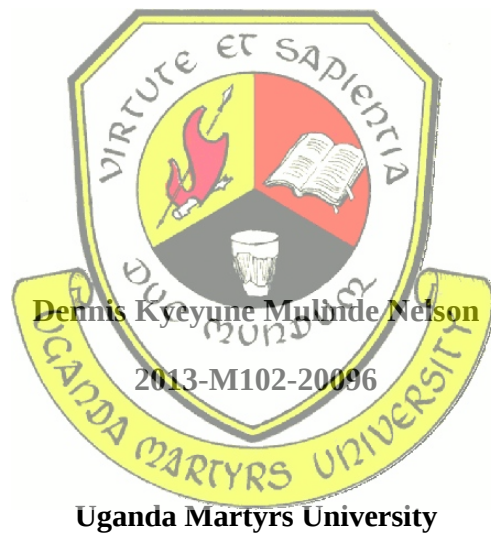


Information Systems and Employee Performance
A Case Study of Vision Group



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Information Systems and Employee Performance
A Case Study of Vision Group

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**A Research Report Presented to the Faculty of Business Administration and Management
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Award of the Degree of Masters of Business
Administration**

DEDICATION

This dissertation is dedicated to my beloved parents, Mr. Patrick Mulinde & Mrs. Barbra Babirye for their early inspiration and guidance.

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First and foremost, I would like to thank God for the precious life, wisdom, courage and determination. It is by His Grace that I have this work completed.

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List of Abbreviations

ANT	Actor–network theory
BASIC	Beginner's All-purpose Symbolic Instruction Code
COBOL	Common Business-Oriented Language
CPU	Central Processing Unit
CRM	Customer Relationship Management
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
FORTRAN	Formula Translation
GST	General Systems Theory
ICT	Information Communication Technology
IS	Information Systems
IT	Information Technology
MIS	Management Information Systems
NOS	Network Operating System
NVL	Vision Group Limited
OIS	Operations Information Systems
PCs	Personal Computers
ROI	Return on investment
SQL	Structured Query Language
STS	Socio-Technical Systems Theory
TAM	Technology Acceptance Model
TTF	Task-Technology Fit
WSM	Work Systems Model
WST	Work System Theory (WST)

ABSTRACT

The title of this study is Information System and Employee Performance. The general objective of this study was to investigate the effect of Information Systems on the performance of the employees at Vision Group Uganda. Specifically, the study was out to establish the effect of hardware and software on performance of employees of Vision Group; find out whether networks have a role to play with respect to the performance of employees Vision group and; to assess the effects of Information Systems processes on employee performance at Vision group.

A descriptive research design and specifically, the study was a case study. The study used a case study of Vision Group hence the study area was in the Central Division of Kampala. The study population was the employees of the organization irrespective of the level, tenure and the designation at the organization. The study sample used a probability proportional to size sampling to state the number of respondents per department and simple random sampling to select the sampling unit from the total number in the department. Thus, the study sample was 169. The researcher used questionnaire as the main instrument of data collection. Data was gathered by use of questionnaire, processed by editing, and computing. It was also analyzed by use of descriptive statistics (frequency tables, pie charts and bar graphs). The researcher used Pearson's correlation coefficient to determine the relationship between the two variables which were Information System and employee performance. In order for the study to investigate the effect of IS on employee performance, the study used multiple regression analysis at a 5% significance level.

The findings indicated that there is a 79.0% relationship between the independent variables and employee performance at Vision Group. At a 5% significance level, relationship between IS and performance of the employees at Vision Group. The findings indicated that for every unit increase (perceived improvement by employees) in Hardware & Software, Networks, End users and IS processes, perceived employee performance improved by 70.9%, 53.6%, -16.7% and 0.4% respectively. This literally means that there a significant positive perceptions of the employees towards the relevance of hardware and software as well as networks on their perceived performance.

The study recommends that in a bid to improve perceptions about the impact, the company should always make sure that functional hardware is availed to the employees and the software needs to be upgraded so that it is scalable and user friendly. The study advises Vision Group to make more investments towards improving the reliability of the networks available. The study recommends that the group streamline the Information System processes for improved performance.

CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

Today, the main focus of companies is to stay globally competitive by leveraging the capabilities of modern information and communication technologies (Winch & Carr, 2001). Companies can use ICT to provide products & services of the highest quality at affordable prices and top-rated customer service, and help the companies to enter new markets through e-commerce (Stone et al., 2007).

According to Kroenke (2015), Information Systems is an academic study of systems with a specific reference to information and the complementary networks of hardware and software that people and organizations use to collect, filter, process, create and also distribute data. The scholar adds that the main types of information systems include Management Information Systems, Transaction Processing Systems, Decision Support System, and Executive Information Systems (Chen et al., 2011).

Employee performance is defined as whether a person executes their job duties and responsibilities well (Gerish, 2015). Many companies assess their employee's performance on an annual or quarterly basis in order to define certain areas that need improvement. Performance is a critical factor in organizational success. Accordingly, Iyer et al., (2004) note that the main components of employee performance include punctuality, quality of work, efficiency, accuracy and innovativeness.

Hossain et al., (2012) studied the relationship between information systems and users by investigating performance on several factors, including the use of the system, system quality, information quality and performance of the user. In line with the above, Denning et al., (2013)

concluded that the above factors positively affect user performance, with findings that suggest that user satisfaction is an important factor which affects the use of the system.

The current study aimed at investigating the effect of Information Systems on employee performance. The study's independent variable was Information Systems and the dependent variable was employee performance. With no internationally specified measures of the variables under study, we chose to use ordinal measures using five point scales.

1.1 Background to the Study

Until the 1990s, before the widespread adoption of personal computers and the Internet, companies were using information systems to manage data processing and record-keeping activities associated with business transactions like maintaining the general ledger (book keeping), payroll, billing, inventory management, etc (Ericson & Jacoby, 2003). The focus was mainly on maintaining files and databases related to day-to-day operations.

Communications, both internal and external, relied on paper, telephone, faxes, and other analog media (Aram & Neumann, 2015). Information systems have evolved over the last 40 years, including the move from the mainframe computer of the 1970s to personal computers becoming an integral part of the tracking and organizational process in the 1980s. The arrival of the mainstream internet in the 1990s expanded business capabilities and the role of information systems to a global system of interaction (Carr & Kaynak, 2007).

Globalization, collaboration, and integration have become the new drivers in this competitive arena (Alter, 2013). To remain competitive, companies are investing in modern information systems like Enterprise Resource Planning (ERP) software, which integrate the different functional areas of the business, and provide consistent real-time data for fast decision making.

ERP systems help companies manage their operations seamlessly across the globe (Doll et al., 2004).

In the past when a company received a customer order, whether it was for a service requested or for a product purchased, the order needed to go through a process of paper-based workflow that was passed along to different departments, inbox-to-inbox (Bansal & Corley, 2012). Throughout this process, the order often had to be re-typed as it passed through various departments, increasing the potential for human error (Kroenke, 2015). There was no accurate account order status because there was no official tracking device to alert each department. In order to retrieve order status information, customers were frequently directed to contact the company's warehouse for manual research (Guo et al., 2011)

Today, companies have eliminated the inaccuracy of paper-based tracking by implementing ERP systems (Whiting & Sines, 2012). In a recent study conducted by Panorama Consulting Solutions, 63 percent of companies used their ERP software to eliminate inefficiencies in processes such as order tracking (Al-Mamary et al., 2014a).

Instead of standalone computer systems, ERP uses a unified program that links various functional departments such as finance, HR, manufacturing, warehouse, planning, purchasing, inventory, sales, and marketing. While each department may have its own set of software modules, the software is interconnected so that information can be shared throughout the organization (Hui et al., 2012). Once one department is finished updating and processing the order, it is automatically routed to the next department so that everyone is alerted to changes made (Fisher & Kenny, 2000).

As companies try to reduce costs, improve productivity, employers are looking to ERP systems to help them grow and remain competitive globally (Frels & Onwuegbuzie, 2013). Information

systems have enhanced productivity for businesses (Hassan et al., 2013). A career in managing information systems is ideal for those looking to advance in a Fortune 500 company (Laudon & Laudon, 2013). As businesses and organizations today require more and more technical skills, companies are looking for employees who will help manage and operate the various information-based tools (Deng & Chi, 2012).

Information Systems have revolutionized the management of contemporary organisations and introduced a paradigm shift in the way businesses operate (Nicholls-Nixon, 2005). The tourism industry is no exception; a variety of new computerized systems are designed to facilitate the inter-organizational and intra-organizational management and communications (Al-Mamary et al., 2014b). As a result, several cities in Africa have benefited by developing destination-management systems, which enable them to coordinate their operations and promote their products.

Information technology (IT) is crucial to the success of any business. IT has brought with it a number of changes and challenges that affect businesses (Hoe & Hoare, 2012). Information systems are the means by which organizations and people use computers to collect, process, store, use (analyze) and distribute information (Laudon and Laudon, 2013). Information systems contain information about significant people, places and things within the organization or environment surrounding it (Kasabeh, 2007).

Computer-based information systems are complementary networks of hardware/software that people and organizations use to collect, filter, and process, create, and distribute data. In order to circulate information and ideas, numerous Information Systems exist today that are continuously updated to promote ethnographic approaches; to ensure data integrity; and to improve the social effectiveness and efficiency of the whole process (Al Sharfa, 2004).

It is a common belief that when technology penetrates any economy, national productivity improves. Muhammad & Asfandiyar (2012) note that there are currently an estimated 1.8 billion business Internet users globally, expecting to grow to 2.2 billion users by 2013 (Ventakesh et al., 2013). There has been substantial growth in all world regions, with countries such as Africa and the Middle east both recording growth of over 1,600% during the last 9 years (Al Ganglji & Al Janabi, 2012). The countries of the Middle East and Africa currently represent only 8% of the global online population; however, the next five years will see some of the highest growth rates, around 13% (Munirat et al., 2014).

Uganda, through the Ministry of ICT has initiated the ICT policy (2012) that would be used by both public and private entities in improving their performance. The information needs in public entity administration encompass the information needs of virtually all institutions and organizations that may themselves derive their wellbeing from the activities of the national government, directly or indirectly (Kalemeera et al., 2012).

The government's raw material is information inputs, its products are those inputs transformed into policies, which is simply an authoritative form of information. Public administrators, thus, need to have good access to all government programs and activities.

Nkwasiwe (2012) observes that public administration is under the influence of social and cultural realities that vary accordingly from community to community, and from individual to individual. According to the scholar, this makes the public sector policy making an ill-structured science with many decision makers, unlimited alternatives, conflicting values, unknown outcomes and incalculable possibilities.

Mugabe (2013) points out that for long, public bodies have been well protected from internal and external frictions by the government, through its readiness to absorb, manipulate, and underwrite any costs they may incur from misreading changes and uncertainties. In this new era of structural

adjustment, according to Mugabe (2013), the public sector has lost much of this protection and must now start to address changes in the environment and adapt to them or face serious problems. Public administration is an open system affected by numerous external factors. Thus, the role of IS to the performance of the employees is insignificant based on the above mentioned scholars.

In a bid to improve the performance of her employee base, Vision group has put lots of emphasis on improvements in Information systems. In this respect, there are outdated systems that have been replaced with newer ones. Vision Group's management in search for business growth adopted various measures including, use of Information Systems like CIO365, Navision Accounting System, and Bluebird for managing paper circulation, Natural log for managing Radios and continuously implemented its human resource strategy that aims at attracting, developing and retaining a skilled workforce that is committed to delivering the company's objectives.

According to Vision Group Annual Report 2013-2014, during the last financial year, there was extensive training in key areas such as Multi-platform Journalism, Photography, Newsroom Management and Productivity Enhancement. Of much importance was also Navision Accounting system training to all finance staff following the upgrade from NAV2009 to the current version NAV2015.

1.2 Statement of the Problem

Information Systems are thought to have significant effect on Information Systems' users' jobs.

Al-Gharaibeh & Malkawi, (2013) studied the impacts of IS on the users' job from different perspectives by using different approaches and by measuring several factors, which include changes in the importance of the user's job, amount of work completed and accuracy of the job. Some studies (Taber et al., 2015; Ringim et al., 2012) confirmed that Information Systems increase productivity and improve employee performance and outcomes.

Several companies in Uganda have used IS in a bid to improve organization performance. These organizations include MTN and Airtel as well as National Water and Sewerage Corporation and UTL that use Accounting Information Systems and Management Information System. MTN and Airtel have been success stories hence their long term survival, however UTL hasn't been that successful. (Mugabe, 2013).

Vision Group introduced Accounting Information Systems like Navision, Management Information System like CIO, Blue bird for managing paper circulation and Natural log for managing radio with the sole intention of improving organization performance through improved employee performance.

However despite the use of the above Information Systems, the employee performance metrics have not exhibited satisfying findings over the last decade. The available evidence shows that the level of involuntary turnover of the employees is high with an average of 70 over the five years starting 2011 (Mwesigye, 2015). This could have culminated from the constant failure to hit the set targets for some of the employees, the increase in the number of errors and failure to meet deadlines for other employees and these are some of the indicators of poor employee performance (Munirat, Sanni & Kazeem, 2014). This identified gap downplays the importance of

Information Systems and therefore the focus of this study is to investigate the effect of Information Systems on employee performance at Vision Group.

1.3 Objectives of the Study

1.3.1 Major Objective

The general objective of this study was to establish the effect of Information Systems on the performance of the employees at Vision Group Uganda.

1.3.2 Specific Objectives

- i. To establish the effect of hardware and software on performance of employees of Vision Group
- ii. To establish the role of IS networks on the performance of employees Vision Group
- iii. To establish the effect of IS processes on employee performance at Vision Group
- iv. To establish the moderating factors affecting IS's effect on performance of employees

1.4 Research Questions

- i. What is the effect hardware and Software on Vision Group employee performance?
- ii. What is effect of computer networks employee performance?
- iii. What is the effect of Information Systems processes on the performance of Vision Group employees?
- iv. What factors moderate the effect of Information Systems on employee performance?

1.5 Scope of the Study

This section is divided into geographical, content and time scope

1.5.1 Geographical Scope

The study was carried out at Vision Group. The Group's headquarters are located on at 19-21 First Street, in the Industrial Area of Kampala, Uganda's capital and largest city. This location

lies at the intersection between First and Third Streets, in Kampala Central Division. This area was selected because most companies with in the same business environment as Vision group use Information Systems.

1.5.2 Content Scope

The study's main points of reference were the effect of Information Systems on employee performance with specific reference to Human Resources Management, Organizational Behavior and Information Communications Technology disciplines.

1.5.3 Time Scope

For the last 6 years the researcher has been attached to Vision Group that is 2011-2017, there has been a problem of declining performance amidst emphasis on the use of Information Systems at this organization hence carrying out the study from July 2016 to August 2017

1.6 Significance of the Study

The findings of the study will provide vital information to policy makers and human resource managers of Vision Group to either consolidate or re-think ways of improving their staff performance.

The findings of the study will add to the existing body of knowledge on the issue of Information Systems and employee performance at Vision Group.

The study findings may be used by future scholars and academicians especially in the field of management to broaden the knowledge gap and also act as a point of reference to these scholars.

The study findings will form a basis for policy especially in finding solutions to the loopholes coherent in the Information Systems at the organization.

1.7 Justification of the Study

Organizations worldwide have endeavored to put up several strategies for improved performance of their human resources base. Some use management related strategies while others use ICT related strategies.

The use of the latter at Vision Group has not been very effective with the problem still persisting. Unless research is carried out, the loopholes in the strategy cannot be identified and resolved and thereby the problem will persist.

1.8 Definition of Terms

An Information System is any organized system for the collection, organization, storage and communication of information (Al Saudi, 2005). The study defines Information Systems as a combination of ICT tools that can be used in processing, storage and retrieval of data in a fast and convenient way.

Employee performance is defined as whether a person executes their job duties and responsibilities well (Hernaes et al., 2012). Many companies assess their employee's performance on an annual or quarterly basis in order to define certain areas that need improvement (Kim & Kankanhalli, 2009). Performance is a critical factor in organizational success (Pavlov & Bourne, 2011). The study defines employee performance as how well an employee executes their duties and responsibilities in an organization.

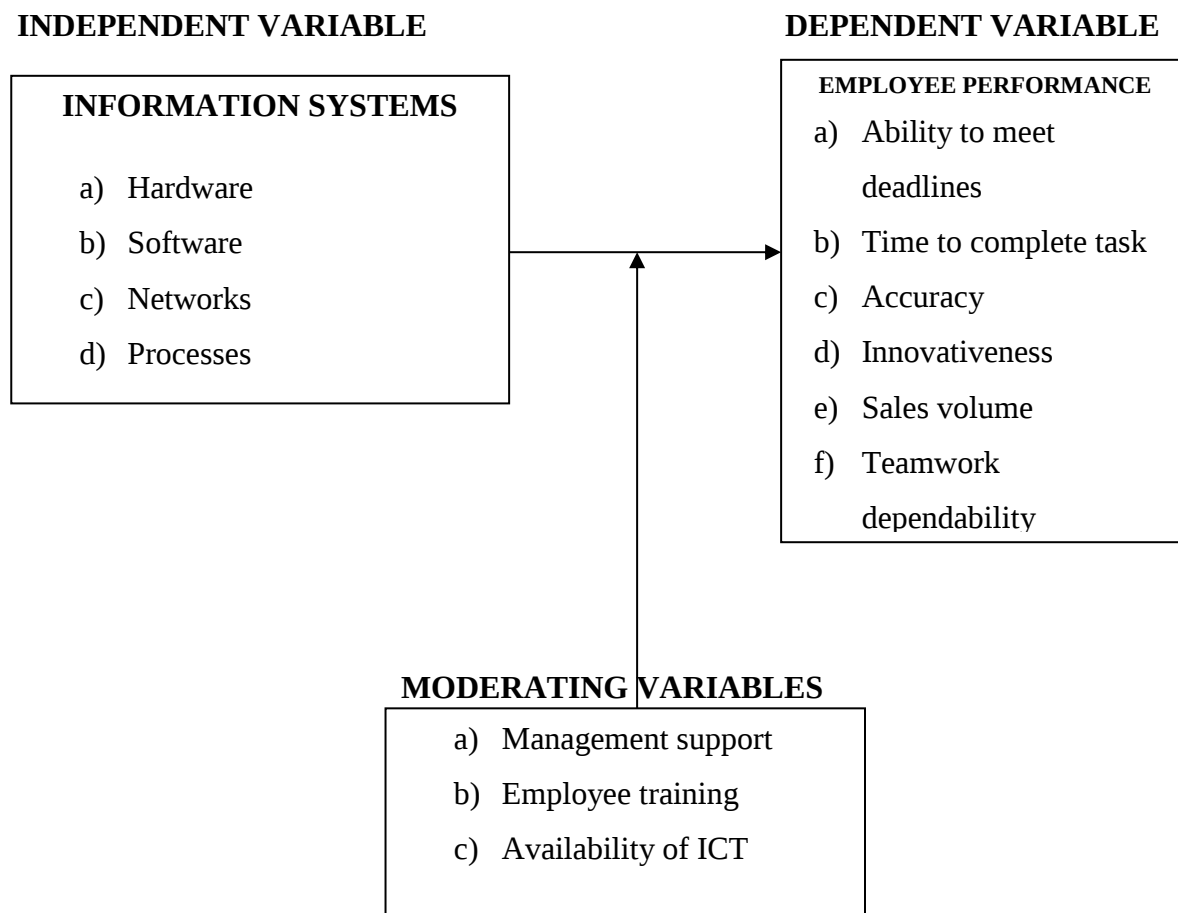
1.9 Conceptual Framework

In the early days of computing, each time an information system was needed it was 'tailor made' - built as a one-off solution for a particular problem (Chen et al., 2011). However, it soon became apparent that many of the problems information systems set out to solve shared certain characteristics. Consequently, people attempted to try to build a single system that would solve a

whole range of similar problems (Eason et al., 2012). However, they soon realized that in order to do this, it was first necessary to be able to define how and where the information system would be used and why it was needed. It was then that the search for a way to classify information systems accurately began (Castells, 2011). Thus, Information Systems will form the study's independent variable. The performance of any entity is explained by the performance of the individual units that form that entity (Armstrong, 2009). The study's dependent variable is thus employee performance.

The figure below presents a conceptual framework for the relationship between the study's dependent and independent variables.

Figure 1. 1 Conceptual framework



Source: Chen, P., Kataria, G., & Krishnan, R. (2011) modified by researcher.

As conceptualized from the framework Information Systems influence employee performance. Information Systems are presented as the independent variable and performance as the dependent variable, which is of primary interest to the researcher. Information systems dimensions considered in the model include; networks, people or end users, hardware and software (Al Fawzan, 2003).

On the other hand, employee work performance was conceptualized to include six dimensions and measured by ability to meet deadlines, time to complete task, accuracy in executing the tasks, innovativeness during task completion, contribution to sales volume and teamwork dependability (Al Omari, 2009).

