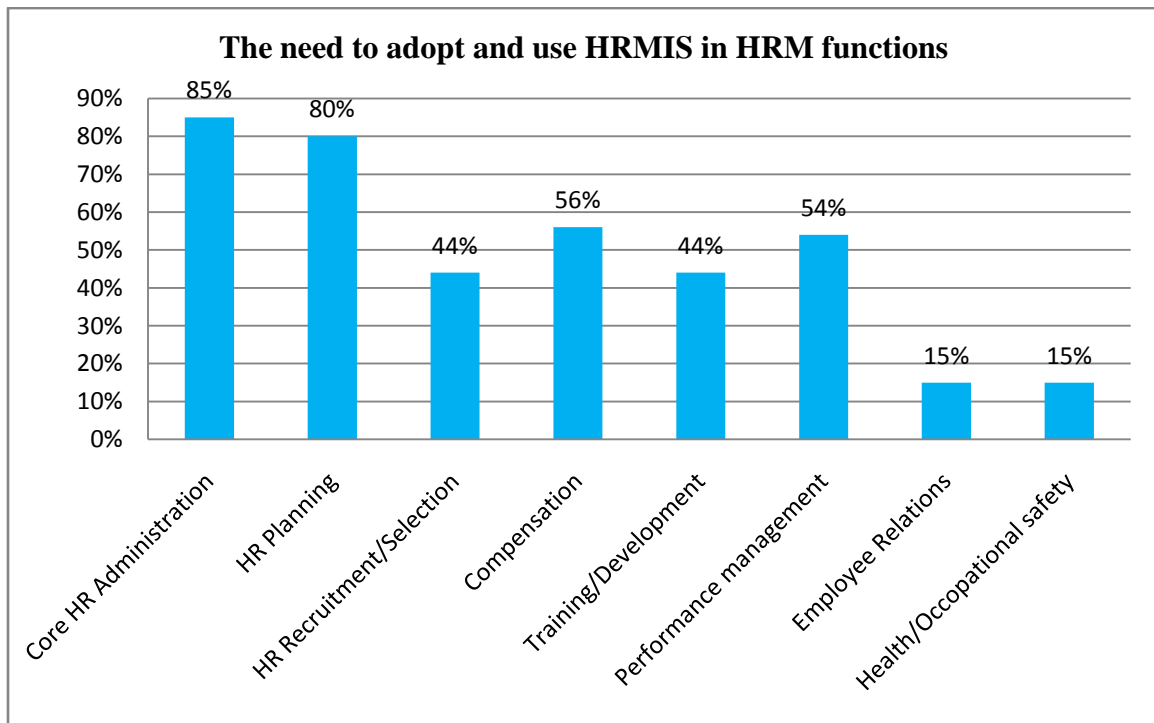


Figure 4. 9 The need to adopt and use HRMIS in HR functions.

The data in Figure 4.9 shows that 85 percent of SMEs in the manufacturing sector would wish to adopt and use HRMIS to support core HR functions. This suggests that respondents' adoption of HRMIS may be in support of all traditional personnel management functions. The need to adopt and use HRMIS for personnel management tasks suggests that the manufacturing SMEs are at initial stages of adopting HRMIS.

The extent of adoption of HRMIS

Figure 4.10 shows the extent of adopting HRMIS to perform management or decision support functions.

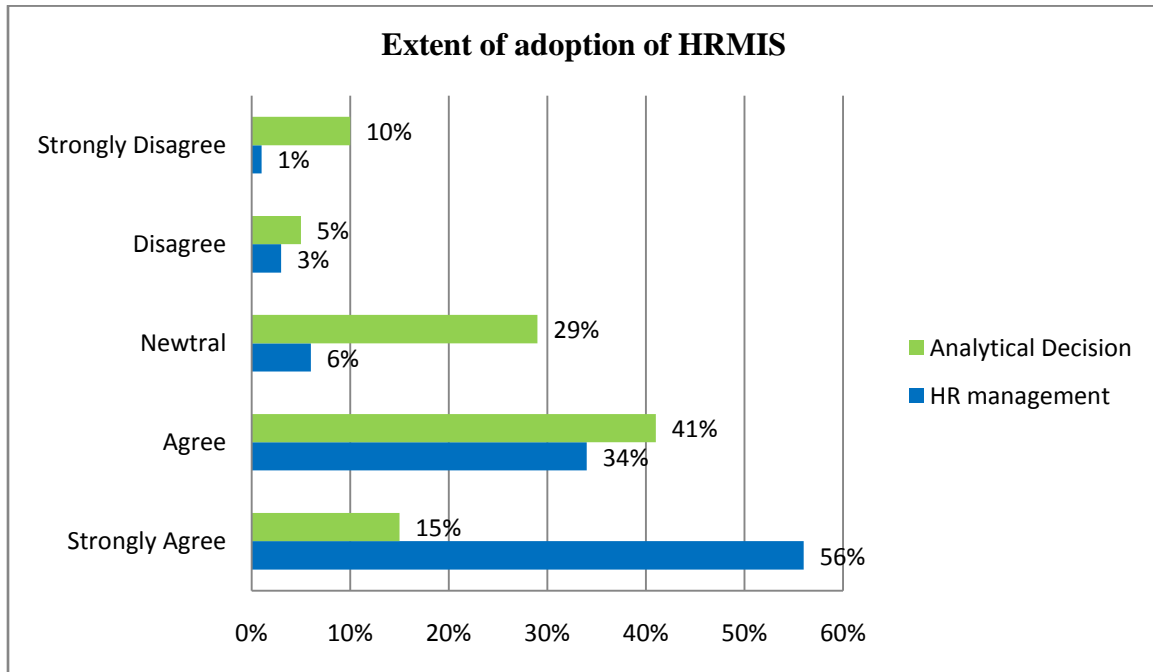


Figure 4. 10 Extent of adoption of HRMIS

The data in Figure 4.10 suggests that HRMIS is adopted and used mainly in management support and less in support analysis for decision making. The data shows that 56 and 15 percent of respondents strongly agree that HRMIS is adopted and used in management support and analytical decision support respectively. On the other hand, approximately 1 and 10 percent strongly disagreed that HRMIS is adopted and used in HR management and analytical decision support respectively. This may be interpreted to mean that 90 percent of respondents “agree” that HRMIS is adopted and used in management support functions. These results supports previous findings which suggested that HRMIS is adopted and used first in management purposes and secondly in analytical decision support. For instance, Kovach and Cathcart (1999) noted that a HRMIS could be used, first, in management purposes to reduce costs and time and, second, in more analytical decision support.

HRM Processes and their automation

Table 4.13 shows human resource management processes that need to be automated within the organization.

Table 4.13 HRM processes that need to be automated

HRM processes to be automated	Yes		No	
	Frequency	Percent	Frequency	Percent
Recruitment process	111	94.9	06	05.1
Occupational health/safety process	105	89.7	12	10.3
Planning process	102	87.2	15	12.8
Performance appraisal process	93	79.5	24	20.5
benefits process	81	69.2	36	30.8
development process	69	59.0	48	41.0
Orientation	66	56.4	51	43.6
Selection process	63	53.9	54	46.1

From the data in Table 4.13 over 50% percent of respondents reported that they would need all the human resource management processes be automated, but in most cases automation of processes in a firm need to incorporate human interaction because of two reasons. First of all, companies will always require some kind of social aspect, whether it is via face-to-face connections, or via some social network or facility such as email or Facebook. Especially in smaller companies, there is a tendency that if they can manage their day to day operations in HRM, there is no need for any further automation. The second aspect which affects full automation is cost. Cost plays a vital role in the survival of small companies, even though there is a certain amount allocated for IT, more cost seems to be invested in service delivery.

