# EFFECTS OF INFORMATION TECHNOLOGY ON HUMAN RESOURCE PERFORMANCE AT MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY, KENYA

**BY**

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## DECLARATION

**Declaration by Candidate**

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## DEDICATION

I dedicate this work to my beloved husband Derick, my daughter Purity and my sons Winston and Ian.

## ACKNOWLEDGEMENT

I would like to thank the following persons and institutions for their valuable contributions during the preparation of this thesis. My supervisors Mr. L. Kuto and Mrs. P. Mining both of the School of Human Resource Development for their patience, constructive criticisms, guidance and valuable contribution that has made the content of this study a reality.

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## ABSTRACT

With the changing world and constant new technology that is available, managers need to be aware of the technology that will increase effectiveness in their company. Many companies have seen a need to transform the way Human Resource operations are performed in order to keep up with new technology and increasing numbers of employees. Organizations therefore have noted that effective and proper implementation of Information Technology will help the organization turn around through improved productivity and employee efficiency without adversely affecting the employees' morale in many ways. The study investigated the effects of Information Technology on Human Resource performance at Masinde Muliro University of Science and Technology, Kenya. The objectives of this study were: to determine the effects of Information Technology on the operational efficiency of Human Resource, determine the staff training needs that arise as a result of IT systems implementation and finally to assess the extent to which challenges arising due to implementation of IT systems have had effect on employee performance. The study was based on O' Brien's model of Ethical, Societal and Organizational Dimensions. The study adopted a survey research design. The target population was 203 employees. Stratified random sampling techniques was used to sample 136 respondents which included Senior management, middle level officers and Junior officers. Questionnaires and interview schedules were used to collect data. The data collected was then analyzed using descriptive statistics and the results presented using tables. The study established that IT was a major catalyst in the running of Masinde Muliro University of Science and Technology. The findings revealed that IT systems have improved efficiency in time and costs. The institution has played a minimal role in training employees on use of IT in performing their daily routine jobs. On the other hand, supervision by the managers through this information technology was not proved fully to be effective. The study recommends that Masinde Muliro Univesity of Science and Technology and other institutions should invest heavily in IT since it is an investment with benefits both to the institution and the employees. It is anticipated that this study will greatly benefit organizational managers with regard to how it will improve employee's performance and morale. The findings will be helpful to Organizations in prioritizing their information technology options which can help them size down budgets and perform more efficiently. The study recommends further research in Health and safety of staff using IT systems.

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## LIST OF ABBREVIATIONS AND ACRONYMS

| | | |
|---|---|---|
| HR | - | Human Resource |
| ICT | - | Information and Communication Technology |
| IT | - | Information Technology |
| OA | - | Office Automation |
| OD | - | Organizational Development |
| MIS | - | Management Information Systems |
| PC | - | Personal Computer |
| SPSS | - | Statistical package for social sciences |

# CHAPTER ONE

## 1.0. Overview

This introductory chapter presents a background of the study, statement of the problem, research questions and objectives, significance of the study, scope of the study and limitations of the study and theoretical framework.

## 1.1. Background of the Study

Information technology (IT) is recognized as a critical infrastructure in many organizations. IT is also emerging as an effective contributor to organizational performance. (Schuler et al., (2001) and Mayfield et al., (2003) noted that major changes included contemporary use of Information Technology in support of the HRM process. More so, a careful analysis indicated that increased human resource information systems usage enabled improved professional performance. According to Ulrich (1997), using IT provides value to the organization and improves HR professionals' own standing in the organization. Information technologies provide enormous potential for enhancing productivity of human resources in both public and private sectors. A fundamental change is happening in companies' competition due to the changes in the global business environment, management thinking and experience and information technology.

Globally, the availability and use of information and communication technologies are a pre-requisite for economic and social development. They are the functional equivalent of electricity in the Industrial Era. Econometric studies show the close statistical

relationship between diffusion of information technology, productivity and competitiveness for countries, regions, industries and firms (Dosi et al, l988). They also show that an adequate level of education in general, and of technical education in particular is essential for the design and productive use of new technologies (Foray and Freeman, l922). The crucial role of information and communication technologies in stimulating development is two edged sword, on the one hand it allows countries to leapfrog stages of economic growth by being able to modernize their production systems and increase competitiveness faster than in the past. On the other hand, for those economies that are unable to adapt to the new technological system, their retardation becomes cumulative.

In Kenya, the National Information and Communications Technology Policy is a product of the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) and was developed by the Ministry of Information and Communication in January 2006. The common Market for Eastern and Southern Africa (COMESA) model was adopted by COMESA Council of Ministers in March 2003. This policy aims at encouraging sustained economic growth and poverty reduction, promote social justice and equity, mainstream gender in national development, empower youth and disadvantaged groups, stimulate investment in media resources to achieve universal access. In general, this policy addresses market structure, policy objectives and targets, implementation strategies, universal access, broadcasting, telecommunications, radio frequency spectrum, postal services and institutional framework for Information Communication Technology.

In the new global method of competition, collaboration exists as a new established niche of competitiveness. Workers in present day institutions spend a considerable part of their time using computers and telephones. Evident is that use of ICT is positively correlated with improved overall organizational performance (Pokharel, 2005). In a traditional thought, collaboration pertains to office workers interacting effectively together to achieve a common objective and goal of the company. Here, the exchange of knowledge among individuals allows them to communicate and share complex ideas and to form a collaborative work performance in creating value. Yet, competitiveness remains central to profitability, growth and business success. Technology has become the driver of change that is taking place in organizations. Technology-based tools greatly support the most innovative concepts currently being implemented in the market. The efficiency at which service levels are improved hinges on the appropriate use of the available technologies.

Today, core HR responsibilities as diverse as recruitment, oversight of legal and regulatory compliance, benefits administration, and the safeguarding of confidential employee information cannot be carried out effectively without high-tech tools(Zeidner, 2010). Integrating the Technologies of HR is a fact, that developments in Information Technology have dramatically affected traditional HR functions with nearly every HR function (example, compensation,staffing, and training) experiencing some sort of reengineering of its processes. However, this process of change has created significant challenges for HR professionals resulting in the transformation of traditional processes into on-line processes. Increased efficiency rapid computing technology has increased

efficiency because it has allowed more transactions to occur with fewer fixed resources. Typical examples are payroll, flexible benefits administration, and health benefits processing. Though technologies of early mainframes provided significant efficiencies in these areas, the difference is that the record processing efficiencies that were once only available to large firms are now readily available to any organization size (Ulrich, 2001). Information technology has also increseased effectiveness because most often, as with processes, computer technology is designed to improve effectiveness either in terms of the accuracy of information or by using the technology to simplify the process.

HR professionals also rely on automated systems to direct employee benefit contributions. Such systems automatically direct a portion of workers' pay towards their retirement savings plans unless employees opt out, for instance.

And while total rewards statements that alert employees to the total value of their compensation benefits packages have been around for years, many companies now are making that information available to workers electronically through HR information systems or self-service sites.

Workplace diversity initiatives are getting a boost from technology. Remarkable developments in assistive technology, for example, have increased job opportunities for people with physical disabilities. Some employers say that investing in such technologies is simply the right thing to do; others argue that such initiatives are good for the bottom line since they allow companies to recruit from a broader pool.

Employers are also turning to technology to assist in evaluating their workers and vice versa. Electronic systems can automate performance-management processes, ensure an accurate "grading curve" and guarantee feedback to employees.

Meanwhile, many companies are relying on technology to streamline traditionally cumbersome employee surveys.

Technology has significant impact on organization and employee development in such areas as e-learning, computer-based testing and workplace collaboration. Organizations are increasingly using technology in training.

Human resources professionals are upping their reliance on technology to manage safety and security information and functions. Workplace safety and security can benefit from technology by facilitating acquisition and analysis of injury and illness data, injury costs per employee, training documentation and management, performance management, electronic communications, digital access key log-in information, security camera data management and identity theft protection.

Biometrics devices that use fingerprints or other physical traits for identification can help solve some employee discipline problems and protect sensitive data. Time clocks are one of a growing number of workplace applications of biometrics.

During the last decade, Internet has played a growing role in external recruiting. Large, all-purpose online job boards quickly find a place in recruitment.

## 1.2. Statement of the problem

In the competitive business world today, the establishment of appropriate technology provides flexibility and responsiveness to adapt to ever changing business environment. Managers therefore, need to be aware of the technology that will increase effectiveness in their organizations. Information Technology Systems is therefore a medium that helps HR professionals perform their job roles more effectively (Grallagher, 1986; Broderick and Boudreau, 1992). Evidently, there are benefits accruing to pro-technology countries, mainly in the Western countries, which have continued to transform their economic, social and cultural development by using Information Technology over a period of time. According to (Abdurahman, 2000), Professional Association of Information Technology members feel that the developing countries' shortcomings in accessing Information and Computing are greater due to lack of financial resources.

Within the last decade, the explosion in information systems related literature confirms that information technology, its implementation, use and benefit is a very well researched area in organizational studies (Robinsson, 1997). However, pressure to shift to information technology systems keeps on mounting, coupling with severe global competition, and in conjunction with the ever-increasing demand for Information technology systems. In Kenya, most institutions are still faced with operational inefficiencies, lack of proper training in IT operations and challenges that arise due to

implementation of IT operations thus adversely affecting the employees morale. Therefore this study aimed to find out the effect of Information Technology on the operational efficiency of Human Resource, to determine the staff training needs arising as a result of IT systems implementation and to assess the extent to which challenges arising due to implementation of IT systems have had effect on employee performance at Masinde Muliro University of Science and Technology.

## 1.3. Research Objectives

The general objective of the study was to assess the effects of Information Technology on Human Resource performance at Masinde Muliro University of Science and Technology, Kenya.

**Specific Objectives of the study were**

1. To examine the effect of Information Technology on the operational efficiency of Human Resource.
2. To determine the staff training needs arising as a result of IT systems implementation.
3. To assess the extent to which challenges arising due to implementation of IT systems have had effect on employee performance.

## 1.4. Research Questions

1. What are the effects of Information Technology on the operational efficiency of Human Resource?
2. What staff training needs arise as a result of IT systems implementation?

3. To what extent have the challenges arising due to implementation of IT systems affected employee performance?

## 1.5 Significance of the Study

It is expected that this study will be important for policy design and formulation on the use of information technology at the workplace. Currently, the Government of Kenya is pursuing the implementation of its ICT resources policy established in 2006. Therefore, this study has been done at a time when information on factors influencing the adoption and use of ICT in Kenya is not yet exhaustive.

The findings of this study will also enable Masinde Muliro University of Science and Technology, the Kenya Government, and other organizations to come up with appropriate information technology policies for efficient management of their business operations. Masinde Muliro University of Science and Technology in particular and others in general, will be able to utilize the findings of this study with a view to enhancing their information technology policies to ensure profitability through cost reduction, improved productivity, improved management decision-making process and enhance customer relationships.

To scholars, researchers and students, this study will contribute to the existing body of knowledge in the area of study and also provide a scope for further research in related fields and show gaps requiring the need for pursuing further studies in this area, which is very dynamic and challenging world-wide.

## 1.6. Scope of the Study

This was a case of Masinde Muliro University of Science and Technology which is situated in Kakamega town. The study covered the three objectives in order to identify the effects of information technology on the effectiveness of human resource at Masinde Muliro University of Science and Technology. The research focused on the senior and middle level staff who handle Information Technology systems in their normal routine and administrative duties at the university.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0. Overview

This chapter presents the literature review on the development of information technology, effects of information technology on human resources, doing business in the digital economy, challenges of information technology, staff training needs as a result of introduction of information technology, effect on employment and ethical issues of information technology.

