**THE RELATIONSHIP BETWEEN THE eCitie ICT SYSTEM AND INFORMATION MANAGEMENT IN THE REVENUE DEPARTMENT AT KAMPALA CAPITAL CITY AUTHORITY.**

**BY**

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# **DECLARATION**

I, Isaac Kisembo, declare that this study is my own original work and has to the best of my knowledge, never been presented in any institution before for any award, academic or otherwise.

Signed; ………………………………….. Date: ……………………………

# **APPROVAL**

This dissertation is submitted with approval from the following Supervisors;

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**Ms. Jennifer Rose Aduwo** DATE

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I am very grateful to the Lord God for this journey. I also thank my dear wife Jackie and my son Liam who have been patient with me; friends and family who have been of tremendous support to me. I am very grateful to my supervisors who kept me going and allowed me to see this through.

# **DEDICATION**

I dedicate this book to my dear mother. Thank you for seeing greatness in me and pushing me towards it. I now pass on the mantle to my dear son to continue from here.

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# **ACRONYMS**

DOI Diffusion of Innovation

FY Financial Year

I.T Information technology

ICT Information communication technology

IM Information Management

ITAA Information Technology Association of America

ITeS Information Technology enabled Services

KCC Kampala City Council

KCCA Kampala Capital City Authority

LG Local Governments

MDAs Ministries Departments and Agencies

NGO Non-Government Organizations

OIT Organizational Information Management

RIM Records Information Management

SPSS Statistics Package for Social Sciences

# **ABSTRACT**

Information Management was previously manual and therefore time consuming for the operations in the Revenue Department. The Authority introduced the eCitie ICT system that automated and drastically improved the way information was managed. The general objective of the study therefore examined the relationship between the eCitie ICT system and information management in the Revenue Department at Kampala Capital City Authority. The study answered the following questions; what is the relationship between the communication channels and information management? What is the relationship between the infrastructure and information management? And finally what is the relationship between the social system and information management in the Revenue Department at K.C.C.A? The study used a correlational descriptive research approach applying a triangulation of both quantitative and qualitative data collection methods with a sample size of 51 respondents. Purposive and Simple random sampling techniques were applied using a questionnaire and interview guide as data collection instruments.

Quantitative data was analyzed using the Pearson’s correlation co-efficient technique and Pairwise comparisons to draw at the correlations and inferential statistics to test the hypothesis. Qualitative data was analyzed using thematic analysis whereby data was recorded into themes and codes were identified and conclusions done according to the study objectives. The findings of the study showed a positive significant relationship between the eCitie ICT system and information management mostly affected by the communication channels that showed the strongest correlation while infrastructure and the social system showed weak correlations. The study concluded that communication channels have the most significant influence on the eCitie system and therefore indicated the strongest correlation with information management. The study recommended that when implementing an ICT system, communication channels should be given highest priority as it will significantly influence the system and its relationship with information management.

# **CHAPTER ONE**

# **INTRODUCTION**

## **1.1** **Introduction**

The study examined the relationship between the eCitie ICT system and Information Management in the Revenue Department at Kampala Capital City Authority in Uganda. The eCitie ICT system was conceived as the independent variable measured in terms of communication channels, infrastructure and social systems. Information management was measured in terms of information acquisition, information maintenance, information dissemination and information utilization. This chapter presented the background of the study, statement of the problem, study objectives, research questions, hypotheses, conceptual framework, the significance of the study, the justification and scope of the study, operational definitions as well as assumptions and limitations to the study.

## **1.2 Background of the Study**

This section highlights the background of the study, developed from the four dimensional approach of the historical, the theoretical, the conceptual and the contextual background, as advanced by Amin (2005).

### **1.2.1 Historical Background**

Earlier in the twentieth century, information management tended towards mechanization, simplification, and replication of information containers, originating the first efforts to control the proliferation of information containers, essentially on paper. The 1920’s and 1930’s saw the introduction of records management in a more organized and wider perspective. With the advent of the computer age in the late 1930’s and early 1940’s, information management by automated information technologies was introduced. The 1950’s and 1960’s were characterized by an explosion of information that could only be matched by computer use and punch cards.

Towards the 1970’s, information management was largely restricted to paper-based documents, magnetic tapes, records and media (Evans, 1979). Due to an increase in the use of the internet, the storage of information shifted towards a more electronic mode which presented a huge potential to managing enormous volumes of information by ICT that were increasing on a daily basis. The 1980’s saw the full introduction and use of ICT systems in the information management process. There were heavy costs for organizations that were using these ICT systems. Information management ought to purposefully manage information like any other assets of an organization (Choo, 2004). According to Dias (2001), information management is a transformation process of data into information used by the decision hierarchy of an enterprise.

ICT has transformed businesses and governments in Africa, driving entrepreneurship, innovation and economic growth. The ICT sector has been the major economic driver in Sub-Saharan Africa over the past decade. By 2006, information technologies and systems that facilitated the management of records and information in Uganda’s MDA’s and LG’s were barely in existence. Annual report of Ministry of Public Service (2006).

Following its rebirth as Kampala Capital City Council (K.C.C.A), the Authority took great leaps in ICT use towards information management. The Revenue Department introduced the remarkable eCitie system to manage the increasing information. The Researcher’s aim in this study was to examine the relationship between the eCitie ICT system and information management in the Revenue Department at Kampala Capital City Authority.

### **1.2.2 Theoretical Background**

The study was guided by Everett Rogers’ 1962 Diffusion of Innovation (DOI) theory. The theory in its 5th edition (2003) describes a process by which an idea, project, innovation or technology is spread or communicated over a given period of time among participants in a given social system. It seeks to explain how, why and at what rate a given innovation is adopted or used in a given organization. Rogers mentioned that a given innovation or technology spreads differently in the following categories; Innovators (2.5%), Early adopters (12.5%), Early majority (34%), Late majority (34%) and the Laggards (16%).

Rogers proposed four main elements that influence the diffusion or use of a given technology; these were the technology used, the communication channels used by the technology, the given period of time for the technology to spread and the social system in the organization. The technology must be widely spread and must realize benefit when used. The technology includes the hardware (tool that embodies technology in physical form) and software (information base for the tool).

The communication channels that are used to communicate the technology in order to reach mutual understanding. Rogers proposed mass media and inter-personal communication as the main channels. The social system which is the physical, social and cultural environment to which people belong and within which they function. These depend on special values, norms and culture. Lastly the time it takes for the technology to spread within the different categories. Information management was mostly manually based and disorganized on the whole. The acquisition of information was slow, storage of records and transactions were non-existent while the reporting and dissemination of information were ill-defined. The theory was applicable to this study in that it focused on the relationship between the eCitie ICT system and information management in the Revenue Department at Kampala Capital City Authority.

### **1.2.3 Conceptual Background**

This section looked at the definitions from various scholars regarding the variables in the study. Information is the organizing and placing of either electronic or physical data in specific meaningful context that has relevance to the recipient (Heeks, 2005). Information is a fundamental constituent of nearly every activity in an organization, so much so that its function has become translucent. Without a firm grasp of how information is created, transformed and used, organizations lack the coherent vision to manage and integrate its information processes (Choo, 2006).

According to Best (1996), information management refers to the effective production, storage, retrieval and dissemination of information in any format and on any medium to support business objectives. Wilson (1997) has put it succinctly: “Information management deals with the value, quality, ownership, use and security of information in the context of organizational performance.”

According to Giorgini (2003), information acquisition is the task of capturing all sorts of relevant information about how things are currently driven by information needs in an organization. Information then goes through a process of maintenance to allow for sense-making before it gets to the user. According to Jonides (2005), information maintenance is a process that enables for the storage of a small amount of information briefly for transformation by given rules and strategies. The information must then reach the intended user also known as information dissemination; the sharing of the best available information with end-users for right decision making (Choo, 1998). Information utilization as the final stage describes how information is interpreted in order to make meaningful choices but also function as a basis for decision-making processes or purposive action (Choo, 2002).

ICT refers to forms of technologies that are used to transmit, process, store, create, display, share or exchange information by electronic means (UNESCO, 2007). An ICT system is a setup consisting of hardware, software, data and people who use them (BBC, 2014). According to Rogers (2003), the technology also known as the innovation consists of the infrastructure which is the hardware and software, the communication channels, time and the social system. According to Rogers (2003), communication channels are defined as mediums or “lines” that take messages from one individual to another; the infrastructure are devices and procedures employed in ICT fields to foster interaction amongst different stakeholders; the time it takes for the technology to spread; the social systems as a cluster of interrelated components engaged in joint problem solving to accomplish a common goal. This study therefore investigated the relationship between the eCitie ICT system and information management in the Revenue Department at Kampala Capital City Authority from the period 2012 to 2017.

### **1.2.4 Contextual Background**

The Government of Uganda undertook various endeavors regarding using ICT to support information management for effective delivery of services in ministries, agencies and departments (Ministry of ICT, 2002). These endeavors were however haphazard and uncoordinated. This led to proliferation of stand-alone systems which lacked interoperability. The Ministry also affirmed that the use of information communication technology directly affects and impacts information management; unfortunately, the different organizations, ministries, agencies and departments are at different levels in terms of usage and exposure of the necessary resources. Some government agencies decided to pick it in their operations and one of them was K.C.C.A.

Kampala Capital City Authority was created by the enactment of the K.C.C.A Act effective March 2011. The Act transformed Kampala City from a Local Government into a Government entity under Central Government whose mandate is to deliver public services to the people of Kampala City. The Revenue Department is one of the key departments, whose top priority is to collect revenue (K.C.C.A Annual Report, 2011). To efficiently carry out this function, the Authority launched a new revenue collection system named “eCitie” to ease the collection of revenue. The eCitie is an online automated system that has eased and facilitated payment of revenue by clients from wherever they are by the click of a mouse.

Prior to the introduction and use of eCitie, the Revenue Department struggled with low revenue collection mostly because information management process was very manual and uncoordinated; the financial information flow and receipting process was slow, forgery of documents and trading licenses were on a high, clients experienced delayed issuing of licenses upon payment, wrong information was disseminated at times and the right information falling into the wrong hands (K.C.C.A Annual Report, 2012). The introduction of the eCitie ICT system aimed at addressing all the inefficiencies of a manual information management process in the Revenue Department.

The aim of this study was to examine the relationship between the eCitie ICT System and information management in the Revenue Department at Kampala Capital City Authority especially with an exponential growth of the information needs in the Department.

## **1.3 Statement of the problem**

Information is a very important asset of any organization. The Revenue Department holds some of the most sensitive information of the Authority which includes revenue collection receipts, client bio-data, payments reconciliations, reports and various communications to stakeholders among others. Previously, this information was physically organized in folders kept by staff in various offices which implied that some information would get misplaced or lost along the way, information retrieval was difficult too and time consuming as well because a few requests could be handled at a time.