Decision-making structure

In this study it is important to identify from respondents the type of decision-making structure which can be use by manufacturing SMEs.

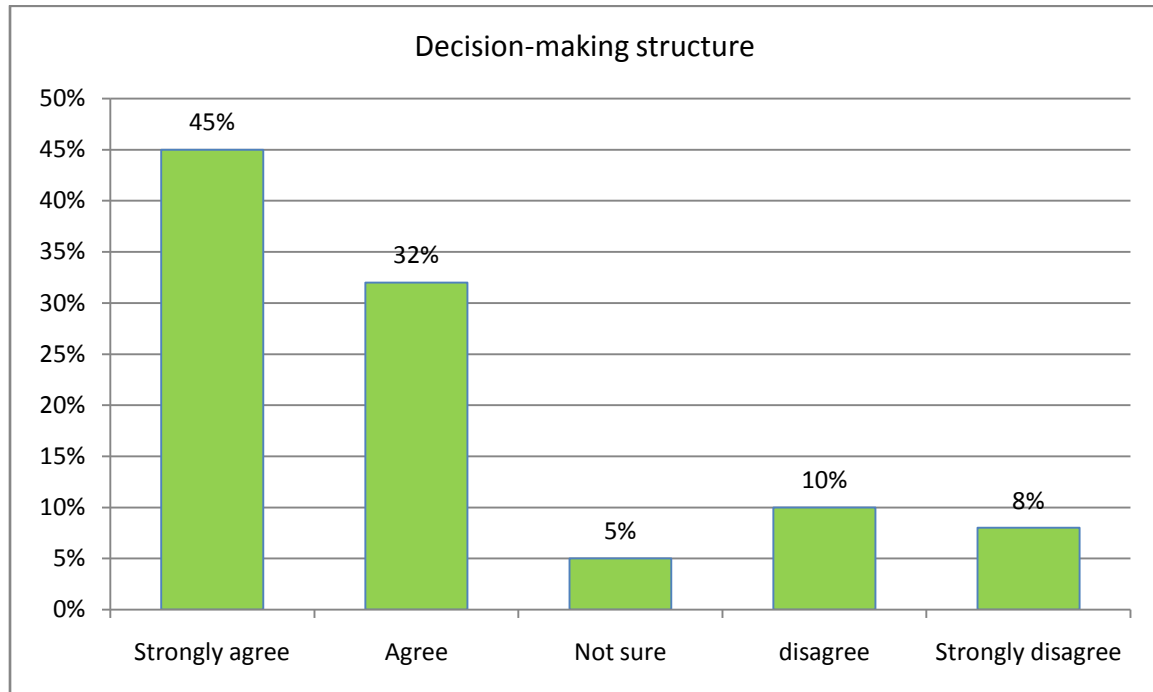


Figure 4.11 Decision-making structure

Figure 4.11 shows that 77% of the respondents agree that decision-making structure should be centralized for successful adoption of HRMIS in manufacturing SMEs. This can be interpreted to mean that the extent of participation by organisation members in decision making pertaining to HRMIS in centralized organisational design can result in better management effectiveness for end user computing and is likely to produce more successful strategic information system applications. These arguments suggest that decision-making structure is a factor that would influence HRMIS adoption success. This finding is consistent with that of Lu, Yu, Liu, & Yao (2003), who suggested that decision-making structure has significant impact on system adoption success with the centralized structure. The results also suggest that SMEs in manufacturing sector in Kenya tend to subscribe to traditional form of decision-making structure. Further more the common practice in these sectors is that decisions are normally made at the strategic level of the organization management.

Management support

Human resource managers play a proactive role in supporting HRMIS implementation in the organizations especially in decision-making. Therefore in this study there is need to know from the respondents how management support influences HRMIS adoption in manufacturing SMEs.

Table 4. 14 management support

Management support	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	18	15.4	15.4	15.4
Disagree	12	10.3	10.3	25.7
Not sure	06	05.1	05.1	30.8
Agree	33	28.2	28.2	59.0
Strongly agree	48	41.0	41.0	100.0
Totals	117	100.0	100.0	

Figure 4.14 shows that Majority (at 69%) agree that management support is important in effective adoption and usage of HRMIS. This suggests that management play a very important role in achieving objectives of human resource management through successful performance of HRM functions. This result is consistent with other related studies such as that of Tanova (2003), who stated that management support, play a very important role in supporting HRMIS activities and eventually facilitates success in organizations performance. More importantly commitment and support from the top officials are most likely to encourage better HRMIS adoption and usage among employees. Any form of support from top management may help employees to overcome resistance and facilitate acceptance of new HRMIS system adoption or utilization. In the context of the Kenyan manufacturing sector, the management support includes encouraging the management officials to attend ICT related courses among others.

Mean, Standard Deviation and correlation values for organisational strategy.

Table 4.15 Mean, Standard Deviation and correlation values for organisational strategy

Variables	Mean	SD	1	2	3	4	5
Organisational strategy	4.1	1.1	1				
Objectives	4.5	1.0	.41*	1			
Decision-making structure	3.9	1.0	.38	.12	1		
Management support	3.6	1.1	.43*	.18	.48	1	
Effective HRMIS adoption	2.4	1.0	.74**	.79**	.65**	.62**	1

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Mean related a five point likert scale (from 1-low to 5-high)

SD: Standard deviations related a five point likert scale (from 1-low to 5-high)

Table 4.15 shows the mean and standard deviation ratings of the organizational strategy variables rated on a five-point scale, with 5 being “very high” and 1 being “very low”. Most of variables have a mean rating more than 3 on the five-point scale based on participants' information on HRMIS adoption. Therefore it can be assumed that the organizational strategy (mean of 4.1 at a rate of 5; SD of 1.1 at a rate of 4) highly influence the effective adoption of HRMIS. This is supported by HRMIS objectives (mean of 4.5 at a rate of 5; SD 1.0 at a rate of 4), decision-making structure (mean of 3.9 at a rate of 4; SD 1.0 at a rate of 4) and management support (mean of 3.6 at a rate of 4; SD of 1.1 at a rate of 3) all indicating high influence on HRMIS adoption. It can be seen from table 4.15 that the significant correlation between organisational strategy activities and effective HRMIS adoption confirms apposite relationship ($\gamma = 0.74$; $p < 0.01$). This finding is supported by the positive and significant relation between effective HRMIS adoption and organisational strategy involvement in HRMIS objectives ($\gamma = 0.79$; $p < 0.01$); decision-making structure ($\gamma = 0.65$; $p < 0.01$); and management support ($\gamma = 0.62$; $p < 0.01$). This implies that HRMIS adoption effectiveness is positively related to organisational involvement in strategic management process.

4.6 HRMIS facilitating conditions

The main HRMIS facilitating conditions to be used in this study are Infrastructure and ICT facilities, financial support, and security measures.