## 2.1. Importance of Information Technology

Information technology (IT) is becoming a common denominator in the growth and competitive stance of today's organizations. Many firms are investing in and have become dependent on IT.

Almost all organizations, both public and private, in manufacturing, agriculture, or service, use various types of ITs to support their operations. IT has become the facilitator of business activities in the world today according to research findings by Dickson et la., (2001); Tapscott et al. (2000); Gill (l996). IT is also a catalyst of fundamental changes in structure, operations, and management of organizations as observed by Dertouzos (l997).

## 2.2. The Development of Information Technology

Organizational Development is inevitable as organizations strive to improve in all aspects of organization. It is a method aimed at changing the attitude, values, skills and belief of

employees so as to improve organizations (Desler 2002). According to Amstrong, (2001), OD is the planned process of developing an organization to be more effective in accomplishing its desired goals. This focuses on developing structures, systems and processes within organization to improve organizational effectiveness. Therefore as organizations adopt strategies of Organizational Development and change interventions, technological change is one of the major areas of concern. Technological changes involve modifications of the work methods an organization seeks to accomplish tasks, which includes new production technologies and other procedures (Amstrong, 2001).

The advent of networks and the parallel introduction of word processing were the principal spearheads of Office Automation (OA). According to Clifton, et al, (2000), the nature of office work means that it will never be entirely automated in the sense that people will be eliminated from offices, because there are too many discrepancies and variations for that to happen. Nevertheless they add, the present generation of office workers is far more technology oriented than those of previous generations. IT includes both supply-side computer hardware and software, telecommunication equipment, and micro electronics based industries and demand-side-applications of IT in all economic sectors including flexible manufacturing, financial and transaction systems, service, e-publishing and Management Information Systems (MIS), Clifton, et al , (2000).

### 2.3. Effects of Information Technology on Human Resources

In 1977, knowledge and information-based activities contributed to almost half of the gross national product and employed 47% of the American workforce (Sussan, 2006).

One could postulate that those numbers have increased over the last 30 years. As information has become an increasingly important feature in the business world, new technologies have become available to facilitate its use and dissemination. This has led to an ever expanding and evolving field of information technology (IT).

New developments in IT have led to an increasingly mobile workforce. Employees are no longer tied to their desk in order to stay in the information loop they can take their offices with them wherever they go. Cellular phones allow them to be reached almost anywhere. Blackberries and Ultra-mobile PCs permit to access e-mail and other data products at a wide range of locations. A wide range of new technologies have given businesses access to faster communication, increased efficiencies, and the ability to work away from the office (Mamaghani, 2006).

New technology has opened a door of opportunities for companies and employees willing to explore non-traditional work arrangements. Standley (2006) wrote, "91 percent of organizations allow employees to work at home occasionally." As telecommuting becomes more popular, employers are realizing the benefits, including "productivity gains, reduced absenteeism, reduced employee turnover costs, reduced real estate costs, and reduced relocation costs to name a few" (Mamaghani, 2006). For Employees, "telecommuting can offer more flexibility and a relief from workplace policies such as dress code and formal office hours" (Sussan, 2006).

This technology also allows a new kind of team to emerge. Virtual teams can be formed, bringing together the best people regardless of location and time (Gignac, 2005). E-mail, teleconferencing, video conferencing, and new emerging technologies are enabling people around the world to communicate and collaborate rapidly and efficiently. Virtual teams are contributing to a synergy like never before seen.

The only thing certain about the future of technology in the workplace is that it will continue to change and evolve at an astounding rate. Despite any pitfalls, the implementation of this new technology, especially IT, is necessary for a company to remain competitive in today's market and in the future. Standley (2006), has said, "If it is to benefit, business will need to understand far more than the mechanics of new technologies. They will need to understand the way that people - their employees and customers, will use and interact with them."

Today, core HR responsibilities as diverse as recruitment, oversight of legal and regulatory compliance, benefits administration, and the safeguarding of confidential employee information cannot be carried out effectively without high-tech tools (Zeidner, 2010).

In a world where what matters gets measured, many HR executives are turning to sophisticated analytics to gauge their department's strategic contributions. In addition, many HR managers are borrowing from other business disciplines and integrating

collaborative and social networking tools such as listservs, Facebook applications and video.

For these HR professionals, the growth of electronic communication and Internet use requires developing policies governing the safekeeping and appropriate flow of information, including e-mail and blogs. Indeed HR professionals, working in tandem with information technologists, now rely on policy and software to monitor data flow, block inappropriate data such as pornography, and prevent the leaking of trade secrets.
HR professionals also rely on automated systems to direct employee benefit contributions. Such systems automatically direct a portion of workers' pay towards their retirement savings plans unless employees opt out, for instance.

The field of Human Resource Management (HRM) has in recent times been seen as moving away from a supportive - selecting, training, and retaining- (Porter, 1996), to a strategic role (Bartlett & Ghoshal, 2002). The latter explained that rather than being supportive, focusing on recruiting, training and taking care of benefits, HRM's role has become strategic building and using human capital to ensure competitive advantage.

And while total rewards statements that alert employees to the total value of their compensation benefits packages have been around for years, many companies now are making that information available to workers electronically through HR information systems or self-service sites.

Workplace diversity initiatives are getting a boost from technology. Remarkable developments in assistive technology, for example, have increased job opportunities for people with physical disabilities. Some employers say that investing in such technologies is simply the right thing to do; others argue that such initiatives are good for the bottom line since they allow companies to recruit from a broader pool.

Bratton and Gold (2003: 37), defines human resource management as the process of linking the human resource function with the objectives of the organization in order to improve performance. An organization's human resource management policies and practices must fit with its strategy in its competitive environment and with the immediate business conditions that it faces.

Employers are also turning to technology to assist in evaluating their workers and vice versa. Electronic systems can automate performance-management processes, ensure an accurate "grading curve" and guarantee feedback to employees.

Meanwhile, many companies are relying on technology to streamline traditionally cumbersome employee surveys. Technology has significant impact on organization and employee development in such areas as e-learning, computer-based testing and workplace collaboration. Organizations are increasingly using technology in training.
Human resources professionals are upping their reliance on technology to manage safety and security information and functions. Workplace safety and security can benefit from technology by facilitating acquisition and analysis of injury and illness data, injury costs

per employee, training documentation and management, performance management, electronic communications, digital access key log-in information, security camera data management and identity theft protection.

Managers look for leadership style that develop the firm's human endowment and cultivate commitment, flexibility, innovation and change (Bratton et al.,1987). Biometrics devices that use fingerprints or other physical traits for identification can help solve some employee discipline problems and protect sensitive data. Time clocks are one of a growing number of workplace applications of biometrics.

During the last decade, the Internet has played a growing role in external recruiting. Large, all-purpose online job boards quickly found a place in recruitment. Meanwhile, niche sites catering to specific industries and demographic niches such as women and Asians won favor. Online corporate job sites and intranets have become key recruiting tools, allowing employers to get the word out about job openings quickly and inexpensively.

Employers are also using technology to market job openings more strategically. Many capitalize on emerging technology like RSS--real simple syndication--allowing online postings to reach job seekers via e-mail or text message as soon as a new job is posted. Others are enhancing traditional online listings with videos and podcasts.

Meanwhile, employers have had to adapt to tech-sawy candidates and multimedia resumes that include text, photos, video and sound.

According to Borkowski (2011), Technology is also playing a pivotal role in the controversy regarding illegal immigration. Tens of thousands of employers are voluntarily using e-Verify, an Internet-powered tool offered free by the Social Security Administration and the U.S. Department of Homeland Security, to verify a match between employees' names, Social Security numbers and immigration information.

Once an application comes in, many HR professionals tap desktop search engines such as Google to check backgrounds. A few employers check out workers' private blogs and entries they may have placed on social networking sites such as Facebook and MySpace. Others sign up for help from computerized background screening services.

And once a new hire comes on board, many HR professionals are relying on electronic onboarding systems to handle tasks including assigning packing passes, computers, uniforms, e-mail addresses and security badges. Some employers--particularly those with a scattered workforce--are capitalizing on computerized learning systems for orientation and to deliver coaching on topics from sexual harassment avoidance to conflict resolution.

## 2.4. Staff Training Needs as a result of Information Technology Introduction

Training both physically, socially, intellectually and mentally are very essential in facilitating not only the level of productivity but also the development of personnel in any organization. Therefore, training can be put in a contact relevant to school administrators. However, knowledge is the ability, the skill, the understanding, the information, which every individual requires acquiring in order to be able to function effectively and perform efficiently.

Human resources, are the most valuable assets of any organization, with the machines, materials and even the money, nothing gets done without man-power. Abiodun (1999), submitted that: Training is a systematic development of the knowledge, skills and attitudes required by employees to perform adequately on a given task or job. It can take place in a number of ways, on the job or off the job; in the organization or outside organization. Adeniyi (1995), observed that staff training and development is a work activity that can make a very significant contribution to the overall effectiveness and profitability of an organization. He therefore, provides a systematic approach to training which encases the main elements of training.

The effectiveness and success of an organization therefore lies on the people who form and work within the organization. It follows therefore that the employees in an organization to be able to perform their duties and make meaningful contributions to the success of the organizational goals need to acquire the relevant skills and knowledge. In

appreciation of this fact, organization like educational institution, conduct final training and development programmes for the different levels of their manpower.

### 2.4.1 Staff Training and Development: A Vital Tool for Organisational Effectiveness

Usually, before training or development programmes are organized efforts are being made through individuals and organizational appraisals to identify the training needs. After the training and development programmes, an evaluation is carried out to ascertain the effectiveness of the programme in line with the need, which had been identified. It is worth of mentioning that organization development follows the development of individuals who form the organization. It follows that no organization becomes effective and efficient until the individuals have and apply the required skills and knowledge.

The need for improved productivity in organizations has become universally accepted and that it depends on efficient and effective training. It has further become necessary in view of advancement in modern world to invest in training. Thus, the role played by staff training and development can no longer be over-emphasized. However, the need for organizations to embark on staff development programme for employees has become obvious. Absence of these programmes often manifest in tripartite problems of incompetence, inefficiency and ineffectiveness. Oribabor (2000), submitted that training and development aim at developing competences such as technical, human, conceptual and managerial for the furtherance of individual and organization growth, also Isyaku (2000), postulated that the process of training and development is a continuous one. Man

is dynamic in nature, the need to be current and relevant in all spheres of human endeavour make staff development a necessity, to keep track with current events and techniques.

Technology has become the present and future of business. It is how most business transactions are accomplished and how job duties are carried out every day. Because of this, employees must be trained on the latest computer applications in order to perform their specific job duties.

There are different types of computer training that serve the purpose of employee training/development. One is general computer skills. In order to use the various computer programs that are required, employees of today must possess excellent general computer skills. This often encompasses the basics, Internet, E-mail, word processing, and the use of spreadsheet applications. Knowledge of database programs may also be required. There are a number of courses taught in these areas that range from teaching the basics to giving trainees the opportunity to improve skills they already possess. These classes are usually inexpensive and many of them take place during the course of a day. When this is the case, employers only need to send their employees to one day's worth of training for each area listed above or at least each that applies to the specific business or job title. That way, each will fulfill the necessary requirements while learning.

Even if your employees possess excellent computer skills, it may also be necessary to send them to training for learning how to use the updated applications they use every day.