According to Chen et al., (2011) Information Systems are of great importance regarding improving performance of the employees as a matter of fact that they improve the efficiency of the employees and knowledge sharing between the employees. This in turn improves both task (speed) and concept (innovativeness) performance.

Gerrish (2015) also asserts that there is a direct relationship between the Information System (computer specs and interconnectedness) on the performance of the individuals in a team but commented that there were some factors that inhibited this effect. In line with Supattra (2007), there is enough evidence to ascertain the fact that training of the employees and the availability of the ICT would certainly moderate the effect of IS on employee performance. Gebauer (2008) added that in most cases, the issues of decision making affect the effects of an undertaking (in this case IS) on performance of the employees.

1.8 Chapter Summary

The first chapter introduced the research topic by describing the background of the study and the problem statement was later discussed in the subsequent section. The three research objectives together with the questions were presented to address the relationships among the constructs. The scope of the study, its location and time aspects were considered in this section. A conceptual framework was adopted to examine the relationships between the variables. This chapter also discussed the practical significance of the study. The next chapter captures a review of literature based on the key variables and research objectives in question.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter will discuss the various theories that inform the relationship between the independent variable and the dependent variable which include the Work System Theory, Socio-technical theory and the stakeholders' theory. The System theory will be used as the lead theory however because its limitations it will be supported by Work System theory and stakeholders theory.

2.1 Theoretical Framework

The study on the effect of information systems is guided by three theories as discussed below.

2.1.1 Systems Theory

Systems theory is a product of the late 1940's, but its intellectual background goes deep into the nineteenth century (Bertalanffy, 1950). This history is worth knowing about because it provides insight into some of the perils of systems thinking. It is, and will probably continue to be, used as a frame of reference for practice, organizing within its broad scope a variety of micro-practical theories and techniques (Abdi et al., 2011). Considering the kinds of questions systems theory encourages us to ask and the general direction it takes us it will become apparent why systems theory in practice has been such a mixed blessing and is so easily exploited by the profiteers.

The usual definitions of a system are simple and general: "a totality of elements in interaction," or "the dynamic interrelatedness of components," (Muhammad & Asfandiyar, 2012) or "a whole which functions as a whole by virtue of the interdependence of its parts." Two salient characteristics of systems theory are prominent in these definitions: a concern for wholes and for interrelatedness.

From the first concern derives the problem of establishing boundaries: what is part of the system and what is not? What is outside the boundary of the system in question is labeled "environment. Allied to the second concern, interrelatedness, is the problem of "homeostasis." It is often assumed, particularly by social work systems theorists, that the major process characterizing the relationship of components of a system is the homeostatic tendency, mentioned earlier, of seeking balance or at least smoothness of operation (Deng & Chi, 2012). These are all, as we have seen, legacies of organismic sociology. The advent of cybernetics brought the idea that the key to interrelationships and their balancing tendencies was information. Thus, analysis of "messages" and "feedback" revealed important things about organization of both living and non-living systems (Carr & Kaynak, 2007). The basic concept of system, then, directs our attention to problems of wholes and their parts, their boundaries, their major processes (chiefly, homeostasis), and the information exchanges that drive these processes (Ringim, Razalli & Hasnan, 2012).

The applicability of this theory stems not only from the definition of IS but rather the fact that it incorporates all concerns of the study's objectives i.e. hardware & software, end users, networks and processes in an organization. All these form part of the organization's Information System. As mentioned earlier a system is defined as "a totality of elements in interaction," or "the dynamic interrelatedness of components. The elements are the end users, hardware and software. The interaction and interrelatedness is aided by the network and processes (Alter, 2013).

One of the greatest problems of systems theory, as amply demonstrated by its ancestry in organismic sociology, is the tendency to assume that parts of something defined as a system are related to each other without some attempt to see that they are (Patrick, Anthony & Yaw, 2013). It is one thing to be on the alert for subtle interconnections and unanticipated consequences. It is

quite another to assume, as did the conservative Social Darwinists, that things were so completely and bafflingly intertwined that society should be left completely free of planned direction or change. Due to this limitation Patrick et al., (2013) advised that the socio technical theory be adopted.

2.1.2 Socio-Technical Systems Theory

The term sociotechnical theory was introduced by the Tavistock Institute in the 1950's for manufacturing cases where the needs of technology confronted those of local communities, for example, long wall mining in English coal mines (Hongbin, 2006). In the 1950's-1960's computing was mainly about hardware, but the 1970's introduced the software era with business information processing (Rierner & Ferscha, 2013). The 1980's then gave personal computers, adding people into the equation, and email in the 1990's introduced the computer as a social medium.

The applicability of this theory stems not only from the definition of IS but rather the fact that it incorporates the entirety of the study's objectives i.e. the social part (end users & processes) as well as the technical part (hardware & software as well as the impact of networks or computer networks) on the performance of the employees (Kazmar, 2006). This theory will be adopted by this study.

The weakness of the theory is that there is considerable variation in what people mean by the term socio-technical system and this is inevitably confusing to potential adopters of these approaches (Resnick, 2002). Similar to the problems of terminology are problems in determining the appropriate levels of abstraction to use when analyzing and describing socio-technical systems. In attempting to make sense of the literature, Winter et al., (2014) suggested that it can

be divided into two basic categories. Each category is based on a set of values that underpins much of the thinking around socio-technical systems.

There has been significant theorizing about the way to design socio-technical systems, but recent published examples of successful use in the design of software-intensive systems are comparatively scarce (Sarker, Chatterjee & Xiao, 2013).

2.1.3 Stakeholder Theory

Developed by Friedman (1970), stakeholder theory provides a vehicle for connecting ethics and strategy. Most references to stakeholders in the information systems literature refer primarily to individuals or groups within the organization and contrary to the stakeholder literature in strategic management (Waddock & Graves, 2006).

As more inter-organizational information systems are developed which usually involve a strategic decisions, a yet wider range of stakeholders needs to be involved. In these systems the attention may switch from end-users and focus on those parties that are external to the organization, but which can be associated in decision-making at managerial or strategic level (Walsh, 2005).

Harrison et al., (2011) define organizational Information System stakeholders as “all those who have a practical concern for the effective application of new technologies, and who are in a position to take or to influence decisions about why and how they are used”.

The applicability of this theory stems not only from the definition of IS but rather the fact that it incorporates two of the study’s objectives i.e. the social part (end users & processes) on the performance of the employees. An organization need to take into consideration the needs of its employees (end users) as well as the needs of its clients in order to improve the business relationship which in in turn improves the work processes.

Stout (2012) has criticized stakeholder theory for assuming that the interests of the various stakeholders can be, at best, compromised or balanced against each other. The scholar argues that this is a product of its emphasis on negotiation as the chief mode of dialogue for dealing with conflicts between stakeholder interests (Harrison et al., 2011). It is indeed impossible to meet all stakeholders and compromising one stakeholder need in order to meet another's need may lead to losing business.

2.2 Information Systems

Information Systems (IS) is the study of complementary networks of hardware and software that people and organizations use to collect, filter, process, create, and distribute data. Information systems are combinations of hardware, software, and telecommunications networks that people build and use to collect, create, and distribute useful data, typically in organizational settings (Agarwal & Lucas, 2006). Information systems are interrelated components working together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and visualization in an organization (D'Atri et al., 2008).

Information systems hardware is the part of an information system you can touch – the physical components of the technology. Computers, keyboards, disk drives, iPads, and flash drives are all examples of information systems hardware (Yassin, 2006).

Software is a set of instructions that tells the hardware what to do. There are several categories of software, with the two main categories being operating-system software, which makes the hardware usable, and application software, which does something useful (Turban & Volonino, 2010).

Besides the components of hardware, software, and data, which have long been considered the core technology of information systems, it has been suggested that one other component should

be added: communication. An information system can exist without the ability to communicate (Spears & Barki, 2010) the first personal computers were stand-alone machines that did not access the Internet. However, in today's hyper-connected world, it is an extremely rare computer that does not connect to another device or to a network. Technically, the networking communication component is made up of hardware and software, but it is such a core feature of today's information systems that it has become its own category (Pollard et al., 2010).

The last component of Information Systems is process. A process is a series of steps undertaken to achieve a desired outcome or goal. Information systems are becoming more and more integrated with organizational processes, bringing more productivity and better control to those processes. But simply automating activities using technology is not enough (Munirat et al., 2014) businesses looking to effectively utilize information systems do more. Using technology to manage and improve processes, both within a company and externally with suppliers and customers, is the ultimate goal.

2.2.1 Information System Hardware

Information systems hardware is the part of an information system you can touch – the physical components of the technology (Bagad, 2010). The term hardware refers to machinery. This category includes the computer itself, which is often referred to as the central processing unit (CPU), and all of its support equipments. Among the support equipments are input and output devices, storage devices and communications devices are all examples of information systems hardware (Yassin, 2006).

2.2.2 Information System Software

The second component of an information system is software. Simply put: Software is the set of instructions that tell the hardware what to do. Software is created through the process of

programming. Without software, the hardware would not be functional (Bagad, 2010). Software can be broadly divided into two categories: operating systems and application software. Operating systems manage the hardware and create the interface between the hardware and the user. Application software is the category of programs that do something useful for the user. Application software is, essentially, software that allows the user to accomplish some goal or purpose

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2.2.3 Information System Networks

Computer networking really began in the 1960s with the birth of the Internet, as we'll see below. However, while the Internet and web were evolving, corporate networking was also taking shape in the form of local area networks and client-server computing. In the 1990s, when the Internet came of age, Internet technologies began to pervade all areas of the organization. Now, with the Internet a global phenomenon, it would be unthinkable to have a computer that did not include communications capabilities. This chapter will review the different technologies that have been put in place to enable this communications revolution.

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2.2.4 Information System Processes

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2.3 Employee Performance

As in the conceptual framework, employee performance is proxied by ability to meet deadlines, accuracy and efficiency, teamwork dependability, innovativeness and sales volumes as reviewed below.

2.3.1 Ability to meet deadlines

Different cultures have different perceptions of ability to meet deadlines and may value different aspects of it (Hickson & Pugh, 2002), whereby the variation attaches a different meaning of time through the ages. Taylor (2012) proposed six benefits of meeting deadlines among individuals in the organization and they included providing a sense of control, reduction in effort and fatigue, helps in goal achievement, maintenance of balance in life, reduction in stress and allows one to enjoy life more fully.

Team members have individual tasks or assignments that they need to do on their own. Most of these tasks have deadlines that other team members are reliant upon. Successful teams complete

these assignments within the specified time frame (Froebel & Marchington, 2005). It is especially important to meet deadlines when working in a group. Other team members could be stuck on their tasks until a different team member gets their job done.

The recognition of the importance of ability to meet deadlines in the world is traced back to the period of scientific management in 1911 as Taylor together with the work of Frank and Lillian Gilbreth became the launching pad for today's ability to meet deadlines (Taylor, 2012). In the scientific management the relationship between ability to meet deadlines and performance of work was restricted to manual workers.

The ability to manage time effectively becomes a fundamental to work performance, after the world has realized time wasters in the 21st century that had never seen. In fact, development of communication technology for instance, cell phones, and internet have become major agents of time wasters nowadays that has brought many requests or suggestions of things to do than ever and has influenced the failures among employees in accomplishing their task on time (Erwin, 2009).

According to Lufunyo (2013) nowadays ability to meet deadlines is seen as an important technique that allows managers in the organisation to accomplish more, serve more and if undertaken in a good way, is a customer oriented profession. Effective use of time is an active, not passive, undertaking rather than simply recording dates, times and details of meetings and tasks (Gupta, 2012). Although ability to meet deadlines had its start over a hundred years ago, the need for ability to meet deadlines is greater than ever. As the pace of life increases, the perception of time changes whereby people in the organizations are considered a superior performer when achieve the goals on time.

Ojokuku & Obasan (2011) conducted a study which was carried out in southwest geo-political zone of Nigeria to find out the ability to meet deadlines and Organizational Performance. Using five point scales, the scholars found that the relationship between ability to meet deadlines and the performance of the employees in an organization was 0.99.

Along similar lines, Njagi & Malel (2012) in the study conducted to find out the effects of ability to meet deadlines strategies on the performance of selected parastatal in Kenya. The findings revealed that there was an existence of a very strong positive relationship between ability to meet deadlines and organisation performances, although there was low positive relationship between the understanding of time bound performance that is measurable.

According to Tavakoli, Hamdollah & Leila (2013) who conducted the study of the relationship between ability to meet deadlines and job satisfaction and their result showed that, ability to meet deadlines has a positive influence on job satisfaction. This indicates that for employees in the local government authorities to be satisfied with their work they must manage their time in order to reduce stress at workplace.

2.3.2 Teamwork dependability

In this era of increased competition, leaders recognize the importance of teamwork more than ever before. Teams can expand the outputs of individuals through collaboration. Employees who are working in teams become the standard for the organization. Teams enable people to cooperate, enhance individual skills and provide constructive feedback without any conflict between individuals (Jones et al., 2007). Teamwork is an important factor for smooth functioning of an organization. Most of the organizational activities become complex due to advancement in technology therefore teamwork is a major focus of many organizations. One research study concluded that teamwork is necessary for all types of organization including non-profit

organizations (Pfaff & Huddleston, 2003). Team members enhance the skills, knowledge and abilities while working in teams (Froebel & Marchington, 2005).

Dependability is an important quality for a worker to possess because it enhances a wide variety of job performance categories. A dependable employee not only shows up for work on time every day but also produces consistent work and can apply company policies and business strategies evenly to each task and assignment. Dependability can lead to job security, which is all too important in tough economic times (Hartenian, 2003). Dependability in team members is essential to the success of any team. Everybody in the team knows which of the team members are not dependable. Conversely, everyone on the team knows which team members they can rely on.

To demonstrate reliability means to show people that one can be depended upon. A team needs to be able to rely on all members of the team to do their part. The major benefit of teams is they are able to achieve more than an individual would on their own. This only works if each teammate is reliable. Teammates need to feel like they can trust one another to do what they say they will do (Mickan & Rodger, 2000). Demonstrating reliability is the best way to establish and grow this trust. In this post we examine several ways team members show their reliability to the rest of the team.

Team members are counted upon to care about the cause of the team and to work toward the team's goals. Team members show they are committed to the cause by doing their part. They participate in group projects, contribute to conversations, and complete individual assignments for which they are responsible (Manz & Neck, 2002). Sometimes, showing commitment might mean going above and beyond expectations. When a solution doesn't come easily, they dig in

and keep trying until they figure it out. This may mean putting in extra time or effort on a project to help the team succeed.

In order for a car to be considered “reliable” the car must be consistent or run the same way all of the time. The way a team runs is much the same and relies on the consistency of the team members (Anderson & West, 2002). Consistency as a teammate means showing up and doing your best every single day. The more consistent team members are the more consistent the team will be. This consistency as a team will help the team be successful in reaching its goals.

Following through means team members do what they say they are going to do. Following through is an essential part of being a reliable teammate (Erden et al., 2003). When a team member says they are going to do something, the rest of the team trusts that it is going to get done. Follow through is where accountability meets the teamwork process. The team will know whether or not individual team members are following through with their commitments. When everyone follows through, the team succeeds.

2.3.3 Employee innovativeness

Organizations, who want to create a basis for long-term success, are constantly evolving. They strive for change at the right point in time to secure their economic survival (Janssen 2000). Therefore it is important to know how a companies’ ability to innovate can be improved, there are manifold thoughts on that topic to be found in literature. Innovation in this sense describes a new, technically feasible product or process, which generates an economic value. All innovation activity can be traced back to the behavior of employees. That makes the employee the center point of attention, if they want to improve their innovation ability. Employees can nourish Innovation or could even hinder it.

In 1994, Wolfe concluded that ‘our understanding of innovative behavior in organizations remains relatively underdeveloped’ (p. 405). More than a decade later, with increasing emphasis placed upon creativity in the knowledge economy, we have witnessed a mushrooming of conferences, courses, publications and journals devoted to uncovering the sources of innovativeness at work. Innovation research has, no doubt, progressed and advanced, and shed light on the factors that support or inhibit employees’ innovativeness. These factors are commonly divided into four broad categories, i.e. *individual, job, team and organizational level*, as they influence innovative behavior at different levels, sometimes independently, but most often in interaction (Anderson, Dreu & Nijstad 2004, Shalley & Gilson, 2004).

Abilities, in the context of innovation, describe the knowledge that is used by a person to solve challenges or problems. They are partially specific to a certain topic, since experienced employees can solve challenges connected to their knowledge faster, or easier (Janssen, 2000). On the other hand, a certain distance to a topic can lead to new insights and valuable solutions or ideas. To avoid so-called Lock-Ins, it is essential that an innovative employee has knowledge of different disciplines. The main reason for this is the large potential of transferring known solutions to other disciplines.

Basic knowledge of the innovative employee embraces systematic and intuitive methods for idea generation. Additionally he has knowledge from various professional and academic disciplines. Experts know furthermore the methods for determination of the search field, for idea evaluation and for realizing their ideas (Miron et al., 2004). Their knowledge covers the complete innovation process. Additionally and because of their high technological insight and empathy capability, experts have the extraordinary ability to recognize and analyze needs as well as to pass on their gained knowledge.

Employee innovativeness can be defined as engagement in innovative behaviors, which includes behaviors related to the innovation process, i.e. idea generation, idea promotion and idea realization, with the aim of producing innovations (Ramamoorthy, Flood, Slattery & Sardesai 2005). Innovations connected to the implementation or adoption of novel ideas can in turn be categorized as either technological (changes in products, services, production processes) or administrative (changes in activities, social processes, structures), and as either radical or incremental, depending on the extent of their influence for existing products or processes.

An individual's engagement in innovative work behaviors requires the individual to be both able (e.g. has certain cognitive capabilities, expertise, relevant task knowledge, necessary technical skills and personality characteristics) and willing (e.g. motivated and satisfied) to be innovative (Ford 2000). With respect to abilities, for example above-average skills, knowledge and general intellect, as well as task-specific skills and knowledge have been found to facilitate innovativeness (Taggar 2002). Skills relevant to creativity can be defined as the ability to think creatively, generate alternatives, engage in divergent thinking, and suspend judgment (Vincent et al. 2002, Shalley & Gilson 2004). Domain or task-specific skills in turn reflect an employee's level of education, training, experience, and knowledge within a particular context and with reference to particular tasks.

The innovative behavior of employees is nourished through a culture that emphasizes collaboration and communication between employees and guarantees freedom for the flow of information (Yuan & Woodman, 2010). The employees earn trust to realize their ideas independently. Necessary resources are provided in a sufficient amount. Good knowledge and idea management provides documentation and traceability of ideas. Furthermore creative space

is created, to enable the employees to break free from the daily work and support their intrinsic interest to generate Innovations.

2.3.4 Employee efficiency and accuracy

Efficiency measures relationship between inputs and outputs or how successfully the inputs have been transformed into outputs (Low, 2000). To maximize the output Porter's Total Productive Maintenance system suggests the elimination of six losses, which are: reduced yield – from start up to stable production; process defects; reduced speed; idling and minor stoppages; set-up and adjustment; and equipment failure. The fewer the inputs used to generate outputs, the greater the efficiency.

Efficiency is a companion to productivity, measuring how much effort and/or expense is required for an employee to maximize productivity. Coming up with a creative solution to cut costs, or reduce the number of mistakes made in production, or increasing the accuracy of data entry, are just a few examples.

According to Pinprayong and Siengthai (2012) there is a difference between business efficiency and organizational efficiency. Business efficiency reveals the performance of input and output ratio, while organizational efficiency reflects the improvement of internal processes of the organization, such as organizational structure, culture and community. Excellent organizational efficiency could improve entities performance in terms of management, productivity, quality and profitability.

2.3.5 Sales volume

Sales personnel play a key role in the formation of long-term relationships with business partners including buyers and suppliers (Zolthers et al., 2006). The relationship acts as the primary link between the buyer and the seller, creating the possibility for considerable influence on the

buyer's perceptions of the seller's reliability, the value of their services and consequently the buyer's interest in continuing the relationship.

The most effective means of measuring performance by sales representatives is by taking into account and measuring each of these factors including the volume of sales in dollars per given unit of time (Churchill, 2003): Sales volume alone won't indicate how much profit or loss each sale represents, as a salesperson may make too many concessions or sell to poor credit risks in order to make the sale. The number of calls made by a sales rep alone doesn't indicate if those accounts with the most profit potential are being serviced. In banking, the number of new accounts opened depicts the performance of the sales team. Comparing sales over a given period of time, say monthly periods each year, will not account for changes in price, product competition or routes.

The sales per square foot data are most commonly used for planning inventory purchases. It can also roughly calculate return on investment and it is used to determine rent on a retail location. When measuring sales per square foot, keep in mind that selling space does not include the stock room or any area where products are not displayed (Donaldson, 2007).

When factoring sales per employee, retailers need to take into consideration whether the store has full time or part time workers (Saha & Raut, 2003). To do this, the managers convert the hours worked by part-time employees during the period to an equivalent number of full-time workers. This form of measuring productivity is an excellent tool for determining the number of sales a business needs to generate when increasing staffing levels.