The infrastructure and ICT facilities

Table 4.16 SMEs infrastructure and ICT facilities

ICT facilities	Percentages					Mean	SD
	Mostly used	Used	Sometimes used	Least used	Not used		
Personal computers	51	16	5	8	20	3.5	1.7
Laptops	34	19	7	14	26	3.0	1.6
Printers	37	12	6	13	32	3.1	1.7
Photocopier	38	14	12	13	23	3.3	1.6
Mobile phone	89	6	3	2	0	5.0	1.1
Internet	40	9	5	17	29	3.1	1.7
Website	31	9	4	12	44	2.7	1.8
Landline telephones	29	13	9	14	35	2.9	1.7
Network infrastructure	26	9	7	16	42	2.6	1.7

The results presented in table 4.16 shows that majority of the respondents (89%) agreed that mobile phones are mostly used with a mean score of 5.0. This implies that manufacturing SMEs use mobile phones more than other ICT tools. The finding is consistent with (Tilwala, Myers, & Andrade, 2009) who argued that the fast growing and most popular ICT used by SMEs in Kenya is mobile phones. Personal computers are the second ICT tools used by manufacturing SMEs as supported by (51%) of respondents with mean score of 3.5. The finding is consistent with (Syed and Mohd, 2009) who argued that SMEs used personal computers to improve their daily operations. It is clear that small firms do not focus on having a fixed network infrastructure because with today's technology one can connect to internet by use of a cell phone or a 3G card. Internet access enables SMEs to have advanced communication capabilities such as email, web browsing and access of more advanced HRMIS tools such as EPR or inventory management. It is expected that telecommunications services and quality levels in Kenya will be improved through completion of the under-sea fibre optic cable and the national fibre optic network for this will close the existing gap in telecommunications infrastructure and costs between Kenya and her competitors.

Software system used by the firm

Figure 4.12 presents the opinion of the respondents concerning the types of operating system used by the firm.

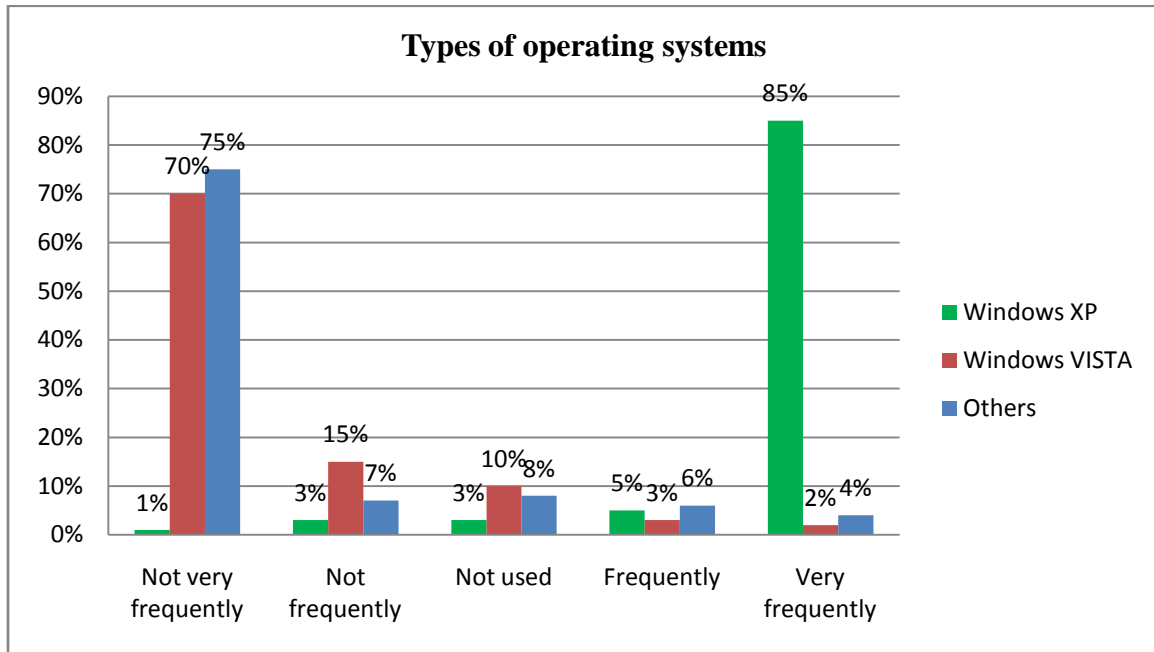


Figure 4.12 types of operating systems

It is clear from figure 4.12 that most of the companies (90%) prefer Windows XP. 5% of the companies using Windows Vista do so because the laptops they bought came out with Vista. these companies cannot familiarize themselves with Windows Vista as it is not always compatible with software and certain hardware devices. The owner says that apart from the fact that Vista is not always compatible with external programs it is also not user friendly. 10% use other types of operating systems.

Financial support

Figure 4.13 presents the proportion of informants concerning budget for the firm toward adoption of HRMIS.

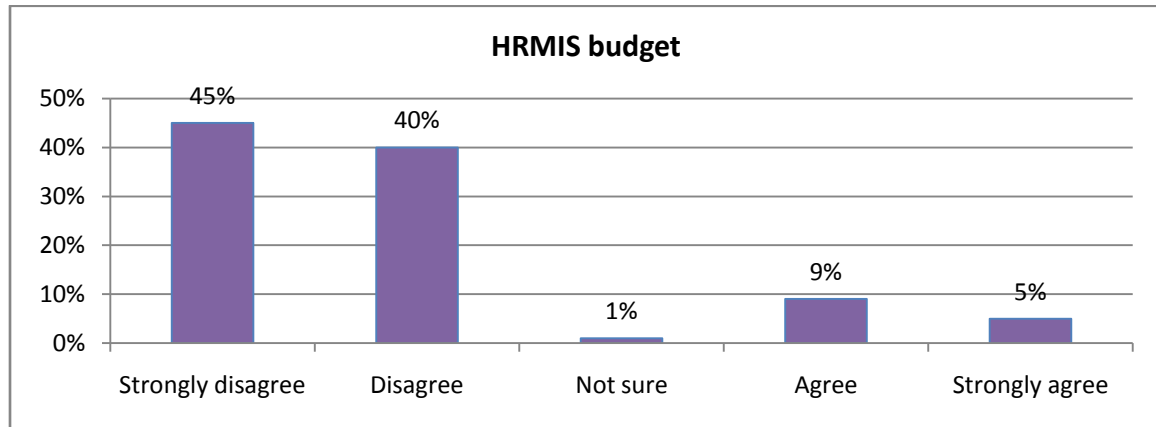


Figure 4.13 HRMIS budget

Figure 4.13 shows that 85% of the respondents disagree that organisation provide sufficient financial support for HRMIS adoption. This suggests that manufacturing SMEs suffer from low financial support for HRMIS adoption because it is costly software. This implies that most of manufacturing SMEs confront financial crisis in general and they lack money to use in designing and developing HRMIS or any other HRM application. Therefore, in order to promote smooth and complete adoption of HRMIS in manufacturing SMEs, it is necessary to ensure that financial/non-financial support to set up a HRMIS and managerial commitment are provided on time. Moreover, the top management support is one of the factors for successful implementation of HRMIS, (Kovach and Cathcart, 1999). Top management takes primary responsibility for providing sufficient financial support and adequate resources for building a successful HRMIS. Lack of financial support and adequate resources will inevitably lead to failure of the system adoption. A comprehensive HRMIS requires a sizeable budget to implement and maintain it. If top managements do not understand how HRMIS bring benefits to the organization, then they will not be willing to allocate valuable resources, time and efforts of its implementation.

Security measures

Table 4.17 shows the status of the security of the company in terms of data and premises.