Often times, updates mean change and while these may seem small, they can appear very large when the goal is to accomplish work and the latest version of a particular application is hindering this process. Learning a process that used to be like the back of an employee's hand suddenly becomes tedious and burdensome with certain updates.

Many companies also use proprietary applications, which are programs that were created specifically for a particular business or position within a company. Here, more specialized employee training/development is needed. This training may last longer, but is still just as important. It will cover the basics of such applications as well as a more in depth look at how they work, so that when the time comes, the implementation of the application may be completed as seamlessly as possible.

### 2.5. Challenges of Information Technology

With all the improvements in productivity and efficiency offered by new technologies, there are areas of concern that must be considered thoroughly by any organization before implementing a new technology. Security is a primary concern inherent in a mobile and accessible IT system. Denying network access to unauthorized users is an ongoing battle in many firms. Physical security of IT equipment is also an issue. Standley (2006) writes, "It was recently reported that the average business laptop held about $1 million of commercial data."

Companies implementing new technology must also take into account the social impact. According to Sussan (2006), "teamwork is a crucial element of workplace functioning."

He goes on to explain that studies have shown lower satisfaction levels for users of virtual meeting tools in contrast with fact-to-face meetings. This effect may be able to be mitigated with a hybrid virtual team, where members occasionally meet in a traditional physical location.

There are also some concerns to consider with the telecommuting arrangement. If team cohesiveness is a primary concern with an organization, the lack of interaction between peers could hinder this goal. Supervision of employees working off-site is also problematic. Evaluating performance, distributing the workload, and motivating employees is more difficult when they are not physically present. Finally, how will customer service be affected by a transition to a mobile workforce? Customer acceptance is important (Mamaghani, 2006).

The growth of new technologies to be used in the workplace is showing no sign of slowing down. Some examples of technology currently in development for commercial use are wearable computing, city and region-wide WiFi, and nanotechnology (Standley, 2006). Microsoft and IBM are working on collaboration technology that will facilitate virtual meetings where participants will be able to teleconference on their computer screens, while creating or changing documents and product designs using a "virtual whiteboard" (Mamaghani, 2006). These technologies and many more, including all the unforeseen advances, will continue to contribute to an increasingly mobile workforce. The challenge lies in discovering how to implement new technology in the workplace as it becomes available. New technology has been injected into the workplace at an

exponentially increasing rate over the last few decades. Many manage and deploy new technology due to rapid change and constant innovation." The ability to keep up with technology changes and integrate them in to business will require a paradigm shift in the way we view technology. Today's children are growing up in a high-technology era, and will be very capable of realizing this new business model in regard to technology (Standley, 2006).

There is inadequate technological infrastructure to support the integration of ITs (Manda, 2006). This refers to issues as poor or lack of national IT policy, low internet connectivity, inadequate supply of electricity, inadequate number of PCs, etc. There is need for policies that deregulate satellite communication and other telecommunication links, regulate government and cross-border data flows, etc. ICT policies can help address stringent tax regimes that still treat computers, communication equipment and other peripherals as luxury items, thus imposing heavy import duties on them and subsequently rendering these items very expensive.

Internet access is now widely available, but the efficiency is poor as many organizations experience downtime. The telecommunication services are the root cause of these downtimes in terms of, either, low bandwidth, technical faults and other network configuration problems. As Jensen (2005), puts it, there are also “many external systemic factors such as electricity, transport networks, import duties” etc, which impact on internet service delivery on the African continent. Yet for research purposes, access to the Internet is no longer a luxury or privilege for only a few people because in academic

circles, access to the Internet and hence to the world's stores of knowledge is a necessity. Thus there is urgent need for improved IT policies and infrastructure in organizations and countries.

### 2.5.1. Effect of Employment

Whether the increasing use of IT creates or destroys jobs remains a subject of debate. Theory suggests that the net impact depends on the relative strength of two competing effects: On the one hand, the use of IT can lead to innovations, which can result in output growth and a concomitant growth in jobs. On the other hand, process innovation and IT-related productivity gains imply that a given output level can be produced with less labour input. In addition, there can be substitution effects if new IT-related products and services replace other, potentially more labour-intensive, products and service. Depending on which of these effects dominates, the net impact of IT on job growth could be positive or negative. Furthermore, the net effect can vary between the firm level, the industry level, and the macroeconomic level. IT as investment products can generate additional employment in some sectors and labour displacement in others. This is part of the structural changes that are caused by the diffusion of IT in the economy, which will ultimately lead to a more efficient allocation of resources in the long run.

New empirical results based on firm-level data from the *e-Business Watch* 2006, survey suggest a positive relationship between IT-enabled innovations and employment growth. In addition, more advanced users of IT in the sample are significantly more likely to increase employment than less advanced users of IT. Finally, the empirical results

suggest that firms with a high share of college-educated employees tend to be more advanced users of IT, while the opposite holds true for firms with a lower share of college-educated employees. This is consistent with the view that a highly skilled workforce and intense IT usage complement each other. This could lead to changes in the labour market, which over-proportionately benefit highly skilled individuals. However, because the *e-Business Watch* 2006, survey does not cover all sectors of the economy, the results reported here cannot be extrapolated to the aggregate level.

### 2.5.2. Ethical issues

Ethical issues arise in the use of computers, although they enable people to do things that were too difficult or costly to be done manually. According to Kroenke and Hatch (l993), an action is unethical if it causes unnecessary harm to another person or has potential to do so. They view key ethical issues in relation to business information systems activities to be; software piracy, viruses and logic bombs, employee privacy, employee monitoring, job displacement and personal use of organizational resources.

A time when the computer has become a critical business tool for companies in Kenya, its misuse could affect overall success of a firm as it influences employee productivity (Mwondi, 2002). He reports that more employees are now surfing the internet for personal gains. It's therefore necessary for management to create a measure that prohibits employees from abusing the computer's internet privileges.

According to Mwondi, (2000), Kenyan firms have communication policies in place stipulating acceptable use of telephones or fax machines for personal purposes. It's however evident that most organizations have been slow to include some direction on internet usage. Employees have to realize that bandwidth is wasted when they abuse resources. For example, if an employee surfs the net to plan a holiday or shop for a car during working hours, the result for co-workers is slow internet access; which means an inability to communicate with business partners when its critical to reach management decisions. Therefore, organizations should implement policies on safety of technology such as the use of passwords to stop such misuse and only allow the right user to access data.

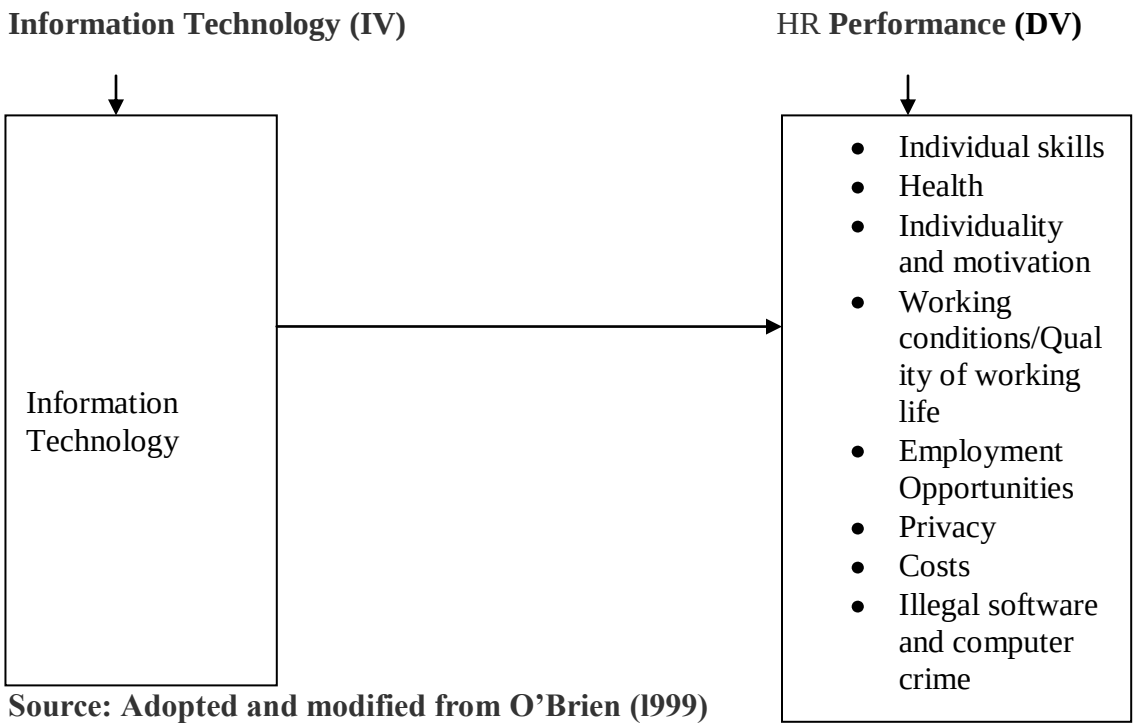
Information Technology has posed various challenges to management and telecommunications technology and networking are so deeply imbedded in the core process of business that they require careful management and planning (Laudon and Laudon, 2001). They say that new IT developments have created problems namely: connectivity, need for organizational change, the costs of technical problems and operations staff. Also difficulty of network bandwidth, reliability and security are among such challenges.

## 2.6. Conceptual Framework

The researcher adopted O' Brien's (1999) model of Ethical, Societal and Organizational Dimensions to conceptualize the framework within which the effect of IT on the performance of human resources can be perceived. This is because the model

emphasizes that the use of IT in business has major effects on society, organizations and individuals. This raises ethical and social considerations in areas such as privacy, computer crimes, health, working conditions, individuality and employment opportunities for employees.

However, it should be realized that IT can have either positive and negative effects in each of these areas. For, example, computerizing a production process may have the adverse effect of the Job, and the beneficial effect of improving the working conditions and job satisfaction of employees that remain while producing products of higher quality at a low cost. The above factors were assessed to find out the extent to which they affect employee performance and these factors were addressed in order for human resource to be effective in using IT. There were two variables under study, the dependent variable is the effectiveness of employee performance and the independent variable is Information Technology.




**Source: Adopted and modified from O'Brien (l999)**

Fig.1.1. A model of the Ethical, Societal and organizational dimensions of IT

## 2.7. Summary

The literature review has revealed the important role played by IT systems in enhancing effectiveness and efficiency of human resources for organizational success. A number of studies have paid attention, either in whole or in part, to the general issues and the challenges paused by IT to management and business productivity. However, very few studies have been conducted on the effects and the challenges IT has had on human resources over the years. Therefore, the effects of technology on the human resource factor in organizations need to be researched in more detail to come up with the overall effectiveness for business success. Based on this background, the research was undertaken to fill the gap and find out the extent to which IT affects human resource performance in a dynamic business environment.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0. Overview

This chapter covers research design, population and sampling design, sampling design, data collection instruments, pilot study, limitations of the study and description of data analysis.

## 3.1. Research Design

A survey research design was employed in order to cover the study population at Masinde Muliro University of Science and Technology. This design was adopted because it was the most appropriate for the study in terms of time and costs involved. The design allowed the researcher to gather information, summarize, present and interpret for the purpose of clarification basing on (Luch and Ruben. 1992).

## 3.2. Population and Sampling Procedure

The study used employees of Masinde Muliro University of Science and Technology as respondents in order to gather relevant data. The study sample was drawn from a target population of 203 employees. Stratified random sampling technique was employed to get the study sample. According to Mugenda and Mugenda (2003) the purpose of stratified random sampling is to achieve desired representation from various subgroups in the population.