The communication channels used were mostly manual and not clearly defined which slowed down information flow. The Authority was marred by the lack of any channel of information accessibility in which information was archived or passed on; poor record and asset management resulting into the “absence” of critical institutional documents when mostly needed and which therefore presented a lack of substantial information supporting key institutional decisions (K.C.C.A, Statement on the issues of Kampala Capital City Authority dated 06/02/2013). Efforts to issue payment receipts and licenses physically, or store books and papers in desks were not a solution especially in view of the expanding information needs of the Authority every year.

In addition, the Revenue Directorate was reported as having been characterized by mismanagement of revenue collection and internal inefficiencies (K.C.C.A, Annual Report 2012). A former K.C.C.A employee allegedly issued receipts and solicited money from property owners on behalf of K.C.C.A. This was evidence showing a lack of information accountability and management because clients were uninformed on where and to whom to make their payments (Mayanja, 2013).

In a bid to streamline and improve information management to provide better accountability, the Authority through infrastructure and information Technology enabled Services (ITeS) introduced the eCitie ICT system in 2014. This system transformed the payment process unto an online platform, any information needed by the staff could be immediately accessed and retrieved online. The researcher therefore sought to examine the relationship between the eCitie ICT system and information management in the Revenue Department at the Authority.

## **1.4 General Objective**

The general objective of the study was to examine the relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A.

## **1.5 Specific Objectives**

The specific objectives of the study were;

1. To examine the relationship between communication channels and information management in the Revenue Department at Kampala Capital City Authority.
2. To study the relationship between infrastructure and information management in the Revenue Department at Kampala Capital City Authority.
3. To investigate the relationship between the social system and information management in the Revenue Department at Kampala Capital City Authority.

## **1.6 Research Questions**

The research based its emphasis on the following questions;

1. What is the relationship between communication channels and information management in the Revenue Department at Kampala Capital City Authority?
2. What is the relationship between infrastructure and information management in the Revenue Department at Kampala Capital City Authority?
3. What is the relationship between the social system and information management in the Revenue Department at Kampala Capital City Authority?

## **1.7 Hypotheses of the study**

The following hypotheses were investigated;

1. Communication channels had a positive relationship with information management in the Revenue Department at Kampala Capital City Authority
2. Infrastructure had a positive relationship with information management in the Revenue Department at Kampala Capital City Authority.
3. The Social System had a positive relationship with information management in the Revenue Department at Kampala Capital City Authority.

## **1.8 Scope of the Study**

This section will present the scope of the study as content scope, geographical scope and time scope.

### **1.8.1 Content Scope**

The researcher’s main concern was examining the relationship between the eCitie ICT system and information management in the Revenue department at Kampala Capital City Authority.

### **1.8.2 Geographical Scope**

The study was carried out in the Revenue Department at Kampala Capital City Authority Kampala District. The study attained information from the Head Office, the Central division, Makindye and Nakawa divisions.

### **1.8.3 Time Scope**

The study focused on the relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A between the period 2012 and 2017. The researcher chose that particular period because the eCitie ICT system was launched in 2012.

## **1.9 Significance of the Study**

To the Authority, the study findings will give guidance on what areas to prioritize when considering investments in any other ICT projects.

To various policy decision makers in other district and city authorities, the study findings are beneficial when seeking information on investing in ICT systems to automate information management.

The information gathered from the study could also inform different government institutions on best practices when considering ICT systems and their relationship with information management.

To the Academia, the study contributes to the already existing knowledge in this study area and would cause further research and debate on ICT and its relationship with information management.

## **1.10 Justification of the study**

K.C.C.A has a very large mandate of offering excellent services to the people of Kampala City and the outskirts with a vision to transform Kampala into a “Smart” City. The authority has to appropriately manage lots of information to make that happen. Unfortunately, the Authority has not efficiently managed information as a key resource.

Information was poorly acquired, maintained, distributed and used wrongly. The Authority however took great strides in introducing the eCitie ICT system. The aim of this study was to examine what relationship the eCitie system had with information management.

## **1.11 Conceptual Framework**

A conceptual framework is a hypothesized model that identifies the concepts under study and their relationships, providing an outline of the preferred approach in the research as well as the desired effects forming independent and dependent variables respectively (Mugenda & Mugenda, 2003). The conceptual framework of the study is shown in the figure below, but the elements used to measure the different variables are not limited to those on the respective lists.

Independent Variable Dependent Variable

**Information Management**

* Information Acquisition
* Information Maintenance
* Information Dissemination
* Information Utilization

**eCitie ICT System**

* **Communication Channels**
  + Intranet
  + Internet
* **Infrastructure**
  + Hardware availability
  + Software usability
* **Social Systems**
* Management Support
* Peer Support

**Figure 1:1 The Conceptual Framework: Adapted from Davis (1989, 1995) & Rogers (1962)**

**Source:** *Ismail Sahin (2006)*

Conceptual framework in figure 1:11 confirmed that the independent variable is the eCitie ICT system conceptualized as; communication channels (intranet, internet), infrastructure (hardware availability, software usability) and social the system (management support, peer support). The framework confirmed that the dependent variable is information management conceptualized as information acquisition, information maintenance, information dissemination and information utilization. The framework is based on the hypothesis that the eCitie ICT system had a positive significant relationship on information management in the Revenue Department at K.C.C.A.

## **1.12 Operational Definitions**

**Information:** These are facts given and or information arranged to identify a particular environment or context. (Wiig, 1999).

**Information Communication Technologies (ICT)**: Forms of technologies that are used to transmit, process, store, create, display, share or exchange information by electronic means (UNESCO, 2007).

**Diffusion**: The process in which an innovation is adopted and or communicated thorough certain channels over time among the members of a social system (Rogers, 2003).

**Hardware** are tools that embody technology in the form of materials or physical objects while **Software** is the information base for the tools (Rogers, 2003).

**Communication**: Procedures that allow for participants to create and distribute information amongst each other for purposes of mutual understanding through channels between sources while sources are individuals or an institutions from which a message originates (Rogers, 2003).

**Channel**: The means by which a message gets from the source to the receiver (Rogers, 2003. The channels in this study will be limited to the intranet which is the internal private organization network and the internet which is the global interconnection of computer networks worldwide

**Social systems:** A cluster of interrelated components engaged in joint problem solving to accomplish a collective goal (Rogers, 2003).

**Information management:** This concerns a cycle of organizational activity that involves the acquisition of information, its proper organization, storage, custodianship and its dissemination to those who need it, and its ultimate disposition through archiving or deletion (Choo, 1998).

## **1.13 Assumptions and Limitations**

The eCitie ICT system forms a key component of effective information management both at the Revenue Department and KCCA; geared towards achieving significant increased productivity and better service delivery to the people of Kampala city.

The continual organization and improved information management will enable the other Local Governments (LGs) and the public sector in Uganda to use the same framework of ICT and information systems in streamlining the information management processes.

# **CHAPTER TWO**

# **LITERATURE REVIEW**

## **2.0 Introduction**

This chapter outlined and analyzed different literature undertaken by various scholars on topics related to the ICT systems and information management as well as theories related to concepts of ICT systems and information management. This chapter laid out the theoretical and conceptual review and the summary of the literature review.

## **2.1 Theoretical Review**

The study was guided by the theory of Diffusion of Innovation by Rogers (1962). This, one of the most popular theories used in explaining technology diffusion and use within organizations. The theory is currently at its 5th edition (2003). Rogers defined the theory of DOI as the process by which an innovation is communicated or spread through certain channels over time among members of a given social system (Rogers, 1962). Rogers explained that a given technology is adopted at different levels or degrees by different categories due to four elements. These are the technology itself which is the eCitie system in this study, the communication channels (the means by which participants create and share information), time taken and the social system which is the set of interrelated units that are engaged in joint problem to accomplish a common goal. (Rogers, 1995).

This theory was relevant to the study in that it examined the use of a new technology (the eCitie ICT system) in terms of its hardware and software. The study also examined what communication channels (like the DOI theory) facilitated its use and lastly what social system it was being introduced into specifically focusing on the Revenue Department. The study finally considered what relationship existed with information management.

According to Rogers (2003), technology is defined as an idea, practice or project that is perceived as new by an individual that reduces uncertainty in the cause-effect relationships involved in achieving a desired outcome. It is composed of two parts: hardware and software. While hardware is “the tool that embodies the technology in the form of a material or physical object,” software is “the information base for the tool” (Rogers, 2003). This study advanced the eCitie ICT system as the technology that was introduced in the Revenue Department. It was conceptualized as infrastructure and unlike the DOI theory that simply stated hardware and software as components, this study advanced hardware availability and software usability more specifically.

The second element advanced by Rogers is the communication channels. This he advanced as the process in which participants create and share information about the technology with one another in order to reach a mutual understanding”. This communication occurs through channels between sources (Rogers, 2003). He went on to advance mass media and inter-personal communication as the most important channels. This study picked up communication channels as one of the concepts and advanced the intranet and the internet as the most effective suitable channels.

The third element is the social system which according to Rogers (2003), is a set of interrelated units engaged in joint problem solving to accomplish a common goal. The community or members interact with the system through given inter-related units also referred to as a social system working together within known identical norms, culture, values towards a common goal. The study advanced social system as a very important component of the technology use but advanced that human interactions (peer to peer) and management support as the biggest players of any social system.

The final element is the time aspect which according to Rogers (2003), is the time taken through which a given technology is communicated to members of a social system. This particular study choose not to adopt this time element because this particular study was done in a specific period.

The theory is credited for showing that the use or spread of a given technology begins in a given category, group, department or unit of people and is eventually used by other groups upon witnessing significant benefits brought to the former. The eCitie system was first adopted by the Revenue Department as a unit and it will probably be customized to suit other units eventually.

The theory is criticized for advancing norms, culture and social interactions between the individuals of a given organization as the only constituents of the social system; Likert argues that the social system must involve a supporting open leadership that will facilitate employee relationships and support (Likert et al, 1961). This study therefore advanced top management support and leadership as one of the elements of the social system concept.

The theory is also criticized for not addressing social imperatives (Hossain & de Silva, 2009) as it ignores relationships and links between individuals, businesses, organizations and political units (Burger & Buskens, 2009). This study advanced peer to peer support and interactions as the other element under the social system with significant influence on the social system.

The theory is also criticized for assuming a seamless flow of information among individuals along clearly defined mass media and interpersonal channels). Different scholars cite that mass media channels aren’t cost-effective and relevant in an organizational setting. This study therefore advanced the use of the internet and the intranet as the more cost effective channels for the spread and use of especially the eCitie ICT system in the Revenue Department at K.C.C.A.