Table 4.17 Security of the data and the premises

Security measures for both data and premises access	Yes		No	
	Frequency	Percent	Frequency	Percent
External hard drive	48	41.0	69	59.0
Password	51	43.6	66	56.4
Others	63	53.9	54	46.1
Backups	93	79.5	24	20.5
alarm systems	99	84.6	18	15.4
Security guards	117	100.0	0	00.0

Table 4.17 show that 79% use backups as security measure of the data in their firms. This implies that most of the manufacturing SMEs recognize backups to be very crucial in terms of data security. Most of SMEs seem to realize the importance of their data and are trying to secure it and also keeping backups off-site, thus assisting with some form of disaster recovery plan. This is supported by studies of Tilwawala, Myers, and Andrade (2009), who emphasized on the importance of regular testing of backups. From the participants, it emerge that backups are not tested regularly. The use of password and external hard drive are both below 45 %, this means that there are no measurements in place to ensure that data is secure and controlled. In terms of Premises security, security guards (100%) and alarm systems (84.6%) are the common form of securing the premises. The management in manufacturing SMEs should provide enough security measure of the data in their firms in order to successfully adopt HRMIS. Unsecure data and premises will lead to poor performance of the system because the data can be accessed by unauthorized person anytime.

Mean, Standard Deviation and correlation for HRMIS facilitating conditions.

Table 4.18 Mean, Standard Deviation and correlation for HRMIS facilitating conditions

Variables	Mean	SD	1	2	3	4	5
HRMIS facilitating conditions	3.8	1.1	1				
Infrastructure/ ICT facilities	4	4		1			
Financial support	4.5	1.0	.66				
	4	3					
Security measures	4.9	1.1	.73*	.61**	1		
	5	4					
Effective HRMIS adoption	3.6	1.0	.33	.57	.62**	1	
	3	3					
	2.4	1.0	.72**	.66**	.81**	.64**	1
	3	3					

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Mean related a five point likert scale (from 1-low to 5-high)

SD: Standard deviations related a five point likert scale (from 1-low to 5-high)

Table 4.18 shows the mean and standard deviation ratings of HRMIS facilitating conditions rated on a five-point scale, with 5 being “very high” and 1 being “very low”. Most of variables have a mean rating more than 3 on the five-point scale based on participants' information on HRMIS adoption. Therefore it can be suggested that HRMIS facilitating conditions (mean of 3.8 at a rate of 4; SD of 1.1 at a rate of 3) highly influence the effective adoption of HRMIS. This is supported by infrastructure and ICT facilities (mean of 4.5 at a rate of 4; SD 1.0 at a rate of 3), financial support (mean of 4.9 at a rate of 5; SD 1.1 at a rate of 4), and security measures (mean of 3.6 at a rate of 3; SD 1.0 at a rate of 3) all indicating high influence on HRMIS adoption. It can be seen from table 4.18 that the significant correlation between HRMIS facilitating conditions and effective HRMIS adoption confirms apposite relationship ($\gamma = 0.72$; $p < 0.01$). This finding is supported by the positive and significant relation between effective HRMIS adoption and infrastructure and ICT facilities ($\gamma = 0.66$; $p < 0.01$) financial support ($\gamma = 0.81$; $p < 0.01$), and security measures ($\gamma = 0.64$; $p < 0.01$). This implies that HRMIS adoption effectiveness is positively influenced by HRMIS facilitating conditions.

4.7 Reliability of the major factors that influence HRMIS adoption

Table 4.19 Mean, Standard Deviation correlation and reliability values

Variables	Mean	SD	1	2	3	4	5
Organisational size	3.5 3	1.0 2	0.72				
Organisational strategy	4.1 5	1.1 4	.66'	0.86			
Staff training	3.6 3	1.0 3	.48"	.63'	0.77		
HRMIS facilitating conditions	3.8 4	1.1 4	.48"	.56'	.65'	0.84	
Effective HRMIS adoption	2.4 3	1.0 3	.61"	.74"	.64"	.72"	0.80

- ' Correlation is significant at the 0.05 level (2-tailed)
- " Correlation is significant at the 0.01 level (2-tailed)
- Mean related a five point likert scale (from 1-low to 5-high)
- SD: Standard deviations related a five point likert scale (from 1-low to 5-high)
- Bolded are cronbach's alpha values

The mean and standard deviation value of each variable is given in table 4.19 all variables recorded moderate scores. The mean and standard deviation ratings of the HRMIS adoption variables rated on a five-point scale, with 5 being “very high” and 1 being “very low”. Most of variables have a mean rating more than 3 on the five-point scale based on participants' information on HRMIS adoption. This implies that the organizational strategy (mean of 4.1 at a rate of 5; SD of 1.1 at a rate of 4) highly influence the effective adoption of HRMIS, followed by HRMIS facilitating conditions (mean of 3.8 at a rate of 4; SD of 1.1 at a rate of 4), then employees training (mean of 3.6 at a rate of 3; SD of 1.0 at a rate of 3), and then organizational size (mean of 3.5 at a rate of 3; SD of 1.0 at a rate of 2). Table 4.19 shows the reliability measure using cronbach's alpha that all constructs have a value exceeding 0.70, so they are internally consistent and reliable. Correlation analysis was run between each of the variable (i.e organisational size, organisational strategy, employees training, and HRMIS facilitating conditions), and effective HRMIS adoption in order to identify the significant effect of the construct. Statistically these results reveal a significant correlation with effective HRMIS adoption in manufacturing SMEs.

CHAPTER FIVE: SUMMARY AND CONCLUSION

5.1 Introduction

This chapter provides a summary of the findings on what should the factors of HRMIS adoption framework for manufacturing SMEs in Kenya entail. The responses were based on the objectives of the study. It also provides a summary of how research questions were answered, how objectives were achieved, and what recommendations, possible limitations, future research suggestions and conclusions were made.

5.2 Achievements

The study achieved the research objectives successfully.

Table 5.1: Mapping Objectives into Research Questions

	Objectives	How they were achieved
1	To investigate the effect of employee training on effective adoption of HRMIS in manufacturing SMEs in Kenya.	Literature review, and Questionnaire
2	To examine the impact of organizational size on effective adoption of HRMIS in manufacturing SMEs in Kenya.	Literature review, and Questionnaire
3	To investigate the effect of organizational strategy on effective adoption of HRMIS in manufacturing SMEs in Kenya.	Literature review, and Questionnaire
4	To examine the impact of HRMIS facilitating conditions on effective adoption of HRMIS in manufacturing SMEs in Kenya.	Literature review, and Questionnaire

5.3 Summary of research Findings

Table 5.2: Summary of research Findings

objective investigated	Variables	Findings	Suggestions	Effect of HRMIS adoption in SMEs
Employees training	HRMIS skills	Lack of HRMIS skills	Facilitate adequate training to employees in HRMIS	Promote provision of better HRM services
	Innovation in HRMIS	No innovation		
	Staff competence in HRMIS	Not competent		
Organizational size	HRMIS department	Not well established	Increase trained employees	Improve performance of HRM functions
	Job specialization	Not practiced		
Organizational strategy	HRMIS objectives	Not clearly defined	Put in place clear and well defined HRMIS strategies	Promote future growth of SMEs and economy
	Decision-making	Made by top managers		
	Management support	Not enough		
HRMIS facilitating conditions	Infrastructure /ICT facilities	Not adequate	Provide adequate facilitating conditions	Encourage use of advanced HRMIS services
	Financial support	Not enough		
	Security measures	Not sufficient		

Table 5.2 shows summary of research Findings and suggestions of the major factors (employees training, organisational size, organisational strategy, and HRMIS facilitating conditions) together with their respective variable and the effect they have on HRMIS adoption in manufacturing SMEs in Kenya. The details of each factor are discussed below.