2.4 The Effect of Hardware and Software on Employee Performance

This sub section presents a review of the effect of hardware and software on employee performance in a typical private firm.

2.4.1 The effect of hardware on employee performance

Computer hardware is the collection of physical components that constitute a computer system (Albashabashh, 2005). Computer hardware is the physical parts or components of a computer, such as monitor, keyboard, computer data storage, hard disk drive (HDD), graphic card, sound card, memory (RAM), motherboard, and so on, all of which are tangible physical objects (Bredard et al., 2014)., Rajput & Gupta (2011) stated that the availability of computer hardware in the vicinity improved the punctuality and task performance of the employees.

Pitt, Berthon & Robson (2011) illustrate how new generation ICTs such as the Internet, laptops, smart phones and tablet computers are widely embraced in organizations (Wasko, Teigland, Leidner & Jarvenpaa, 2011). ICTs provide employees with a wide choice of ICTs like social media, instant messaging and email (Ou & Davison, 2011).

We live in an era where pretty much is automated and computerized (Spears & Barki, 2010). And amidst all the technological advancement that humankind has achieved, one important device has been created that will only sure to become more relevant to our lives as technology progresses, the computer (Siponen & Vance, 2010). It is too evident that computers are now an essential part of our lives, the same way a cell phone and television does. It is safe to say that in this day and age, having no computer would be an inconvenience (Sun, 2012). The hardware of the computer is considered to be the most important because without it, it will simply not work. Further, Frank & Oluwafemi, (2012) noted that the availability of hardware is critical for improving the quality of the work performed as well as personal presentation by the employees especially those with poor handwriting (Kumar et al., 2008).

Simply put if to handle the hardware of a computer and know each of their function for the unit, then one can easily determine what the problem is in case the unit stops functioning (Taneja et

al., 2013). In order to be familiar with basic computer troubleshooting, then one also need to be familiar with computer hardware (Ioannou & Mavri, 2007). All programs and applications that are ran in a computer needs memory. Without RAM it simply won't function (Mitchell, 2011). Aside from that, even if one have a RAM but it does have the specifications to keep up with the programs that are being ran, then the operation would be slowed down to a crawl (Bansal & Corley, 2012). So when it comes to computer hardware, one have to make sure that it is not obsolete, so one need to upgrade depending on what sort of program that one are usually using (Chang & King, 2005). Further, a study by Abubakar & Tasmin (2012) shows that with the required hardware available for the employees, the level of innovativeness and availability to learn by the employee improves and this positively affected their performance.

When handling computer hardware, one has to keep in mind some safety measures so one can manipulate the unit safely (Taylor & Murphy, 2004). Before opening any computer cases, employees have to make sure that the unit is unplugged or one might risk electrocution or shocks (Pollard et al., 2010). While checking one's hardware components, employees always check for damaged parts because that is most likely the one that is causing problems (Al Naggar, 2010). When inserting components and parts, the employees have to remember that if it doesn't fit, then most likely one are inserting it on the wrong slot (Doll et al., 2004). If it does not fit, then they do not force it or one will risk breaking the component. Before touching any parts inside the unit, employees make sure that one discharge oneself first by through a grounded metal object or one can use an anti-static wrist strap or mat which is sold in stores for cheap (Caldeira & Ward, 2002). With all these precautionary measures, Agbolade (2011) believes that the personal habits of the employees usually have to change and more attention will be given to instructors to improve accuracy and service delivery.

According to Al Meetani (2004), all aspects of human life have majorly been affected by technological revolutions. Organizations, as important sectors of society, have also been subjected to the revolutions; however, changes in this private sector of developing countries have not conformed to the daily pace of technology. Fast-paced growth of computer adoption along with computer-based technologies has had considerable influence on global business systems and computer knowledge and skills are turning into performance improvement tools in organizations (Guo et al., 2011). In addition, nations have recognized inevitable role of ICT and computer knowledge in order to improve work quality (Frank & Oluwafemi, 2012). Employees are the main contributors of prosperous interactions in private sector organizations performance. As individual employees have their own methods in adopting any other facilities in executing their duties, incorporation of technology, particularly computer, in the work plan depends on their experience and attitude and may occur in various levels (Kisely & Kendall, 2011). Adoption of technology, especially computer, in executing tasks has extensively reviewed by authors. In order for an employee to make use of computer in executing the tasks required, he/she needs to possess proper qualifications in computer knowledge (Abubakar & Tasmin, 2012). UNESCO has defined criteria for employees in adoption of technology in their profession: employees must have basic skills of software and hardware, applications, web, communication software, graphic, and managerial applications (Turban & Volonino, 2010). It is crystal-clear that employees' roles in adoption of computer in organizations in not negligible at all.

Whatever attempt conducted so as to revolutionize employment must consider employees' knowledge, skills, beliefs, and attitudes (Srivastava & Teo, 2012). The most important effects of computer hardware in employment in the private sector can be seen in development of

employees' capabilities, making more abundant and comprehensive educational opportunities, and improving training styles (Kroenke, 2014). However, the magnitude of the effects thereof has always been neglected by the scholars in the field and hence the need for this study.

2.4.2 The effect of software on employee performance

Software is a generic term for organized collections of computer data and instructions, often broken into two major categories: system software that provides the basic non-task-specific functions of the computer, and available application software which is used by users to accomplish specific tasks (Laudon & Laudon, 2013).

System software is responsible for controlling, integrating, and managing the individual hardware components of a computer system so that other software and the users of the system see it as a functional unit without having to be concerned with the low-level details such as transferring data from memory to disk, or rendering text onto a display (Jeffcoate et al, 2002). Generally, system software consists of an operating system and some fundamental utilities such as disk formatters, file managers, display managers, text editors, user authentication (login) and management tools, and networking and device control software (Munirat, Sanni & Kazeem, 2014).

Application software, on the other hand, is used to accomplish specific tasks other than just running the computer system (Deng & Chi, 2012). Application software may consist of a single program, such as an image viewer; a small collection of programs (often called a software package) that work closely together to accomplish a task, such as a spreadsheet or text processing system; a larger collection (often called a software suite) of related but independent programs and packages that have a common user interface or shared data format, such as Microsoft Office, which consists of closely integrated word processor, spreadsheet, database,

etc.; or a software system, such as a database management system, which is a collection of fundamental programs that may provide some service to a variety of other independent applications (Hasan, Shamsuddin & Aziati, 2013).

Software is created with programming languages and related utilities, which may come in several of the above forms: single programs like script interpreters, packages containing a compiler, linker, and other tools; and large suites (often called Integrated Development Environments) that include editors, debuggers, and other tools for multiple languages (Iyer et al., 2004).

Every high-growth business grapples with decisions around the best business system to manage its expanding operations (Gordon et al., 2011). Proper planning of an integrated business management software system often takes a back seat to short-term revenue acceleration goals. As a consequence, various disparate applications are installed at different points in time in various functional areas, resulting in business process inefficiencies and software integration challenges (Agbolade, 2011). A rapidly growing company can quickly become entangled with a complex application landscape. When starting out, companies first install accounting software such as QuickBooks so that they can manage their bookkeeping (Gebauer, 2008).

In the quest to acquire more customers, companies then put in standalone opportunity management systems, along with separate systems for resolving customer support issues. Inventory management, order management and fulfillment systems get addressed with disparate software and spreadsheets (Hoe & Hoare, 2012). To further increase top-line revenue, many companies will open new office locations and embrace additional sales channels resulting in more sophisticated processes for ecommerce integration, recurring billing, and financial consolidation, amongst others (Nicholls-Nixon, 2005). Additional business software to support

these processes can take the form of standalone applications from different vendors, homegrown applications, or a variety of spreadsheet workarounds (Frank & Oluwafemi, 2012).

There are several key processes that you may encounter in your daily operations, such as order management, fulfillment, invoicing, cash collection, expense approvals, and financial consolidation, to name a few (Johnson & Halle, 2009). Automating such processes enables you to avoid new hires that would otherwise be required to manage these processes, and redeploy staff to higher-value activities to help your business innovate and grow (Kroenke, 2014). In an ROI study by independent analyst firm Nucleus Research, of customers using NetSuite, the world's leading integrated cloud business suite, Nucleus found that, by using an integrated suite, companies accelerated their financial close times by up to 50%, increase sales productivity by 12.5%, and increase inventory turns by 50%, amongst other efficiencies (Whiting & Sines, 2012). In the same study, another customer, Advantage Sign Supply, cut its order processing time by 66%.

Real-time visibility is important in making timely informed decisions (Ventakesh et al., 2012). When information can be accessed instantly from almost anywhere, without wasting resources on data extraction and tying data from different sources together, employees are better informed and can make more accurate, faster decisions (Huser et al., 2011). With Information Technology no longer having to procure, install, and maintain multiple systems as well as the various integrations between them, a significant reduction in operational costs can be realized while Information Technology time can be spent improving the business operations.

With an integrated software system, expansion to multiple locations and additional sales channels can be accomplished a lot faster because of unified order and accounting management processes and data (Winch & Carr, 2001). Companies can also upsell and cross-sell more

efficiently to their existing customer base because of the improved visibility they obtain. Because process changes can be implemented quickly, everyday business users are able to apply their functional expertise to tailor processes and applications in a way that improves performance (Mitchell, 2011). Meanwhile, IT is liberated to focus on strategic initiatives that can add value to the bottom line by building innovative value-added solutions (Hasan, Shamsuddin & Aziati, 2013).

However, Stone et al., (2007) state that in growth mode, every employee must be operating at optimal productivity. If the employees are bogged down with inefficient and disjointed processes, it increases errors and takes time away from their more important core duties. Important processes such as order processing, invoicing, expense approvals, and fulfillment, to name a few, can take a lot longer to get completed, and are often erroneous (Frels & Onwuegbuzie, 2013). For instance, the firm's employees may be spending hours manually re-entering order information into the accounting and invoicing system, while other employees pull that same information from the firm's CRM system for their order fulfillment processes and to calculate sales commissions (Lotfollah et al., 2012). If any orders are canceled in the meantime, your employees have to sift through mounds of data to reconcile this information again. Such labor-intensive and manual tasks reduce the agility that your company needs to grow.

When software systems are un-integrated, firms have multiple overlapping databases, and cannot easily get a view of business performance in a timely fashion. Reports showing performance across firm's finance, sales, marketing, service, and fulfillment departments are crucial to giving you an integrated view of the company's operations (Laudon & Laudon, 2013). Most companies simply give up on acquiring this information on a regular basis because of the amount of time it takes to source, extract and analyze this data (Al Naggar, 2010). For those that do, countless

hours are wasted trying to tie unrelated, error-prone, and out of date information together. Consequently, businesses either end up making critical decisions slowly, based on inaccurate information, or they make hasty and risky decisions off of gut instinct (Chaffey & Wood, 2005). With so many disparate applications, IT wastes an enormous amount of time and money on integrating, maintaining, and acquiring new versions of these applications (Yassin, 2006). Often times, once new versions are purchased, even more integration and maintenance needs to be performed for all the different versions of software to work together (Carr & Kaynak, 2007). Consequently, valuable IT time that could be used to make the business more productive is wasted, while maintenance costs skyrocket (Rajput & Gupta, 2011).

2.5 The Effect of IS Networks on Employee Performance

Steelman et al., (2012) suggested that a psychological need for networks is now emerging. By analyzing Facebook asynchronous communication of individual posts, the authors found that status update messaging generates a feeling of connectedness between users.

Romero, Markopoulos, Soror & Davis (2014) suggested that through the use of ICTs individuals gain a sense or feeling of connectedness to their device, which emotionally connects them to others. This sense is described as an emotional experience characterized by a feeling of staying in touch within ongoing social relationships.

On the other hand, Walsh et al., (2013) introduced the phenomenon of Internet Connectedness (IC) to illustrate how the communication infrastructures of daily life are evolving with the use of new communication technologies. The concept of Information Systems originate from the Media Systems Dependency (MSD) theory which highlights that the more an individual depends on media to meet their needs, the more important the media will be and therefore the more effects the media will have on that individual (Lai & Tsen, 2013).

The empirical study discussed in this section show the effect of ICT networks on employee productivity through perceptual measures (Chang & King, 2005). It is important to note that an individual's perception of their productivity may not be seen as productive by others in the workplace, or vice versa (Wasko et al., 2011). Additionally, certain behavior can be counterproductive – that is, while it makes the user productive it can make others unproductive or vice versa. This research focused solely on the user's perceived productivity assessed by him- or herself (Al Meetani, 2004).

Networks can allow businesses to reduce expenses and improve efficiency by sharing data and common equipment, such as printers, among many different computers (Winch & Carr, 2001). While printers can be shared in other ways, such as by carrying information on floppy disks from one PC to another, or using manual or electronic data switches, networks have the capacity to accommodate more users with less frustration (Pollard et al., 2010). The power of mainframes or minicomputers can be used in harmony with personal computers (Yun et al., 2012).

The larger machines can process larger and more complex jobs, such as maintaining the millions of records needed by a national company, while individual PCs manned by individual users handle smaller jobs such as word processing (Gordon et al., 2011). And older equipment can be rotated to less demanding jobs as workstations are upgraded (Laudon & Laudon, 2013). Many software programs also offer license agreements for networks, which can be more cost effective than purchasing individual copies for each machine (Kisely & Kendall, 2011). The costs of implementing a network depend on issues of performance, compatibility, and whether value must be added to a turnkey system through additional programming or the addition of special components (Lai & Tsen, 2013).

By coordinating all data and applications through a single network, backup copies of data for all systems can be made more consistently than could be expected if left to individual users (Gebauer, 2008). Additionally, updated software for all machines on a network can be installed through a single PC (Ballard & Ramgolan, 2011). A centralized system simplifies other aspects of administration, too. With the proper software, computer security can also be implemented more effectively in a network than among many individual hard drives. Access to files can be restricted to password holders or it can be limited to inquiry-only access for public users (Jae-Gu et al., 2007). Generally, security measures are more vulnerable at machines with single user operating systems than those with network security precautions.

Cameron & Webster (2013) noted that the punctuality component of employee performance is improved with networks in that walking from one end to the other of the organization is minimized by the computer network and chat. Along similar lines, Carr (2011) stated that in addition to improving punctuality, the level of innovativeness of the employees is improved with computer networks. This is also consistent with Castells (2011) who noted that delivery of service or work quality will always tend to improve with the availability of backups that exists with computer networks in an organization.

However, Cecez-Kecmanovic, Boell & Campbell (2014) noted that performance of the employee may not improve with networks as expected because of the level of materiality of players in the network. The scholars argued that where materiality is at its minimum, the impact of networks on employee performance will be telling and positive.

2.6 The Effect of IS Processes on Employee Performance

Organizational processes today are markedly different than they were 100 years ago. It has been estimated that a century before about nine out of ten workers produced and moved tangible,

material things (Srivastava & Teo, 2012). In the mid-1990s this ratio was down to one out of five. The other four out of five workers currently produce and deliver intangible products such as information and services (Lotfollah et al., 2012). In today's service dominating world the foundations of any organization are the people and the processes. If people are knowledgeable, motivated and working hard, but the IS processes are not good and remain as non-value-adding activities, organizational performance will be poor (Khuzaimah, 2011). As Artem et al., (2014) stated that all organizations, whether service giving or manufacturing, are struggling to meet the tough and new competitive standards of the 1900s speed, quality, efficiency and increased productivity in order to become more competitive, and flexible to meet the desired standard (Caldeira & Ward, 2002).

Ensermued and Moorthy (2013) carried out a research on assessing the effect of business process reengineering on organizational performance. The purpose of the study was to assess the effect of BPR on organizational performance of Bureau Finance and Economic Development (BOFED). Questionnaires and interview were used for data collection and Likert was used for analyses. Major findings were that the customers of (BOFED) were satisfied with speed of service delivery quality of service, cycle time (Deng & Chi, 2012).

Mohammad and Elaheh (2014) researched on the effect of business process reengineering factors in Organizational Agility in Ports and Maritime Organization in Iran. BPA factors are operationalized by cultural factors, communications, methodology, project management, strategic alignment, information technology, and leadership empowerment and performance management (Al Gandlji & Al Janabi, 2012). Questionnaires were developed and were distributed to marine training, assessment, financial and information technology division of Port and Maritime organization. Using path analysis with partial standardized regression coefficient,

the result revealed that leadership and empowerment variables had the most effect on organizational agility the other variables (Ioannou & Mavri, 2007).

Abdi, Zarei, Vaisy & Parvin (2011) carried out a conceptual research on innovation models and business process redesign. It was based on the innovation mode using Durbin's methodology. This innovation concepts makes a new environment that drives employee the innovate and look forward to new processes where employees should make significant changes in jobs, workflows and IT, and increases the chances of business process improvement project success (Guo et al., 2011).

Ringin, Razalli and Hasnan (2012) carried out a conceptual research on critical success factors for business process management for small and medium banks in Nigeria. They investigated on a large scale survey of organizations in financial sector and applied a rigorous research methodology and carried out five critical success factors of BPM implementation, which are IT investment, volume of financial activities, personal commitment, strong capital base and effective reward system (Taneja et al., 2013). Among these factors, It investment, personal commitment and volume of financial activities have significant relationship with overall organizational performance (cost reduction, customer service management and operational efficiency performance) while effective reward system is only.

Most organizations that have made an attempt to move toward process orientation agree that it does indeed provide numerous benefits, including cost savings through a more efficient execution of work, improved customer focus, better integration across the organization, etc (Turban & Volonino, 2010). Main advantages of process-based organizational structure, in comparison to functional one, are in economical design of IS processes, as well as in reducing cycle time (Huser et al., 2011), while there is also a dramatically increased flexibility of the firm

along with improved customer satisfaction. Huser et al.'s study indicated that IS processes improved the level of punctuality and the quality of work performed by the employees. Despite their work being quantitatively driven, it lacked intuitive appeal in that they neglected the magnitude of the relationship between these two variables.

Artem et al., (2014) cited that IS processes improved workflows which improved punctuality and attitudinal components of the employee performance measure. Although along process orientation is constantly improved organizational performance mentioned, there are rare authors which have empirically investigated that relationship (Sun, 2012). One of them is Malakooti (2013), who conducted an empirical study to explore the relationship between IS processes and enhanced employee performance. The research findings showed that IS processes is critical in reducing conflict and encouraging greater connectedness within an organization, while improving individual employee performance (Taneja et al., 2013). Their findings indicate a surprisingly strong relationship between IS processes and overall performance. Considering all the factors that can potentially affect business performance, this finding is compelling.

However, experiences are showing that companies are managing their IS processes with different success, what depends on established balance between organizational structure and organization's environment (Hui et al., 2012). In another words, not all the news about process transformation has been good. Many firms have found that even dramatic levels of process improvement often do not translate into better business performance (Kohlbacher & Gruenwald, 2011). Furthermore, most organizations only have some of their processes well defined and are only beginning to use process measures and process management techniques to control their organizations (Lai & Tsen, 2013). All aforementioned emphasizes even more the importance of studying a process orientation as an important factor in modern business.

2.7 Factors Moderating the Effect of IS on Employee Performance

A great number of organizations could not operate properly and successfully without the implementation of MIS (Carr & Kaynak, 2007). Management information systems make it possible for organizations to get the right information to the right people at the right time in the right form by enhancing the interaction between the organization's people (Ericson & Jacoby, 2003). Management information systems play a key role in the life of organizations; it provides the appropriate information in right time as needed to support the management activities (Al-Mamary et al., 2014).

In addition MIS allows information to move between departments instantly, reducing the need for face-to-face communications among employees, thus increasing the responsiveness of the organization (Nath & Badgujar, 2013). Management information system one of the most important tools in any organization, which aims to provide reliable, complete, accessible, and understandable information in a timely manner to the users of the system (Yaser et al., 2014).

On the other hand, assessing the success of information systems has been identified as one of the most critical issues in IS field (Clark, 2009). Several conceptual and empirical studies have been conducted to explore this confusing yet important issue. A huge debate continues concerning the appropriate set of variables that can be used to determine the users' perception of IS success (Al Omari, 2009). According to Petter et al (2013) the successful adoption of technologies in companies are much depending on technology characteristics, project and organizational characteristics, user and social characteristics, and task characteristics. However in reality these factors are much neglected by organizations especially among small companies (Bredart et al., 2014).

Based on preliminary interviews with some of the employees of telecommunications companies in Yemen, the main problem hinder the successful adoption of MIS in telecommunication companies are system quality, information quality, service quality, top management support, end-user training, technology self-efficacy, and user experience (Chen et al., 2011). From the issues mentioned earlier, this study will empirically examine the impact of these on perceived usefulness and user satisfaction toward impact on organizational performance. This study attempts to focus deeply on the characteristics that lead to successful adoption of MIS in organizations, and to investigate the effect of MIS on employee performance.