## **2.2 eCitie ICT system and Information Management**

ICT is a major facilitator of business activities and the main catalyst of fundamental changes in structure, operation and management of organizations in the modern world today (Dertouzos, 1997). Various scholars confirm that ICT has a positive relationship with information management. Huber & George (1990) defined ICT as devices that transmit, manipulate, analyze, or exploit information through digital computer processes which produce information integral to the user's communication or decision task. According to Sheng-Cheng Huang (2006), ICT can also influence the effectiveness of distributing information in an institution. Attila (2007) further explained that ICT’s peculiar function is to support the acquiring, storage, processing, transmission, dissemination, management, control, transformation, retrieval and use of information typically in a digital format.

Beckinsale & Ram (2006) defined Information Communication Technology (ICT) as ‘any technology used to support information gathering, processing, distribution and use’. ICT enables near perfect database or virtual record keeping and information management. Gookin (2000) observed that database management through the use of computers has helped immensely in maintaining order file. According to Longe (2003), the application of ICT in the field of information and its management has aided in capturing, storage, retrieval, analysis, and communication of information whether in the form of data, text, image or voice. Today, the emergence of ICT’s have made it possible for organizations to record, synthesize, analyze and disseminate information quicker than any other time in history (Galliers, 2003). Timely and relevant information must be available at all levels of implementation (Nasasira, 2003). Proper automated information management aims to get the right information to the right person at the right place and at the right time (Robertson, 2005).

Kampala Capital City Authority has heavily automated and transformed its business processes and operations through the use of ICT. The eCitie is the most significant technology driver in the Revenue Department today. An online automated system implemented to ease and boast the collection of revenue to the clients of Kampala city. Indeed the eCitie ICT system has significantly increased the revenue collection by wide margins. Fred Andema, K.C.C.A Deputy Director Revenue Collection noted “Revenue collection in Kampala city increased by 15 billion shillings (20%) in two years by end of fiscal year 2015/2016 due to reforms in the systems”.

While it has had tremendous benefit to the tax payer, it has had more benefit to the staff in the Revenue Department especially in the way information is managed back at the office. The reporting and assessment of information is very fast; by a click of a mouse, all information can be achieved in a second. Information retrieval is much quicker and faster as well. The maintenance is all done by the system now and one doesn’t have to worry about the storage and security of the information because only authorized persons can use this information. There is clear accountability as well in terms of the fact that the system clearly shows who made changes to the information and for what purpose. Finally, information gets to the right people in a matter of seconds which eases decision making.

It is very clear that the eCitie has had a significant influence on the revenue collections and the way information is managed in the Revenue Department at K.C.C.A. This study was therefore an investigation into what relationship the eCitie ICT system has with information management in the Revenue Department at Kampala Capital City Authority.

### **2.2.1 Communication channels and Information Management**

Company communication is involved in all management activities and is the main element which connects and coordinates all activities in the company through controlling people (Hola J, 2007). A broader understanding of communication involves giving information value, distributing and sharing it with others to gain meaning by all members. According to Welch & Jackson (2007), internal communication is the strategic management of communication and relationships between stakeholders at all levels within an organization. Internal communication coordinates information exchange within the organization and establishes effective coordination of activities between the members of organization.

Large organizations are now adopting internet technologies to improve their internal communication and coordination processes. They build their own small-scale versions of the Internet called intranets that span the entire organization and connect people and information systems across functional and geographical boundaries (Jorgen P et al, 2000). The progress of technology, the development of data-communication and the Internet have had an effect on the way in which information is exchanged and how people communicate within the organization. In the 5th edition of the Diffusion of Innovation theory (2003), Rogers addresses the spread of the internet as a major change in communication today.

Rogers (1962) initially advanced mass media (TV, Radio or newspaper) and interpersonal (communication between two or more individuals) are the most common channels, this study like many other researchers contends with this argument and so proposed the internet and the intranet as the most qualified communication channels. Andrews & Herschel (1998) reiterated that despite population growth and technology evolution, there is a need for efficient channels of communication for effective communication as the world has now become a global village.

The intranet and internet technologies have opened new ways of communication allowing all the members of the organization to stay connected and respond to relevant information in time; while allowing a radical increase in volume, speed and complexity for processing information(Hilbert & López, 2011). When selecting the best way to deliver their message and understand their audience, internal communicators have so many more options to choose from to deliver messages to employees. (Crescenzo, 2011).

Communication channels are the means that allow for the carrying or transmitting of messages from one individual (sender) to another also known as the receiver (Payne 2001). The internet as a communication channel has changed the ways of communication, information seeking behavior, and lifestyles of individuals (Lean, 2009). These online communication channels (intranet and the internet) enhance collaboration by supporting communication among members and sharing of information and documents, especially when team members are located in different geographical areas (Duyshart 1997; Skibniewski and Abduh 2000; Abudayyeh et al.2001; Ahmad et. al. 2002; Sriprasert and Dawood 2002).

In addition, the Internet has greatly expanded the scope for information management: documents and technical drawings can be exchanged in real time, legally recognized signatures can be authenticated, browsers can be used to access the information systems of suppliers and customers, and transactions can be completed much more quickly. The different divisions at K.C.C.A are now able to exchange information seamlessly through a secure internal network (intranet) despite their different geographical or physical locations. Discussions can be held online in real time that has quickened both information retrieval and dissemination. This showed a significant relationship between these communication channels and information management.

The internet has become an essential communication channel characterizing the world in the 21st century. The Internet has opened the entire global environment to organizations and has permitted almost anyone to access almost any information that may contribute to the accomplishment of particular goals (Atre, 2007). The multiple tools of the Internet enable the transmission and exchange of information through multiple formats, namely one-to-one communication (i.e., through e-mail), one-to-many (i.e., through the Web or e-mail), and many-to-many (i.e., through the Web, newsgroups and mailing lists) communication (George J et al, 2000).

According to Buffa (2007), the intranet plays different roles for a business organization: it is a communication tool (“let us notify our employees that something happened”), it can hold services (“go to that URL and you’ll find the people directory”), etc. The intranet can greatly improve knowledge sharing between members of an organization and becomes its memory. Wide access to corporate information on an Intranet allows redundancy of knowledge, yet saves on paper, mailing and distribution costs (Judy, 1998). The intranet can improve access, increase speed and facilitate global communication (Holtz,. 2003). According to Marchand (2001), the intranet enables relatively inexpensive and simple storage, organization, processing, maintenance and sharing of information between members of a given organization.

The intranet and internet are the two most commonly used communication channels in the business world today. The Authority adopted these channels and has seen significant improvement in the way communication has been done but also indicated a positive relationship between the channels and information management and hence the reason for this study; to find out the relationship between the communication channels and information management in the Revenue Department at K.C.C.A.

### **2.2.2 Infrastructure and Information Management**

Rogers(1962) advanced hardware and software as two components of any given technology, innovation or system. This study will use the term infrastructure instead of technology and agreed with Rogers’ proposal of hardware and software but went ahead to advance more specifically the availability of the hardware and the usability of the software. According to UNICORN Systems (2015), infrastructure is a logical, physically structured system of components and activities, which can be used across different information systems whose purpose is to build an environment which provides users with required functionalities to carry out their tasks.

The infrastructures are the right tools that enable the users perform and realize significant change in their roles and tasks. The infrastructure looks at the tools which are the hardware on which the eCitie ICT system sits on and the software being the programs used. The Center of Lifelong Learning at the Australian Catholic University defined technologies as infrastructure in ICT as hardware, software applications and connectivity. This infrastructure ought to help the users realize significant change in their roles and tasks. This change was fully realized in the Revenue Department in terms of quicker access, retrieval and dissemination of information. This study was to therefore examine the relationship between the infrastructure of the eCitie system and information management.

Turban (2013) defined hardware as a set of physical devices, applied for following activities of the computer system: input, process, output and storage of data while software are a set of programs that instruct the hardware how to process the data. According to Islam & Islam (2006), software technologyconsists of step-by-step instructions that command the computer in processing the data and what to do.

Hardware Availability deals with the availability of physical hardware such as servers, storage media, computers and much more to enable carrying out of tasks. Software Usability is the ease of using software in order to achieve purpose. This study emphasized that the hardware ought to be adequately available. The staff must have the right hardware to carry out their functions and that staff must have knowledge on how to operate the systems on the hardware (software usability). According to a study by Douglas E. (2005), the selection and use of computer hardware and software technology can have a profound impact on business performance.

The first applications of computers in business were in the early 1950s. Software was less important (and less costly) in computer systems then, because early hardware was literally hardwired by hand for each application. Today, software comprises a much larger percentage of the cost of modern computer systems than it did in the 1950s (Irv, 2009). This is the reason this study advanced software usability as one of the concepts under infrastructure. According to Bias & Mayhew (1994), usability practitioners frequently complain that work on usability is too little and too late.

The security of the technology or system was a gap identified by this study and therefore could not be ignored because the lack of it would mean insecure information vulnerable to attacks, and which would paralyze the effective management of information. How secure both the hardware and software are is a key point in this study. The literature clearly shows that the eCitie ICT system had available hardware supporting it and the staff are able to easily use the software which showed a positive relationship between the infrastructure and information management in the Revenue Department at K.C.C.A

### **2.2.3 Social Systems and Information Management**

Rogers (1962) defined the social system as a set of interrelated units engaged in joint problem solving to accomplish a common goal. According to Rogers, the social system is influenced by the social structure which is “the patterned arrangements of the units in a system. Rogers goes on to mention that any new technology is diffused into a physical and cultural setting that serve as its boundary. It defines where people belong and what they stand for.

The theory is criticized for not being detailed on what comprises the social structure or patterned units. This study advanced that the most important components of the social system are people networks and interactions and hence the peer to peer support and top management support. Tusubira et al. (2009) asserted that ICT is not merely technology but about people networks at the intellectual, functional and operational level. Najibullah (2016), defined a social system as a complex set of human relationships interacting in many ways including an environment of human-created beliefs, customs, norms and practices.

Better business performance, according to a twenty-eight month research which included over 1.000 senior managers worldwide, comes not just from ICT but also from management of organization's people (Marchand et al., 2001). Social system includes both people and their relations and company policies (Brian Whitworth, 2009).