The first objective investigated in this study was the impact of employees training on effective HRMIS adoption in manufacturing SMEs which included investigation of HRMIS skills, innovation in HRMIS, and competence in HRMIS. The evaluation using cronbach's alpha in this study rated employees training as a third factor that influences effective adoption of HRMIS. The findings on employees training details were addressed by analysing questions in section2 of the questionnaire. From this analysis the study reflected a positive relationship between effective HRMIS adoption and employees training variables (HRMIS skills, innovation in HRMIS, and competence in HRMIS), although it is not provided in manufacturing SMEs as seen from the data analysis. This explains the reason why adoption of HRMIS in manufacturing SMEs lags behind. This goes in line with HRMIS budget since the findings of the study revealed that manufacturing SMEs suffer from low financial support, hence they cannot finance training of all employees.

In Kenya technical skills are not developed in a well-structured and coordinated manner and are virtually absent in SMEs. There is also a mismatch between available technical skills and market demands due to poor linkages between training institutions and the industry. In order to solve this problem, Kenya intends to create a globally competitive and adaptive ICT base to meet the requirements of a rapidly industrializing economy. This will be done through life-long ICT training and education. As a priority, a human resource management database will be established to facilitate better planning of human resources requirements in the country especially in manufacturing sector. Furthermore, steps will be taken to raise labour productivity to international levels. Other steps will include the establishment of new technical training institutions, as well as enhancement of closer collaboration between industry and training institutions. Large numbers of SMEs in Kenya require HRMIS development to meet their needs. This can be achieved through specialized training at different levels such as community polytechnics, and the technical, industrial, vocational and entrepreneurship (TIVET) institutions which is part of the educational goals for Vision 2030.

The second objective examined in this study was the impact of organizational size on effective adoption of HRMIS in manufacturing SMEs. Using cronbach's alpha evaluation, organizational size was rated as the fourth factor that influences effective HRMIS adoption. This objective was achieved by examining the results analysis on organizational size questions as addressed in the questionnaire section3. The findings revealed that, there is a strong relationship between effective HRMIS adoption and organizational size. The variables considered as dependant on the organization size were HRMIS department and job specialization. The results analysis of organizational size suggested that, the size of the organization determines the number of trained employees in a firm which influences establishment of HRMIS department and job specialization. This study found that in manufacturing SMEs in Kenya, the number of trained employees is very small and they lack necessary resources required for facilitating training. That is why HRMIS departments are not well established and job specialization is rarely practiced and therefore they are less likely to adopt HRMIS effectively. This finding is consistent with that of Cardon and Stevens (2004), who emphasized that in small firms where resources are scarce there is a small number of formal HRMIS department or professionals, increased difficulty in recruiting and retaining experienced employees.

Larger firms possess resources necessary for increasing the number of trained employees. Hence they can establish HRMIS departments and practice specialization through labour division meaning that they can adopt HRMIS effectively. Hart & Hannan (2004) stated that presence of personnel department in SMEs increases with firm size. It is the job of HRMIS manager and/or department within any organization to define their HR function through analysis survey for helping business operations. So there is need to establish HRMIS departments in manufacturing SMEs because HRM department, that plans and implements HRMIS activities, was indentified as an important factor of firm development processes, which influence decisions and actions regarding HRM strategy. Thus increasing organizational size leads to successful HRMIS adoption in manufacturing SMEs in Kenya because the employees are able to perform their duties effectively by practising job specialization within their department.

The impact of organizational strategy on effective adoption of HRMIS in manufacturing SMEs was the third objective investigated in this study. The cronbach's alpha test used in this study, rated organizational strategy as the first factor that influences effective HRMIS adoption. This objective was achieved by results analysis of the questions in section4 of the questionnaire. According to the findings of this study, the correlation between organisational strategy and effective HRMIS adoption confirmed a positive relationship which is supported by a positive and significant relationship between organisational strategy variables (HRMIS objectives, decision-making, and management support) and effective HRMIS adoption. The findings revealed that manufacturing SMEs use basic HRMIS services to perform HRM functions, meaning that they need a framework for HRMIS adoption. The results analysis indicated that higher level goal alignment practices correlate to higher level of perception towards HRMIS adoption success. This is congruent with the studies done by (Fink and Disterer 2006). The current commitment and practice by the Kenyan government is to lead Kenya in becoming an informative and knowledge-based nation which will help managers in manufacturing sector realign and refine strategic role of HRMIS in SMEs.

The manufacturing SMEs surveyed, tend to realize the need to have clearly defined objectives which provide a clear indication of what role IT plays in future growth of SMEs. What emerged during investigation was that HRMIS strategies need to be put in place so that SMEs know what they want to achieve. Based on these strategies and objectives, the best HRMIS to be adopted by manufacturing SMEs can be identified. Also the findings indentified a positive significant relationship between decision making structure and HRMIS adoption success. This finding is consistent with studies done by Tanova (2003). Thus decision-making style in the organizations and beliefs and values of the managers, have significant impact on the adopted policies and practices in SMEs. Firms which practice centralized decision-making style are more likely to adopt formal performance appraisal system, orientation program for new employees, employee pension plan, and job sharing. The main driving force behind the adoption of strategic human resource development approach in small manufacturing firms is the importance placed on training and learning by owner-managers (Syed & Mohd 2009).

The results analysis revealed that a higher level management support significantly, relates to a higher degree of system adoption. These results validated the assertion that management plays a very important role in supporting HRMIS activities and eventually facilitates success in organizations. More importantly commitment and support from the top officials are most likely to encourage employees overcome resistance and facilitate acceptance of new HRMIS system implementation. The choice of HRMIS and the extent of using this system in SMEs depend on the existence of HR managers within the company (Cassell, Nadin, Gray, and Clegg, 2002). HR manager's knowledge and skills in HRMIS field are resources crucial for successful HRMIS adoption. However, findings revealed that SMEs do not have HRMIS specialists familiar with HRM as supported by the findings of (Kok and Uhlane 2001). Therefore putting in place organizational strategy activities by using HRMIS in performing management functions such as planning and decision-making, and providing enough management support can lead to effective adoption of HRMIS in manufacturing SMEs.

Finally this study investigated the effect of HRMIS facilitating conditions on effective adoption of HRMIS in manufacturing SMEs as the fourth objective, but it was rated as the second factor, using cronbach's alpha. This objective was achieved, by addressing questions in section5 of the questionnaire. The findings of this study confirmed a positive relationship between the correlation of HRMIS facilitating conditions and effective HRMIS adoption. These findings are supported by positive and significant relationship between effective HRMIS adoption and HRMIS facilitating conditions which are infrastructure /ICT facilities, financial support, and security measures. The study revealed that manufacturing SMEs used mobile phones more than other ICT tools. These findings are consistent with (Tilvawala, Myers, & Andrade, 2009) who argued that the fast growing and most popular ICT tools used by SMEs in Kenya are mobile phones. Personal computers were ranked second ICT tools used by manufacturing SMEs, although it is difficult to recommend whether to buy a laptop or a PC, and to indentify which type of mobile device to use. These findings are consistent with (Syed and Mohd, 2009) who argued that SMEs used personal computers to improve their daily operations.