The population was divided in strata according to departments. The target population was 203 employees. Stratified random sampling techniques was used to sample 136 respondents which is 67% of the target population. Mugenda and Mugenda (2003) suggest that in descriptive studies ten percent of the survey population is representative enough to generalize characteristics being observed.

### 3.3. Sampling Method

The study used a stratified random sampling by lottery method to obtain the employees to respond to the structured questionnaires. In the lottery method, each member/item in the "population" was assigned a unique number. The probability of picking any card was equal for all the cards since each card represented a member of population, the probability of selecting each was exactly the same. Sampling made the study less expensive. Fewer people were interviewed, and therefore collecting, processing and tabulating the data was much easier. When small samples are used, it is possible to give more attention to each return that is received and to check their accuracy.

Table 1: Distribution of Sample Stratified According to Employees' Departments

| Department | Strata Sizes | Sample size by strata |
|---|---|---|
| Finance | 28 | 17 |
| Administration | 42 | 29 |
| Secretaries | 56 | 47 |
| Procurement | 21 | 10 |
| Hostels and Catering | 25 | 11 |
| Library | 31 | 22 |
| Total | 203 | 136 |

Source: Masinde Muliro University of Science and Technology registry

### 3.4. Data Collection

Two types of data was gathered for this study. These included the primary and secondary data types. The primary data was derived from the answers the participants gave during the survey process. The secondary data on the other hand, was obtained from published documents and literature that was relevant to the study was obtained from offices and other resource centres which supplemented the primary data.

#### 3.4.0. Data Collection Instruments

#### 3.4.1. Questionnaire

The data for this study was obtained through personally administered structured questionnaires. These were advantageous because they could be filled easily and they were analyzed easily. The questionnaires was subdivided into two sections. The first

part of the questionnaires contained personal information and the second part touched on the various issues on the use of information technology by employees and the objectives of the study. The instruments were designed to start with general questions aimed at developing rapport with the respondent and ending up with more specific questions.

### 3.4.2 Interview Guide

Interview guides consisted of short structured questions prepared for face to face discussions with respondents. Structured interviews are standardized and do not allow the interviewer to deviate from the questions (Saunders, Lewis, and Thornhill, 2003). Interviews were appropriate to supplement questionnaires as a data collection instrument. This is because it enabled the creation of rapport and trust between respondents and interviewer, thus enhancing clarity and quality of information. The interview guide was designed specifically for senior administrative staff.

### 3.4.3 Pilot Study

A pilot study is a trial run to determine whether the instrument is clearly worded and free from major biases and whether it solicits the desired information (Polit & Hungler 1997). A pilot study was carried out on a small number of people at Moi University. From the pilot study it was possible to determine whether the questionnaire provided the data required for the study and its clarity to the respondents in answering the questions to provide a check on it as an important tool for the study and also to test reliability and validity of the instruments.

### 3.5 Validity of Instruments

The validity of an instrument is the determination of the extent to which the instrument actually reflects the abstract concept being examined (Burn & Grove l987).

In order to test for content validity of the instrument experts and specialists in the field of Human Resource Development (Supervisors) was used to validate the tool. The use of experts is supported by Polit and Hungler (l997) who maintain that experts on the content should be called upon to analyze the adequacy of each item in the instrument.

### 3.6. Reliability of Instruments

The reliability of a research instrument is the degree of consistency with which the instrument measures the attribute it is supposed to be measuring. Reliability can be equated with stability, consistency or dependability of measuring tool (Polit & Hungler l991). Reliability is also said to occur when the same or similar scores are obtained with repeated testing with the same group of respondents. In other words, the scores are consistent from one time to the next.

Thereafter, the content of the interview questions was examined to find out the reliability of the instrument. Irrelevant questions were then excluded and words that were deemed difficult by the respondents were changed to much simpler terms. The respondents who were initially used for the validation of the instrument were excluded.

### 3.7. Data Analysis

The data was sorted, coded, categorized and finally tabulated in form of frequencies and percentages. Data collected by the researcher was presented using descriptive statistics

that is tables. The analysis was done using the Statistical Package for Social Science (SPSS) to generate frequency tables.

### 3.8. Study Limitations

Time and financial resources available was inadequate and this limited the sample size for the study. A sample size of 136 was a limitation as a much larger sample size of 200 could have provided better results. Some of the respondents were unwilling to reveal sensitive information on university policies which would have been of importance to the study. The study addressed the above limitations by assuring the respondents that the research was purely academic and that the findings will not be used against them.

### 3.9 Ethical Considerations

In keeping with the appropriate procedures and in the interest of maintaining the integrity of the research, the researcher made every effort to ensure that the ethical guidelines for conducting a study were strictly followed. Prior to commencing the research, permission was obtained from each employee, who participated in the study. All data collected from the respondents was kept in a secure location. The objectives and the significance of the study were relayed to the participants before initiating the research process. The researcher was solely responsible for conducting the whole research process and abided by all the policies regarding the university. Both confidentiality and anonymity of the informants who participated in the research was maintained. There was no Coercion or force to take advantage of the informants. An introductory letter and licence/permit was

obtained from the National Council for Science and Technology and also from Masinde Muliro University of Science and Technology.

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION AND INTERPRETATION

## 4.1 Overview

This chapter deals with data analysis, presentation and the interpretation of findings. The data presented includes background information of the respondents and an investigation into the Information Technology and its effects on the effectiveness of Human Resources at Masinde Muliro University of Science and Technology.

## 4.2 Background Information of the Respondents

The study obtained information from respondents with diverse characteristics in terms of gender, level of education, period of service in the institution. This information is useful especially in providing different views of the respondents in line with the outlined objectives and relevant questions they were asked.

### 4.2.1 Department of the respondents

Table 4.1. illustrates statistics concerning their departments.

***Table 4.1: Departments***

| | Frequency | Percentage (%) |
|---|---|---|
| Procurement | 9 | 6.6 |
| Sports | 2 | 1.5 |
| Dean of students | 5 | 3.7 |
| Finance | 23 | 16.9 |
| Criminology | 2 | 1.5 |
| Education | 3 | 2.2 |
| Production | 3 | 2.2 |
| Aids control unit | 1 | .7 |
| Catering | 11 | 8.1 |
| Administration | 38 | 27.9 |
| Biological | 2 | 1.5 |
| Student Affairs | 3 | 2.2 |
| Clinic | 2 | 1.5 |
| Management | 2 | 1.5 |
| Engineering | 2 | 1.5 |
| Library | 26 | 19.1 |
| IT | 2 | 1.5 |
| Total | 136 | 100.0 |

As shown above, administration department, library and finance have more employees using computers as they represents majority of the respondents. Most of the administrative work is to do with communication which is normally written

communication and therefore this is done on the computer for ease of retrieval, storage and distribution i.e. on email. For Finance department and Library the computers are mostly used for storage of information.

### 4.2.2 Position in the Department

Positions held by different respondents in their respective department.

Table 4.2. shows the results of the study.

***Table 4.2: Positions in the department***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Secretary | 47 | 34.6 |
| Senior Librarian Assistant | 8 | 5.9 |
| Library Assistant | 9 | 6.6 |
| Purchasing Officer | 1 | .7 |
| Accountant | 1 | .7 |
| cateress | 3 | 2.2 |
| Accounts Assistants | 8 | 5.9 |
| Ass. Administrator | 12 | 8.8 |
| Ass. Purchasing Officer | 3 | 2.2 |
| Senior Accounts Assistants | 5 | 3.7 |
| Assistant Hostels Officer | 1 | .7 |
| Hostels Officer | 2 | 1.5 |
| Office Clerk | 29 | 21.3 |
| Students Counselor | 2 | 1.5 |
| Assistant Binder | 5 | 3.7 |
| Total | 136 | 100.0 |

Majority of the respondents from Masinde Muliro University of Technology were found to be secretaries this is because all secretaries use computers in performing their duties followed by office clerks and assistant administrators as shown by 47 (34.6%), 29 (21.3%) and 12 (8.8%) respectively. This is because their area of work entails a lot of routine processing, dissemination and storing of information and report writing thus the need to use computers more frequently.

### 4.2.3 Gender

The respondents were asked about their gender and Table 4.3. illustrates the findings.

***Table 4.3: Gender of the respondents***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Male | 52 | 38.2 |
| Female | 84 | 61.8 |
| Total | 136 | 100.0 |

Majority 84 (61.8)% were female compared to their counterparts male who stood at 52 (28%). This can be ascertained by the fact that most of the respondents were secretaries who are female. Gender equality was an essential part of the United Nation's Universal Declaration of Human Rights in 1948. Article 23 stated that "everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment".

### 4.2.4 Age of the Respondents

The respondents were asked about their age and Table 4.4. illustrates respondents age.

***Table 4.4: Respondents age***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| 20-24 | 8 | 5.9 |
| 25-31 | 40 | 29.4 |
| 32-38 | 32 | 23.5 |
| 39-45 | 30 | 22.1 |
| 46-52 | 20 | 14.7 |
| 53 and above | 6 | 4.4 |
| Total | 136 | 100.0 |

It is clear that majority of the respondents' age was between 25 – 31, this is given by 29.4% followed closely by age groups 32-38 and 39 – 45 represented by 23.5% and 22.1% respectively. Other age groups included 46 – 52 with 14.7%, 20 – 24 with 5.9% while 53 year and above age group had a minority of 4.4%. This implies that majority of Masinde Muliro University of Science and Technology workers are at their prime ages which makes it easier for them to adapt to the technology.

### 4.2.5 Academic Qualifications of the respondents

When the respondents were questioned about their highest academic achievement, table 4.5. demonstrates the results of the study.

***Table 4.5: Academic qualifications***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Certificate | 35 | 25.7 |
| Diploma | 51 | 37.5 |
| Degree | 37 | 27.2 |
| Masters | 13 | 9.6 |
| Doctorate | 0 | 0 |
| Total | 136 | 100.0 |

Majority of the respondents seem to be diploma holders in their respective professional fields, this is evidenced by 51 (37.5%) as shown on table 4.5. Respondents with degree qualifications were represented by 37 (27.2%) while certificate holders had 35 (25.7%). The study also found out that respondents with masters were 13 (9.6%). When one is applying for a job or looking for a new business partner, the first thing people ask is, "what do you do?" In other words they judge one by their academic qualifications. No curriculum vitae is acceptable without the inclusion of education qualifications. Therefore it is an unannounced rule of both the corporate world and the social world that a man's acquisition of academic qualifications is a giant leap towards opportunities in every walk of life.

### 4.2.6 Hours working in a day

Respondents working duration in a day in terms of hours was sought and the statistics reveal findings.

***Table 4.6: Working hours***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| 8 hrs | 120 | 88.2 |
| 10hrs | 8 | 5.9 |
| 7hrs | 3 | 2.2 |
| 9hrs | 5 | 3.7 |
| Total | 136 | 100.0 |

The data accordingly reveals that majority of the respondents do work for 8 hours a day, this is shown by 120 (88.2%) of the respondents. This implies that 8 hours a day is the standardized and most commonly recognized working hours especially in government offices. Hours of work Under the Regulation of Wages (General) Order, subsidiary to the Regulations of Wages and Conditions of Employment Act, the general working hours are 52 per week, but the normal working hours usually consist of 40 hours of work per week, Monday to Friday 8 hours each.

### 4.2.7 Work experience

Respondents working experience especially in the particular field was sought. This was tabulated as shown in table 4.7.