A study by Van Akkeren and Harker (2003) argued that information filters through the networks and depending on the nature of the networks and the roles of its opinion leaders, new innovations are either adopted or rejected. This study emphasized that in spite of the opinion leader’s influence, Top management and its style play a very important role. Firms with supportive leadership and management have better management and utilization of information. Authoritarianism in the decision-making structure is negatively correlated with Innovation diffusion, whereas a more open leadership style based on the “principle of supportive relationships” (Likert, 1961, p. 103, in Rogers & Jain, 1968, p. 22) contributes to “full and efficient” diffusion. Furuholt and Ørvik (2006) cited lack of top management engagement as a major barrier towards a strong stable social system which will eventually affect the presence of ICT. The office of the Executive Director K.C.CA has thrown lots of support in the use and growth of ICT within all business functions and processes of the organization. This study sought to examine the relationship the social system (in terms of peer to peer support and top management support) and information management.

## **2.3 Summary of Literature Review**

The reviewed literature showed that ICT has had a positive relationship with information management in most organization. The communication channels especially the intranet and internet, the infrastructure of a given technology and the social system shown a positive relationship with information management. K.C.C.A is praised for being one of the few government institutions that has quickly adopted and is using ICT in its operations. The researcher sought to find out what relationship the eCitie ICT system had with information management in the Revenue Department at K.C.C.A

# **CHAPTER THREE**

# **METHODOLOGY**

## **3.0 Introduction**

This chapter entailed the methodology that was adopted while conducting the study. The chapter covered the research design, the study population, sample size and how it was selected, sampling techniques and procedures, data collection methods, data collection instruments, validity and reliability of the data collection instruments, procedure of data collection, data analysis as well as measurement of variables and the ethical considerations.

## **3.1 Research Design Approach**

The study adopted a correlation descriptive research approach paradigm using a triangulation of quantitative and qualitative research data collection techniques. A research paradigm describes a cluster of beliefs and dictates what should be studied, how research should be done and how the results should be interpreted (Bryman, 2008). The research examined the relationship between the eCitie ICT system and information management seeking to establish the strength and magnitude of the relationship between the two variables. The sample population were informed about the particular data that was collected in accordance with the objectives of the study.

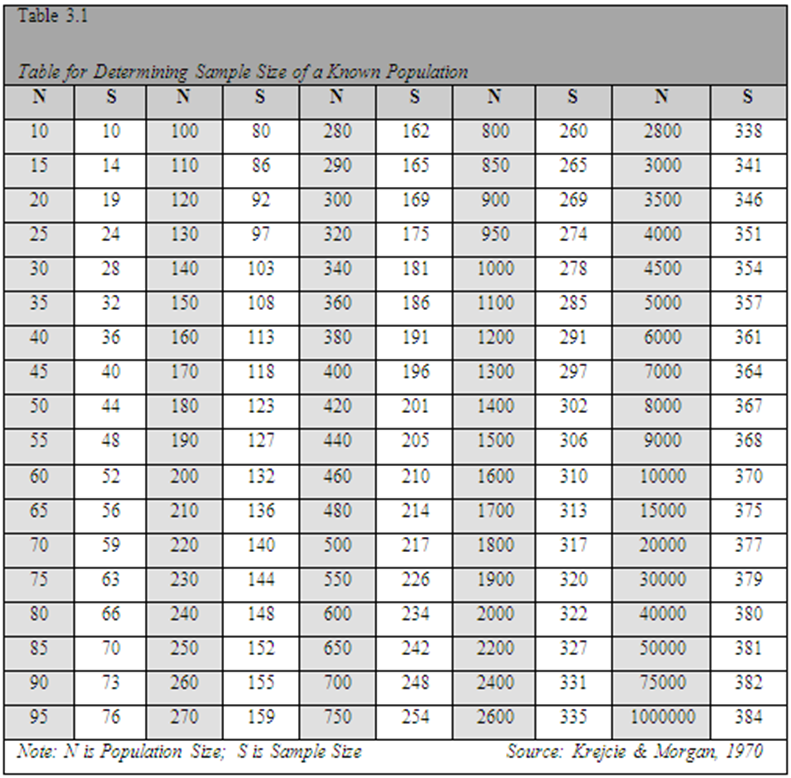
## **3.2 Study Population**

A study population is a collection of elements that have similar characteristics. The study population comprised of 56 respondents (all staff) including 5 Revue Supervisors, 45 Revenue Officers, 5 ICT officers and 1 ICT Manger from the Revenue Department and the ICT function. The departments identified were considered for this study because they directly interacted with the eCitie ICT system on a daily basis and would therefore be best suited to answer questions related to the system and the research study in general.

## **3.3 Sample Size and Selection**

Sample size is the quantity of elements in the selected sample (Manheim & Rich, 1999). The sample size was determined with guidance from Krejcie and Morgan’s table (1970) because it was applicable to a defined population as is seen in this study. The approach was sufficient enough to provide accuracy to base on the findings with confidence.

**Table 3. 1: Determining the sample size of a known population (Krejcie & Morgan, 1970)**



**Table 3. 2: Determining the sample size of a known population**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/No.** | **Target Category** | **Population Size (N)** | **Sample Size (S)** | **Sampling Technique** |
| 1 | Revenue Officers | 45 | 40 | Simple Random |
| 2 | Revenue Supervisors | 5 | 5 | Purposive |
| 3 | ICT Officers | 5 | 5 | Purposive |
| 4 | ICT Manager | 1 | 1 | Purposive |
| **TOTAL** |  | 56 | 51 |  |

***Source****: Primary data*

Overall, a sample of 51 respondents from a population of 56 were identified for the study; these included 40 Revenue officers, 5 Revenue Supervisors, 5 ICT Officers and 01 ICT Manager.

## **3.4 Sampling Techniques and Procedure**

The study applied both the probability and non-probability sampling techniques to select the samples. Purposive sampling technique was used to select the ICT Manager and Revenue Supervisors because this technique was specific at selecting units from the population that were of interest in order to generalize findings to the target population from which the sample was chosen (Gay, 1992). In addition, the simple random sampling method was used to select the Revenue officers which according to Mugenda&Mugenda (1999) is a method used in circumstances where every respondent has an equally same chance of being chosen to be involved in a given study.

## **3.5 Data Collection Methods**

The study was conducted using a triangulation of quantitative and qualitative research data collection techniques that were adapted in order to exploit the synergies offered by the different methodologies (Barifaijo, Basheka & Oonyu, 2010). The purpose of triangulation is not necessarily to cross-validate data but rather to capture different dimensions of the same phenomenon. These included the use of both primary and secondary data collection methods.

### **3.5.1 Primary Data Collection Methods**

The study used both questionnaires and face to face interviews as primary data collection methods.

#### **3.5.1.1 Questionnaire**

A questionnaire was used because it allowed all the participants to respond to the same statements, as participants are offered the same options on each statement (Hofstee, 2006). The questionnaire also allowed the researcher to reach out to more participants in more different areas than would be the case if personal interviews and personal observation methods were used (Hofstee, 2006).

#### **3.5.1.2 Interviews**

Interview guides with open ended questions were used to gain in-depth information from ICT Manager and Revenue Supervisors. These happened face to face. The interviews are used when the topic of inquiry requires considerable probing (Easwaramoorthy, 2006)

### **3.5.2 Secondary Data Collection Methods**

Documentation review was also used as a secondary data collection method. According to Baker (2000), documentary analysis is one way of interpreting textual data. The documentary review was helpful in that in provided the researcher with information regarding what systems were in existence before the introduction of the eCitie ICT system in the Revenue Department.

## **3.6** **Data Collection Instruments**

The study employed the use of both qualitative and quantitative data collection instruments including an interview guide, questionnaire and a document checklist for this research.

### **3.6.1 Interviews**

Face to face interviews were conducted with different supervisors and managers at K.C.C.A; interviews were held with the ICT Applications manager and the Revenue Supervisors at the Head office. The interview guide was applied because it offered the researcher the chance to probe for more information about the study variables with the interviewees, hence assessing very valuable information (Creswell, 2003). This allowed the researcher to gain an in-depth understanding of the relationship between the eCitie systems and information management in the Revenue Department at K.C.C.A.

### **3.6.2 Questionnaires**

Self-administered questionnaires were used for staff in both the Revenue Department and ICT function with 37 structured items mainly capturing quantitative data. It was closed in nature guided and structured on a 5 point Likert scale labeled with 5=strongly agree, 4=agree, 3=Don’t know, 2=disagree, 1-strongly disagree to allow for same responses.

### **3.6.3 Document Checklist**

The document review comprised a study of different reports and write-ups related to past ICT systems and information management in the Authority. These included performance reports, financial reports, newspaper articles, journals by different scholars. The review gathered information regarding the use of ICT systems and their relationship on information management. The data from the document reviews was then aggregated with that from the questionnaires and interviews for comparisons and linkages.

## **3.7 Validity and Reliability**

In order to produce accurate results, there was need to ensure the quality of the instruments. This is done through the validity and reliability of these instruments pre-tested on different experts in the Information and Communications Technology and Revenue sectors. Validity tests how well the instrument chosen measures the particular concept it is supposed to measure while reliability tests how consistently the instrument measured that particular concept (Whitelaw, 2001).

### **3.7.1 Validity**

Validity is the accuracy and meaningfulness of inferences based on the research results (Mugenda and Mugenda, 1999). The expertise of supervisors and other researchers was done through interviews and consultations to check the clarity of the statements in relation to their synergy with study objectives. Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are (Joppe, 2000).

Content validity (widely in quantitative evaluation) is the degree to which an instrument has an appropriate sample of items for the construct being measure. It was used as it focused on the extent to which the content of the instrument met the objectives of the study (Amin, 2005). Amin further stated that for an instrument to be accepted as valid, the average index should be 0.78 or higher.

The content validity index (CVI) will then be calculated using this formula (Lawshe, 1975):

CVI (Content Validity Index) = No. of items rated relevant**/**total no. of items in instrument

CVI = 34/37

CVI = 0.9

### **3.7.2 Reliability**

Reliability refers to the extent to which the research instrument will yield consistent findings (Saunders et al, 2007). It is the ability of the instrument to collect the same data consistently under similar conditions (Amin, 2004; Odiya, 2009). The researcher adopted the internal consistency method that involved pretesting the instrument once to a sample of respondents; the pretesting was done with a sample of Revenue officers in Nakawa division to ensure consistency and the logical flow of the questions before data was eventually collected. The data was then entered into SPSS and correlated using Chronbach’s alpha that produced a 0.791 of the 34 items which indicated an averagely high reliability as shown in the table below;

**Table 3. 3: Reliability Statistic Results**

|  |  |
| --- | --- |
| Cronbach’s Alpha | Number of Items |
| 0.791 | 34 |

**Source:** *Primary Data*

The reliability results shown in Table 3.3: show a high reliability coefficient meaning that all dimensions were implemented in the data collection instruments and in their right proportions because the Cronbach’s Alpha was above 0.7 which according to Amin (2005) was seen as favorable and acceptable. The instrument was therefore adopted as it was found reliable.