During results analysis it emerged that SMEs in manufacturing sectors should investigate the option of investing in a laptop rather than a PC, as well as investing in a smart phone which allows them to receive email and connect to the Internet from any location. The findings revealed that small companies do not focus on having a fixed network infrastructure because with today's technology one can connect to the internet by using a cell phone. Internet access enables SMEs to have advanced communication capabilities such as email, web browsing, and access of advanced HRMIS tools such as ERP or inventory management. Also it is expected that telecommunications services and quality levels in Kenya will improve through completion of the under-sea fibre optic cable and the national fibre optic network for this will close the existing gap in telecommunications infrastructure and costs between Kenya and other countries. Also in order to promote smooth HRMIS adoption in manufacturing SMEs, it is necessary to ensure that adequate financial support is provided because a comprehensive HRMIS adoption requires a sizeable budget to implement and maintain the system.

This study revealed that most of the manufacturing SMEs seem to realize the importance of saving their data because unsecure data and premises results to poor performance of the system for the data can be accessed by unauthorized person anytime. Although the sectors are trying to secure data by keeping backups off-site, as a form of disaster recovery plan, but from the participants, it emerged that backups are not tested regularly. This finding is consistent with (Tilvawala, Myers, & Andrade, 2009) who emphasized on the importance and regular testing of backups. During results analysis, security guards and alarm systems were found to be the most common form of Premises security. HRMIS is designed to help companies best meet the needs of their employees while promoting company goals by performing HRM functions in a secured environment. Companies who work hard to meet the needs of their employees cultivate a work atmosphere conducive to productivity which can be achieved through effective adoption of HRMIS. Therefore it can be concluded that investing in the best HRMIS facilitating conditions (infrastructure and ICT facilities, financial support, and security measures) the manufacturing SMEs can adopt HRMIS successfully.

5.4 Research recommendations

The findings revealed that manufacturing SMEs tend to realize the importance of HRMIS and how it can help them increase their productivity, thus they need to be encouraged to adopt the latest HRMIS techniques that are relevant to their field such as investing in a laptop rather than a PC, as well as investing in a smart phone which allows them to receive email and connect to the Internet from any location. However, the major challenge is lack of a conceptual framework and government policies that support HRMIS adoption in manufacturing SMEs. But by adopting the conceptual framework proposed in this study, manufacturing SMEs in Kenya are able to overcome challenges which they face in performing HRM functions. Even though this framework has been developed to assist manufacturing SMEs in Kenya to investigate and adopt HRMIS, one has to understand that it was not tested during this study and therefore it is recommended that a measurement tool should be developed and used during implementation. In order to promote smooth HRMIS adoption in manufacturing SMEs in Kenya, the researcher recommends the government to provide adequate employees training, put in place strategies and policies, financial support, security, and infrastructure/ICT facilities.

5.5 Limitation of the Study and Suggestions for Future Research

In the process of conducting this study, it encountered a number of limitations some of which offer opportunities for future research. The duration of the study was not long enough to enable proper investigation of the responses and survey. Majority of the respondents were officers who did not have HRMIS designations and in the time of data collection the researcher didn't have ample time to interact with respondents at their work place. Since the study is solely conducted on selected users of HRMIS in manufacturing SMEs that operate within Nairobi and its surroundings, the results may suffer from regional biases. Therefore the results need to be interpreted carefully and replicated in other regions in the country in order to improve their relevance. As this study is only an introduction to HRMIS adoption framework, there is need for future studies to develop a measurement instrument to test it before it is implemented to ensure that requirements of the users are fully met. Researchers in the field of ICT ought to put more emphasis on HRMIS adoption in order to assist HRM professional in improving their services.

5.6 Research conclusion

The research objective of this study was to examine factors which influence the adoption of HRMIS in manufacturing SMEs in Kenya. A conceptual model was proposed with four main factors (Employees training, organizational size, organizational strategy, and HRMIS facilitating conditions) as determinants of effective adoption of HRMIS. The study revealed that if manufacturing SMEs increase organizational size (by increasing trained employees so as to establish HRMIS department and practice job specialization), put in place well defined organizational strategies (by achieving HRMIS objectives, and by performing management functions such as planning and decision making), facilitate training activities (HRMIS skills, innovation in HRMIS, competence in HRMIS), and provide adequate facilitating conditions (infrastructure/ICT facilities, financial support and security) they will successfully adopt HRMIS. Also the research findings revealed that there is need to have a framework to be used as a blueprint to standardize, authenticate and validate HRMIS services in SMEs in order to improve employees working conditions and address their grievances on time. The manufacturing SMEs can benefit from this model because IT-based HRM systems can off-load administrative tasks freeing up HRM professionals for more value-adding roles.

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Appendix I: sample size formula

- Why i chose this formula is because i wanted to determine a representative sample for a proportion of manufacturing SMEs in Kenya i.e Nairobi and its surrounding. The estimate of the proportion of manufacturing SMEs employees in HRMIS that i used is guided by past survey of Mauritius. In this study i considered the situation in other countries how they managed to adopt and use HRMIS in their organizations. Mauritius being one of them had a survey which estimated that 89.1% of employees supported the ideas of adoption and use of HRMIS in their SMEs and it was implemented successfully. So i planned for a similar survey for manufacturing SMEs in Kenya in which i wanted a 95% confidence interval to have a margin of error of 0.05 so as to have results similar to those of Mauritius.

In general the formula is
$$n = \frac{t^2 p(1-p)}{m^2}$$

where

m= is the desired margin of error

t= is the z-score, e.g. 1.645 for a 90% confidence interval, 1.96 for a 95% confidence interval, 2.58 for a 99% confidence interval

p = prior judgment of the correct value of p.

n =is the sample size

Using these standard values the calculations are
$$n = \frac{1.96^2 * 0.891(1-0.891)}{0.05^2} = 150$$

The required sample size = 150 employees from manufacturing SMEs.

- In this study the confidence level of 95% means that there are 95 chances in 100(or 0.95 in 1) that the sample results represent the true condition of the population within a specified precision range against 5 chances in (100 (or 0.05 in 1) that it does not. When the significance level is 5%, the confidence level is 95% and the critical value is 1.96
- If the value of t is changed, for example if it is decreased to 1.645, the confidence level decreases to 90% and also the sample error decreases. The smaller the sample error, the greater the uniformity of sampling distribution and hence, the greater is the reliability of sample. The size of sampling error depends upon the sample size to a greater extent and it varies inversely with the size of the sample.

Appendix II: Cronbach's alpha

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items as shown below.

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Where:

N is the number of items,

c-bar is the average inter-item covariance among the items

v-bar equals the average variance: v-bar is 1 for standardized Cronbach's alpha.