***Table 4.7: Work experience***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| 1-5 | 20 | 14.7 |
| 6-10 | 53 | 39.0 |
| 11-15 | 28 | 20.6 |
| 16-20 | 18 | 13.2 |
| 21 and above | 17 | 12.5 |
| Total | 136 | 100.0 |

Table 4.7 reveals that majority of the respondents have a work experience of about 6 – 10 years, this is evidenced by 53 (39%). According to Kathrine Jensen 2009 work experience gives an employee an insight into the kind of work he/she is likely to be doing. Work experience also gives an opportunity to get to know a work place, the culture, the job roles and the other employees. It is also a way to learn more about what kind of training and development opportunities are available and gives the employee something to aim for or use as comparison in other contexts or with other employers.

## 4.3 Effect of Information Technology on the operational efficiency of Human Resource

Many researchers have shown and theorized both positive and negative effects of information technology being introduced in human resource systems. These effects were further investigated in Masinde Muliro University of Science and Technology by this study and the following represents various views of the respondents.

### 4.3.1 Computerized Department

The study sought to find out whether various departments in the study location were equipped with computer gadgets or not.

***Table 4.8: Computerized department***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 69 | 50.7 |
| Agree | 61 | 44.9 |
| Neutral | 4 | 2.9 |
| Disagree | 2 | 1.5 |
| Strongly disagree | 0 | 0 |
| Total | 136 | 100.0 |

It is clear that majority of the departments in Masinde Muliro University of Science and Technology are well equipped with computers, this is supported by both 69 (50.7%) and 61 (33.9%) of the respondents who agreed to be operating in a computerized departments. However, a minority of them, 2 (1.5%), and 4 (2.9%) disagreed or were

neutral. The results show that almost all the departments within Masinde Muliro University of Science and Technology are computerized and they use computers in their day to day activities. This is also evidenced in the results of the interview schedule with five Administrative officers who all agreed that their departments are computerized and that the few sections which were left out feel disadvantaged and inadequate in terms of functioning below the expected standards because they are not facilitated with computers.

### 4.3.2 Electronic Information Systems

Use of electronic information systems was also enquired by the respondents and table 4.9 illustrates results.

***Table 4.9: Electronic Information System***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 45 | 33.1 |
| Agree | 80 | 58.8 |
| Neutral | 5 | 3.7 |
| Disagree | 6 | 4.4 |
| Total | 136 | 100.0 |

The study revealed that majority of the respondents agreed that they indeed use Electronic Information System, this is evidenced by 45 (33.1%) and 80 (58.8%) who both agreed. Those who remained neutral were 5 (3.7%), 6 (4.4.%) disagreed. According to the interview scheduled with the administrative officers the results revealed that Email is used frequently and the institution prefers it to other forms of communication because it reduces on staff who move around circulating documents. Documents are received at the

same time irrespective of distance in terms of emailing documents, it is also fast and cheap in terms of photocopying and printing bulky documents. A study conducted by Dawley and Antony in 2003 determined that Electronic mail is being used for multiple tasks such as circulating documents, requesting information and having brief conversations at the users convenience. According to Daft, & Lengel (l996), Electronic mail is, to date, the most successful and widely used form of computer-mediated communication. Electronic mail seems to be gaining on phone and face-to-face interaction by leaps and bounds as the central method of information exchange at work, Kaufmann, (2006).

### 4.3.3 Use of hard copy memos for internal communication

Respondents were asked whether they still use hard copy memos for internal communication despite their computer systems being reliable and effective.

***Table 4.10: use of hard copy memos***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 18 | 13.2 |
| Agree | 49 | 36.0 |
| Neutral | 15 | 11.0 |
| Disagree | 49 | 36.0 |
| Strongly Disagree | 5 | 3.7 |
| Total | 136 | 100.0 |

The findings thus revealed that though a sizeable number agreed to that fact, others disagreed with the use of such hard copy memos. This is clearly illustrated in table 4.10. 18 (13.2%) strongly agreed while 49 (36.0%) agreed, 15 (11.0%) were neutral about it, 49 (36.0%) disagreed while 5 (3.7%) strongly disagreed. The results show that though there are effective and reliable computer systems in use half the number has embraced the technology while the other half are still attached to the old ways of doing things. (Berghel, 1997), says that while Information Technology has generally been regarded as a positive force in organizational communication, due to its speed, convenience, the increased social interaction it affords and the ability it gives people to communicate with others regardless of geographic location or time (Cleary & Freeman, 2005), it has also been cursed as a tool that creates and exacerbates conflict (Friedman & Currall, 2003; Landry, 2000).

### 4.3.4 Creating value from use of computer systems

Respondents were further asked whether Masinde Muliro University of Science and Technology creates value from use of computer systems by sharing knowledge and promoting organizational core values and table 4.11. illustrates findings.

***Table 4.11: Creating values***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 7 | 5.1 |
| Agree | 68 | 50.0 |
| Neutral | 30 | 22.1 |
| Disagree | 29 | 21.3 |
| Strongly Disagree | 2 | 1.5 |
| Total | 136 | 100.0 |

Quite a number of respondents agreed to that fact, this is displayed by 68 (50%) and 7 (5.1%) who both agreed. However, certain percentage 21.3% and 1.5% still believe that no value has been created by use of computer systems while some were undecided, (22.1%). When asked to compare the two periods before and after introduction of IT, in terms of employee effectiveness and value created, the administrators said that there was improved efficiency and performance of work, Information management is good because it is organized. Work is easy to retrieve, speed of processing work is high. An employee can pick up work from where the other person left. Therefore there is evidence that information technology has created value in Masinde Muliro University of Science and Technology.

### 3.4.5 Established reliable and effective computer communication network

This question sought to determine the extent in which computer communication network is established in Masinde Muliro University of Science and Technology and how effectively its being utilized.

***Table 4.12: Effectiveness of computer communication network***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 7 | 5.1 |
| Agree | 74 | 54.4 |
| Neutral | 29 | 21.3 |
| Disagree | 22 | 16.2 |
| Strongly Disagree | 4 | 2.9 |
| Total | 136 | 100.0 |

An overwhelming percentage of the respondents acceded to the fact that established computer communication network has enhanced effective communication within Masinde Muliro University of Science and Technology. This is shown by both 54.4% and 5.1% of the respondents. However some respondents (16.2% and 2.9%) disagreed to that fact and instead thought that it has not effectively enhanced communication systems. The administrators interviewed confirmed that they were able to communicate effectively. They noted that the use of effective computer communication has minimized travels by employees from one campus to another. Documents can be scanned and sent via e-mail services and personal databases of employees can be accessed right from their campuses. They agreed that it has improved efficiency and productivity. Wreden (1997), noted that

application of information technology in business supported the organizations' business objectives by reducing costs and improving productivity. According to Hemel, (2000), Electronic Commerce is becoming a very significant global economic element in the twenty first century. He noted that the infrastructure for EC in a digital economy is a networked computing, which is emerging as the standard computing environment in business, institutions, home and government a trend that is being embraced in MMUST.

### 4.3.6 Has employees' morale been boosted

Has the implementation of the computer systems in Masinde Muliro University of Science and Technology boosted employees' morale at work place.

***Table 4.13: Employees morale***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 20 | 14.7 |
| Agree | 87 | 64.0 |
| Neutral | 18 | 13.2 |
| Disagree | 9 | 6.6 |
| Strongly Disagree | 2 | 1.5 |
| Total | 136 | 100.0 |

An overwhelming majority of the respondents have acceded to the fact that their morale has been boosted through implementation of computer systems. This is evidently shown by both 87 (64.0%) and 20 (14.7%). This therefore shows how important computers have become to the lives of employees. Interviews conducted with the administrators

indicated that staff love computers and IT equipments because it eases their work. They were more productive, they were able to meet deadlines, complete more tasks and consult widely on work issues with very little stress. Working with computers also helped them to acquire more skills as training is sometime organized in the event that a new software is installed. At the end of the training, certificates of attendance are awarded. This certificates are recognized during interviews for promotion and this boosts their morale. The skills enable them to become more competitive in the business world. Interviews with the administrators further indicated that morale boosting was very crucial if the skilled workforce was to fully utilize its potential to the maximum. Otherwise, they noted, employee turnover would increase if the morale of workers was not kept to the acceptable standards.

### 4.3.7 Supervision Enhanced

The study further sought from the respondents the extent in which implementation of the computer systems has necessitated the supervision role of managers. Table 4.14 shows the results.

***Table 4.14: Supervision enhanced***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 11 | 8.1 |
| Agree | 25 | 18.4 |
| Neutral | 26 | 19.1 |
| Disagree | 41 | 30.1 |
| Strongly Disagree | 33 | 24.3 |
| Total | 136 | 100.0 |

Majority of the respondents have disagreed to that fact, this is supported by 41 (30.1%) and 33 (24.3%) of the respondents from table 4.14. However, a sizeable number of respondents (8.1% and 18.4%) agreed by showing that the IT systems has enhanced supervision role of managers. It is evident from the results that Masinde Muliro University of Science and Technology has not taken advantage of information technology to use it as a tool of supervising their staff. According to Byrd and Turner, (2000), the establishment of an appropriate ICT infrastructure provides an organization with the flexibility and responsiveness to adapt to changing business environment.

### 4.3.8 Transacting business

The study went further to investigate if Masinde Muliro University of science and Technology uses IT systems to transact business with its suppliers and customers and table 4.15. illustrates the findings.

***Table 4.15: Transacting business***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 11 | 8.1 |
| Agree | 75 | 55.1 |
| Neutral | 29 | 21.3 |
| Disagree | 16 | 11.8 |
| Strongly Disagree | 5 | 3.7 |
| Total | 136 | 100.0 |

Majority of the respondents, 75 (55.1%) and 11 (8.1%) have agreed that it's a fact the institution uses IT systems to transact business. Just a few respondents, 16 (11.8%) and 5 (3.7%) disagreed to that fact while some, 29 (21.3%), were undecided. Interview conducted support the results above, the Administrative Officers interviewed said programmes had been installed. These programmes were called AMIS and HRIMS which were to be used in transacting business. The Finance department also had different programmes which were being used by students finance and for staff matters. Today, core HR responsibilities as diverse as recruitment, oversight of legal and regulatory

compliance, benefits administration, and the safeguarding of confidential employee information cannot be carried out effectively without high-tech tools (Zeidner, 2010).

### 4.3.9 Storage of Expert knowledge

To determine the extent to which respondents believed that computers in Masinde Muliro University of Science and Technology could store expert knowledge and be used for the benefit of organizational operational efficiency, table 4.16 shows the results.

***Table 4.16: Expert knowledge***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 24 | 17.6 |
| Agree | 83 | 61.0 |
| Neutral | 16 | 11.8 |
| Disagree | 12 | 8.8 |
| Strongly Disagree | 1 | .7 |
| Total | 136 | 100.0 |

It is clear from table 4.16 that majority of the respondents believed that computers installed in their organization can store expert knowledge, this is shown by 61% and 17.6% agreeing while a few, 11.8% and 0.7% disagreeing. 11.8% of the respondents were undecided. Interview results revealed that the programmes installed, AMIS and HRIMS would store export knowledge overtime for future operational efficiencies. The software installed would not only store expert knowledge over time but could also enable

repair and maintenance. The software would enable the operations of Human resource functions to be made easier.

### 4.3.10 IT Systems Saving Time

Time taken to perform particular task through use of computer systems was also evaluated compared to the non-computer systems. The results of this is illustrated through table 4.17.