## **3.8 Procedure of Data Collection**

The researcher sought and obtained permission from Uganda Management Institute through a letter that was presented as an introductory letter from the Institute to the Managers Revenue and ICT Departments at K.C.C.A Head Office before any research was carried out. Upon successfully being given a go-ahead, the researcher went on to physically distribute the questionnaires to the respondents and the different interviews carried out.

## **3.9 Data Analysis**

Data was analyzed both qualitatively and quantitatively.

### **3.9.1 Quantitative data**

Quantitatively, data collected was sorted, cleaned and coded first; this involved grouping up similar responses and giving them a particular key or code. The coded data was then entered using Statistical Package for Social Sciences (SPSS), analyzed and later summarized in form of descriptive statistics such as frequencies, mean, standard deviation, variance e.t.c to give a meaningful distribution of the scores (Mugenda & Mugenda, 2003). The SPSS package was chosen because of its statistical capabilities and popularity in social sciences research (Babbie & Mouton, 2007). Descriptive analysis enabled the researcher generate respondent’s profiles statistics.

Inferential statistics were employed to test the hypotheses of the study in order to reject the null hypothesis by determining whether the observations are sufficiently deviant from it to justify rejecting it. Inferential statistics allow researchers infer or generalize observations made with samples to the larger population from which they were selected. The researcher used Pearson correlation Analysis used to determine the direct or inverse nature between variables as well as the degree of association. (Masud, Nyame, & Kumah, 2014).

### **3.9.2 Qualitative data**

Qualitatively, content analysis was done; data collected was summarized into much shorter yet meaningful statements and later used to determine trends in the responses given. Thematic analysis was utilized to record data into themes and codes were identified (Sekaran, 2003). The findings were laid out objective by objective as representations of the key findings of the study.

## **3.10 Measurement of Variables**

This particular research study used both the nominal and ordinal scales to measure and determine the variables. Nominal scale was used to measure the background information of the sample population. On the other hand, the ordinal scale used the 5 point Likert scale to determine the opinions of the respondents on different aspects of the variables at hand. The 5 point Likert scale gave room for the respondent to express their opinion as; strongly agree (5), agree (4), don’t know (3), disagree (2) and strongly disagree (1).

## **3.11 Ethical Considerations**

First and foremost, the researcher sought permission from the Institute to go the field and carry out the research. The research then sought permission from the Authority (through the managers in the different departments) to conduct the study through the formal introductory letter from UMI. The researcher then thoroughly explained to the respondents the purpose of the research and their participation. It was emphasized that participation was absolutely voluntary and that confidentiality and anonymity were highly guaranteed. Before any interviews were done or questionnaires handed out, the researcher clearly articulated the ethical issues to the respondents and ensured that they had all been well understood. The researcher also emphasized and allowed for withdrawal from any respondent who didn’t feel comfortable participating in the study.

# **CHAPTER FOUR**

# **PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS**

## **4.0 Introduction**

A detailed presentation, analysis and interpretation of the findings of the study are presented in this chapter. It presents the response rate, background information of the respondents, demographic characteristics, empirical findings as per the objectives of the study (descriptive in nature), relationship between the variables and the hypothesis test using inferential statistics of each of the variable based on the objectives of the study.

## **4.1 Response Rate**

A summary of the response rate is presented in Table 4.1 below.

**Table 4. 1: Response rate for the respondents**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category of respondents** | **Study Population** | **Sample Size** | **Actual Response** | **Response Rate (%)** |
| Revenue officers | 45 | 40 | 37 | 93% |
| Revenue Supervisors | 5 | 5 | 3 | 60% |
| I.C.T officers | 5 | 5 | 3 | 60% |
| I.C.T Manager | 1 | 1 | 1 | 100% |
| **Totals** | **56** | **51** | **44** | **86%** |

***Source:*** *Primary data*

Results in table 4.1 above indicate that of the 40 questionnaires distributed to the K.C.C.A Revenue officers, 37 were filed and returned, 3 of the 5 questionnaires distributed to the I.C.T officers were filled and returned. 3 out of 5 interviews were done with the Revenue Supervisors and the one interview with the I.C.T Application Manager. Results reported indicate that the overall response rate was 86% which according to Mugenda and Mugenda (2003) correspond to a very good response rate. The response rate of the sample of the study was therefore accepted as very reliable to provide a framework to make solid conclusions.

## **4.2 Demographic characteristics of the study respondents**

This section presents the demographic characteristics of the employees such as their gender, age and the length of time (years) they have worked with the organization. Table 4.2 below presented the information.

**Table 4. 2: Demographic characteristics of the Respondents (Gender)**

| **Background information** | **Attributes** | **Frequency** | **Percentage (%)** |
| --- | --- | --- | --- |
| **Gender** | Male | 27 | 61.3 |
|  | Female | 17 | 38.7 |

***Source:*** *Primary data*

The demographic characteristics in terms of Gender showed that (61%) of the respondents were males while (39%) were females implying that labour workforce is dominated by males.

**Table 4. 3: Demographic characteristics of the Respondents (Age in years)**

| **Background information** | **Attributes** | **Frequency** | **Percentage (%)** |
| --- | --- | --- | --- |
| Age bracket (years) | 16 – 25 | 4 | 9.1 |
|  | 26 – 35 | 30 | 68.1 |
|  | 36 – 45 | 6 | 13.6 |
|  | Over Forty six | 0 | 0.0 |
|  | Void | 4 | 9.1 |

The demographic characteristics in terms of the Age of the employees (in years) showed (68%) which is majority of the respondents were in the (26-35) age bracket. (14%) were in the (36-45) age bracket, (9%) were in the (16-25) age bracket while (9%) were invalid questionnaires. This indicated a dominant middle age work force at the organization.

**Table 4. 4: Demographic characteristics of the Respondents (Period in years)**

| **Background information** | **Attributes** | **Frequency** | **Percentage (%)** |
| --- | --- | --- | --- |
| Period (in Years) | Less than two | 13 | 29.5 |
|  | 2 – 5 | 21 | 47.7 |
|  | 6 – 10 | 9 | 20.5 |
|  | Over ten | 0 | 0.0 |
|  | Other | 0 | 0.0 |
|  | Void | 1 | 2.2 |

Majority of the respondents (48%) had worked with the organization for a period of between 2-5 years which indicated minimal rates of labour turnover. (29%) of the respondents had worked with the organization for less than 2 years while (20%) of the respondents had worked with the organization for a period of between 6-10 years. (2%) were invalid questionnaires. This implied a very informed in-depth representation of the people that had worked with the previous manual systems and the current more advanced systems but also understood how the organization carried out information management as this study was carried out between the years 2012 to 2017.

## **4.3 Empirical findings as per objectives of the study**

This subsection presented results on information management and the eCitie ICT system (communication channels, infrastructure and social systems).

### **4.3.1 Information management**

This section explored respondents’ views and opinions on information management as the independent variable. It was represented and determined by fifteen (15) statements on the five-point Likert scale to measure their level of agreement or disagreement.

The statements focused on the elements of information management in order; information acquisition, information maintenance, information dissemination and information use. Table 4.3 presented a summary from the results followed by the analysis and interpretation.

**Table 4. 5:Assessment of Information management**

|  | **Frequency (% of cases)** | | | | |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Strongly Disagree** | **Disagree** | **Don’t know** | **Agree** | **Strongly Agree** |
| Information is always availed on time | 0 (0.0) | 6 (15.0) | 7 (17.5) | 24 (60.0) | 3 (7.5) |
| Information is acquired from the right people | 1 (2.5) | 3 (7.5) | 3 (7.5) | 18 (45.0) | 15 (37.5) |
| Information is acquired from the right sources | 2 (5.0) | 2 (5.0) | 6 (15.0) | 18 (45.0) | 12 (30.0) |
| Information is availed for reference when needed | 1 (2.6) | 3 (7.9) | 1 (2.6) | 17 (44.7) | 16 (42.1) |
| Information is availed in the right format | 2 (5.0) | 5 (12.5) | 3 (7.5) | 19 (47.5) | 11 (27.5) |
| Information is securely kept | 3 (7.5) | 1 (2.5) | 1 (2.5) | 18 (45.0) | 17 (42.5) |
| Information is classified according to subject | 1 (2.5) | 2 (5.0) | 4 (10.0) | 21 (52.5) | 12 (30.0) |
| Information is quickly updated upon new changes | 2 (5.1) | 5 (12.8) | 6 (15.4) | 19 (48.7) | 7 (18.0) |
| Information is disseminated to the right users | 0 (0.0) | 4 (10.5) | 5 (13.2) | 15 (39.5) | 14 (36.8) |
| Information is disseminated on time | 0 (0.0) | 7 (17.5) | 4 (10.0) | 20 (50.0) | 9 (22.5) |
| High user confidentiality is observed during information dissemination | 2 (5.3) | 1 (2.6) | 6 (15.8) | 16 (42.1) | 13 (34.2) |
| Information is ready for use when disseminated | 2 (5.1) | 0 (0.0) | 3 (7.7) | 22 (56.4) | 12 (30.8) |
| Information is fully utilised | 3 (7.9) | 4 (10.5) | 5 (13.2) | 10 (26.3) | 16 (42.1) |
| Information is used in the most appropriate manner | 2 (5.1) | 3 (7.7) | 6 (15.4) | 16 (41.0) | 12 (30.8) |
| Information is amenable for decision making | 0 (0.0) | 4 (10.5) | 6 (15.8) | 16 (42.1) | 12 (31.6) |

***Source:*** *Primary data*

**Key (Assessment of Information management)**

|  |  |
| --- | --- |
| **Information management elements** | **Statement** |
| Information Acquisition | Statement 1 to 4 |
| Information Maintenance | Statement 5 to 8 |
| Information Dissemination | Statement 8 to 12 |
| Information Utilization | Statement 13 to 15 |

Findings from the table 4.5 above in regards to information acquisition show that majority of those who responded (60%) agreed to the statement that information is always availed on time, (15%) disagreed to the statement that information is always availed on time while (8%) strongly agreed to the statement that information is always availed on time. (17%) did not respond to this statement. This clearly indicated that information the eCitie ICT system though clear defined communication channels enable for the availability of information when needed to a great extent and therefore showing a positive relationship with information management. One respondent interviewed mentioned that, “*it is easier and quicker to call urgent meetings nowadays because immediately the communication is done, staff are alerted about it*”. It is also very clear that a positive relationship exists between the eCitie and information management because there was high improvement in the response rate in terms of communication i.e. staff were able to respond and act faster as they have all they need in time.