2.7.1 Technological factors

In technological dimension, three variables in relation to ICT are suggested: system quality, information quality, and service quality. The quality of the system and quality of the information are considered as a key factors affecting IS acceptance and improvement of organizational performance (Al-Mamary et al., 2014). System quality is the desirable characteristics of information system. For example: ease of use, system flexibility, system reliability, and ease of learning, as well as system features of intuitiveness, sophistication, flexibility, and response times (Johnstone & Halle, 2009). The proposed theoretical frameworks assumed that MIS quality effect on the perceived usefulness and user satisfaction.

In addition Park et al., (2011) supported that system quality has a positive influence on perceived usefulness. In addition Ainin et al.,(2012) supported that system quality will have a significant, positive relationship with user satisfaction level.

2.7.2 Organizational factors

In organizational dimension, two variables are suggested: top management support, and end-user training. Management support refers to the perceived level of general support offered by top

management in small firms (Caldeira & Ward, 2002). For example: management is aware of the benefits that can be achieved with the use of system, management always supports and encourages the use of system for job-related work, management provides most of the necessary help and resources to enable people to use system, management is really keen to see that people are happy with using system, management provides good access to hardware resources when people need them, and management provides good access to various types of software when people need them (Igbaria et al., 1997). The proposed theoretical frameworks assumed that top management support effect on the perceived usefulness and user satisfaction.

Chen & Hsiao (2012) supported that top management support positively influences perceived usefulness. In addition Urbach et al., (2011) supported that top management support has a significant impact on user satisfaction. Dezdar & Ainin (2011) supported that training are positively related to user satisfaction

2.7.3 People factors

In people dimension, two variables are suggested: computer self-efficacy, and user experience (Chaffey & Wood, 2005). Computer self-efficacy refers to an individual's belief that he or she has the skills and abilities to accomplish a specific task successfully (Zao, 2010). The proposed theoretical frameworks assumed that computer self-efficacy effect on the perceived usefulness and user satisfaction. Moreover Saba (2012) supported that self-efficacy will be positively related to satisfaction.

2.8 Chapter Summary

This chapter identified the knowledge and insight obtained from researching the current literature. The review explored the themes of Information Systems and performance from their development as theoretical concepts to the current research issues that were relevant for this

study. However, the studies do not link IS on performance explicitly as they do not indicate the magnitude of the effects and by how much performance would change as a result of changes in IS and its sub components.

In light of the above literature review, this review has identified that most of the studies were conducted in organizations based in Europe and there is little or no information that has been produced in the context of Africa.

The next chapter covers key sections on the research methodology that was used by the student researcher with an aim of addressing the study objectives. It covered sections on the research design, study population and sampling procedures be used by the researcher. Further analysis will be made on the tools and methods of data collection, data analysis and a brief discussion on the validity of the research was given together with the ethical considerations taken into account when conducting the study.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discusses the research design, study population and sample size, sampling design and procedure, methods of data collection, instruments, and sources of data, measurement of variables, data analysis and presentation, anticipated limitations/solutions to the study. The response rate was 78.6% which was adequate to make reliable conclusions.

3.1 Research Design

This study was descriptive in nature. Descriptive research is a study designed to depict the participants in an accurate way. More simply put, descriptive research is all about describing people who take part in the study. A case study was used because of the need to establish an in-depth study of an individual or group of individuals and this is what the study on the impact of IS on employee performance is all about. Descriptive studies can yield rich data that lead to important recommendations.

The approach used was both quantitative and qualitative. It can involve collections of quantitative information that can be tabulated along a continuum in numerical form, such as scores on a test or the number of times a person chooses to use a-certain feature of a multimedia program, or it can describe categories of information such as gender or patterns of interaction when using technology in a group situation. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection (Glass & Hopkins, 1984). It often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution. Because the human mind cannot extract the full import of a large mass of raw data, descriptive statistics are very important in reducing the data to

manageable form. When in-depth, narrative descriptions of small numbers of cases are involved, the research uses description as a tool to organize data into patterns that emerge during analysis. Those patterns aid the mind in comprehending a qualitative study and its implications.

3.2 Area of the Study

The study used a case study of Vision group hence the study area was in the Central Division of Kampala with Head Quarters located at 19-21 First Street, in the Industrial Area of Kampala. The population of the study included the staff of Vision group. The research area was selected because of its ultimate importance as success stories of IS impact on employee performance are observed amongst the private mobile phone operators while failure stories were observed amongst the public entities that operate with the same business environment.

3.3 Population of the Study

The study population was the employees of the organization irrespective of the level, tenure and the designation at the organization. The employees are selected on grounds that it may be because of flaws in IS that they are poorly performing as indicated by the high involuntary turnover rates. The total number of employees at Vision Group was 1314 as of 2017. However, the number of employees at Vision Group Headquarters (which is the study's case) was 300 as of 2017. These 300 employees formed the population that was the basis for providing the study's required information.

3.4 Sampling Procedure

3.4.1 Sample size

The researcher used a sample which was selected from the 300 employees of Vision group Head Quarters. The target population was finite therefore Krejcie & Morgan, 1970 was used to determine the 169 sample size (see appendix III)

3.4.2 Sampling techniques

The researcher used a probability sampling strategy known as simple random sampling samples to select the number of respondents per department, because it removes bias from the selection procedure and should result in representative samples.

Table 3. 1 population size and sampling technique

Item	Designation	Population size (N)	Sample size (n)	Sampling Technique
1	Top managers	8	4	Simple random sampling
2	Departmental managers	16	14	Simple random sampling
3	Marketers and sales	210	99	Simple random sampling
4	Transport & Welfare	6	3	Simple random sampling
5	Finance	60	49	Simple random sampling
Total		300	169	

3.5 Data Collection Methods and Instruments

3.5.1 Questionnaires

The study used a questionnaire as the main tool of data collection. A questionnaire was used because it enabled the researcher get firsthand information which aids in depth research. A questionnaire was further used because it increased the degree of reliability questions in. The questionnaire consisted of closed-ended questions and open ended questions. The questionnaires

easier to administer and were cheaper in regards to time hence a large group of respondents was covered within a short time. The questionnaires method was applied to the junior employees and supervisors because their performance is directly affected by the use of Information Systems.

3.5.2 Interviewing

An interview is a formal conversation where questions are asked and answers are given. This method was used to collect qualitative data through purposeful discussion between the researcher and the respondents. This is enabled the researcher to get deep exploration of opinions of the respondents. Using an interview schedule, open-ended questions were asked by the interviewer to give respondents a chance to express their views and opinions about the relationship between variables. Probing was done to seek clarification on the responses. This method ensured that respondents give accurate and complete answers to the questions. Interview method was applied to Vision group top and departmental managers, as they approve the implementation of policy alternatives.

3.5.3 Research Instruments

3.5.3.1 Self-administered questionnaires

The researcher used questionnaire as the main instrument of data. The questionnaires were sectioned according to the objectives of the study. Ordinarily, these were used since it is not practical to interview all the respondents given the time limitation. A questionnaire is a list of questions drafted by the researcher to be filled by the respondent. Questionnaires are very cost effective when compared to face-to-face interviews. This is especially true for studies involving large sample sizes and large geographic areas. Written questionnaires become even more cost effective as the number of research questions increases. The questionnaire will contain close ended (constructed in a 5 point scale) and the variables therein will be measured using likert

scaling technique. The questionnaires were administered to the selected junior employees as a matter of fact that it is this category for which Information Systems is directed. The reason for use of this method is that it minimizes respondent bias especially in studies like one of the impact of IS on employee performance where some information is confidential.

3.5.3.2 Interview guide

To supplement the few open-ended questions in the questionnaire, more questions were designed strategically to get information that wouldn't be captured by the questionnaires. The key informants were top and departmental managers. This category of the sample was appropriate for interview since they have a wide knowledge about the variables of the study given their role in the organization. The open ended questions would provoke discussions and many other relevant issues would come up and this helped to enrich the results of this study with more facts on the ground. The researcher carried out face to face interviews with selected administrators of Vision Group. Each respondent was free to give his/her own opinion from their experiences.

3.6 Quality Control Methods

Quality control methods are basically concerned with issues of validity and reliability of the research instruments.

3.6.1 Validity

Validity is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform. In ensuring validity of the research instrument, the researcher used a sample of 20 experts to give their views on the instrument and whether the questions would be fully understood by the respondents. Content Validity Index was used to establish whether the tool was valid or not.

Using the formula

$$CVI = \left(\frac{n_e - \left(\frac{N}{2}\right)}{\left(\frac{N}{2}\right)} \right)$$

Where n_e is the number of raters who accepted that the tool was essential ($n_e = 17$) and N the total number of raters ($N = 20$). The CVI for this study was 0.7 and this means that the study tools passed the validity test (See appendix V).

3.6.2 Reliability

Reliability *can* be thought of as consistency. Does the instrument consistently measure what it is intended to measure? That is the degree to which different raters give consistent answers or estimates, the consistency of a measure evaluated over time, the reliability of two tests constructed the same way, from the same content and the consistency of results across items, often measured with Cronbach's Alpha.

The current study used the Cronbach's alpha coefficient. Suppose that we measure a quantity which is a sum of K components (K - statements in the questionnaire or interview guide): $X = Y_1 + Y_2 + \dots + Y_k$. X is the sum of responses (or ratings, Y) to the various components K . Cronbach's α is defined as:

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \delta_{Y_i}^2}{\delta_X^2} \right)$$

Where δ_X^2 is the variance of the observed total test scores, and $\delta_{Y_i}^2$ the variance of component i for the current sample of persons. Using statistical procedures on the above formula and the data provided, the study's Cronbach's coefficient was 0.88 as in appendix V.

3.7 Data Management and Processing

Data collected was arranged, checked and edited to ensure that it covered and satisfied the objectives of the study for purposes of completeness and accuracy. Data was coded to enable processing using SPSS version 22.

3.8 Data Analysis

Data was also analyzed by use of descriptive statistics (frequency tables, pie charts and bar graphs). The researcher used Pearson's correlation coefficient to determine the relationship between the two variables which was Information System and employee performance. Data was also analyzed using inferences (regression at a stated level of significance) with the help of a computer software program called Statistical Package for Social Sciences (SPSS). With the use of regression analyses, the significance and magnitude of the impact of Information Systems on employee performance was established so as to make more meaningful conclusions and policy directives. Qualitative data was presented as narratives.

3.9 Ethical Considerations

The researcher endeavored to obtain any form of authorization that was necessary for the study to take place.

Throughout the study, the researcher refrained from any practice deemed inconsistent with research ethics.

The researcher accorded due respect to all respondents and acknowledged all scholarly works to which the study referred.

The researcher further desisted from any tendencies towards plagiarism and imposition of personal viewpoints in the data. The researcher endeavored to protect the respondents by keeping the information they gave confidential as promised.

3.10 Limitations of the Study

The researcher faced challenges of access the respondents especially top managers as they were preoccupied with office activities like holding meeting and therefore it was difficult to allocate time for face to face interviews.

The researcher faced challenges of non-response due to business confidentiality and some officers were too busy thus failed to allocate sufficient time to the researcher. The researcher had to explain to every respondent the purpose of the study.

The respondents also delayed to give the required information. To solve this problem, the researcher exhibited patience and persistence in data collection hence was in position to obtain all the required information.

3.11 Conclusion

The research design and sampling technique was the most appropriate for the research. Interviews yielded more responses than questionnaires possibly because respondent were reluctant to write down their responses due to their busy schedules. The descriptive nature of the previous studies has called on the use of more scientific and statistical procedures like inferential statistics and SPSS to improve the results.

CHAPTER FOUR

DATA PRESENTATION AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter provides study findings and analysis as related to the chosen topic. The researcher used SPSS and multiple regression models at a 5% significance level. The effects of Information Systems on performance of employees at Vision Group are summarized in tables below. The effects of segregated components of Information Systems i.e. hardware, software, networks and processes on the performance of the employees are also presented in this chapter.

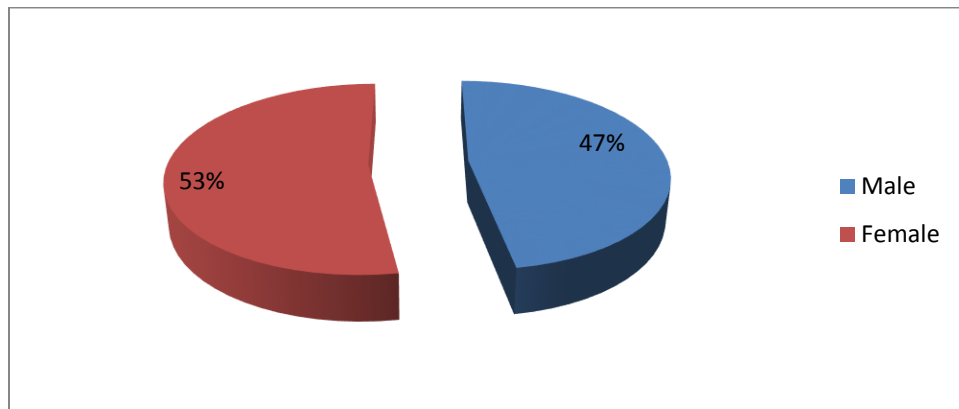
4.1 Respondents Demographic Characteristics

The respondents' demographic characteristics are presented for matters of establishing the suitability of the data provided with respect to the topic under study. The demographic characteristics have a lot to tell with regards to explaining the responses provided by the respondents. These are presented in figures and tables

4.1.1 Gender of respondents

The gender of the respondents is presented for matters of indicating whether there exists a gender balance in employment and whether there are significant differences in the responses or not due to gender differences. Figure 2 presents gender distribution of the respondents at Vision Group.

Figure 4. 1 The respondents' gender



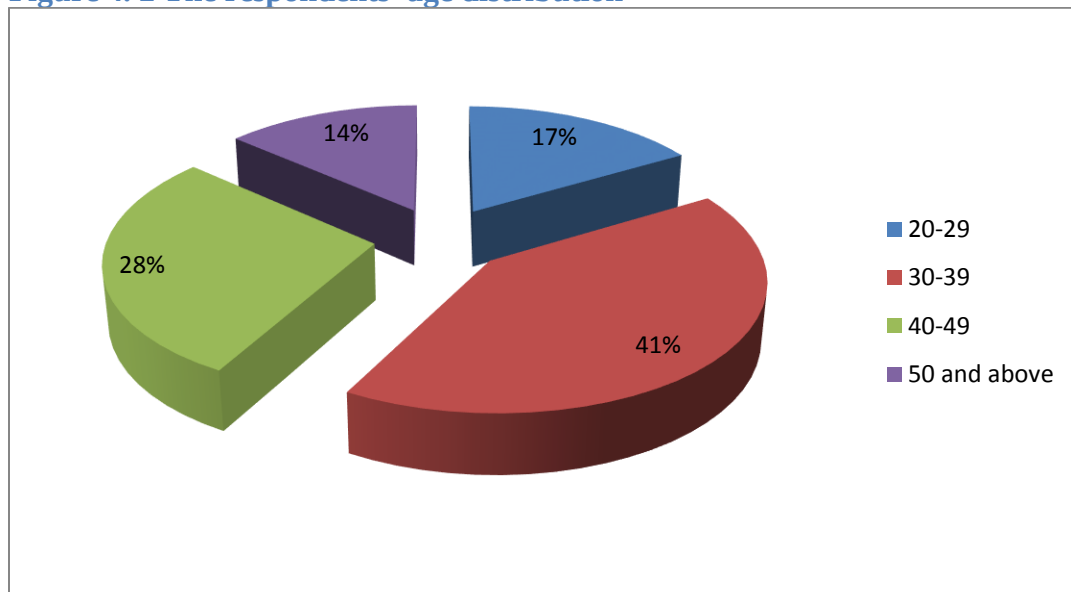
Source: Primary data (2017)

The Figure 4.1 above presents the distribution of the respondents by their gender groupings. The figure shows that of the respondents, 89 (representing 53%) were female employees. This suggests that there may be more female employees than male in Vision Group. This could be attributed to females being considered more ethical than male (Yamokoski & Keister, 2006). The findings in Appendix IV reveal that there was no significant effect of gender on responses made in regards to the study objective

4.1.2 Age bracket of respondents

Cresswell (2009) noted that the age bracket of the respondents goes a long way in explaining the satisfaction levels with an undertaking. Cresswell asserted that the older employees (age above 50 years) are more resistant to policies that are assumed to bring about a positive change by changing the status quo as compared to the younger employees (age less than 30 years) who wish to explore all the available opportunities to enhance their effectiveness and efficiency at work thereby improving their performance and that of the organization in general. This may be attributed to the adaptability and adventurous nature of younger employees who are driven by the desire to become better and better. Figure 3 below presents the distribution of the respondents by age groupings.

Figure 4. 2 The respondents' age distribution



Source: Primary data (2017)

Figure 4.2 above shows that out of 169 respondents, (41%) were between 30 and 39 years of age. 24% of the respondents were between 40 and 49 years of age. This is because the organization aims at employing more energetic and agile individuals. The possible implication of this to the organization is that there is likely to be improved performance as a result of the employment of able bodied employees who are willing to go an extra mile to have the work completed in the shortest possible time and are less resistant to change. Therefore Vision Group can easily adopt and implement work systems that will lead to improvements in task performance of individual units in the organization hence positively affecting the general performance of the organization. From the interview guides the age of the employee could be used as a benchmark for training and experience:

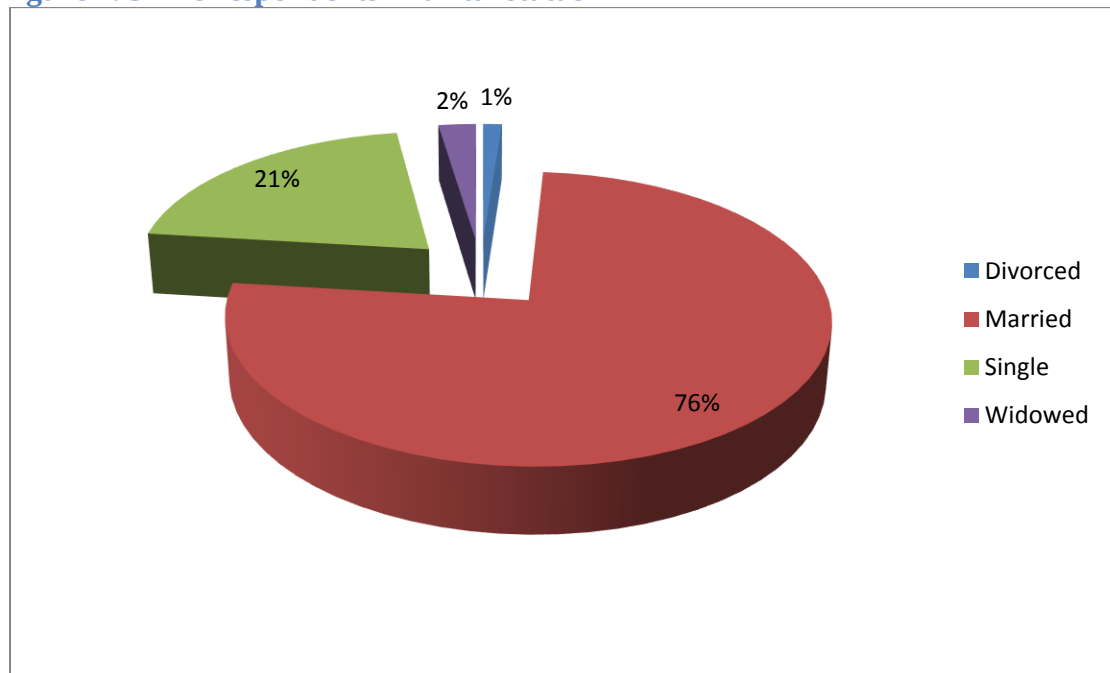
“...30-39 years category was most represented. Yes. It could present the ambitions of vision group with respect to vigor, experience and ability to learn while providing high quality service to the company...”

The findings in appendix IV showed that there was an insignificant effect of age bracket of the respondent on responses about the study objectives.

4.1.3 Marital status of the respondents

The study presents the respondents' marital status as in the figure below.

Figure 4. 3 The respondents' marital status



Source: Primary data (2017)

Figure 4.3 above presents a summary of the marital status of the interviewed respondents. The figure shows that of all the interviewed respondents, 21 percent were single, 76 percent were married, 2 percent were widowed and the 1% was divorced. The high proportion of the married respondents could be vital for the study since the married tend to handle tasks in a way that reflects maturity which tends to improve the quality (Yamokoski & Keister, 2006) and hence the performance of the employees.

The distribution's implication is that there is likely to be a mature thought in handling the day's work related tasks at the organization. Further, the married respondents were more satisfied with the current Information Systems at Vision Group as it emphasizes transparency. This further

implies that with an increase in the satisfaction with the current Information Systems especially by the biggest category in regards to marital status, the overall performance will improve ceteris paribus.