***Table 4.17: Time taken***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 59 | 43.3 |
| Agree | 67 | 49.3 |
| Neutral | 6 | 4.4 |
| Disagree | 2 | 1.5 |
| Strongly Disagree | 2 | 1.5 |
| Total | 136 | 100.0 |

Almost all the respondents agreed to this fact that use of IT systems reduces the time taken to perform a particular task compared to other initial methods. This is illustrated by both 43.3% and 49.3% agreeing and only 1.5% disagreed to this fact. When asked to describe whether the IT systems were efficient in terms of cost and time, the administrators said it reduces paper work because some documents are emailed. Minutes are just kept for record purposes. Email reduces on staff who move around circulating documents. Multiple addressability means that the person can contact groups of people

within one organization or firm or outside it. Just in a few minutes your message is delivered and the information is distributed not to one individual but to a group of individuals, documents are received at the same time irrespective of distance.

### 4.3.11 Use of computer systems to increase production and efficiency

Respondents were questioned if they believed that through computer systems, production and efficiency would be increased. Table 4.18 illustrates the results of this finding.

***Table 4.18: Production and efficiency increased***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 36 | 26.5 |
| Agree | 56 | 41.2 |
| Neutral | 22 | 16.2 |
| Disagree | 18 | 13.2 |
| Strongly Disagree | 4 | 2.9 |
| Total | 136 | 100.0 |

Amazingly majority of the respondents in this case agreed to the fact that computer systems increase level of production and efficiency. This is given by 41.2% and 26.5% from table 4.18. A few, 2.9% and 13.2% tend to disagree to that fact though some, 16.2% were undecided. Computer systems improves productivity by speeding up the decision-making process. They also facilitate meeting planning and preparation. During the last decade, the increasing adoption of the Internet by organizations and individuals has contributed to Kenya's ability to view the world as a global village, reducing the spatial-

temporal separation between different regions of the world and enabling various forms of information to be freely and quickly diffused and exchanged. ICT has become the facilitator of business activities in the world today according to research findings by Dickson et la., (2001); Tapscott et al. (2000); Gill (l996). ICT is also a catalyst of fundamental changes in structure, operations, and management of organizations as observed by Dertouzos (l997).

## 4.4 Staff Training Needs Arising During Implementation of IT Systems

### 4.4.1 Are Employees trained on use of computer systems

Most employees are not trained on the use of computer systems therefore the study went a head to establish reality to this fact among the employees of the Masinde Muliro University of Science and Technology and table 4.19. illustrates the findings.

***Table 4.19: Staff training***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 5 | 3.7 |
| Agree | 27 | 19.9 |
| Neutral | 17 | 12.5 |
| Disagree | 64 | 47.1 |
| Strongly Disagree | 23 | 16.9 |
| Total | 136 | 100.0 |

This fact was not fully ascertained because majority of the respondents thought otherwise, this is supported by 47.1% and 16.9% who disagreed that staff are not trained

on the use of computers. However, 3.7% and 19.9% agreed by showing that staff are not being trained on use of IT systems while 12.5% were undecided. The interview schedule results with the administrators revealed that most of the staff who are hired to the institution join with some computer training depending on their area of specialization, there are computer packages for Finance staff which most of the finance people are usually already trained in as part of their course, likewise most of the secretaries as part of their course work under go computer training and other categories of staff. The results of the interview schedule also revealed that whenever new software is installed e.g. the AMIS and HRIMS the institution goes ahead to train the staff on the use of that particular software. The people who develop the software train the staff involved in the department on how to use the software. Workshops are organized for identified people to be trained, manuals are prepared and distributed to the relevant staff on how to use the systems. Certificates of participation are given to staff who attend the training.

### 4.4.3 Invested on Training of employees on use of computer systems

Masinde Muliro University of Science and Technology has invested heavily on training of staff on use of computer systems, this fact was sought from the respondents and findings are as presented in table 4.20.

***Table 4.20: Investment on training of employees***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 4 | 2.9 |
| Agree | 17 | 12.5 |
| Neutral | 32 | 23.5 |
| Disagree | 50 | 36.8 |
| Strongly Disagree | 33 | 24.3 |
| Total | 136 | 100.0 |

Majority of the respondents, 36.8% and 24.3% believed that the institution had not done enough in investing on training of the employees to use computer systems. On the contrary 2.9% and 12.5% thought that the institution has done enough on training investment though a sizeable number (36.8%) were unaware. Despite the negative results, administrative officers interviewed revealed that they had a staff Training and Development policy on development. They use Training Needs Assessment to select the staff to be trained. They said there are accredited institutions who train people and that is where staff are taken for training. These institutions are KIA, Matuga, Mombasa etc. Training and workshops e.g. lectures notes, presentations are also prepared for staff and

at the end of the workshops certificates of attendance are given which motivates them to work harder.

### 4.4.4 Need to enhance awareness of the capabilities of the computer systems

The study thought that there was need to create more awareness on the capability of computer systems within the institution, but these employees had different views and the table 4.21. illustrates results.

***Table 4.21: Awareness of capability of the computer systems***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 11 | 8.1 |
| Agree | 44 | 32.4 |
| Neutral | 30 | 22.1 |
| Disagree | 42 | 30.9 |
| Strongly Disagree | 9 | 6.6 |
| Total | 136 | 100.0 |

Different respondents were divided in opinion, 32.4% and 8.1% agreed that there was need to create awareness of the capability of computer systems while 30.9% and 6.6% disagreed by stating that there is no need to create such awareness. However, 22.1% were not sure if the institution should create such awareness. It is important for the institution to make their staff aware of the capabilities of Information Technology. IT increases human resource information systems usage enables improved professional performance and in addition, according to Ulrich (1997), using IT provides value to the organization

and improves HR professionals' own standing in the organization. Information technologies provide enormous potential for enhancing productivity of human resources in both public and private sectors.

### 4.4.5 Sponsored by Institution

Respondents were further asked if they were sponsored to train in It operations, results of these finding is displayed in table 4.22.

***Table 4.22: Sponsored by institution***

| | **Frequency** | **Percent** |
|---|---|---|
| Strongly agree | 3 | 2.2 |
| Agree | 43 | 31.6 |
| Neutral | 15 | 11.0 |
| Disagree | 48 | 35.3 |
| Strongly Disagree | 27 | 19.9 |
| Total | 136 | 100.0 |

The results show that 31.6 and 2.2. agree to the fact that they have been sponsored for training, while 35.3 and 19.9 disagree and 11.0 are undecided. As earlier indicated the Institution has trained some staff on the installed programmes while others have been sponsored for courses outside the institution, institutions like Matuga, KIA and Mombasa. Workshops have also been held and certificates of attendance given. This is an indication that some staff have been sponsored for training. Some of the staff joined

the institution already with knowledge of computer from relevant training institutions and therefore did not need further or additional training.

### 4.4.6 Relevance of training to operations performed

Here the study went ahead to establish from respondents the depth in which kind of training they engage in was indeed relevant to tasks they always perform within the institution.

***Table 4.23: relevance of training***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 10 | 7.4 |
| Agree | 45 | 33.1 |
| Neutral | 23 | 16.9 |
| Disagree | 35 | 25.7 |
| Strongly Disagree | 23 | 16.9 |
| Total | 136 | 100.0 |

Table 4.23. indicates 33.1% and 7.4% of the respondents to be agreeing that they indeed do have relevant training on the operations they perform. Incidentally, 25.7% and 16.9% thought otherwise, while 16.9% again indicating to be undecided. The interview done with the administrative officers revealed that if an officer received training in an area that was not relevant to the task that one performs then the staff was transferred to a department where the skill received was relevant.

## 4.5 Effect of employee performance challenges arising due to implementation of IT systems

Installing computer systems in a given organization can have both negative and positive effects on employees' performances, adverse effect may be fear of job security that might reduce his overall performance and the beneficial effect may be improving the working conditions and job satisfaction of employees. These various levels of effects were investigated and the subsequent sub-titles include both results and their analysis.

### 4.5.1 IT as a threat to job security

The study attempted to investigate the extent to which computer systems pose a threat to job security of the respondents, below presentations shows results.

***4.24: A threat to job security***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 3 | 2.2 |
| Agree | 33 | 24.3 |
| Neutral | 20 | 14.7 |
| Disagree | 50 | 36.8 |
| Strongly Disagree | 30 | 22.1 |
| Total | 136 | 100.0 |

When the respondents were asked whether computer systems pose a threat to their job security 50 (36.8%) and 30 (22.1%) disagreed and strongly disagreed respectively, 33 (24.3%) and 3 (2.2%) were of the opinion that it posed a threat to their jobs while 20

(14.7%) were undecided. It is evident from the results that most of the staff are not worried about losing their jobs. Instead the interview results show that instead the staff asserted that the implementation of IT in the Institution has helped them acquire new skills, which they never thought they would get. The interviews with some of the Administrative officers revealed that Masinde Muliro University of Science and Technology was still a young institution and that no staff has been reduced so far as a result of the introduction of computers. This is because the university is still growing and has not achieved the required number of staff.

Any changes in an organization brings with it fear among staff, fear for the unknown, fear for their job security. According to Prinsonneault and Kraemer, (1993), the use of ICT brings many changes to organizations. These changes allow for flatter organizational hierarchies, reduced number of employees, increased productivity, and decreased span of control. As also noted by Dickson et al, (2001), that almost all organizations in America, both public and private, in manufacturing, agriculture, or service, use various types of ICT to support their operations.

### 4.5.2 Old ways of doing things have hindered us from fully utilizing the capabilities of computer systems installed

***4.25: Old ways of doing things***

| | Frequency | Percentage (%) |
|---|---|---|
| Strongly agree | 6 | 4.4 |
| Agree | 74 | 54.4 |
| Neutral | 24 | 17.6 |
| Disagree | 25 | 18.4 |
| Strongly Disagree | 7 | 5.1 |
| Total | 136 | 100.0 |

When asked whether their old ways of doing things had hindered them from fully utilizing the capabilities of computer systems installed the responses were as follows: 74 (54.4%) and 6 (4.4.%) agreed that their old ways had actually hindered them from fully utilizing the capabilities of computer systems installed while 25 (18.4%) and 7 (5.1%) disagreed and 25 (18.4%) were neutral about the matter. It is evident that change is difficult to cope with, people will always be attached to their routine way of doing things, this hinders the organization from achieving their goals and objectives fully. Information technology (IT) is recognized as a critical infrastructure in many organizations. IT is also emerging as an effective contributor to organizational performance. (Schuler et al., (2001) and Mayfield et al., (2003) noted that major changes included contemporary use of Information Technology in support of the HRM process. More so, a careful analysis indicated that increased human resource information systems usage enabled improved

professional performance and in addition, according to Ulrich (1997), using IT provides value to the organization and improves HR professionals' own standing in the organization. Information technologies provide enormous potential for enhancing productivity of human resources in both public and private sectors. That is why Masinde Muliro University of Science and Technology should strive to make sure that the old ways of doing things are done away with and that people should be able to cope with the new way of doing things to be able to be competitive in the global arena.