Findings from the study also established that (45%) respondents agreed to the statement that information is acquired from the right people or sources followed by (38%) who strongly agreed to the same statement that information is acquired from the right sources and people and yet (8%) disagreed with the statement while (8%) did not say or make a response to the statement. This implied that it is more feasible to say that information is acquired from the right people or sources and which therefore meant the information could be trusted to make decisions and carry out tasks because the decision makers have full confidence in the information. This implied a strong positive relationship between information management particularly acquisition and the eCitie ICT system.

Findings from respondents further indicated that (45%) agreed to the statement that information is availed for reference when needed followed by (42%) who strongly agreed to this statement and yet (8%) disagreed with the statement that information is availed for reference when needed. One respondent interviewed stated that, “*by just a click, information needed by whichever user is retrieved in that moment*”. This indicated a positive relationship between the eCitie ICT system and information management.

Regarding information maintenance, respondents (48%) agreed to the statement that information is availed in the right format followed by (28%) who strongly agreed to the statement. (13%) however disagreed with the statement that information is availed in the right format while 5% strongly disagreed with the statement. One respondent interviewed mentioned that “*each and every unit will receive the right kind of information it needs to carry out its tasks*” indicating that it is more appropriate to say that information is mostly availed in the right format when it is asked for. This therefore implied that the information is more easily because it is received in the appropriate format of given users and therefore showing a positive relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A.

A very important consideration was factored in (information security) while information maintenance is happening and the following were the respondents views. (45%) agreed to the statement that information is securely kept, (43%) strongly agreed to this statement as well while (8%) disagreed with the statement that information is securely kept. In an interview with the I.C.T Application Manager, he mentioned that, “*information security is a very big priority for us and there is a special security team to ensure no breaches happen; in fact we haven’t had any major incidences with our information*”. Another key informant shared that *‘depending on the system rights granted to a particular user – usually with regard to a position served or a title held, one is either limited to operate within certain access, manipulation and interaction levels, meaning particular users can access or even do things others cannot do with the system’*.

This implied that information is secure, it can be trusted and there is clear accountability in terms of who uses it and for what purpose. This showed a positive relationship between the eCitie ICT systems and information management in the Revenue Department at K.C.C.A.

As regards to Information being classified according to the subject area during information maintenance, (53%) of the respondents which is over half of the respondents agreed with the statement, (30%) strongly agreed with the statement while (5%) disagreed with the statement that information is classified according to subject area. This implied that the eCitie system allowed for appropriate classification and grouping of information for faster and easier use. This therefore showed a positive relationship between the eCitie ICT system and information management in the Revenue Department.

In addition, (49%) respondents agreed to the statement that information is quickly updated upon any new changes, (18%) strongly agreed to the statement, while (13%) disagreed to the statement that information is quickly updated upon new changes. This implied therefore it is more likely that information is quickly updated upon new changes as resulting into data consistency that has ensured consistent results in operations. This has therefore showed a positive relationship between the eCitie ICT system and information management.

As regards to information dissemination, (40%) respondents agreed to the statement that information is disseminated to the right users, (37%) strongly agreed to the statement that information is disseminated to the right users. (11%) however disagreed with the statement which was indicative that it is more generally agreeable that information is disseminated or distributed to the right users to a larger extent which implied a positive relationship between the eCitie ICT system and information management. One respondent interviewed mentioned that “*there is an ICT team responsible to ensure that the eCitie system is running at a 100% to ensure information is distributed to the right users*”.

Findings in regards to the statement on information being disseminated on time revealed that (50%) respondents agreed with the statement, (23%) of the respondents strongly agreed with the statement while (18%) of the respondent disagreed with the statement that information is disseminated on time. This implied that under eCitie ICT system, information after going through maintenance was disseminated to the right users on time. This showed a positive relationship between the use of the eCitie ICT systems and information management at K.C.C.A.

The findings continued to show that (42%) of the respondents agreed with the statement that high user confidentiality is observed as information is being disseminated, (34%) respondents strongly agreed with the statement, (5%) of the respondents strongly disagreed with statement while (16%) were undecided and choose not to mention. This implied that high user confidentiality is maintained during information dissemination (decision makers have confidence in making decisions) because it has gone through the necessary appropriate checks affirming a positive relationship between the eCitie and information management

Responding to statement on the readiness of use of information upon its dissemination, (56%) of the respondents agreed with the statement, (31%) strongly agreed with the statement and (5%) strongly disagreed with the statement. The biggest percentage of the respondents agreed to the fact that information is ready for use upon its dissemination which led to confidence in both the information and the system that quickened the process of information use and a more refined consistent information management process. This showed a positive relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A.

Regarding information use; (42%) of the respondents strongly agreed with the statement that information is fully utilized upon receipt by the user, (26%) agreed with the statement, (10%) disagreed with the statement while (8%) strongly disagreed with the statement. This implied that majority of the staff in the Revenue Department confirm that information is fully utilized under the eCitie ICT system meaning that little or even close to none is not used also implying that there is a positive relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A.

(41%) agreed to the statement that information is used in the most appropriate manner, (31%) of the respondents strongly agreed with the statement, (8%) disagreed with the statement while (5%) strongly disagreed with the statement. This implied that information is used in the most appropriate manner to a larger extent. In an interview with one of the Revenue Supervisors, he mentioned that “*an oath of secrecy for appropriate use of information is sworn indicating penalties for any misappropriation of the information*”. Staff get to work together and trust that they are all working for one common good because of a well streamlined accountable process. This implied a positive relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A.

Finally, (42%) respondents agreed with the statement that information is amenable for decision making while being used, (32%) strongly agreed with the statement, (11%) respondents disagreed with the statement while (16%) were undecided and did not give their views. This implied that majority of staff found information amenable for decision making which implied an improved quality of the decisions made. This implied a relationship between the eCitie ICT system and information management.

### **4.3.2 The communication channels of the eCitie ICT system**

The respondents were issued with seven (7) statements about communication channels on what relationship exists with information management on a five point Likert scale measured as Strongly Agree (5), Agree (4), Don’t know (3), Disagree (2) and Strongly Disagree (1). The results or findings were presented in Table 4.6 below;

**Table 4. 6: Responses on Communication channels**

|  | **Frequency (% of cases)** | | | | |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Strongly Disagree** | **Disagree** | **Don't know** | **Agree** | **Strongly Agree** |
| Clear communication channels exist between users | 1 (2.5) | 5 (12.5) | 3 (7.5) | 15 (37.5) | 16 (40.0) |
| Well known communication channels exist between system users | 1 (2.5) | 1 (2.5) | 4 (10) | 21 (52.5) | 13 (32.5) |
| The intranet is the quickest communication channel | 1 (2.5) | 1 (2.5) | 3 (7.5) | 18 (45) | 17 (42.5) |
| The intranet is mostly always online | 1 (2.5) | 5 (12.5) | 1 (2.5) | 20 (50.0) | 13 (32.5) |
| The intranet is the most reliable communication channel | 1 (2.5) | 4 (10) | 3 (7.5) | 17 (42.5) | 15 (37.5) |
| The internet connection is always reliable | 3 (7.5) | 10 (25) | 1 (2.5) | 15 (37.5) | 11 (27.5) |
| The internet is the fastest communication channel | 2 (5) | 3 (7.5) | 3 (7.5) | 17 (42.5) | 15 (37.5) |

***Source:*** *Primary data*

Results from the Table 4.6 above indicated that (40%) respondents strongly agreed to the statement that clear communication channels exist between the users followed by about (38%) who agreed with the statement while (13%) disagreed with the statement and (3%) strongly disagreed with the statement. This was an indication that clear communication channels existed between the different users which resulted into less delays in information transfer as users were knowledgeable of which channels are available for their use. This showed a positive relationship between the communication channel sand information management.

Findings also showed that (53%) respondents agreed to the statement that the well-known channels exist between the users of the system, (33%) strongly agreed to the statement while (3%) both strongly disagreed and disagreed to the statement respectively. This implied that the communication channels that exist between the users are well known. This meant the purpose for each is well known, where to find them, thereby making the flow or dissemination of information easier and quicker. This implied a positive relationship between the eCitie system and information management

The study findings further showed that more respondents (45%) agreed to the statement that the intranet is the quickest communication channel, (43%) strongly agreed and to the statement while (3%) strongly disagreed with the statement respectively indicating that it is generally acceptable that the intranet is likely the quickest communication channel in the Revenue Department at K.C.C.A. An interview with one of respondent confirmed these views, “*The intranet is fully utilized and gets information to the right people in the quickest ways possible; it is rarely affected by network issues too*”. This implied that the previous delays experienced in the dissemination of information had reduced significantly, implying a continued improved information management process and a positive relationship with information management.

Furthermore, (50%) of the respondents agreed to the statement that the intranet is mostly always online/available, (33%) respondents strongly agreed to the same statement and while (13%) disagreed with the statement. One of the respondents interviewed said that “*whenever you need to get an urgent or important piece of communication out there, you are guaranteed at the very least that it will happen*”. This has smoothened and eased internal communication which has reduced response time. This implied a positive relationship between the eCitie and information management.

(43%) respondents agreed that the intranet is the most reliable communication channel, (38%) strongly agreed with the statement while (10%) disagreed with the statement indicating that it was generally agreeable that the intranet is the most reliable communication channel and therefore the most used channel for internal communication. This was also indicative that the eCitie ICT system had a positive relationship on information management.

Results showed that (38%) respondents agreed that the internet connection is always reliable, (28%) respondents strongly agreed with the statement while (25%) and (8%) disagreed and strongly disagreed with the statement respectively. This was supported by comments from one of respondents interviewed “*on a higher percentage the internet is reliable. When it is offline, its restoration happens as quickly as possible”*. This showed a positive relationship between the eCitie and information management.

Findings further showed that (43%) respondents agreed to the statement that the internet connection is the fastest communication channel, (38%) strongly agreed with the statement while (8%) disagreed with the statement that the internet is the fastest communication channel while (5%) strongly disagreed with this statement. This meant that it is more generally accepted that the internet could be relied upon to deliver information to the intended users in the fastest way possible. This implied a positive relationship between the eCitie and information management.