The interviewees accepted that

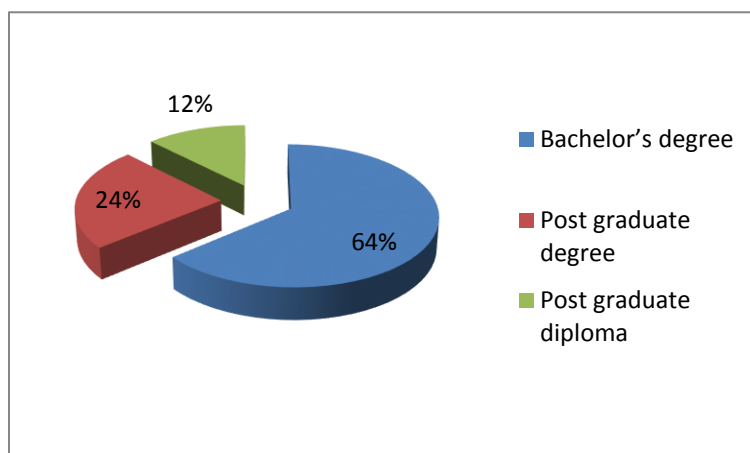
“Indeed, the married employees are satisfied with the current IS at Vision Group because the labor turnover intentions in this category are very slim as compared to the other categories. This in turn has a positive impact on task and context performance.”

This could ultimately affect the performance of the organization especially if the biggest proportion of the employees is married ceteris paribus. The findings in appendix IV showed that there was no significant effect of marital status on the responses made about the study objectives.

4.1.4 Respondents' education level

The distribution of the respondents by education level is presented in the figure below.

Figure 4. 4 The education level distribution of the respondents



Source: Primary data (2017)

From Figure 4.4 above, the findings indicated that of the 169 respondents, 64% had a Bachelor's degree. It also indicates that 12% of the respondents had post graduate diplomas and 24% had post graduate degrees. This suggests that the employees at Vision Group are highly educated and would therefore appreciate and readily embrace Information Systems in their day to day tasks. Educated people relate and respond to different aspects differently as compared to less educated ones. Educated individuals spend less time to complete tasks and are easier to train thus leading to quicker adoption of new work tools like Information Systems that help them to improve their performance. Less educated prefer to maintain the status quo because they fear new challenges that come along with changes in the work system as these may expose their inefficiencies and effectiveness (Yamokoski & Keister, 2006)

The interviewees also highlighted that employees who are more educated beyond the bachelor's degree level are also more expensive to maintain despite the fact that they may perform better. From the interviewees' point of view;

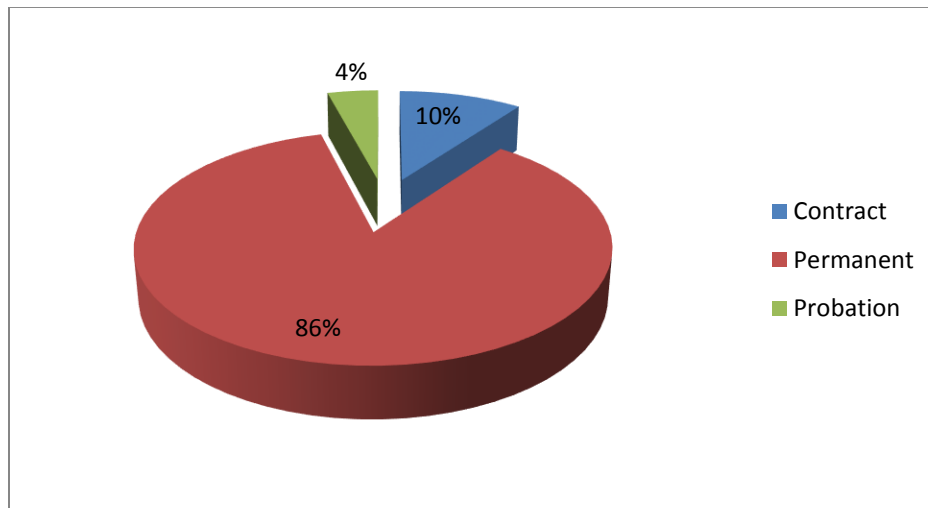
“Organizations are critical in the way they do carry out the human resources business. At Vision Group, we aim at maximizing performance subject to cost minimization. A large bachelor's degree category coupled with a moderate size of post graduate degree category shows that the latter is in the supervisory role while the former is inclusive of the juniors' role.

The findings in appendix IV showed that there was no significant effect of education level on the responses made about the study objectives.

4.1.5 Respondents' terms of employment

The figure below presents the descriptive analyses of this demographic variable.

Figure 4. 5 The distribution of the respondents by terms of employment



Source: Primary data (2017)

The figure above shows that 86% of the respondents were permanent employees suggesting that they form the largest group at Vision Group. This was further affirmed by an interviewee who asserted that;

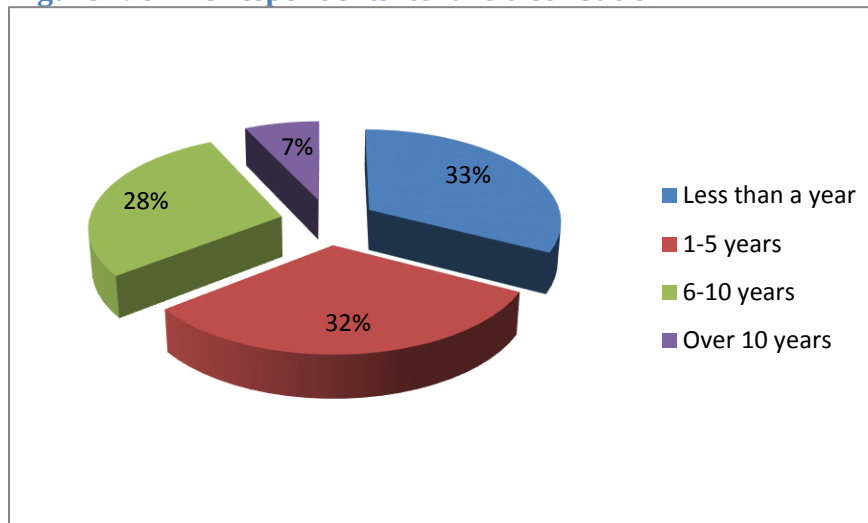
“Permanent employees form the biggest category of the employees that we employ. As far as am concerned, they are knowledgeable about whatever we do. From a management point of view, the permanent employees are tricky but we have several measures of getting the best out of them”

The study established that the terms of employment did not have a significant impact on the perceived impact of IS on the performance of the employees at Vision group as represent in appendix IV.

4.1.6 Respondents' length of service at Vision Group

The Length of Service (LOS) of the respondents is thought of as a critical determinant of knowledge about the organization activities and operations. The descriptive analysis is hence presented as below.

Figure 4. 6 The respondents' tenure distribution



Source: Primary data (2017)

With respect to the duration of service, 32% and 28% of the respondents had spent between a period of 1-5 years and between 6 to 10 years respectively as employees at Vision Group. Further, 7% had been employees of Vision Group for periods over 10 years. However, there were no significant differences in the perception of the relationships between Information Systems and employee performance by the different lengths as employees at Vision Group. It was also observed from the study, that 32.5% of the respondents had stayed for less than a year. This implies that Vision Group has an adequate number of experienced employees and therefore it can be easily to improve their performance, that is would take less time to complete a task and easier to train

According to the key informants,

“...the time in service of the employees has a critical role to play with respect to performance of the employees in particular and the organization in general...”

The key informants believed that

“...the length of service improved the employee’s working experience which improved the task performance and in the event that a majority of the employees excel in task performance, then the organization’s overall task performance improves steadily.”

The findings in appendix IV showed that there was no significant effect of length of service on the responses made about the study objectives.

4.2 Descriptive Statistics for the Variables

The previous scholars have based their conclusions on descriptive analysis. However, they used different statements to show the perceived impact of the independent on the dependent variable. Despite the fact that the current study based conclusions on inferential statistics, it was reasonable to first present descriptive statistics.

4.2.1 Descriptive statistics for respondents’ perception on hardware

The perception of the respondents regarding the state of computer hardware at Vision Group was captured using the table below.

Table 4. 1 Respondents' perceptions on hardware at Vision Group

	Responses of the respondents				
	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
At the Vision group, the required hardware is available to the employees	16 (9.5%)	34 (20.1%)	17 (10.1%)	34 (20.1%)	68 (40.2%)
The hardware available at Vision group is fully functional and ready to use	15 (8.9%)	31 (18.3%)	32 (18.9%)	45 (26.6%)	46 (27.2%)
The available hardware at Vision group is capable of handling a growing amount of work	17 (10.1%)	34 (20.1%)	17 (10.1%)	50 (29.6%)	51 (30.2%)
The hardware available to the employees at Vision Group is user friendly	0	17 (10.1%)	34 (20.1%)	68 (40.2%)	50 (29.6%)

Source: Primary data (2017)

The findings in the Table 1 above show that of the respondents, 40.2% strongly agreed that at the Vision Group, the required hardware is available to the employees, 20.1% were in agreement with the same proposition implying that 60.3% agreed with the validity of this statement at Vision Group.

The findings indicate that of the respondents, 27.2% strongly agreed that the hardware available at Vision group is fully functional and ready to use, 26.6% were in agreement with the same proposition implying that 53.8% agreed with the stated proposition

The table also shows that 30.2% strongly agreed that the available hardware at Vision group is capable of handling a growing amount of work, 29.6% were in agreement with the same proposition implying that 59.8% agreed that above statement holds at Vision group.

Finally, of the respondents, 29.6% strongly agreed that the hardware available to the employees at Vision Group is user friendly, 40.2% were in agreement with the same proposition implying that 69.8% agreed with this component of the hardware available to them. It can therefore be

generally inferred that the employees agree that available hardware at Vision group is user friendly.

From the onset, the results prove that the employees are aware that IS supportive hardware is available. This means that the study findings are consistent with Francis (2013) who noted that the perception of availability of hardware was instrumental in improving the performance of accounting systems which would ultimately improve the performance of the employees.

4.2.2 Descriptive statistics for respondents' perception software

The perception of the state of computer software at Vision group is captured using the table below.

Table 4. 2 Respondents' perceptions on software at Vision Group

	Responses of the respondents				
	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
At the Vision group, the required software is available to the employees	1 (0.6%)	35 (20.7%)	19 (11.2%)	36 (21.3%)	78 (46.2%)
The software available at Vision Group is fully functional and ready to use	24 (14.2%)	24 (14.2%)	24 (14.2%)	49 (29%)	48 (28.4%)
The available software at Vision Group is capable of handling a growing amount of work	0	24 (14.2%)	49 (29%)	72 (42.6%)	24 (14.2%)
The software available to the employees at Vision Group is user friendly	25 (14.8%)	24 (14.2%)	24 (14.2%)	48 (28.4%)	48 (28.4%)

Source: Primary data (2017)

The findings in the table above show that of the respondents, 46.2% strongly agreed that at the Vision Group, the required software is available to the employees, 21.3% were in agreement with the same proposition implying that 67.5% agreed that IS software is available at Vision group.

Further, 28.4% strongly agreed that the software available at Vision group is fully functional and ready to use, 29% were in agreement with the same proposition implying that 57.4% agreed that they side with the functionality of the software.

In addition, 14.2% strongly agreed that the available software at Vision group is capable of handling a growing amount of work, 42.6% were in agreement with the same proposition implying that 56.8% agreed that the available software at Vision group is scalable.

Finally, of the respondents, 28.4% strongly agreed that the hardware available to the employees at Vision Group is user friendly, 28.4% were in agreement with the same proposition implying that 56.8% were satisfied with the validity of this proposition. It can therefore be generally inferred that the employees agree that available software at Vision group is always available.

The study results are consistent with Laudon & Laudon (2013) who noted that for the impact of Information Systems to be recognized in an organization, there needs to be technological advancements. In this respect, since it is very expensive to replace the available hardware in a very short time period, the scholar urges that an organization should invest more in making sure that the available software is always updated.

4.2.3 Descriptive statistics for respondents' perception IS processes

The employees' perception of the state of IS processes at Vision group was captured using the following table.

Table 4. 3 Respondents’ perceptions on IS processes at Vision Group

	Responses of the respondents				
	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Process have an effect on employees’ performance at Vision group	9 (5.3%)	24 (14.2%)	44 (26%)	51 (30.2%)	41 (24.3%)
At the Vision group, there is no discretion regarding IS processes	27 (15.4%)	17 (10.1%)	19 (11.2%)	51 (30.2%)	56 (33.1%)
The IS processes at Vision Group follow a pre-defined pattern	19 (11.2%)	27 (16%)	33 (19.5%)	26 (15.4%)	64 (37.9%)
The different departments at Vision Group have varying IS processes	17 (10.1%)	31 (18.3%)	21 (12.4%)	44 (26%)	56 (33.1%)
The IS processes at Vision group are flexible and liked by several members of my team	23 (13.6%)	21 (12.4%)	22 (13%)	41 (24.3%)	62 (36.7%)
With the available IS processes at Vision group, every employee is given opportunity to use extra powers to attain task	19 (11.2%)	28 (16.6%)	20 (11.8%)	50 (29.6%)	52 (30.8%)
Am well knowledgeable about the IS processes that are existent at Vision Group	0	16 (8.9%)	35 (20.7%)	61 (36.1%)	58 (34.3%)
Processes at vision group go hand in hand with the available Information Systems	11 (6.5%)	34 (20.1%)	22 (13%)	39 (23.1%)	63 (37.3%)

Source: Primary data (2017)

The findings in the table above show that of the respondents, 33.1% strongly agreed that at the Vision Group, there is no discretion regarding IS processes, 30.2% were in agreement with the same proposition implying that 63.3% agreed with the validity of the above.

The findings in the table above show that of the respondents, 37.9% strongly agreed that the IS processes at Vision Group follow a pre-defined pattern, 15.4% were in agreement with the same proposition implying that 53.3% were satisfied with the pattern of the IS processes at Vision Group.

The findings in the table above show that of the respondents, 33.1% strongly agreed that the different departments at Vision group have varying IS processes, 26% were in agreement with the same proposition implying that 59.1% variation of IS processes across departments at Vision Group.

The findings in the table above show that of the respondents, 36.7% strongly agreed the IS processes at Vision Group are flexible and liked by several members of my team, 24.3% were in agreement with the same proposition implying that 61% were satisfied with IS process flexibility.

The findings in the table above show that of the respondents, 30.8% strongly agreed that with the available IS processes at Vision Group, every employee is given opportunity to use extra powers to attain task, 29.6% were in agreement with the same proposition implying that 60.4% were satisfied with employee empowerment.

The findings in the table above show that of the respondents, 34.3% strongly agreed that they were well knowledgeable about the IS processes that are existent at Vision Group, 36.1% were in agreement with the same proposition implying that 70.4% had knowledge about IS processes.

Finally, of the respondents, 37.3% strongly agreed that the processes at vision group go hand in hand with the available information systems, 23.1% were in agreement with the same proposition implying that 60.4% were satisfied with the link between processes and IS.

From the study findings, knowledge about the IS processes in organizations is critical for performance improvements. In this respect, the study findings are consistent with the scholarly work of Muhammad & Asfandyar (2012) who noted that wherever individual units are aware of the processes enshrined in an ICT undertaking, it becomes successful.

4.2.4 Descriptive analysis for respondents' perception IS networks

The perception of the employees regarding the state of IS networks at Vision group was captured using the table below.

Table 4. 4 Respondents' perceptions on IS networks at Vision Group

	Responses of the respondents				
	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Networks at Vision group have an effect on its employees' performance	10 (5.9%)	22 (13%)	53 (31.4%)	43 (22.4%)	41 (24.3%)
At Vision Group, the networks are on and running well at all time of the day	5 (3%)	33 (19.5%)	23 (13.6%)	40 (23.7%)	68 (40.2%)
The speed networks of Vision group are fast and are under constant modifications to further improve the speed	22 (13%)	23 (13.6%)	29 (17.2%)	52 (30.8%)	43 (25.4%)
The networks of the Vision group are reliable and the clients, administrators, other users are satisfied with it	1 (0.6%)	22 (13%)	50 (29.6%)	66 (39.1%)	30 (17.8%)
The management of Vision group invests a lot of finances in ensuring the reliability of the available networks	21 (12.4%)	24 (14.2%)	35 (20.7%)	48 (28.4%)	41 (24.3%)
At Vision group, every user requires a user ID to login into the network and no data losses are reported over a large time period	20 (11.8%)	11 (6.5%)	38 (22.5%)	47 (27.8%)	53 (31.4%)
The company endures to make its networks secure and this comes forth with increments in financial additions	15 (8.9%)	30 (17.8%)	31 (18.3%)	40 (23.7%)	53 (31.4%)
At Vision group, the networks are given backups in order to avoid production or sales breakups	15 (8.9%)	17 (10.1%)	15 (8.9%)	66 (39.1%)	56 (33.1%)

Source: Primary data (2017)

The findings in the Table 4 above show that of the respondents, 40.2% strongly agreed that at Vision Group, the networks are on and running well at all time of the day, 23.7% were in agreement with the same proposition implying that 63.9% agreed with the state of networks at Vision Group.

The findings in the table above show that of the respondents, 25.4% strongly agreed that the speed networks of Vision group are fast and are under constant modifications to further improve the speed, 30.8% were in agreement with the same proposition implying that 56.3% were satisfied with the IS network speed.

The findings in the table above show that of the respondents, 17.8% strongly agreed that the networks of the Vision group are reliable and the clients, administrators, other users are satisfied with it, 39.1% were in agreement with the same proposition implying that 56.9% reliability of the networks.

The findings in the table above further show that of the respondents, 24.3% strongly agreed that the management of Vision group invests a lot of finances in ensuring the reliability of the available networks, 28.4% were in agreement with the same proposition implying that 52.7% were satisfied with the financing of IS requirements.

The findings in the table above also show that of the respondents, 31.4% strongly agreed that at Vision group, every user requires a user Identification Details to login into the network and no data losses are reported over a large time period, 27.8% were in agreement with the same proposition implying that 63.9% of the employees are satisfied with the login status.

Further, of the respondents, 31.4% strongly agreed that the company endures to make its networks secure and this comes forth with increments in financial additions, 23.7% were in agreement with the same proposition implying that 55.1% are satisfied with the organization's network security.

Still, the findings in the table above show that of the respondents, 33.1% strongly agreed that at Vision group, the networks are given backups in order to avoid production or sales breakups, 39.1% were in agreement with the same proposition implying that 72.2% of the employees are satisfied with the nature and importance of backups.

It can therefore be generally inferred that the employees agree that available networks at Vision group are backed up and of high quality. This is in line with Kumar et al., (2008) who emphasize

backup in data storage and networks so as to deduce delays when the main system gets a malfunction.

4.2.5 Descriptive analysis for the respondents' perception on the dependent variable

The perception of the employees regarding performance at Vision group is captured using the table.

Table 4. 5 Respondents' perception on employee performance

	Responses of the respondents				
	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Employees' performance at Vision Group is affected by extrinsic factors.	13 (7.7%)	32 (18.9%)	17 (10.1%)	43 (25.4%)	64 (37.9%)
The performance of the employees at Vision group is constantly monitored for improvements	16 (9.5%)	31 (18.3%)	17 (10.1%)	32 (18.9%)	73 (42.3%)
I would measure my performance through examining the time I take to accomplish a task	0	24 (14.2%)	47 (27.8%)	58 (34.3%)	40 (23.7%)
My performance is measured by the superiors and they mainly consider the quality of work that I perform	21 (12.4%)	23 (13.6%)	23 (13.6%)	48 (28.4%)	54 (32%)
For teams, the performance is measured by the number of adverts brought in	12 (7.1%)	27 (16%)	36 (21.3%)	34 (20.1%)	60 (35.5%)
Other issues considered in establishing the performance of the employees include innovation	15 (8.9%)	16 (9.5%)	34 (20.1%)	39 (23.1%)	65 (38.5%)
The performance of the employees at Vision Group can be measured using metrics such as the number of tasks carried out at a time	21 (12.4%)	23 (13.6%)	26 (15.4%)	39 (23.1%)	60 (35.5%)

Source: Primary data (2017)

The findings in the table above show that of the respondents, 37.9% strongly agreed that employees' performance at Vision Group is affected by extrinsic factors, 25.4% were in agreement with the same proposition implying that 63.3% agreed with the same proposition.

Again, the findings show that of the respondents, 42.3% strongly agreed that employees' performance at Vision Group is affected by extrinsic factors, 18.9% were in agreement with the same proposition implying that 61.2% were satisfied with the available extrinsic factors.

Further, the findings show that of the respondents, 23.7% strongly agreed that they measure my performance through examining the time they take to accomplish a task, 34.3% were in agreement with the same proposition implying that 58% were satisfied with accomplishment of a task as their measure of performance.

In addition to the above, the findings show that of the respondents, 32% strongly agreed that their performance is measured by the superiors and they mainly consider the quality of work that they perform, 28.4% were in agreement with the same proposition implying that 60.4% were satisfied with quality of work as their measure of performance.