The selected questions 3.a,3.c,5,10,13,14,16 and 18 for pilot tests were presented to 4 respondents who were asked to respond to the statement using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) as shown in table 3.1a

Table3.1a: Questionnaire reliability test selected questions

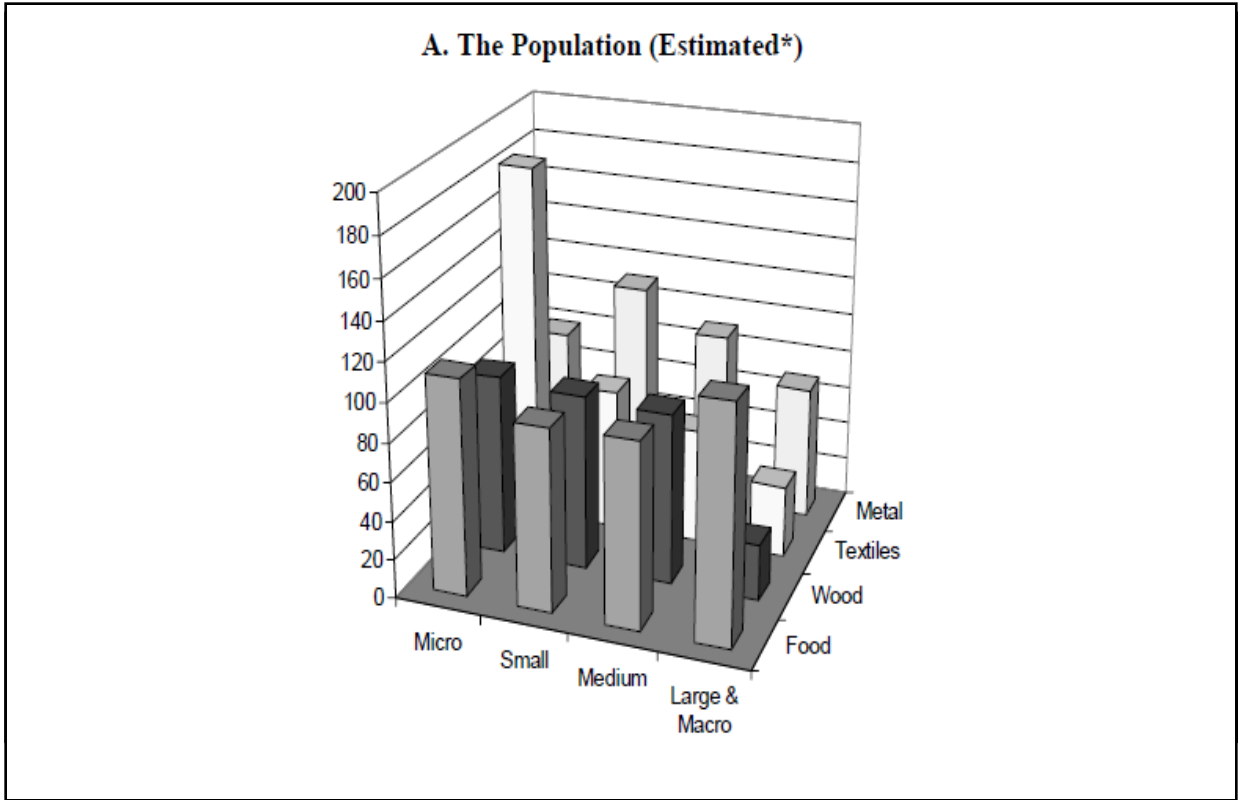
Item	Content	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
3.a	The firm has enough skilled and qualified staff in HRMIS field.	1	2	3	4	5
3.c	The competence of staff determine effective HRMIS adoption	1	2	3	4	5
5	The firm has well established HRM department.	1	2	3	4	5
10	Adoption of computers in core HRM functions in your firm.	1	2	3	4	5
13	The firm decision-making being centralized.	1	2	3	4	5
14	The firm providing management support in HRMIS adoption	1	2	3	4	5
16	The firm uses different types of operating systems	1	2	3	4	5
18	The firm providing financial support for HRMIS adoption.	1	2	3	4	5

Table 3.1b: Analysis output for the tested questions.

	N	Mean	Variance	SD		
Statistics	8	29.1042	30.8187	5.5515		
for scale						
Item	Mean	Minimum	Maximum	Range	Max/Min	Variance
Means	3.6380	3.3125	3.9792	.6667	1.2013	.0729
Variances	1.0750	.7017	1.4109	.7092	2.0107	.0714
Inter-correlations	.3824	.0415	.5861	.5446	14.1266	.0191
Item	Total	Scale	Scale	Corrected	Squared	Alpha
Statistics	Mean	Variance		Item total	Multiple	
				Correlation	Correlation	
3.a	25.1250	25.0479	.6046	.4909	.7988	
3.c	25.7917	23.2748	.5351	.3693	.8063	
5	25.6667	24.6525	.4260	.4474	.8219	
10	25.2500	25.2128	.5134	.4587	.8081	
13	25.6250	22.9202	.6578	.5104	.7874	
14	25.7083	24.3387	.4473	.3116	.8192	
16	25.1250	23.9840	.6134	.5202	.7949	
18	25.4375	24.0811	.6432	.4751	.7920	
				Alpha	Standardized	
					Alpha	
Reliability	coefficient	For 8 items	.8240	.8320		

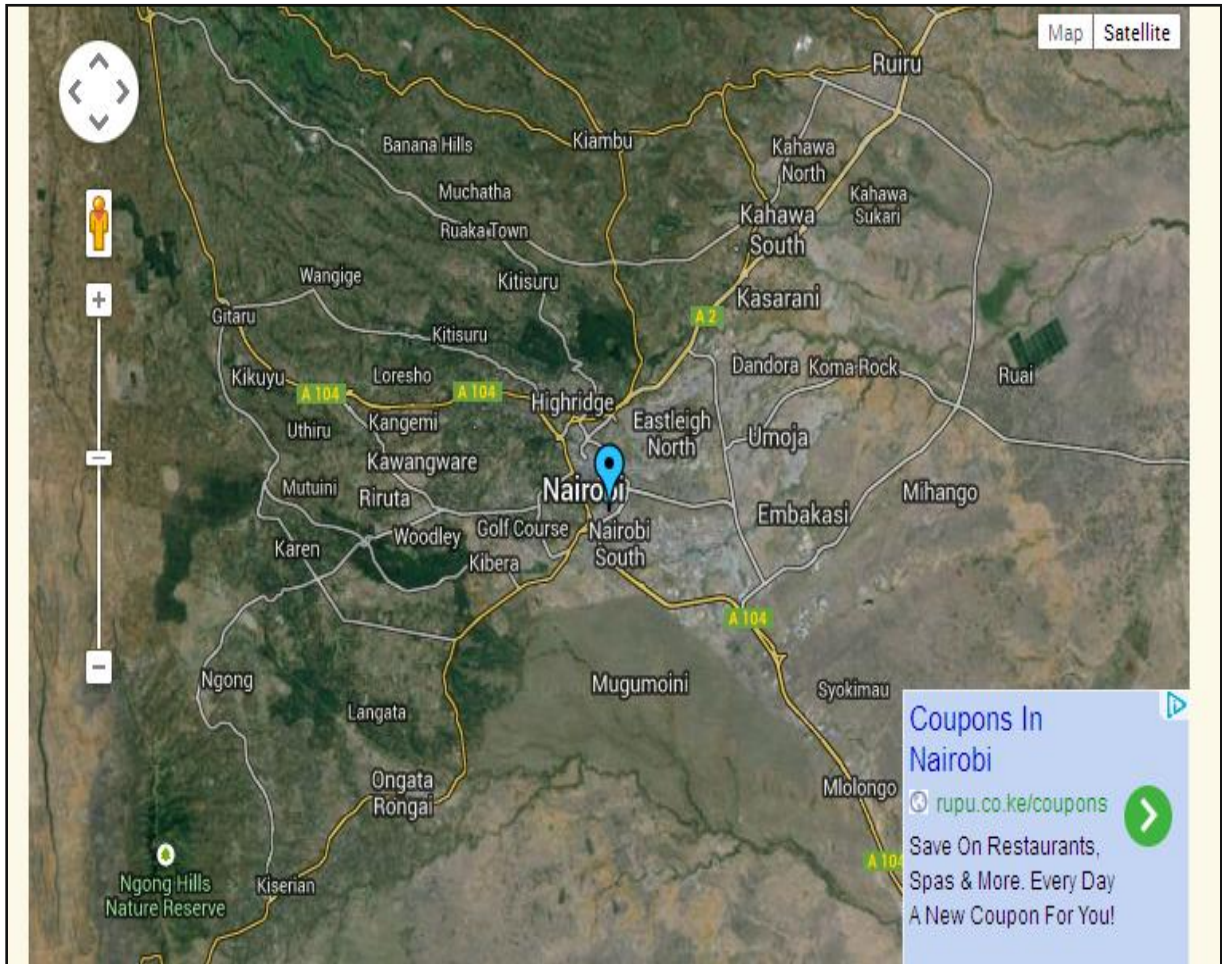
Table3.1b shows analysis output for the tested questions.