### **4.3.4 Infrastructure of the eCitie ICT system**

The views of the respondents were rated on a five-point Likert scale as Strongly Agree (5), Agree (4), Don’t know (3), Disagree (2) and Strongly Disagree (1). The researcher used a set of six (6) items or statements to get the views from the respondents in regards to the infrastructure of the eCitie ICT system. Table 4.7 below reported a summary of the views;

**Table 4. 7: Responses on Infrastructure**

|  | **Frequency (% of cases)** | | | | |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Strongly Disagree** | **Disagree** | **Don't know** | **Agree** | **Strongly Agree** |
| Hardware resources are always available | 0 (0.0) | 7 (17.5) | 5 (12.5) | 17 (42.5) | 11 (27.5) |
| Hardware resources work in good condition | 1 (2.5) | 4 (10.0) | 4 (10.0) | 20 (50.0) | 11 (27.5) |
| Backup hardware resources are available | 4 (10.0) | 4 (10.0) | 5 (12.5) | 17 (42.5) | 10 (25.0) |
| The software is always up-to-date | 3 (7.5) | 3 (7.5) | 4 (10.0) | 21 (52.5) | 9 (22.5) |
| The software can be used remotely | 2 (5) | 5 (12.5) | 8 (20.0) | 16 (40.0) | 9 (22.5) |
| Users are fully equipped to use the software | 2 (5) | 4 (10.0) | 5 (12.5) | 16 (40.0) | 13 (32.5) |

***Source:*** *Primary data*

Findings showed that (43%) respondents agreed to the statement that hardware resources are always available for use followed by (28%) who strongly agreed to this statement while (18%) disagreed with the statement. In an interview with one of the Revenue Managers, he mentioned that “*there is an almost one to one ratio of available hardware resources to users*” which meant that operations will keep going and redundancy time is reduced improving the management of information in the Revenue Department. This reported a positive relationship between the eCitie and information management.

Findings further showed that (50%) respondents agreed to the statement that hardware resources work in good condition followed by (28%) who strongly agreed to this statement while (10%) disagreed with the statement and (3%) strongly disagreed to the statement. This indicated that to a larger extent, it is more likely that hardware resources work in good condition pointing to a positive relationship between the eCitie and information management.

Related closely to the hardware resources, (43%) respondents agreed to the statement that backup hardware resources are mostly available followed by (25%) who strongly agreed to the same statement while (10%) disagreed or strongly disagreed with the statement respectively. One of the respondents interviewed however noted that “*the procurement process in acquiring a new hardware resource for replacement is still excessively longer than should be but for some critical departments where operations must continue running, it is very quick*”. The presence and access to backup hardware is very important to the operation of the eCitie ICT system indicating a positive relationship with the information management.

Results from the respondents continued to show that (53%) agreed with the statement that software is always up to date, (23%) strongly agreed with the statement while (8%) strongly disagreed or disagreed with the statement respectively thus implying that it is more agreeable that software used is always up to date. One respondent from the ICT function responded, “*Software updates are done daily to ensure the software used is working and functioning well*”. Updated software has a significant impact to the proper operation of the eCitie system therefore indicating a positive relationship between the eCitie information management.

As regards the use of software remotely, (40%) respondents agreed with the statement, (23%) strongly agreed with the statement. (13%) disagreed with the statement while (20%) respondents did not indicate or give their views. which indicated that it was more agreeable that software can be used remotely and showed a positive relationship with information management.

Findings further showed that (40%) respondents agreed to the statement that users are fully equipped to use the software, (33%) strongly agreed to the statement, (10%) disagreed with the statement while (13%) did not know which implied that majority respondents agree to the statement that users are fully equipped to use the software. One respondent from the Revenue department at KCCA shared thus; *‘A training unit under the revenue department usually updates system users through training workshops, noticeboards’.* This indicated a positive relationship between eCitie and information management in the Revenue Department.

### **4.3.5 Social systems of the eCitie ICT system**

The Respondents’ views on social systems were tested using a set of six (6) statements along a five point Likert scale as Strongly Agree (5), Agree (4), Don’t know (3), Disagree (2) and Strongly Disagree (1) and the results were summarized in Table 4.3.5.1 below.

**Table 4. 8: Responses on the Social System**

|  | **Frequency (% of cases)** | | | | |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **Strongly Disagree** | **Disagree** | **Don't know** | **Agree** | **Strongly Agree** |
| A peer to peer support exists between users | 2 (5.0) | 5 (12.5) | 1 (2.5) | 16 (40.0) | 16 (40.0) |
| The peer to peer support is quick to find | 2 (5.0) | 5 (12.5) | 2 (5.0) | 18 (45.0) | 13 (32.5) |
| The peer to peer support is always encouraged | 1 (2.5) | 6 (15.0) | 2 (5.0) | 17 (42.5) | 14 (35.0) |
| Top management always generously supports the budget towards ICT | 0 (0.0) | 5 (12.5) | 8 (20.0) | 13 (32.5) | 14 (35.0) |
| Top management is highly supportive of the system users | 0 (0.0) | 6 (15.0) | 2 (5.0) | 18 (45.0) | 14 (35.0) |
| Top management highly use the system | 2 (5.0) | 0 (0.0) | 4 (10.0) | 16 (40.0) | 18 (45.0) |

***Source:*** *Primary data*

Study findings continued to indicate that (40%) respondents strongly agreed and agreed to the statement respectively that a peer to peer support exists between users of the eCitie system in the Revenue Department as one respondent interviewed asserted that “*excellent performance was rewarded by how well a team supported and worked together*”. (13%) respondents disagreed with the statement while (5%) strongly disagreed with the statement. This implied that a peer to peer support existed that influenced how the eCitie system is used and also showed a positive relationship between the system and information management. Furthermore, (45%) respondents agreed with the statement that peer to peer support was quick to find when needed, (33%) strongly agreed to this statement while (13%) disagreed and (5%) strongly disagreed with the statement indicating that it is more agreeable that peer to peer support is quick to find while using the eCitie system and showing a positive relationship between the eCitie and information management.

Similarly, findings showed that (43%) respondents agreed to the statement that peer to peer support is always encouraged followed by (35%) who strongly agreed to this statement while (13%) disagreed with the statement and (20%) were undecided and didn’t give their views. This implied that it is more agreeable that peer to peer support is always encouraged. Unfortunately not much evidence was shown on how peer to peer support and is demonstrated in the different operational units, an observation method would probably show it more clearly.

The findings also showed that (35%) respondents strongly agreed to the statement that Top management always generously supports the budget towards ICT, (33%) agreed to the statement while (12%) disagreed with the statement which meant that to a greater extent it is more agreeable that Top management mostly always generously supports the budget towards ICT. One respondent interviewed mentioned that “*Top management absolutely supports ICT because the performance of the different ICT systems is the performance of the organization and will do all it takes to ensure different ICT is running well*”. This pointed to a positive relationship between the eCitie ICT system and information management.

Furthermore, (45%) respondents agreed with the statement that Top Management is highly supportive of the system users, (35%) strongly agreed with the statement while (15%) disagreed with the statement. This showed a positive relationship between the eCitie system and information management. Finally, in regards to top management use and participation with the eCitie system, (45%) strongly agreed with the statement, (40%) agreed with the statement while (5%) strongly disagreed with the statement which implied that it is mostly agreeable that top management highly use the eCitie ICT system. The manager ICT applications stated it plainly, “*whether you are a boss, failure to keep up with ICT means you’re out*”.

## **4.4 Findings showing association relationship between the study variables**

The responses provided on a 5 point Likert scale were fifteen (15) statements on information management under the eCitie ICT system (reported in Table 4.3.1.1), the seven (7) statements about the communication channels used by the eCitie system (Table 4.3.2.1), the six (6) statements about the infrastructure (Table 4.3.4.1) and the six (6) statements about the social system represented in Table 4.3.5.1. There were each weighted separately to produce four polytonal summary variables as information management, communication channels, infrastructure and social systems represented overall on the same 5 point Likert scale. Further still, a dummy (yes/no?) variable was generated for the overall relationship with the eCitie system. Cross tabulations using Pearson Chi-Square (Chi2) statistics were obtained in order to examine any associations or relations between the variables and the results were reported in Table 4.9.

**Table 4. 9: Pearson Chi-Square statistics showing relationship between eCitie ICT system on other variables.**

|  |  | **Does eCitie ICT system have a relationship? n (% )** | |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **No** | **Yes** | **Pearson Chi2** | **p-value** |
| **Information management** | Strongly disagree | 2 (28.6) | 5 (71.4) | 36.7 | < 0.050 |
|  | Disagree | 9 (60.0) | 6 (40.0) |  |  |
|  | Don’t know | 6 (26.1) | 17 (73.9) |  |  |
|  | Agree | 8 (22.2) | 28 (77.8) |  |  |
|  | Strongly agree | 2 (6.9) | 27 (93.1) |  |  |
| **Communication channels** | Strongly disagree | 3 (50.0) | 3 (50.0) | 27.4 | 0.007 |
|  | Disagree | 8 (50.0) | 8 (50.0) |  |  |
|  | Don’t know | 4 (40.0) | 6 (60.0) |  |  |
|  | Agree | 7 (20.6) | 27 (79.4) |  |  |
|  | Strongly agree | 3 (10.7) | 25 (89.3) |  |  |
| **Infrastructure** | Strongly disagree | 1 (14.3) | 6 (85.7) | 17.6 | 0.174 |
|  | Disagree | 7 (38.9) | 11 (61.1) |  |  |
|  | Don’t know | 7 (43.8) | 9 (56.3) |  |  |
|  | Agree | 7 (21.9) | 25 (78.2) |  |  |
|  | Strongly agree | 2 (10.5) | 17 (89.5) |  |  |
| **Social system** | Strongly disagree | 1 (20.0) | 4 (80.0) | 13.2 | 0.215 |
|  | Disagree | 5 (38.7) | 8 (61.5) |  |  |
|  | Don’t know | 7 (53.9) | 6 (46.2) |  |  |
|  | Agree | 8 (28.6) | 20 (71.4) |  |  |
|  | Strongly agree | 2 (9.1) | 20 (90.9) |  |  |

***Source:*** *Primary data*

Results reported in Table 4.9 show that there is a significant (p = 0.000 < 0.050 at 5% significance level) positive relationship between information management and the eCitie ICT system as derived overall from the responses provided. This is further indicated by higher percentages of respondents generally rating the system as having an overall positive relationship; among those who strongly agreed to some statements regarding the relationship between the eCitie ICT system and information management.

(93%) respondents strongly agreed that overall, the system has had a positive significant relationship with information management, (77.8%) agreed to the overall relationship of the system and even more respondents over (71%) initially strongly disagreed to some statements asserting likely influence of the system on information management to accept (agree or strongly agree) and therefore indicated a positive relationship with information management in the Revenue Department.

Results continued to indicate from the Pearson Chi-Square statistic, Chi2 = 27.4 and its corresponding p-value, 0.007 < 0.050 at 5% level of significance show that there is a significant positive relationship between communication channels and the overall impact of the eCitie system in the Revenue Department. Higher percentages of respondents strongly agreed (89.3%) or agreed (79.4%) to the overall relationship of the eCitie system with communication channels. This indicated an influence of the eCitie ICT system in terms of its communication channels on information management and therefore indicated a positive relationship with information management in the Revenue Department.