The findings in the table also show that of the respondents, 35.5% strongly agreed that the performance is measured by the number of adverts brought in, 20.1% were in agreement with the same proposition implying that 55.6% believed that sales volume is a measure of their performance.

Of the respondents, 38.5% strongly agreed that other issues considered in establishing the performance of the employees include innovation, 23.1% were in agreement with the same proposition implying that 61.6% were satisfied with innovativeness as their measure of performance.

Lastly, the findings show that of the respondents, 35.5% strongly agreed that the performance of the employees at Vision Group can be measured using metrics such as the number of tasks carried out at a time, 23.1% were in agreement with the same proposition implying that 58.6% were of the view that the number of tasks carried out at a time is a metric for their performance.

It can therefore be generally inferred that the employees agree that employee performance measurement at Vision group is governed by a multiplicity of extrinsic factors. This is because of the fact that measurement of employment performance is at the discretion of the supervisors and

department heads and the context of performance being measured as Nicholls-Nixon (2012) noted.

4.2.6 Descriptive analysis for the respondents' perception on the effect of moderating variables on the relationship between Information System and employee performance

The perception of the employees regarding the state of the specified moderating factors at Vision group is captured using the table below.

Table 4. 6 Respondents' perceptions on moderating factors' effect on the effect of IS on employee performance

Statement	1	2	3	4	5
Systems like Information Systems relevant Vision group employees' performance.	18 (10.7%)	20 (11.8%)	19 (11.2%)	47 (27.8%)	65 (38.5%)
Vision group caters for its Stakeholders' interests as one way of enhancing its employees' performance.	10 (5.9%)	36 (21.3%)	32 (18.9%)	27 (16%)	64 (37.9%)
Human, social, organization and technical factors affect the way work is done at Vision group	37 (21.9%)	43 (25.4%)	21 (12.4%)	24 (14.2%)	44 (26%)
Management support at Vision group moderates the influence of Information Systems on its employees' performance	4 (2.4%)	13 (7.7%)	41 (24.3%)	50 (29.6%)	61 (36.1%)
Employee training at Vision group moderates the influence of Information Systems on its employees' performance	18 (10.7%)	28 (16.6%)	35 (20.7%)	37 (21.9%)	51 (30.2%)
Availability of ICT at Vision group moderates the influence of Information Systems on its employees' performance	24 (14.2%)	27 (16.0%)	23 (13.6%)	32 (18.9%)	63 (37.3%)

Source: Primary data (2017)

The findings in the table above show that of the respondents, 38.5% strongly agreed that systems like information systems relevant Vision group employees' performance, 27.8% were in agreement with the same proposition implying that 66.3% were satisfied with the proposition.

The findings in the table above show that of the respondents, 37.9% strongly agreed that Vision group caters for its Stakeholders' interests as one way of enhancing its employees' performance,

16% were in agreement with the same proposition implying that 53.9% agreed that Stakeholders' interests are key.

The findings in the table above show that of the respondents, 26% strongly agreed that human, social, organization and technical factors affect the way work is done at Vision group, 14.2% were in agreement with the same proposition implying that 40.2% were satisfied with the interplay of human, social, organization and technical factors.

The findings in the table above show that of the respondents, 36.1% strongly agreed that management support at Vision group moderates the influence of Information Systems on its employees' performance, 29.6% were in agreement with the same proposition implying that 65.7% believed that management is the major moderating variable.

The findings in the table above show that of the respondents, 30.2% strongly agreed that employee training at Vision group moderates the influence of Information Systems on its employees' performance, 21.9% were in agreement with the same proposition implying that 52.1% acknowledge employee training in the IS performance equation.

Lastly, the findings in the table above show that of the respondents, 37.3% strongly agreed that availability of ICT at Vision group moderates the influence of Information Systems on its employees' performance, 18.9% were in agreement with the same proposition implying that 56.2% believed that the availability of ICT is the main moderator factor.

4.3 Correlation of the Respondents' Perception on Relationships between the Variables

Simple descriptive analysis captured perceptions but not the size of the relationship between the two variables under study. Correlating the variables captures the magnitude of the relationship.

4.3.1 Correlating respondents' perception on hardware and employee performance

Simple descriptive analysis showed that there were differences in the responses regarding the perceived relationship between the two variables but did not show the magnitude and direction of

the relationship between perceived hardware state and perceived performance of the employees. The table below presents a correlation between hardware and perceived performance of the employee at Vision Group.

Table 4. 7 Correlation of respondents' perception on hardware and employee performance

		IS Hardware	Performance
IS Hardware	Pearson Correlation	1	.365**
	Sig. (2-tailed)		.000
	N	169	169
Performance	Pearson Correlation	.365**	1
	Sig. (2-tailed)	.000	
	N	169	169
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).			

Source: Primary data (2017)

Correlation analysis showed a significant positive relationship ($r = 0.365$, $p < 0.01$) between IS hardware and employee performance at Vision Group. This means that improving the hardware qualities improves the performance of the employees at the organization. The correlation between the two variables is thus moderate. The significance of these findings is that the management and stakeholders of Vision Group are provided with a scientific basis to predict the hardware needs to optimize their work force performance.

Francis (2013) noted that hardware availability was perceived to have an impact on IS effectiveness. However, Chang & King (2005) argued that hardware availability is the hard of functionality of the information system. The study has however noted that on addition to the previous scholar's work, improving hardware availability improves performance by 13.2% (or 0.365^2) hence adding to the body of existing knowledge.

4.3.2 Correlating respondents' perception on software and employee performance

Simple descriptive statistics showed that there were differences in the responses regarding the perceived relationship between the software and performance but did not show the magnitude

and direction of the relationship between perceived software state and perceived performance of the employees. The table below presents a correlation between software and perceived performance of the employee at Vision Group.

Table 4. 8 Correlation of respondents' perception on software and employee performance

		IS Software	Performance
IS Software	Pearson Correlation	1	.660**
	Sig. (2-tailed)		.000
	N	169	169
Performance	Pearson Correlation	.660**	1
	Sig. (2-tailed)	.000	
	N	169	169
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).			

Source: Primary data (2017)

Correlation analysis showed a significant positive relationship ($r = 0.660$, $p < 0.01$) between IS Software and employee performance at Vision Group. This possibly means that improving the software qualities improves the performance of the employees at the organization. Further, the correlation between software and employee performance is moderate. The significance of these findings is that the management and stakeholders of Vision Group are provided with a scientific basis to predict the software needs to optimize their work force performance.

In the descriptive statistics, Laudon & Laudon (2013) was fully in support of the positive effects of computer software availability and functionality on performance with reference to improved task performance without emphasis on the magnitude of the effects on performance. This study has added to knowledge by indicating that changing the software perceptions improves performance by 43.56% (or 0.66^2).

4.3.3 Correlating respondents' perception on IS networks and employee performance

Simple descriptive statistics showed that there were differences in the responses regarding the perceived relationship between the IS networks and performance but did not show the magnitude

and direction of the relationship between perceived IS networks state and perceived performance of the employees. The table below presents a correlation between IS networks and perceived performance of the employee at Vision Group

Table 4. 9 Correlation of respondents' perception on networks and employee performance

		IS Networks	Performance
IS Networks	Pearson Correlation	1	.588**
	Sig. (2-tailed)		.000
	N	169	169
Performance	Pearson Correlation	.588**	1
	Sig. (2-tailed)	.000	
	N	169	169
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).			

Source: Primary data (2017)

Correlation analysis showed a significant positive relationship ($r = 0.588$, $p < 0.01$) between IS Networks and employee performance at Vision Group. This means that improving the networks qualities improves the performance of the employees at the organization. Further, the correlation between IS networks and employee performance is moderate. The significance of these findings is that the findings give management and stakeholders of Vision Group a scientific basis to predict the computer network needs to optimize their work force performance.

Kumar et al., (2008) emphasized the effects of back up on the IS networks available at Vision Group. However, the scholar based this on retrieval and reduction of data losses in case of system malfunction. However, the scholar adds to the existing body of knowledge by showing that indeed, backups are necessary and a unit improvement in IS networks available at Vision Group improves performance by 34.5% (or 0.588^2).

4.3.4 Correlating respondents' perception on IS processes and employee performance

Simple descriptive statistics showed that there were differences in the responses regarding the perceived relationship between the IS processes and performance but did not show the magnitude and direction of the relationship between perceived IS processes state and perceived

performance of the employees. The table below presents a correlation between IS processes and perceived performance of the employee at Vision Group.

Table 4. 10 Correlation of respondents' perception on IS processes and employee performance

		IS Processes	Performance
IS Processes	Pearson Correlation	1	.310**
	Sig. (2-tailed)		.000
	N	169	169
Performance	Pearson Correlation	.310**	1
	Sig. (2-tailed)	.000	
	N	169	169
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).			

Source: Primary data (2017)

Correlation analysis showed a significant positive relationship ($r = 0.310$, $p < 0.01$) between IS Processes and employee performance at Vision Group. This means that improving the IS process discretion and knowledge improves the performance of the employees at the organization. Further, the correlation between IS processes and employee performance at Vision Group is moderate. The significance of these findings is that the management and stakeholders of Vision Group are provided with a scientific basis to predict the IS processes discretion to optimize their work force performance.

Knowledge about IS processes has been singled out by Muhammad & Asfandiyar (2012) as the most critical factor impacting the performance of IS in organizations. The scholars argue that knowledge is an important factor in minimizing delays and improving concept performance. However, in addition to knowledge, the study adds that a unit improvement in processes at Vision group improves performance by 9.61% (or 0.31^2)

4.3.5 Correlating the respondents' perception on the effect of moderating factors on relationship between IS and employee Performance

Simple descriptive analysis showed that there were differences in the responses regarding the perceived relationship between the IS mediating factors and performance but did not show the

magnitude and direction of the relationship between perceived state of IS mediating factors and perceived performance of the employees. The table below presents a correlation between the state of IS mediating variables and perceived performance of the employee at Vision Group

Table 4. 11 Correlation of respondents' perception on moderating variables effect on the relationship between IS and employee performance

		Moderating Variables	Performance
Moderating Variables	Pearson Correlation	1	.117
	Sig. (2-tailed)		.129
	N	169	169
Performance	Pearson Correlation	.117	1
	Sig. (2-tailed)	.129	
	N	169	169
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).			

Source: Primary data (2017)

Correlation analysis showed an insignificant positive relationship ($r = 0.117$, $p > 0.01$) between IS Moderating variables and employee performance at Vision Group. Further, the correlation between moderating factors and the effect of IS on employee performance is weak. This means that the stated factors may not have any effect on the relationship between IS and employee performance at Vision group. Just like Zao (2010) commented, moderating factors in IS in an organization may only depend on the impact of the key components of the IS systems being operational.

4.3.6 Correlating respondents' perception on Information Systems and employee performance

Simple descriptive analysis showed that there were differences in the responses regarding the perceived relationship between the IS and performance but did not show the magnitude and direction of the relationship between perceived state of IS and perceived performance of the employees. The table below presents a correlation between the IS and perceived performance of the employee at Vision Group.

Table 4. 12 Correlation of respondents' perception on the effect of Information Systems on employee performance

		IS	Performance
IS	Pearson Correlation	1	.790 ^{**}
	Sig. (2-tailed)		.000
	N	169	169
Performance	Pearson Correlation	.790 ^{**}	1
	Sig. (2-tailed)	.000	
	N	169	169
^{**} . Correlation is significant at the 0.01 level (2-tailed). [*] . Correlation is significant at the 0.05 level (2-tailed).			

Source: Primary data (2017)

Correlation analysis showed a significant positive relationship ($r = 0.790$, $p < 0.01$) between Information Systems and employee performance at Vision Group. Further, the correlation between IS and employee performance is strong. The significance of these findings is that the findings give management and stakeholders of Vision Group a scientific basis to predict the Information Systems needs to optimize their work force performance. Several scholars like Bredard et al., 2014; Ou & Davison, 2011; Bansal & Chorley, 2012 and Agbolade (2011) showed that there were positive relationships between information systems and employee performance in any organization. The scholars argue that the performance is improved through improving task and concept performance. However, the scholars did have varying results with some showing significant results while others obtained insignificant results.

Further, the scholars used different components of Information systems and yielded different results. In the current study, all the four components of information systems are considered and the results show that when IS improves by a unit, performance (as by the study metrics) improves by 39% (or 0.79^2) implying that the study is an addition to knowledge.

4.4 Regression of respondents' perception on the effect of IS on employee performance

The study's main objective was to investigate the effects of Information Systems on employee performance at Vision Group. This entailed first to carry out a regression analysis on the effects

of the combined components of the independent variable on the dependent variable to come to a conclusion. Regression analysis shows by how much the dependent variable will change due to a unit change in the independent variable. The multiple regression model below presents the effects of Information Systems on employee performance at Vision Group Headquarters.

Table 4. 13 Regression of respondents' perception on the effect of IS on employee performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.429	.286		-1.503	.135
HARDWARE	.311	.054	.384	5.740	.000
SOFTWARE	.369	.056	.422	6.583	.000
NETWORK	.554	.087	.401	6.397	.000
PROCESSES	-.102	.071	-.096	-1.429	.155

a. Dependent Variable: PERFORMANCE
Source: Primary data (2017)

HARDWARE – The coefficient for hardware is .311. So for every unit improvement in perceptions about the available hardware, a 0.311 unit increase in perceived performance is predicted, holding all other variables constant.

SOFTWARE – The coefficient for software is .369. This means that for every unit improvement in perceptions about the available software at Vision Group, a 0.369 unit increase in perceived performance is predicted, holding all other variables constant.

NETWORK – The coefficient for network is .554. This means that for every unit improvement in perceptions about the available IS networks at Vision group, a 0.554 unit increase in perceived performance is predicted, holding all other variables constant.

PROCESSES – The coefficient for processes is -.102. This means that for every unit improvement in perceptions about the available IS processes at Vision Group, a 0.102 unit decrease in perceived performance is predicted, holding all other variables constant.

These are the t-statistics and their associated 2-tailed p-values used in testing whether a given coefficient is significantly different from zero. Using a significance level of 0.05 or 5%, significance of the effects of the sub components of IS was established.

The coefficient for HARDWARE (0.311) is significantly different from 0 because its p-value is 0.000, which is smaller than 0.05. Further, the coefficient for SOFTWARE (0.369) is significantly different from 0 because its p-value is 0.000, which is smaller than 0.05. Along similar lines, the coefficient for NETWORK (0.554) is significantly different from 0 because its p-value is 0.000, which is smaller than 0.05. However, the coefficient for PROCESSES (-.0102) is not significantly different from 0 because its p-value is 0.000, which is larger than 0.05.

From the regression model above, there is enough evidence to support the claim that IS significantly affects employee performance at Vision Group. The study results are consistent with Bredard et al., 2014; Ou & Davison, 2011; Bansal & Chorley, 2012 and Agbolade (2011) and since the components of both the dependent and independent variables vary across the studies and the current study, the study has added to knowledge. However, the previous scholars used simple descriptive analyses which do not show precision limiting the quality of the findings. In improving the findings, the study adds the precision component by using inferential analysis to improve the findings.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The study examined the effect of Information Systems on employee performance. The study considered four objectives which looked at the effect of hardware, software, networks and IS processes on employee performance. This chapter presents a summary of the findings, the conclusions that can be drawn as well as the recommendations made with specific reference to the study objectives.

5.1 Summary of Findings

These are made in line with the study objectives and the findings in the preceding chapter as below.

5.1.1 The respondents' perception on the effect of hardware on performance of employees

The researcher basing on descriptive analysis found out that 60.3% of the respondents confirmed that the required hardware was available, 53.8% confirmed the hardware is fully functional, 59.8% confirmed that the hardware is scalable and 69.8% confirmed that the hardware is user friendly. The Pearson correlation coefficient was positive and significant at 36.5% and regression coefficient was significant at 31.1%.

5.1.2 The respondents' perception on the effect of software on employee performance

The researcher basing on descriptive analysis found out that 67.5% of the respondents confirmed that the required software was available, 57.4% confirmed the software is fully functional, 56.8% confirmed that the hardware is scalable and 56.8% confirmed that the hardware is user friendly. The Pearson correlation coefficient was positive and significant at 66.1% and regression coefficient was significant at 36.9%.

5.1.3 The respondents' perception on the role of networks on employee performance

The researcher basing on descriptive analysis found out that 63.9% of the respondent confirmed that the available network was up and running, 56.3% confirmed that the network was fast and under constant modification, 56.9% confirmed that the network was reliable, 52.7% confirmed that management invested a lot of finance in the network, 63.9% confirmed that the network had user ID provisions, 55.1% confirmed that the network was secure and 72.2% confirmed the company used network backup. The Pearson correlation coefficient was positive and significant at 58.5%% and regression coefficient was significant at 55.4%.

5.1.4 The respondents' perception on the effects of IS processes on employee performance

The researcher basing on descriptive analysis found out that 63.3% of the respondents confirmed that there is discretion regarding IS processes, 53.3% confirmed that the IS processes follow a pre-determined pattern, 59.1% confirmed that there are varying IS processes, 61% confirmed that the IS processes are flexible and liked and 70.4% confirmed that they have knowledge about the IS processes. The Pearson correlation coefficient was positive and significant at 31% and regression coefficient was insignificant at -10.2%.

5.1.3 The respondents' perception on the role of networks on employee performance

The researcher basing on descriptive analysis found out that 63.9% of the respondent confirmed that Information Systems have an effect on employee performance, 53.9% confirmed that stakeholders' needs are vital to enhance employee performance, 40.2% confirmed that human, social, organization and technological factors are affect employee performance, 65.7% confirmed that management involvement is a moderating factor, 52.1% acknowledged that training is also a moderating factor and 56.2% believed that availability of ICT was too a moderating factor.

The Pearson correlation coefficient was positive and significant at 11.7%.

5.2 Conclusions

Findings from the study's descriptive statistics indicate that there is need for improvement in perception about hardware availability, functionality, handling increasing amount of work and user friendliness since not all respondents were affirmative in regards to the questions asked.

The Pearson correlation coefficient of 36.5% is weak but significant implying that there is a 36.5% relationship between hardware and employee performance. Meaning that hardware can possibly cause a 36.5% improvement in employee performance. The 31.1% regression coefficient indicates that 31.1% improvement in employee performance is due to a unit increase in perception about hardware. Therefore improving hardware needs will possibly improve performance of employees

Findings from the study's descriptive statistics indicate that there is need for improvement in perception about software availability, functionality, handling increasing amount of work and user friendliness since not all respondents were affirmative in regards the questions asked

The Pearson correlation coefficient of 66.1% is moderate but significant implying that there is a 66.1% relationship between software and employee performance. Meaning that sotware can possibly cause a 66.1%% improvement in employee performance. The 36.9% regression coefficient indicates that 31.1% improvement in employee performance is due to a unit increase in perception about software. Therefore improving software needs will possibly improve performance of employees.

Findings from the study's descriptive statistics indicate that there is need for improvement in perception about network availability, network speed and modification, network reliability, network security and network backup. The Pearson correlation coefficient of 58.8% is moderate but significant implying that there is a 58.8% relationship between software and employee

performance. Meaning that network can possibly cause a 58.8% improvement in employee performance. The 55.4% regression coefficient indicates that 55.4% improvement in employee performance is due to a unit increase in perception about software. Therefore improving network needs will possibly improve performance of employees.

Findings from the study's descriptive statistics indicate that there is need for improvement in perception about IS processes varying as per department, IS processes flexibility, IS processes importance and IS processes existence. The Pearson correlation coefficient of 31% is weak but significant implying that there is a 31% relationship between software and employee performance. The -10.2% regression coefficient indicates that -10.2% decline in employee performance is due to a unit increase in perception about software. Therefore improving IS processes needs will not necessary improve performance of employees however the decline is insignificant therefore should be considered as well.

Findings from the study's descriptive statistics indicate that there is need for improvement in perception about importance of meeting stakeholders' needs, the importance of human, social, organization and technical to the way work is done, appreciating management training and ICT availability as moderating factors. The Pearson correlation coefficient of 11.7% is weak and insignificant implying that there is a 11.7% relationship between moderating factors and the effect of Information Systems on employee performance, meaning they may not have an effect on the relationship between IS and employee performance however this is not conclusive therefore these moderating factors should be considered when using Information Systems to improve performance of employees.

The general objective of this study was to investigate the impact of Information Systems on the employee performance at Vision Group. The findings indicated that there is a 79.0% relationship

between the independent variables and employee performance at Vision group. Apart from IS processes, the other segregated components of the independent variable have significant effects on the dependent variable at a 5% significance level.

In line with theory, the study indicated that hardware, software and networks had positive and significant effects on performance of the employees whereas processes didn't. To this end, the study's results are consistent with the general systems theory.

5.3 Recommendations

The researcher basing on the study found out that improving hardware will possibly improve employee performance therefore management and other stakeholders should focus on improving hardware requirement, that is, should improve the availability of hardware by immediately replacing damaged hardware and providing every employee with the required equipment.

Management should ensure that hardware is fully functional by carrying regular servicing.