### 4.5.3 Constrains experienced while using IT systems

***Table 4.26: Constraints experienced while using IT systems***

| | Frequency | Percent |
|---|---|---|
| Strongly agree | 6 | 4.4 |
| Agree | 95 | 69.9 |
| Neutral | 12 | 8.8 |
| Disagree | 16 | 11.8 |
| Strongly Disagree | 7 | 5.1 |
| Total | 136 | 100.0 |

The respondents were asked if they experienced any constraints while using IT systems. 95 (69.9%) and 6 (4.4%) were in agreement that indeed they experienced such constrains while 16 (11.8%) and 7 (5.1%) disagreed. 12 (8.8%) were not sure. It is obvious from the results that indeed there are challenges of using IT systems. The interview results revealed that there is the issue of confidentiality which if not addressed early brings in

rumours (grapevine) especially when using e-mails which is a distress to the organization. There is also the problem of hacking into your computer e.g. if this happened in finance department this can cause a very serious problem in terms of budget, salaries e.g. adjusting figures, which can disorganize the whole organization. With all the improvements in productivity and efficiency offered by new technologies, there are areas of concern that must be considered thoroughly by any organization before implementing a new technology. Security is a primary concern inherent in a mobile and accessible IT system. Denying network access to unauthorized users is an ongoing battle in many firms. Physical security of IT equipment is also an issue. Standley (2006), writes, "It was recently reported that the average business laptop held about $1 million of commercial data."

### 4.5.4 Computer systems affecting personal rights as employees

***Table 4.27: Personal rights of employees***

| | **Frequency** | **Percentage (%)** |
|---|---|---|
| Strongly agree | 4 | 2.9 |
| Agree | 53 | 39.0 |
| Neutral | 29 | 21.3 |
| Disagree | 35 | 25.7 |
| Strongly Disagree | 15 | 11.0 |
| Total | 136 | 100.0 |

When the respondents were asked if the computer systems were affecting their personal rights as employees they gave the following responses. 39.0% and 2.9% were in agreement, 25.7% and 11.0% disagreed. 21.3% were neutral. Ethical issues arise in the use of computers, although they enable people to do things that were too difficult or costly to be done manually. According to Kroenke and Hatch (l993) an action is unethical if it causes unnecessary harm to another person or has potential to do so. They view key ethical issues in relation to business information systems activities to be; software piracy, viruses and logic bombs, employee privacy, employee monitoring, job displacement and personal use of organizational resources.

### 4.5.5 Frequent breakdowns, poor maintenance, power blackouts

***Table 4.28: Frequent breakdown, poor maintenance and blackouts***

| | **Frequency** | **Percent** |
|---|---|---|
| Strongly agree | 7 | 5.1 |
| Agree | 68 | 50.0 |
| Neutral | 20 | 14.7 |
| Disagree | 36 | 26.5 |
| Strongly Disagree | 5 | 3.7 |
| Total | 136 | 100.0 |

Frequent breakdowns, poor maintenance, power blackouts are some of the problems that are experienced when using computers. The respondents had the following results when asked whether the said problems existed in Masinde Muliro University of Science and

Technology. 68 (50.0%) and 7 (5.1%) were in agreement while 36 (26.5%) and 5 (3.7%) denied that fact while 20 (14.7%) were undecided. According to (Laudon and Laudon, 2001) Information Technology has posed various challenges to management and telecommunications technology and networking are so deeply imbedded in the core process of business that they require careful management and planning. (Laudon and Laudon 2001) say that new IT developments have created problems namely: connectivity, need for organizational change, the costs of technical problems and operations staff. Also difficulty of network bandwidth, reliability and security are among such challenges. The interviews conducted with five administrative officers revealed that Virus were causing a major threat to information systems of the Institution especially where they caused data loss. Power fluctuations was also another problem but they said this was not a major one because they had tried to install power surge which was helpful during that period.

### 4.5.6 Lack of peer interaction hinders team cohesiveness

***Table 4.29: Poor interaction***

| | **Frequency** | **Percent** |
|---|---|---|
| Strongly agree | 12 | 8.8 |
| Agree | 87 | 64.0 |
| Neutral | 20 | 14.7 |
| Disagree | 11 | 8.1 |
| Strongly Disagree | 6 | 4.4 |
| Total | 136 | 100.0 |

8.8% and 64.0% of the respondents strongly agreed and agreed respectively. 14.7% were neutral while 8.1% and 4.4.% strongly disagreed and disagreed respectively. Lack of peer interaction is not socially viable because it reduces physical contact. Companies implementing new technology must also take into account the social impact. According to Sussan (2006), "teamwork is a crucial element of workplace functioning." He goes on to explain that studies have shown lower satisfaction levels for users of virtual meeting tools in contrast with fact-to-face meetings. This effect can be mitigated with a hybrid virtual team, where members occasionally meet in a traditional physical location to discuss various issues about the organization. There are also some concerns to consider with the telecommuting arrangement. If team cohesiveness is a primary concern with an organization, the lack of interaction between peers could hinder this goal. Supervision of employees working off-site is also problematic. Evaluating performance, distributing the workload, and motivating employees is more difficult when they are not physically

present. Finally, how will customer service be affected by a transition to a mobile workforce? Customer acceptance is important (Mamaghani, 2006). Landry (2000) and other scholars contend that the depersonalization of the other and the lack of social cues such as facial expressions, tone of voice, gestures, and other cues found in face-to-face communication create misunderstandings between communicators.

# CHAPTER FIVE

# SUMMARY, DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.1. Overview

This study looked at the Information Technology and its effects on the effectiveness of Human Resources, a case of Masinde Muliro University of Sciences & Technology. Chapter one which constitutes the introduction to the study contains the background information, problem statement with relevant research questions, objectives of the study, scope and significance of the study. Chapter two of the study reviewed relevant literature. Chapter three deals with the methodology of the study and contains the research design, population, sample of the study, sampling techniques, data collection methods, design and administration of research instruments, and data analysis procedures. Chapter four provided the findings of the study. The data collected from the primary and secondary sources were presented and analyzed in the chapter according to the objectives of the study. Accordingly, the results of the study are discussed in this chapter. Recommendations and a conclusion are also presented.

## 5.2. Summary of Findings

The study was conducted in Masinde Muliro University of Science and Technology. Questionnaires were distributed then collected later and only 136 questionnaires were finally collected but 67 of them were not returned. The data obtained from the questionnaires was organized and analyzed qualitatively and quantitatively using interpreted information. In-

depth analysis and interpretation was carried out in line with the outlined objectives of the study of which conclusions and recommendations was drawn.

The study reveals conformity of the institution to the global trend of doing business in the digital economy and aligning itself to face future challenges in the competitive business environment using IT. The study therefore confirmed that indeed there exist different effects both positive and negative. From the investigations carried out on objective one, it is true that their departments are computer operated and their channels of communication are effectively networked. The study revealed that the extent of IT application in Masinde Muliro University of Science and Technology was wide, cutting across all cadres of staff and that there was significant relationship between the use of IT and the operational efficiency in Masinde Muliro University of Science and Technology. IT systems boosted employees' morale and that the employees have become more productive through acquisition of new computer skills and experience. On the other hand, supervision by the managers through this information technology was not proved fully to be effective.

Various needs of the staff in terms of training while implementing IT systems also arose where some respondents agreed that they had received training from the institution while others disagreed. The interviews held with administrative officers, however, revealed that there was a training and development policy in place. It also emerged that different cadres of staff joined the institution already having been trained in packages which are necessary for operation in their various fields of specialization.

Some challenges also arose where staff experienced difficulties in using IT systems in terms of security of their documents and lack of interaction with their peers.

### 5.3. Discussion of Findings

The first objective of this study accordingly tried to determine the effect of information technology on the operational efficiency of Human Resource. The statistics found revealed that indeed computer systems have increased the level of production and efficiency. This is given by the results in table 4.19. where 41.2% and 26.5% say they agree to that. A few, 2.9% and 13.2% tend to disagree to that fact though some, 16.2% were undecided meaning that either they do not use computers much in their day to day activities or are untrained in the use of computer.

On the issue of effective communication brought about by computers, the respondents interviewed confirmed that they were able to communicate effectively. They noted that the use of effective computer communication has minimized travels by employees from one campus to another. Documents can be scanned and sent via e-mail services and personal databases of employees can be accessed right from their campuses. This, they agreed has improved efficiency and productivity as given in table 4.12 where 54.4% and 5.1% of the respondents agreed that indeed there is effective communication brought about by computer communication. However some respondents (16.2% and 2.9%) disagreed to that fact and instead thought that it has not effectively enhanced communication systems. This could be as a result of the few respondents being ignorant on the use of communication via e-mail.

When asked to describe whether the IT systems were efficient in terms of cost and time, they said it reduces paper work because some documents are emailed. Minutes are just kept as a record. Email reduces on staff who move around circulating documents. Multiple addressability means that the person can contact groups of people within one organization or firm or outside it. Just in a few minutes the message is delivered and the information is distributed not to one individual but to a group of individuals. Documents are received at the same time irrespective of distance.

An overwhelming majority of the respondents have acceded to the fact that their morale has been boosted through implementation of computer systems. This is evidently shown in table 4.13 where both 87 (64.0%) and 20 (14.7%) saying they agree that IT has in fact boosted their morale. This therefore shows how important computers have become to the lives of employees. Interviews conducted indicated that staff love computers and IT equipments because it makes their work easy, they were more productive, they were able to meet deadlines, complete more tasks and consult widely on work issues with very little stress. Working with computers also helped them to acquire more skills as training is sometime organized in the event that a new software is installed, at the end of the training certificates of attendance are awarded. These certificates are recognized during interviews for promotion and this boosts their morale. The skills enable them to become more competitive in the business world. Interviews further indicated that morale booting was very crucial if the skilled workforce was to fully utilize its potential to the maximum. Otherwise, they noted, employee turnover would increase if the morale of workers was not kept to the acceptable standards.

The second objective of the study was to determine the staff training needs arising as a result of IT systems implementation. Majority of the respondents, in Table 4.20, 36.8% and 24.3% believed that the institution had not done enough in investing on training of the employees to use computer systems. On the contrary 2.9% and 12.5% thought that the institution has done enough on investment in training though a sizeable number (36.8%) were unaware. Despite the negative results, administrative officers interviewed revealed that they had a staff Training and Development policy on development. Training Needs Assessment is used to select the staff to be trained. The administrators said there are accredited bodies who train the employees and that is where staff are taken for training. These institutions are KIA, Matuga, Mombasa etc. Training and workshops e.g. lectures are also prepared for staff and at the end of the workshops certificates of attendance are given. As earlier indicated the institution has trained some staff on the installed programmes while others have been sponsored for courses outside the institution like in Matuga, KIA and Mombasa. Workshops have also been held and certificates of attendance given. This is an indication that some staff have been sponsored for training. Some of the staff joined the institution already with knowledge of computer from relevant training institutions. The interviews done also revealed that if the training received was not relevant to the task that one performed then the staff was transferred to a department where the skill received was relevant.

The third objective of the study tried to assess the extent to which challenges arising due to implementation of IT systems have had effect on employee performance. When the respondents were asked whether computer systems pose a threat to their job security 50

(36.8%) and 30 (22.1%) disagreed and strongly disagreed respectively, 33 (24.3%) and 3 (2.2%) were of the opinion that it posed a threat to their jobs while 20 (14.7%) were undecided as given in table 4.24. It is evident from the results that most of the staff are not worried about losing their jobs, instead the interview results showed that staff asserted that the implementation of IT in the Institution has helped them acquire new skills, which they never thought they would get. The interviews with some of the Administrative officers revealed that Masinde Muliro University of Science and Technology was still a young institution and that no staff has been reduced so far as a result of the introduction of computers. This is because the university is still growing and has not achieved the required number of staff. Any changes in an organizations brings with it fear among staff, fear for the unknown, fear for their job security. These changes allow for flatter organizational hierarchies, reduced number of employees, increased productivity, and decreased span of control.