Appendix III: The population of some samples of firms in manufacturing sector in Kenya



*Calculated from Central Bureau of Statistics, (1999).

Appendix IV: Map showing location of manufacturing SMEs in Nairobi area in Kenya



Map data from KAM directory (2003).

Appendix V: Questionnaire

A survey of HRMIS adoption in manufacturing SMEs in Kenya

The purpose of this study is to examine factors that influence the adoption of HRMIS in manufacturing SMEs in Kenya. The research instrument consists of five sections which are section1 demographic data, section2 employees training details section3 organizational size details, section4 organizational strategy details and section5 information about HRMIS facilitating conditions.

Note: Fill in your answers in the space provided and do not indicate your name on the questionnaire.

SECTION1 DEMOGRAPHIC DATA

Question 1 Employee Details

(a) Employee Contact Details: _____

(b) Mailing address: _____

(c) Work phone: _____

(d) Mobile phone (if any): _____

(e) E-mail address (if any): _____

(f) Gender: male female

(g) Age: Below 30 31-50 Above 50

(h) Education level: Secondary school College University

(i) Income in Kshs per month: less than 20,000 21,000-50,000 Above 50,000

(j) Working experience: 2years or less 3-5years 6-10years Above 10 years

SECTION2 employees training

Section2 consists of questions 2 and 3 which seek to examine the employee training details.

Question 2: Please indicate whether the firm perform or promote any kind of training

Formal training Informal training

Question 3: To what extent do you agree with the following statements regarding your organization conducting HRMIS training services? *Check in one box.*

(a) The firm has enough skilled and qualified staff in HRMIS field.

Strongly agree Agree Not sure Disagree Strongly disagree

(b) The firm provides innovative training to employees on HRMIS services.

Strongly agree Agree Not sure Disagree Strongly disagree

(c) The competence of the staff determines effective adoption/usage of HRMIS.

Strongly agree Agree Not sure Disagree Strongly disagree

(d) Staff training is a key component of HRMIS services.

Strongly agree Agree Not sure Disagree Strongly disagree

SECTION3 Organizational size

Section3 consists of questions 4, 5 and 6 which are used to examine the firm size details.

Question 4: Choose the number of employees working in this firm.

1-50	<input type="checkbox"/>
51-100	<input type="checkbox"/>
101-150	<input type="checkbox"/>
151-200	<input type="checkbox"/>
201-250	<input type="checkbox"/>
251-300	<input type="checkbox"/>
Above 300	<input type="checkbox"/>

Question 5: The firm has well established HRM department.

Strongly agree Agree Not sure Disagree Strongly disagree

Question 6: Choose the area of professional specialization as an employee working in this firm

Position in the firm

Human Resource Manager	<input type="checkbox"/>
Human Resource Officer	<input type="checkbox"/>
IT Specialist	<input type="checkbox"/>
Accountant	<input type="checkbox"/>
Others	<input type="checkbox"/>

SECTION4 Organisational strategy details

Section4 consists of questions 7, 8, 9, 10, 11, 12, 13, and 14 which are used to investigate the details for organization strategy variables (HRMIS functions, revising HRM systems and investing in HRMIS goals)

Question 7: Please indicate whether the firm uses computer to process information relating to human resources management tasks. Yes No

Question 8: State if the following type of information is held in firm's HRMIS database

	Yes	No
Current employment details	<input type="checkbox"/>	<input type="checkbox"/>
Organization salary structure	<input type="checkbox"/>	<input type="checkbox"/>
Organizational job and positions	<input type="checkbox"/>	<input type="checkbox"/>
Employee relations	<input type="checkbox"/>	<input type="checkbox"/>

Question 9: Is there any need to adopt and use HRMIS in performing the following HR functions?

	Yes	No
Core Human resource administration	<input type="checkbox"/>	<input type="checkbox"/>
Human resources planning	<input type="checkbox"/>	<input type="checkbox"/>
Recruitment, selection and placement	<input type="checkbox"/>	<input type="checkbox"/>
Compensation	<input type="checkbox"/>	<input type="checkbox"/>
Training and development	<input type="checkbox"/>	<input type="checkbox"/>
Performance management	<input type="checkbox"/>	<input type="checkbox"/>
Employee relations	<input type="checkbox"/>	<input type="checkbox"/>
Health and occupational safety	<input type="checkbox"/>	<input type="checkbox"/>

Question 10: To what extent do you agree with the following statements about adoption of computers in core human resource functions in your firm?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Information is stored					
Primarily for management use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To support analysis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For decision making	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 11

a) Do you have HRM processes within your organization which are not automated?

Yes No

b) If yes to 11a, list them.....

c) Do you wish to automate these processes?

Yes No

Question 12: Would you say that your business goals include investing in HRMIS?

Yes No

Question13: To what extent do you agree with the statement about the firm decision-making being centralized? (*Check in the box*)

Strongly agree Agree Not sure Disagree Strongly disagree

Question14: To what extent do you agree with the statement about the firm providing management support in HRMIS adoption? (*Check in the box*)

Strongly agree Agree Not sure Disagree Strongly disagree

SECTION5 HRMIS facilitating conditions

Section5 consists of questions 15, 16, 17, and 18 which are used to examine the HRMIS facilitating conditions variables (Infrastructure and ICT facilities, security measures, and financial support).

Infrastructure and ICT facilities

Question 15: In each of the following questions; *check in one box*

a) Do you have a mobile phone? Y N

b) If yes, does your mobile phone have internet access? Y N

Name your mobile phone service provider _____

c) Does your company have a land line? Y N

d) Do you have laptops provided in your work area? Y N

e) Do you have network infrastructure? Y N

State the type of network infrastructure you have in place _____

f) Are there accessible computers in your immediate working area? Y N

g) Do you have network access via these computers? Y N

h) Do you have internet access via these computers? Y N

g) Name any other ICT facilities available in your working area _____

Question 16: Please rate how frequently the firm uses the following types of operating system

	Very Frequently	Frequently	Not used	Not frequently	Not very frequently
Windows XP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Windows VISTA	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Others	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Question 17: Security of the data and the premises

- a) Do you have security measures within your company in terms of data and premises access? Yes No
- b) If yes to 15a, list these measures -----

- c) Do you back-up any of your data on a regular basis? Yes No
- d) If yes to 15c, state how regular _____

Question 18: To what extent do you agree with the statement about the firm providing financial support for HRMIS adoption? (*Check in the box*)

Strongly agree Agree Not sure Disagree Strongly disagree