Management can ensure that the hardware can handle increasing amount of work by upgrading and management can ensure that the hardware is user friendly by carrying regular training.

The researcher basing on the study found out that improving software will possibly improve employee performance therefore management and other stakeholders should focus on improving software requirement, that is, should improve the availability of software by immediately replacing obsolete software and providing every employee with the required software.

Management should ensure that software is fully functional by carrying regular updating.

Management can ensure that the software can handle increasing amount of work by upgrading and management can ensure that the software is user friendly by carrying regular training.

The researcher basing on the study found out that improving network will possibly improve employee performance therefore management and other stakeholders should focus on improving

network requirement, that is, ensure that the network is up and running carrying out regular checkup and ensuring that IS user inform the specialist in case of network break down.

Management can ensure network speed by bring on board service providers with fastest internet speed. The IS administrators should ensure that the network backup is always on or automatically switches on when the network breaks down. IS administrators should ensure that each user has their own User ID whose password should be changed regular and this can be achieved by setting the system to request for password change by default after a prescribed period to enhance network security. Network security and reliability can further be enhanced by using firewalls to lock out hackers.

The researcher basing on the study found out that the relationship between IS processes and employee performance is significant and positive as per Pearson correlation therefore should be considered as well therefore management should ensure that the users of the IS contribute to building and improving the IS since the more aware of the system requirements, the IS processes can be made more likeable and flexible by involving the users in developing the pre-determined patterns that the processes will follow.

The researcher basing on the study found out moderating factors could have an effect on the effect of ISs on employee performance therefore management should increase their involvement to enhance the effect of IS on employee performance by sensitizing the employees about the importance of IS on employee performance and the organization as a whole. Regular training should be carried out because this would make the IS more user friendly hence reduce time taken to complete a task and reduce on the number of errors for instance. ICT upgrade should carried out more regularly to ensure that the IS remains fully functional, user friendly, scalable hence reducing the time taken to complete a task, reduce on number of error, innovativeness.

5.4 Suggestions for Further Study

The study was carried out at Vision group and yet Information Systems are adopted by other organizations for example MTN and Airtel, therefore a similar study should be carried out in such organizations.

There is need to carry out a study on how best organizations can improve employee performance and information system as these are very important in enhancing organizations overall performance.

REFERENCES

Books

- Al Mqraby, A. (2002). *Management Information Systems (bases and principles)*, modern library, Mansoura.
- Al Naggar, F. J. (2010). *Management Information Systems an administrative perspective* , (3rd edition), Dar Al - Hamed for publication and distribution , Amman, Jordan.
- Armstrong, Michael (2009), *Handbook of Performance Management An Evidence-based Guide to Delivering High Performance*, 4th edition, London, Kogan Page, e-Book.
- Artem M. Chirkin, Sergey V. Kovalchuk (2014). "Towards Better Workflow Execution Time Estimation". *IERI Procedia.Elsevier*.**10**: 216–223.
- Awano, Gaganan (2012) “Metadata Review”, in Final Report, ESSnet on Linking of Micro-data on ICT Impact, Eurostat, pages 25-30
- Carr, N. (2011). *The shallows: What the Internet is doing to our brains*. New York: WW Norton & Co Inc.
- Castells, M. (2011). *The rise of the network society: The information age: economy, society, and culture Volume I*. West Sussex: Wiley-Blackwell.
- Eskerod, P., & Jepsen, A. L. (2013). *Project Stakeholder Management*. Gower Publishing, Ltd.
- Kerzner, H. (2011). *Project Management Metrics, KPIs, and Dashboards: A Guide to Measuring and Monitoring Project Performance*. NJ: Wiley & Sons.
- Kroenke, David (2015). *MIS Essentials* (Fourth ed.). Boston: Pearson. p. 10.
- Laudon, K. C., and Laudon, J. P. (2013), *Essentials of Business Information Systems*, 11th ed., Prentice-Hall, Inc., Upper Saddle River, New Jersey.
- Laudon, K. C., and Laudon, J. P. (2013), *Essentials of Business Information Systems*, 11th ed., Prentice-Hall, Inc., Upper Saddle River, New Jersey.
- Malakooti, B. (2013). *Operations and Production Systems with Multiple Objectives*. John Wiley & Sons.
- Scherer, A. G., & Patzer, M. 2011. Where is the theory in stakeholder theory? A meta-analysis of the pluralism in stakeholder theory. In R. A. Phillips, *Stakeholder theory: Impact and prospects*: 140-62. Cheltenham: Edward Elgar Publishing Ltd.
- Soror, A., & Davis, F. (2014). Using self-regulation theory to inform technology-based behavior change interventions. Paper presented at the Hawaii International Conference on Information Sciences, Waikoloa.
- Turban, Efraim and Volonino, Linda (2010). *Information Technology for Management, Transforming Organizations in the Digital Economy*, 7th edition, Asia, John Wiley & Sons Ltd.
- Yassin, S. G. (2006). *Basics of Management Information Systems and Information Technology*, Dar Almanahge for printing and publishing, Amman.

Journals

- Abdi, N., Zarei, B., Vaisy, J. and Parvin, B. (2011). Innovation models and Business Process Redesign. CSC anada, International Business and Management. Vol.3, No 2.
- Abubakar, A. A., & Tasmin, R. B. H. (2012). The impact of information and communication technology on banks' performance and customer service delivery in the banking industry. International Journal of Latest Trends in Finance and Economic Sciences, 2 (1).
- Agarwal, R.; Lucas, H. (2005). "The information systems identity crisis: focusing on high-visibility and high-impact research". MIS Quarterly. 29 (3): 381–398.
- Agbolade, O. K. (2011). Information and communication technology and banks profitability in Nigeria.
- Airaksinen, Aarno, Mika Maliranta and Petri Rouvinen (2012) "ICT Support, Outsourcing and Training", in Final Report, ESSnet on Linking of Microdata on ICT Impact, Eurostat, pages 56-60
- Al Fawzan, Rashid M (2003), modern information system and their impact on the performance of employees, a survey on the General Customs Authority, Saudi Arabia, Master theses, NaifArabe University for Security Sciences, Graduate School, Department of Administrative Sciences, Saudi Arabia.
- Al Gandlji, A. and AlJanabi, A. (2012). *Management information systems*, (7th edition), Printing and Publishing by Almasera, Amman. Al Kurdy, M. (2003), *Introduction to Management Information Systems "basic concepts and applications"*,
- Albashabashh , S. (2005). The impact of the quality of management information systems in raising the level of functionality in the Jordanian Social Security Corporation , *Journal of Accounting, Management and Insurance* , Amman , vol. 10.
- AL-Gharaibeh, S., Malkawi , N. (2013). The Impact of Management Information Systems on the Performance of Governmental Organizations- Study at Jordanian Ministry of Planning, International Journal of Business and Social Science Vol. 4 No. 17.
- Al-Mamary, Y.H., Shamsuddin, A. & Aziati, N. (2014a). Factors affecting successful adoption of management information systems in organizations towards enhancing organizational performance, American Journal of Systems and Software, 2(5), pp. 121–126.
- Al-Mamary, Y.H., Shamsuddin, A. & Aziati, N. (2014b). Proposed Model For The Successful Implementation Of Management Information Systems In Yemeni Organizations, Journal of Management and Science, 4(3).
- Alter, S (2013). "Work System Theory: Overview of Core Concepts, Extensions, and Challenges for the Future". Journal of the Association for Information Systems. 14 (2): 72–121.
- Aram, Michael; Neumann, Gustaf (2015). "Multilayered analysis of co-development of business information systems" (PDF). Journal of Internet Services and Applications. 6 (1).
- Ballard, D. I., & Ramgolam, D. I. (2011). Connecting through smart phones and open doors: A spatiotemporal perspective on communication technologies at work. Paper presented at the 95th Annual Convention, Chicago.

- Bansal, P., & Corley, K. (2012). What's different about qualitative research? *Academy of Management Journal*, 509-513.
- Bodin, L. D., Gordon, L. A., & Loeb, M. P. (2008). Information security and risk management. *Communications of the ACM*, 51(4), 64-68.
- Baxter, G.; Sommerville, I (2011). Socio Technical Systems: From design methods to systems engineering. *Interact. Comput.* 23, 4–17.
- Brédart, A., Marrel, A., Abetz-Webb, L., Lasch, K., & Acquadro, C. (2014). Interviewing to develop Patient-Reported Outcome (PRO) measures for clinical research: Eliciting patients' experience. *Health & Quality Of Life Outcomes*, 12(1), 1-20.
- Caldeira, M. and Ward, J. (2002) "Understanding the successful adoption and use of IS/IT in SMEs: an explanation from Portuguese manufacturing industries", *Journal of Information Systems*, Vol. 12, pp 121-152.
- Cameron, A.-F., & Webster, J. (2013). Multi-communicating: Juggling multiple conversations in the workplace. *Information Systems Research*, 24(2), 352-371.
- Carr, A. and Kaynak, H. (2007) "Communication methods, information sharing, supplier development and performance: An empirical study of their relationships", *International Journal of Operations & Production Management*, Vol. 27, No. 4, pp 346 - 370
- Ceccez-Kecmanovic, D., Boell, S., & Campbell, J. (2014). Materiality of Connectivity in the Networked Society: A Socio-material Perspective. Paper presented at the 25th Australasian Conference on Information Systems, Auckland.
- Chaffey, D. and Wood, S. (2005) *Business information management: Improving performance using information systems*, Australian Journal of Business and Management Research, 1(4), 102-107.
- Chang J. and King W. (2005). Measuring the performance of information system: A Functional scorecard, *Journal of management information system*, vol. 22, no. 1.
- Chang, A., Chih, Y.-Y., Chew, E., & Pisarski, A. (2013). Reconceptualizing mega project success in Australian Defence: Recognizing the importance of value co-creation. *International Journal of Project Management*, 31(8), 1139-1153.
- Chen, J.-S., & Tsou, H.-T. (2012). Performance effects of IT capability, service process innovation, and the mediating role of customer service. *Journal of Engineering and Technology Management*, 29 (1), 71-94.
- Chen, P., Kataria, G., & Krishnan, R. (2011). Correlated failures, diversification, and information security risk management. *MIS Quarterly*, 35(2), 397-A3.
- Chen, Y., Ramamurthy, K. K., & Wen, K. (2012). Organizations' information security policy compliance: Stick or carrot approach? *Journal of Management Information Systems*, 29(3), 157-188.
- Clark, A. M. (2009). Qualitative research: What it is and what it can contribute to cardiology in the young. *Cardiology in the Young*, 131-134.
- Clegg, C. W. (2000). Sociotechnical principles for system design. *Applied Ergonomics*, 31, 463-477.
- D'Atri A., De Marco M., Casalino N. (2008). "Interdisciplinary Aspects of Information Systems Studies", Physica-Verlag, Springer, Germany, pp. 1–416

- Deng, X., & Chi, L. (2012). Understanding post-adoptive behaviors in information systems use: A longitudinal analysis of system use problems in the business intelligence context. *Journal of Management Information Systems*, 29(3), 291-326
- Denning, T., Tadayoshi, K., & Levy, H. M. (2013). Computer security and the modern home. *Communications of The ACM*, 56(1), 94-103.
- Doll, W. J., Xiaodong, D., Raghunathan, T. S., Torkzadeh, G., & Weidong, X. (2004). The meaning and measurement of user satisfaction: A multi-group invariance analysis of the end-user computing satisfaction instrument. *Journal of Management Information Systems*, 21(1), 227-262.
- Eason, K.D., Waterson, P.E., 2012. Socio-technical considerations in the delivery of care to the frail elderly at home. *Proceedings of the 4th International Conference in Applied Human Factors and Ergonomics*, San Francisco, pp. 6967e6973, 21–25
- Erickson, C. L., & Jacoby, S. M. (2003). The effect of employer networks on workplace innovation and training. *Industrial & Labor Relations Review*, 56(2), 203-223.
- Fageha, M. K., & Aibinu, A. A. (2013). Managing Project Scope Definition to Improve Stakeholders' Participation and Enhance Project Outcome. *Procedia-Social and Behavioral Sciences*, 74, 345-355.
- Francis, P. (2013). Impact of Information Technology on Accounting Systems. *Asia-Pacific Journal of Multimedia Services Convergent With Art, Humanities, And Sociology*, 3(2), 93-106.
- Frank, I., & Oluwafemi, J (2012). Impact of Information Technology on Nigeria Banking Industry: a caseStudy of Skye Bank.
- Frels, R. K., & Onwuegbuzie, A. J. (2013). Administering quantitative instruments with qualitative interviews: A mixed research approach. *Journal of Counseling & Development*, 91(2), 184-194.
- Gebauer, J. (2008). User requirements of mobile technology: A summary of research results. *Information Knowledge Systems Management*, 7(1/2), 101-119.
- Gerrish, Ed. 2015. The Impact of Performance Management on Performance in Public Organizations: A Meta-Analysis. *Public Administration Review* 76(1):48–66.
- Gordon, L. A., Loeb, M. P., & Lei, Z. (2011). The impact of information security breaches: Has there been a downward shift in costs? *Journal of Computer Security*, 19(1), 33-56.
- Guo, K. H., Yuan, Y., Archer, N. P., & Connelly, C. E. (2011). Understanding non-malicious security violations in the workplace: A composite behavior model. *Journal of Management Information Systems*, 28(2), 203-236.
- Harrison, J. S., Bosse, D. A., & Phillips, R. A. 2010. Managing for stakeholders, stakeholder utility functions and competitive advantage. *Strategic Management Journal*, 31: 58-74. <http://dx.doi.org/10.1002/smj.801>.
- Hasan, Y., Shamsuddin, A. & Aziati, N. (2013). The impact of management information systems adoption in managerial decision making: A review. *Management*, 8(4), pp. 010–017

- Hernaus, T., Pejić Bach, M., BosiljVukšić, V. (2012). Influence of strategic approach to BPM on financial and non-financial performance, *Baltic Journal of Management*, 7 (4), pp. 376 – 396.
- Hirschhorn, L., Noble, P. & Rankin, T. (2001). Sociotechnical systems in an age of mass customization. *Journal of Engineering and Technology Management*, 18, 241-252.
- Hoe, J., & Hoare, Z. (2012). Understanding quantitative research: Part 1. *Nursing Standard*, 27(15-17), 52-57.
- Hossain, M. D, Moon, M., Yun, J.W., Chan Choe, Y (2012). “Impact of psychological traits on user performance in information systems delivering customer service: IS management perspective”, *Decision Support Systems*, pp. 1-12
- Hui, K., Hui, W., & Yue, W. T. (2012). Information security outsourcing with system interdependency and mandatory security requirement. *Journal of Management Information Systems*, 29(3), 117-156.
- Huser, V.; Rasmussen, L. V.; Oberg, R.; Starren, J. B. (2011). "Implementation of workflow engine technology to deliver basic clinical decision support functionality". *BMC Medical Research Methodology*.11: 43.
- Ioannou, G. and Mavri M. (2007). Performance net: A Decision support system for reconfiguring a Banks Branch network, *Omega*, vol. 35, no. 2.
- Iyer, K., Germain, R. and Frankwick, G. (2004) “Supply chain B2B e-commerce and time-based delivery performance”, *International Journal of Physical Distribution & Logistics Management*, Vol. 34, No. 8, pp 645-661.
- Jae-Gu, S., Gil-Cheol, P., & Seoksoo, K. (2007). RFID based context information security system architecture for securing personal information under ubiquitous environment. *AIP Conference Proceedings*, 963(2), 563-566.
- Jeffcoate, J., Chappell, C. and Feindt, S. (2002) “Best practice in SME adoption of e-commerce, Benchmarking”, *An International Journal*, Vol. 9, No. 2, pp 122-132.
- Jensen, M. C. 2001. Value maximization, stakeholder theory and the corporate objective function. *European Financial Management*, 7: 297-317. <http://dx.doi.org/10.1111/1468-036X.00158>.
- Johnston, A. C., & Hale, R. (2009). Improved security through information security governance. *Communications of The ACM*, 52(1), 126-129.
- Kalemera, A., Nalwoga, L., & Wakabi, W. (2012). How ICT tools are promoting citizen participation in Uganda. Kampala (Uganda): The Swedish Program for ICT in Developing Regions (SPIDER), and The Collaboration on International ICT Policy in East and Southern Africa (CIPESA).
- Kazmar, M. M. (2006). Creation and loss of socio-technical capital among information professionals educated online. *Library & Information Science Research*, 28, 172-191.
- Kim, H., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS Quarterly*, 33(3), 567-582.

- Kisely, S., & Kendall, E. (2011). Critically appraising qualitative research: A guide for clinicians more familiar with quantitative techniques. *Australasian Psychiatry*, 19(4), 364-367.
- Kohlbacher, M., Gruenwald, S. (2011): Process orientation: conceptualization and measurement, *Business Process Management Journal*, 17 (2), pp. 267-283.
- Kumar, R. L., Park, S., & Subramaniam, C. (2008). Understanding the value of countermeasure portfolios in information systems security. *Journal of Management Information Systems*, 25(2), 241-279.
- Lai, W., & Tsen, H. (2013). Exploring the relationship between system development life cycle and knowledge accumulation in Taiwan's IT industry. *Expert Systems*, 30(2), 173-182.
- Littau, P., Jujagiri, N. J., & Adlbrecht, G. (2010). 25 years of stakeholder theory in project management literature (1984-2009). *Project Management Journal*, 41(4), 17-29.
- Lotfollah N., Ziaul H., Seyed M.A., and Saeedreza H. (2012). Impact of IT on process improvement: *Journal of emerging trends in computing and information sciences*. 3, (1).ISSN 2079-8407
- Mitchell, M. (2011). A reflection on the emotional potential of qualitative interviewing. *British Journal of Midwifery*, 19(10), 653-657.
- Mugabe, D. (2013, April 18). How Ugandan innovators are changing the world. *The Vision Group*, 28(078), pp. 17-18.
- Muhammad, H., Asfandyar, Y. (2012). The impact of Management Information System on the Overall Performance and Efficiency of the Workforce of the Accountant General (Peshawar): A Research Base Study, *International Journal of Academic Research in Accounting, Finance and Management Sciences* Volume 2, Issue 2
- Munirat, Y., Sanni, I., Kazeem, A. (2014). The Impact of Management Information System (MIS) on the Performance of Business Organization in Nigeria. *International Journal of Humanities Social Sciences and Education (IJHSSE)* Volume 1, Issue 2, PP 76-86.
- Nicholls-Nixon, C. (2005) "Rapid growth and high performance: The entrepreneur's impossible dream", *Academy of Management Executive*, Vol.19, No. 1, pp77-89. T
- Nkwasiwe, G. (2012, May 23). Uganda ICT innovators honored. Retrieved April 17, 2013, from Your ICT Magazine: <http://www.yourictmagazine.com/home/local-news/452-uganda-ict-innovators-honored>
- Patrick, O., Anthony, A., & Yaw, B. (2013). The Adoption Of Information And Communication Technology In The Public Sector; A Study Of The Financial Management In The Ghana Education Service (GES). *International Journal of Scientific & Technology Research*, 2(12)
- Pavlov, A., Bourne, M. (2011). Explaining the effects of performance measurement on performance: an organizational routines perspective. *International Journal of Operations & Production Management*, 31 (1), pp. 101–122.
- Phillips, R. A., Freeman, R. E., & Wicks, A. C. 2003. What stakeholder theory is not. *Business Ethics Quarterly*, 13: 479-502. <http://dx.doi.org/10.5840/eq200313434>.

- Pollard, C. E., Gupta, D., & Satzinger, J. W. (2010). Teaching systems development: A compelling case for integrating the SDLC with the ITSM Lifecycle. *Information Systems Management*, 27(2), 113-122.
- Rajput, N., & Gupta, M. (2011). Impact of IT on Indian Commercial Banking Industry: DEA Analysis. *Global Journal of Enterprise Information System*, 3 (1), 17-31.
- Resnick, P. (2002). Beyond bowling together: Sociotechnical capital. In J. M. Carroll (Ed.), *Human-computer interaction in the new millennium* (pp. 647-672). Boston: Addison-Wesley.
- Riener, A.; Ferscha, A (2013). *Enhancing Future Mass ICT with Social Capabilities. Co-Evolution of Intelligent Socio Technical Systems*; Springer: Berlin/Heidelberg, Germany, pp. 141-184.
- Ringim, K.J., Razalli, M.R and Hasnan, N (2012). The Moderating Effect of IT Capability on the Relationship between Business Reengineering Factors and Organizational Performance of Banks. *Journal of Internet Banking and Commerce*
- Sarker, S., Chatterjee, S., & Xiao, X. (2013). How “Socio-technical” is our IS Research? An Assessment and Possible Ways Forward. *Proceedings of ICIS 2013*.
- Siponen, M., & Vance, A. (2010). Neutralization: New insights into the problem of employee information systems security policy violations. *MIS Quarterly*, 34(3), 487-A12.
- Spears, J. L., & Barki, H. (2010). User participation in information systems security risk management. *MIS Quarterly*, 34(3), 503-A5.
- Srivastava, S. C., & Teo, T. H. (2012). Contract performance in offshore systems development: Role of control mechanisms. *Journal of Management Information Systems*, 29(1), 115-158
- Steelman, Z., Soror, A., Limayem, M., & Worrell, D. (2012). Obsessive compulsive tendencies as predictors of dangerous mobile phone usage. Paper presented at the Americas Conference on Information Systems, Seattle.
- Stone, Robert W; Good, David J and Baker-Eveleth Lori (2007), the impact of information technology on individual and firm marketing performance, *Behavior & Information Technology*, Vol.26, No.6,
- Stout, L. A. (2012). *The shareholder value myth: How putting shareholders first harms investors, corporations, and the public*. Sanfranciso, California; Berrett-Koehler Publishers.
- Sun, H. (2012). Understanding user revisions when using information system features: Adaptive system use and triggers. *MIS Quarterly*, 36(2), 453-478
- Supattra, B. (2007). The influence of management information system and information technology on management performance and satisfaction", *7th global conference on business and economics*.
- Taber, T. A. A., Alaryan, L. A., & Haija, A. A. A. (2014). The effectiveness of accounting information systems in Jordanian private higher education institutions. *International Journal of Accounting and Financial Reporting*, 4(1), 28-42.