When asked whether their old ways of doing things had hindered them from fully utilizing the capabilities of computer systems installed the responses were as follows as shown in table 4.25: 74 (54.4%) and 6 (4.4.%) agreed that their old ways had actually hindered them from fully utilizing the capabilities of computer systems installed while 25 (18.4%) and 7 (5.1%) disagreed and 25 (18.4%) were neutral about the matter. It is evident that changes are difficult to cope with, people will always be attached to their routine way of doing things, this hinders the organization from achieving their goals and objectives fully. Information technology (IT) is recognized as a critical infrastructure in many organizations. IT is also emerging as an effective contributor to organizational

performance. Major changes include contemporary use of Information Technology in support of the HRM process. Information systems usage enables improved professional performance and in addition, using IT provides value to the organization and improves HR professionals' own standing in the organization. Information technologies provide enormous potential for enhancing productivity of human resources in both public and private sectors. That is why Masinde Muliro University of Science and Technology should strive to make sure that the old ways of doing things are done away with and that people should be able to cope with the new way of doing things to be able to be competitive in the global arena.

In table 4.26 the respondents were asked if they experienced any constraints while using IT systems. 95 (69.9%) and 6 (4.4%) were in agreement that indeed they experienced such constrains while 16 (11.8%) and 7 (5.1%) disagreed. 12 (8.8%) were not sure. It is obvious from the results that indeed there are challenges in using IT systems. The interview results revealed that there is the issue of confidentiality which if not addressed early brings in rumours (grapevine) especially when using e-mails which can be a distress to the organization. There is also the problems of hacking into computers e.g. if this happened in finance department. This can cause a very serious problem in terms of budget, salaries e.g. adjusting figures, which can disorganize the whole organization. With all the improvements in productivity and efficiency offered by new technologies, there are areas of concern that must be considered thoroughly by any organization before implementing a new technology. Security is a primary concern inherent in a mobile and

accessible IT system. Denying network access to unauthorized users is an ongoing battle in many firms. Physical security of IT equipment is also an issue.

According to Sussan (2006), companies implementing new technology must also take into account the social impact. Teamwork is a crucial element of workplace functioning, studies have shown lower satisfaction levels for users of virtual meeting tools in contrast with fact-to-face meetings. This effect may be able to be mitigated with a hybrid virtual team, where members occasionally meet in a traditional physical location.

There are also some concerns to consider with the telecommuting arrangement. If team cohesiveness is a primary concern with an organization, the lack of interaction between peers could hinder this goal. Supervision of employees working off-site is also problematic. Evaluating performance, distributing the workload, and motivating employees is more difficult when they are not physically present.

### 5.4. Conclusion

In conclusion, it is evidenced from the this study findings that IT globalization has taken hold in Masinde Muliro University of Science and Technology and that the application of IT has impacted positively on the management of the Institution and human resource. However, it has been established that operational efficiency of the human resource within, experience various degrees of challenges through the use of information technology. Total overhaul of old way of communication needs to be instituted since certain departments in the research location were still using their old ways of internal communication like hard copy memos,

though this ought to be replaced by the modern sophisticated ones like computer communication networks. Among the challenges is also the issue of telecommuting bringing about lack of interaction between peers hindering team cohesiveness, this is an issue that can hinder team building among workers.

We always find training needs of employees in various sectors of a given organization to be suffering in one way or the other, Masinde Muliro University of Science and Technology reputations is not an exception therefore a cost effective training modes needs to be properly instituted to ensure increase in productivity and operational efficiency, and this would eventually make staff members to be more effective in their routine operations. It is always perceived especially in the third world countries that an effective organization in terms of various channels of communication needs to have invested heavily either on the training of the personnel or sponsoring employees for further training, this is evidently seen from the benefits accruing to pro-technology countries, mainly in the Western countries, which have continued to transform their economic, social and cultural development by using Information Technology over a period of time.

It is interesting to note that Information Technology is not a threat to the employees' job security as the results of the interview schedule revealed. Instead they asserted that the implementation of IT in the Institution has helped them acquire new skills, which they never thought they would get. Sharing knowledge and promotion of organizational core values was found to be at its modest through the use of the reliable and effective systems and this really adds value to the Masinde Muliro University of Science and Technology reputations. The

ability of IT systems to store expert knowledge and the acquisition of new IT skills by the employees were established as good indicators of the institution's operational efficiency.
No employee has been retrenched or laid off so far as a result of IT systems being implemented. The study results through an interview with the Administrative Officers revealed that the university was still growing and had not achieved its required number of staff.

Finally, from the study findings, this study suggests that IT is not a liability but rather an investment with benefits both to the organization and the individual employees in the long term. It is a lifeline of any promising organization in the competitive world today.

### 5.5. Recommendations

The study accordingly tried to examine the way forward to these effects that Masinde Muliro University of Science and Technology and its employees would be going through in their endeavor to use IT systems.

Operational efficiency of human resource through information technology systems can only be realized if the workers are kept at pace. This can only be realized through a series of training and insisting on use of only modern computerized systems. All the avenues of old ways of doing things in the organization should be blocked by checking regularly on how departments are dealing with communication, this would leave employees with no option but use of available means and in the long run efficiency would be realized.

Staff training needs has been cited widely to be expensive and demanding, especially to the small and middle sized organizations but this should be either put a priority before job recruitment is done. All the potential employees should prove their prowess in information technology before their absorptions and this might in the long run reduce training expenses to the company. At the same time, capability of the computer systems should be enhanced within various institutions, this would strengthen the need of implementing it among the workers and various channels of production and communications.

The existence of various dangers paused to information systems like computer viruses, power blackout, software, data and people necessitate security controls. The institution should invest heavily on controls to reduce risks faced.

The institution should invest more in IT through development and expansion of its existing IT systems for the benefit of its operational efficiencies and to fully utilize the current IT capabilities to enhance its operations and management.

### 5.6. Suggestions for further Research

The study recommends further research on Health and safety of staff using IT systems because the underlying aim of good health and safety management is to make sure that people's safety is not put at risk by the equipment that they use to do their work. Over the past twenty years a great many questions have arisen concerning the links that may exist between the use of computers and the health of those using them. With the increase in

computer use, a number of health and safety concerns related to vision and body aches and pains have arisen. That is why the study recommends research in this area.

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**Appendix I**

**LETTER TO RESPONDENTS**

Everline Awuor,
P.O. Box 4606,
ELDORET.

Dear Respondent,

I am a student undertaking Masters in Human Resource Development at Moi University. This questionnaire is part of my research work. I kindly request your cooperation by filling in the questionnaire. The Research Title is **"Effects of Information Technology on Human Resource performance at Masinde Muliro University of Science and Technology, Kenya".**

Thank you in advance.

**EVERLINE AWUOR**

**Appendix II**

**LETTER OF INTRODUCTION**

Everline Awuor
P.O.Box 4606,
ELDORET.

The Registrar,
Masinde Muliro University of
Sciences & Technology,
P.O. Box 190,
KAKAMEGA.

Dear Sir,

**RE: REQUEST TO CONDUCT AN ACADEMIC RESEARCH**

I am a student undertaking Masters in Human Resource Development at Moi University.

I am kindly requesting for an opportunity to conduct an academic research in your organization. The Title of the Research is: **"Effects of Information Technology on Human Resource performance at Masinde Muliro University of Science and Technology, Kenya".**

Thank you in advance.

Yours faithfully,

**EVERLINE AWUOR**

**Appendix III**

**THE QUESTIONNAIRE FOR EMPLOYEES**

**SECTION A**

DEMOGRAPHIC DATA

Please fill in the blank spaces at the end of each question or statement or simply put a tick where appropriate.

1. Department ……

2. Position/Designation……..

3. Gender: Male ☐ Female ☐

4. Age in years

   20 – 24 ☐

   25 – 31 ☐

   32 – 38 ☐

   39 – 45 ☐

   46 – 52 ☐

   53 and above ☐

5. Level of professional/academic qualifications

   Certificate ☐

   Diploma ☐

   Degree ☐

   Masters ☐

   Doctorate ☐

   Others(please specify)…….

6. State the number of hours you work per day ……

7. Work experience in years

1 - 5 ☐

6 – 10 ☐

11 – 15 ☐

16 – 20 ☐

21 and above ☐

**SECTION B**

Below are statements, which relate to the use of information technology at Masinde Muliro University of Science and technology. For each statement indicate with an X, in the appropriate box under the response that best describes your personal view with respect to use of information technology systems in the institution. The four responses provided are namely: **Strongly Agree; Agree; Neutral; Disagree; Strongly Disagree**.

| S.No. | STATEMENT | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| **Objective No.1** | | | | | | |
| 1. | Our department is computerized | | | | | |
| 2. | We use electronic information systems frequently | | | | | |
| 3. | Our computer systems are very reliable and effective but we keep on writing hard copy memos for internal communication | | | | | |
| 4. | In MMUST we create value from use of computer systems by sharing knowledge and promoting organizational core values | | | | | |
| 5. | MMUST has established a very reliable and effective computer communication network, thereby enhancing effective communication within the entire institution. | | | | | |
| 6. | The implementation of computer systems in MMUST has boosted employees morale at work place. | | | | | |
| 7. | The implementation of computer systems has enabled managers to see | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | what their junior employees do in the system without necessarily going through their immediate supervisor | | | | | |
| 8. | In the institution we use computer systems to effectively transact business with our suppliers and customers. | | | | | |
| 9. | The computer system installed in MMUST can store expert knowledge overtime and such expert knowledge can easily be availed for the benefit of the organizational operational efficiency. | | | | | |
| 10. | The use of IT systems has reduced the time taken to perform a task | | | | | |
| **Objective No. 2** | | | | | | |
| 11. | Most employees are not trained on the use of computer systems | | | | | |
| 12. | Most employees do not know how to use the computer systems to increase productivity and efficiency | | | | | |
| 13. | The institution has invested heavily on training employees on the use of computer systems | | | | | |
| 14. | There is need to enhance awareness of the capabilities of the computer systems available in MMUST | | | | | |
| 15. | I have been sponsored by the institution to train in IT operations | | | | | |
| 16. | The type of training is relevant to the operations I perform | | | | | |
| **Objective No. 3** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 17. | Use of IT operations in the institution is a major threat to our job security. | | | | | |
| 18. | Our old ways of doing things has totally hindered us from fully utilizing the capabilities of our computer systems installed in MMUST | | | | | |
| 19. | We have experienced constraints when using IT systems such as data security and maintenance? | | | | | |
| 20. | The use of computerized systems have affected our personal rights as employees. | | | | | |
| 21. | There are frequent breakdowns, poor maintenance, power blackouts thus affecting our work negatively. | | | | | |
| 22. | Because of telecommuting lack of interaction between peers hinders team cohesiveness. | | | | | |

**Appendix IV**

**INTERVIEW GUIDE**

**(THE INTERVIEW GUIDE IS FOR PRINCIPAL/SENIOR ADMINISTRATIVE OFFICERS)**

1. Do the employees in your department use computers in the performance of their duties?
2. Compare the two periods before and after introduction of IT, in terms of employee effectiveness.
3. Can you describe the IT systems as being efficient in terms of cost and time?
4. Describe the staff attitude towards the use of computers in doing their work?
5. Do you train the workers on the use of the systems installed?
6. How is the training conducted, is it internal or external?
7. Do you still maintain the same number of staff you had before introducing use of IT systems?
8. Are there any negative effects you have experienced by using computerized systems?