- Taneja, S., Golden Pryor, M., Humphreys, J. H., & Pryor Singleton, L. (2013). Strategic management in an era of paradigmatic chaos: Lessons for managers. *International Journal of Management*, 30(1), 112-126
- Taylor, M. and Murphy, A. (2004), "SMEs and e-business, *Journal of Small Business and Enterprise Development*", Vol.11, No. 3, pp 280-289.
- Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly*, 37(1), 21-54
- Venkatesh, V., Brown, S. A., Maruping, L. M., & Bala, H. (2008). Predicting different conceptualizations of system use: The competing roles of behavioral intention, facilitating conditions, and behavioral expectation. *MIS Quarterly*, 32(3), 483-502.
- Waddock, S., & Graves, S. B. 2006. The impact of mergers and acquisitions on corporate stakeholder practices. *Journal of Corporate Citizenship*, 22: 91-109
- Walsh, S. P., White, K. M., Cox, S., & Young, R. M. D. (2011). Keeping in constant touch: The predictors of young Australians' mobile phone involvement. *Computers in Human Behavior*, 27(1), 333-342.
- Walsh, J. P. 2005. Taking stock of stakeholder management. *Academy of Management Review*, 30: 426-52. <http://dx.doi.org/10.5465/AMR.2005.16387898>.
- Waltz, C.F., Strickland, O.L., & Lenz, E.R. (2005). *Measurement in nursing and health research* (3rd ed.) New York: Springer Publishing Co.
- Whiting, M., & Sines, D. (2012). Mind maps: Establishing 'trustworthiness' in qualitative research. *Nurse Researcher*, 20(1), 21-27.
- Wilson, F.R., Pan, W., & Schumsky, D.A. (2012). Recalculation of the critical values for Lawshe's content validity ratio. *Measurement and Evaluation in Counseling and Development*, 45(3), 197-210. doi:10.1177/0748175612440286
- Winch, G. and Carr, B. (2001) "Process, maps and protocols: Understanding the shape of the construction process", *Journal of Construction Management and Economics*, Vol.19, pp 519-531.
- Winter, S., Berente, N., Howison, J., & Butler, B. (2014). Beyond The Organizational 'Container': Conceptualizing 21st Century Socio-technical Work. *Information and Organization*, 24(4), 250-269.
- Yun, H., Kettinger, W. J., & Lee, C. C. (2012). A new open door: The smart phones' impact on work-to-life conflict, stress, and resistance. *International Journal of Electronic Commerce*, 16(4), 121-151.

Reports

- Al Tai, M. A. (2005). *Advanced management information systems*, Zarqa Private University.
- Al Saudi, M. (2005). *The impact of computerized management information systems on the performance of employees in the Security Institute*, College of Administrative Sciences, Amman
- Al Sharfa, A. (2004). *Evaluation of information systems used in the Ministry of Health in the Gaza Strip of*, Master Thesis, School of Public Health University of Jerusalem, Abu Dis , Gaza : Palestine.
- Al Omari, A. (2009). *The impact of computerized management information systems on the performance of employees in the Palestinian Telecommunications Company*, Master Thesis, The Islamic University, Gaza: Palestine
- Al Meetani, Yousef Abdul Rahman Yousef (2004), the impact of management information systems to improve the efficiency and effectiveness of the Jordanian Commercial Banks: A Case Study of Arab Bank, Master, Al al-Bait University, Faculty of Economics and Administrative Sciences, Jordan.
- Hongbin Zha (2006). *Interactive Technologies and Sociotechnical Systems: 12th International Conference, VSMM 2006, Xi'an, China, October 18–20, 2006, Proceedings*.
- Kasasbeh, Abdel Karim (2007), the role of information technology in improving corporate performance, A Case Study Jordanian Free Zones Corporation, Arab University for Graduate Studies, Faculty of Management Studies and Senior Finance, Department of Management, Jordan.
- Khuzaimah, A. (2011). The impact of business process reengineering on organizational Performance: Unpublished master thesis, University Utara Malaysia Lilegdon W.R. and Goldsman D. SCS. 55-60.
- Munduga P. (2014). An analysis of the poor performance of state owned enterprises in Africa: Submitted to ESAMI in partial fulfilment of the requirement for Masters in Business Administration degree
- Mkaharsh, R. M. (2007). *The impact of the development of human resources information systems on the effectiveness of the administrative work - Empirical Study of Government Organizations in its Jeddah*, Master Thesis, The Naif Arab Academy for Security Sciences, Riyadh: Saudi Arabia

Appendix I: Research Questionnaire

UGANDA MARTYS UNIVERSITY

Information Systems and employee performance

A case study of the Vision Group Headquarters

A. Introduction

Dear Respondent,

My name is **Dennis Kyeyune Mulinde Nelson**. I am an MBA (Masters in Business Administration) student of Uganda Martyrs University (UMU). As part of the course requirements, I am required to conduct a study on the above stated topic. The study is significant in assessing the contribution of Information systems on employee performance at Vision Group Headquarters.

You are requested to spare approximately 30 minutes of your valuable time to fill in this questionnaire. Please give your frank views as possibly as you can. There is no right or wrong answers. Undecided option is available, if you are unable to decide about a statement or if it is not applicable to you. Your individual opinion and all information you provide are strictly confidential, anonymous and will be used only for the purpose of this study.

Thank you for your time and cooperation.

BACKGROUND DATA

Please circle the numbers representing the most appropriate responses for you in respect of the following items:

1. Your gender a) Male b) Female
2. What is your age group?
a) 20-29, b) 30-39, c) 40-49, d) 50 and above
3. What is your highest level of education?
a) Post Grad Diploma, b) Bachelor's degree, c) Post Graduate
e) Others (specify) -----

4. What is your marital status?
 (a) Single (b) Married (c) divorced (d) Separated (e) Widowed
5. On what terms of employment are you serving Vision Group?
 (a) Probation (b) Contract (c) Permanent
6. For how many years have you been an employee in Vision Group?
 a) Less than one year b) 1-5 years c) 6-10 years 4) Over 10 years
- It is believed that Information systems have critical importance to the performance of the employees in any organization. To what extent is this statement true?
- a) Strongly disagree ☐
- b) Disagree ☐
- c) Not sure ☐
- d) Agree ☐
- e) Strongly agree ☐

B. Study Variables

For each of the statements below, **please tick ☒ one of the alternatives given in the appropriate box** in the column bearing the number on the scale that most closely represents your opinion based on your own views. The scale gives you opportunity to rate or respond, using the (1=strongly disagree, 2=disagree, 3=Undecided (Not sure), 4=agree and 5=strongly agree).

Effect of hardware and software on employees' performance at Vision Group

7. Thinking about Information system, to what extent do you agree or disagree with the following statements regarding the hardware and software on employees' performance at Vision Group?

1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree

No	Statement	1	2	3	4	5
1	Hardware and software are of significance to Vision group's employee performance					
2	At the Vision group, the required hardware is available to the employees					
3	The hardware available at Vision group is fully functional and ready to use					
4	The available hardware at Vision group is capable of handling a growing amount of work					
5	The hardware available to the employees at Vision Group is					

No	Statement	1	2	3	4	5
	user friendly					
6	At the Vision group, the required software is available to the employees					
7	The software available at Vision group is fully functional and ready to use					
8	The available software at Vision group undergoes constant upgrade to meet required standards					
9	The software available to the employees at Vision Group is user friendly					

What other hardware and software issues should be considered in order to improve employees' performance at Vision group?

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Effect of networks on employees' performance at Vision Group

8. Thinking about networks, to what extent do you agree or disagree with the following statements regarding the effect of networks on employees' performance at Vision Group?

1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree

No	Statement	1	2	3	4	5
1	Networks at Vision group have an effect on its employees' performance					
2	At Vision Group, the networks are on and running well at all time of the day					
3	The speed networks of Vision group are fast and are under constant modifications to further improve the speed					
4	The networks of the Vision group are reliable and the clients, administrators, other users are satisfied with it					
5	The management of Vision group invests a lot of finances in ensuring the reliability of the available networks					
6	At Vision group, every user requires a user ID to login into the network and no data losses are reported over a large time period					
7	The company endures to make its networks secure and this comes forth with increments in financial additions					
8	At Vision group, the networks are given backups in order to avoid production or sales breakups					

What other network issues should be considered in order to improve employees' performance at Vision group?

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Effect of processes on employees' performance at Vision Group

9. Thinking about processes, to what extent do you agree or disagree with the following statements regarding the effect of processes on employees' performance at Vision Group?

1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree

No	Statement	1	2	3	4	5
1	Process have an effect on employees' performance at Vision group					
2	At the Vision group, there is no discretion regarding IS processes					
3	The IS processes at Vision group follow a pre-defined pattern					
4	The different departments at Vision group have varying IS processes					
5	The IS processes at Vision group are flexible and liked by several members of my team					
6	With the available IS processes at Vision group, every employee is given opportunity to use extra powers to attain task					
7	Am well knowledgeable about the IS processes that are existent at Vision Group					
8	Processes at vision group go hand in hand with the available information systems					

What other processes issues should be considered in order to improve employees' performance at Vision group?

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Indicators of employees' performance at Vision Group

10. Thinking about the performance of the employees at Vision group, to what extent do you agree or disagree with the following statements regarding employees' performance at Vision group?

1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree

No	Statement	1	2	3	4	5
1	Employees' performance at Vision Group is affected by extrinsic factors.					
2	The performance of the employees at Vision group is constantly monitored for improvements					
3	I would measure my performance through examining the time I take to accomplish a task					
4	My performance is measured by the superiors and they mainly consider the quality of work that I perform					
5	For teams, the performance is measured by the number of adverts brought in					
6	Other issues considered in establishing the performance of the employees include innovation					
7	The performance of the employees at Vision Group can be measured using metrics such as the number of tasks carried out at a time					

What could be the other on the performance indicators of employees at Vision group?

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Moderating factors for information System's influence on employees' performance at Vision Group

11. Thinking about the performance of the employees at Vision group, to what extent do you agree or disagree with the following statements regarding employees' performance at Vision group?

1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree

No	Statement	1	2	3	4	5
1	Systems like Information Systems relevant Vision group employees' performance.					
2	Vision group caters for its Stakeholders' interests as one way of enhancing its employees' performance.					

No	Statement	1	2	3	4	5
3	Human, social, organization and technical factors affect the way work is done at Vision group					
4	Management support at Vision Group moderates the influence of Information Systems on its employees' performance					
5	Employee training at Vision Group moderates the influence of Information Systems on its employees' performance					
6	Availability of ICT at Vision Group moderates the influence of Information Systems on its employees' performance					

Does the availability of Information System enhance the performance of employees at Vision group? (Yes/No)

If yes, how does the availability of Information System enhance the performance of employees at Vision group?

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What factors should be considered when measuring of employees' performance at Vision group?

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What factors should be considers as moderating factors for Information System's influence on employee performance at Vision group?

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When management is supportive and you, the employee, are trained well, do you believe that the existence of ICT at Vision group could affect your performance at work? Justify your response.

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Appendix II: Interview guide

1. What do you understand by Information Systems as applied at Vision Group?
2. When did Vision group start implementing Information Systems?
3. Have Information Systems influenced Vision Group employees' performance?
4. If yes, please elaborate
5. What challenges does Vision group face in adopting Information systems?
6. How does the group overcome these challenges?
7. How can hardware and software be modified to improve their influence on its employees' performance?
8. How often is training carried out to enhance end users' impact on employees' performance?
9. Is Vision group using providers with the fastest network available on the market?
10. How often are processes modified to cater for new changes in how work is done at Vision group?
11. How does Vision group cater for its stakeholders?
12. Does Vision group practice woman emancipation?
13. Do the above have an impact on its employees' performance?
14. How do social, organization, human and technical factors have an impact on Vision group employees' performance?

Thank you for your time and Participation!

Appendix III: Krejcie and Morgan (1970) table

Table 3.1									
<i>Table for Determining Sample Size of a Known Population</i>									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384
<i>Note: N is Population Size; S is Sample Size</i>					<i>Source: Krejcie & Morgan, 1970</i>				

Appendix IV: Chi square cross tables

Chi square tests on differences in response of the effect of hardware and software on performance by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.472 ^a	16	.200
Likelihood Ratio	24.713	16	.075
N of Valid Cases	169		

a. 18 cells (52.9%) have expected count less than 5. The minimum expected count is .95.

Chi square tests on differences in response of the effect of networks on performance by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.581 ^a	14	.144
Likelihood Ratio	21.899	14	.081
N of Valid Cases	169		

a. 12 cells (40.0%) have expected count less than 5. The minimum expected count is .47.

Chi square tests on differences in response of the effect of end users on performance by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.855 ^a	14	.171
Likelihood Ratio	22.369	14	.071
N of Valid Cases	169		

a. 14 cells (46.7%) have expected count less than 5. The minimum expected count is .47.

Chi square tests on differences in response of the effect of processes on performance by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.898 ^a	17	.027
Likelihood Ratio	37.654	17	.003
N of Valid Cases	169		

. 21 cells (58.3%) have expected count less than 5. The minimum expected count is .47.

Chi square tests on differences in response of the effect of hardware and software on performance by age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.575 ^a	48	.832
Likelihood Ratio	43.488	48	.658
N of Valid Cases	169		

a. 59 cells (86.8%) have expected count less than 5. The minimum expected count is .27.

Chi square tests on differences in response of the effect of networks on performance by age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.780 ^a	42	.481
Likelihood Ratio	44.974	42	.348
N of Valid Cases	169		

a. 51 cells (85.0%) have expected count less than 5. The minimum expected count is .14.

Chi square tests on differences in response of the effect of end users on performance by age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.146 ^a	42	.963
Likelihood Ratio	30.452	42	.907
N of Valid Cases	169		

a. 50 cells (83.3%) have expected count less than 5. The minimum expected count is .14.

Chi square tests on differences in response of the effect of processes on performance by age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54.227 ^a	51	.352
Likelihood Ratio	54.230	51	.352
N of Valid Cases	169		

a. 65 cells (90.3%) have expected count less than 5. The minimum expected count is .14.

Chi square tests on differences in response of the effect of hardware and software on performance by marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.566 ^a	48	.908
Likelihood Ratio	39.439	48	.806
N of Valid Cases	169		

a. 58 cells (85.3%) have expected count less than 5. The minimum expected count is .02.

Chi square tests on differences in response of the effect of networks on performance by marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.010 ^a	42	.992
Likelihood Ratio	22.453	42	.994
N of Valid Cases	169		

a. 50 cells (83.3%) have expected count less than 5. The minimum expected count is .01.

Chi square tests on differences in response of the effect of end users on performance by marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	80.307 ^a	42	.000
Likelihood Ratio	42.205	42	.462
N of Valid Cases	169		

a. 49 cells (81.7%) have expected count less than 5. The minimum expected count is .01.

Chi square tests on differences in response of the effect of processes on performance by marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.488 ^a	51	.963
Likelihood Ratio	34.095	51	.967
N of Valid Cases	169		

a. 60 cells (83.3%) have expected count less than 5. The minimum expected count is .01.

Chi square tests on differences in response of the effect of hardware and software on performance by education level

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.036 ^a	32	.370
Likelihood Ratio	33.930	32	.375
N of Valid Cases	169		

a. 40 cells (78.4%) have expected count less than 5. The minimum expected count is .25.

Chi square tests on differences in response of the effect of networks on performance by education level

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.941 ^a	28	.468
Likelihood Ratio	27.550	28	.488
N of Valid Cases	169		

a. 33 cells (73.3%) have expected count less than 5. The minimum expected count is .12.

Chi square tests on differences in response of the effect of end users on performance by education level

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.203 ^a	28	.617
Likelihood Ratio	27.256	28	.504
N of Valid Cases	169		

a. 34 cells (75.6%) have expected count less than 5. The minimum expected count is .12.

Chi square tests on differences in response of the effect of processes on performance by education level

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.716 ^a	34	.906
Likelihood Ratio	25.463	34	.854
N of Valid Cases	169		

a. 42 cells (77.8%) have expected count less than 5. The minimum expected count is .12.

Chi square tests on differences in response of the effect of hardware and software on performance by employment terms

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.859 ^a	32	.911
Likelihood Ratio	25.746	32	.775
N of Valid Cases	169		

a. 41 cells (80.4%) have expected count less than 5. The minimum expected count is .08.

Chi square tests on differences in response of the effect of networks on performance by employment terms

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.015 ^a	28	.898
Likelihood Ratio	23.190	28	.723
N of Valid Cases	169		

a. 36 cells (80.0%) have expected count less than 5. The minimum expected count is .04.

Chi square tests on differences in response of the effect of end users on performance by employment terms

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.128 ^a	28	.406
Likelihood Ratio	25.885	28	.579
N of Valid Cases	169		

a. 35 cells (77.8%) have expected count less than 5. The minimum expected count is .04.

Chi square tests on differences in response of the effect of processes on performance by employment terms

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.030 ^a	34	.989
Likelihood Ratio	22.987	34	.924
N of Valid Cases	169		

a. 43 cells (79.6%) have expected count less than 5. The minimum expected count is .04.

Chi square tests on differences in response of the importance of IS by tenure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	64.172 ^a	54	.162
Likelihood Ratio	72.730	54	.045
N of Valid Cases	169		

a. 65 cells (85.5%) have expected count less than 5. The minimum expected count is .07.

Chi square tests on differences in response of the effect of hardware and software on performance by tenure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	49.497 ^a	48	.413
Likelihood Ratio	57.017	48	.175
N of Valid Cases	169		

a. 60 cells (88.2%) have expected count less than 5. The minimum expected count is .14.

Chi square tests on differences in response of the effect of networks on performance by tenure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48.349 ^a	42	.232
Likelihood Ratio	50.782	42	.166
N of Valid Cases	169		

a. 48 cells (80.0%) have expected count less than 5. The minimum expected count is .07.

Chi square tests on differences in response of the effect of end users on performance by tenure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.344 ^a	42	.113
Likelihood Ratio	60.276	42	.033
N of Valid Cases	169		

a. 46 cells (76.7%) have expected count less than 5. The minimum expected count is .07.

Chi square tests on differences in response of the effect of processes on performance by tenure

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.719 ^a	51	.970
Likelihood Ratio	36.865	51	.932
N of Valid Cases	169		

a. 62 cells (86.1%) have expected count less than 5. The minimum expected count is .07.

Appendix V: Validity and reliability statistics

Where N_e stands for raters that argued that the tool was essential and N is the total number of raters. The content validity index CVI is given by the formula. Those with total ratings below 200 believed that the tool was not essential.

$$CVI = \frac{N_e - \left(\frac{N}{2}\right)}{\left(\frac{N}{2}\right)}$$

$$CVI = \frac{17 - \left(\frac{20}{2}\right)}{\left(\frac{20}{2}\right)}$$

$$CVI = \frac{17 - (10)}{(10)}$$

$$CVI = \frac{7}{10}$$

$$CVI = 0.7$$

In investigating the results of reliability, the following formula was used

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \delta_{Y_i}^2}{\delta_X^2} \right)$$

Where K is the number of raters = 20

$\delta_{Y_i}^2$ are the variances between the ratings of the raters per question

δ_X^2 are the variances between the total ratings by the raters

α is the Cronbach's alpha coefficient

$$\sum_{i=1}^{20} \delta_{Y_i}^2 = (\text{SUM V2:V39}) \text{ in the excel dataset provided} = 89.25$$

$$\delta_X^2 = 546.6148$$

$$\text{Then, } \alpha = \frac{20}{20-1} \left(1 - \frac{89.25}{546.6148} \right)$$

$$\alpha = 1.053(1 - 0.163)$$

$$\alpha = 1.053(0.837)$$

$$\alpha = 0.881$$