On the other hand, the Pearson Chi-Square statistics showed no significant relationship between social systems or infrastructure and the eCitie ICT system; results showed (p > 0.05 at 5% level), implying any observed relationship with both infrastructure and social systems but which results cannot be used to conclusively be attributed to the eCitie ICT system having a relationship with information management.

## **4.5 Hypothesis testing of the relationship between the Variables**

Pairwise comparisons based on Pearson correlation statistics were used to in order to investigate any possible relationships between the eCitie ICT system and its independent factors that would then give conclusions that would be used in testing the hypothesis. This was presented in Table 4.10 below.

**Table 4. 10: Pairwise comparisons for significant relationship between the eCitie system and its potential determinant factors.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Information Management** | **Communication Channels** | **Infrastructure** | **Social System** |
| **eCitie ICT system has an influence?** |  |  |  |  |
| Strongly Disagree  Sig. (2-tailed) | -0.0111  0.946 | -0.2165  0.1739 | 0.1285  0.4235 | 0.0574  0.7213 |
| Disagree  Sig. (2-tailed) | -0.5638  0.0002 | -0.4184  0.0065 | -0.2408  0.1294 | -0.1789  0.2631 |
| Don’t Know  Sig. (2-tailed) | 0.0368  0.8216 | -0.1688  0.2913 | -0.3055  0.0521 | -0.4155  0.0069 |
| Agree  Sig. (2-tailed) | 0.3546  0.0248 | 0.3104  0.0482 | 0.2108  0.1858 | -0.0577  0.7201 |
| Strongly Agree  Sig. (2-tailed) | 0.7492  0.000 | 0.5338  0.0003 | 0.3419  0.0287 | 0.4308  0.0049 |

***Source****: Primary data*

Results in Table 4.10 indicated that a significant strong positive correlation was observed between the influence of eCitie ICT system and information management (0.7492; p =0.000 < 0.05). This indicated that the use of the eCitie system had a positive relationship and therefore correlation with information management therefore showing that the eCitie system has impacted the information management process.

Results also showed that there is a significant strong positive correlation between the influence of eCitie ICT system and communication channels (0.5338; p < 0.05) at 5% significance level. This means that the communication channels do have a strong positive relationship with information management as they are an important component of the eCitie ICT system. These Responses strongly agreed that the eCitie ICT system had an overall positive contribution and therefore strongly positively correlated that the eCitie ICT system has automated and improved information management in the Revenue Department.

Findings from the table 4.5.1 however showed that there were weak positive correlations observed between the influence of the eCitie ICT system and the two other independent factors; which were the infrastructure (0.3419; p = 0.0287 < 0.05) and the social system (0.4808; p = 0.0049 < 0.05) at 5% significance level. This therefore implied that while respondents agreed to a greater extent with the fact that the infrastructure and social systems had any influence on the way the eCitie ICT system operates, there were weak relationships found that could lead wot draw conclusions that they had a correlation with information management. It can therefore be concluded that there were no significant relationship between the infrastructure and social system with information management.

# **CHAPTER FIVE**

# **SUMMARY, DISCUSSION, CONCLUSION AND RECOMMONDATIONS**

## **5.0 Introduction**

This study examined the relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A in Uganda. This chapter presents the summary of the key findings, a discussion of the study findings, the conclusion as derived from the discussion of the results, suggested recommendations for further action and highlights key study limitations as well as areas that could be considered for further research in line with the study objectives.

## **5.1 Summary of the key findings**

A summary of the key findings is shown here below, focusing on each of the three specific study objectives;

### **5.1.1 Communication Channels and information management in the Revenue Department**

The results showed that there was a strong positive relationship between the communication channels and information management in the Revenue Department at K.C.C.A (The Pearson Chi-Square statistic, Chi2 = 27.4 and its corresponding p-value, 0.007 < 0.050 at 5% while the Pairwise comparisons showed a significant strong positive correlation between the influence of eCitie ICT system and communication channels (0.5338; p < 0.05) at 5% significance level). This study found out that the communication channels being used were clear and well known to the users, the intranet and the internet were the quickest and most reliable communication channels and that the channels were mostly online to a greater percentage. This therefore showed a significant positive correlation between the communication channels and information management.

### **5.1.2 Infrastructure and information management in the Revenue Department**

The study findings found a weak significant relationship between the infrastructure and the overall use of the eCitie ICT system on information management in the Revenue Department at K.C.C.A (p > 0.05 at 5% level). The study found out that while having the right kind of hardware that is in good working condition is essential with additional backup, there is relationship that it has with information management. Findings also showed that while software that is always available and up to date might make the use of the eCitie ICT system more effective, there is no clear indication that the eCitie ICT system significant positive relationship was attributed to the infrastructure.

### **5.1.3 Social systems and information management in the Revenue Department**

The study findings showed a weak significant relationship between the social systems and the overall influence of the eCitie ICT system on information management in the Revenue Department at K.C.C.A (p > 0.05 at 5% level). The study found out the following; a peer to peer support existed between users to a higher percentage, one that was quick to find at that, top management always generously supports the ICT budget, top management is very supportive of system users and engages with the system as well. This could however not be used to conclusively attribute the influence of the eCitie ICT system on information management and therefore confirm that there is no significant relationship between the social system and information management in the Revenue Department at K.C.C.A.

## **5.2 Discussion of findings**

This section presents the discussions of the findings of the study aligned with specific objectives of the study.

### **5.2.1 Communication channels and information management**

The sample studied in the research clearly indicated that communication channels have a significant positive relationship with information management in the Revenue Department at K.C.C.A. Such findings are in agreement with the findings of a study by Cristina Andrei (2014) who mentioned that Information and communication technology systems offer numerous possibilities to improve information management in organizations and therewith make better use of employees' knowledge. One of such options is use of intranet as an internal information system of a company, which is based on the Internet.

The study confirmed that the intranet and the internet are the most effective, efficient communication channels especially within the organization as regards information management. An intranet uses network technologies as a tool to facilitate communication between people or work groups providing consistent, up-to-date information in an appealing visual format (Cristina, 2014). Research by Judy (2007) found that information posted on the intranet changes frequently, enabled by the ease of making changes with web technology. This contributes to the breakdown of routines which triggers creative chaos and stimulates interaction with a fluctuating environment. He adds that wide access to corporate information on an Intranet allows redundancy of knowledge, yet saves on paper, mailing and distribution costs. When there is an overlap in knowledge on pages from different departments, there is just one set of data for each department to keep current there by allowing for cheap dissemination of updated information.

Holtz (2003) further supported this by adding that the intranet is an inexpensive information resource, where common notices, policies are kept, improving the data sharing capability and reducing the need for online storage because one copy serves many people. The intranet has improved the accessibility of information (by making wider, you can get what you want from wherever you are), increased the speed and facilitate global communication. The K.C.C.A ministerial Policy Statement Financial year 2014/15 indicated that the intranet has offered an “interconnected office” for all branches or divisions and home users which was implemented through Unified messaging.

The study also revealed that the internet is a more reliable and efficient communication channel unlike mass media channels as had been suggested by Rogers. Manuel (1998) confirmed this by adding that the internet has created a platform where people are able to “linkup” as it bypasses the communication system and style established by mass media. While mass media are themselves fully present in Internet, people may opt for their own communication, or for selected, alternative sources of information and interaction, thus escaping from their dependence upon mass media. This is a clear indication that communication channels of any ICT system have a significant relationship on information management.

### **5.2.2 Infrastructure and information management**

The study found out that as much as majority of the respondents agreed to the availability of hardware and the usability of software being crucial components of the eCitie ICT system, there was a weak correlation between the infrastructure and the impact of the eCitie ICT system. It can therefore be concluded that there was no significant relationship between the infrastructure and information management in the Revenue Department at K.C.C.A.

Studies showed that the infrastructure cannot stand on its own, it is joined to other components that ought to support it and work hand in hand with it for it to have influence on any given ICT system. In other words infrastructure is broader than hardware and software. These findings were supported by Jyoti et al. (2012) who affirms that infrastructure of a given technology encompasses four main areas: data centers, desktop infrastructure, broadcasting services and telecommunication networks. However he pointed out one main challenge is convergence: this means it is no longer easy to place ICTs into discrete categories and, in practice, businesses rarely, if ever, use just one category. The infrastructure shouldn’t be limited to the availability and usability of the hardware and software alone.

### **5.2.3 Social systems and information management**

The study found out that while a good number of the respondents agreed to the fact that there existed a strong peer to peer support among the users of the system and that top management fully backed and supported ICT systems especially the eCitie ICT system, there existed no significant relationship between the social systems and the impact of the eCitie ICT system because there existed a weak correlation between the two variables.

Research done indicated that first and foremost, a social system cannot be limited to support between peers and from top management. According to Talcott (1989) a social system is a network of interactions between people or actors of the same unit but that rely on a system of a language or culture that must exist and is well known in that given society. He goes on to mention that the people each understand their roles to play and there exists an orderly manner in which it is done.

In addition, Niklas Luhmann (1997) expressed that that a social system goes beyond a group of people that interact together in a given unit but that there exists interrelations within those interactions that are achieved over a period of time influenced by the society’s norms, cultures and different patterns and concluded therefore that social system may be described as an arrangement of social interactions based on shared norms and values. Individuals constitute it, and each has place and function to perform within it.

This argument is also supported by research done by Charles (1905), who noted that a given social system is composed of the patterned interaction of people whose’ relation to each other are mutually oriented through the definition of the mediation of pattern of structured and shared symbols and expectations. All this shows that social systems are more than people working well together but their relationships, the norms, cultures, different policies under which they are operating as well.

## **5.3 Conclusion of the study**

This section presents the conclusions based on the findings of the study in relation to the objectives of the study;

### **5.3.1 Communication channels and information management**

The study showed a positive significant relationship between the communication channels and information management in the Revenue Department at K.C.C.A clearly indicating that the intranet and the internet are the most efficient and reliable channels used in organizations.

It can be concluded that communication channels have a positive influence and relationship on the way information is managed from its acquisition, its maintenance and or storage, its dissemination and its use upon its receipt on the rightful owner. This means that the kind of communication channels chosen, how clear and well known they are to the users will influence an ICT system and eventually information management.

### **5.3.2 Infrastructure and information management**

There was a weak relationship between the infrastructure and information management in the Revenue Department at K.C.C.A. This therefore meant that any changes made to hardware availability, training of the users on the software used will have no significant influence on a given ICT system and its eventual relationship with information management. While the staff were generally knowledgeable on using the software and the hardware, these showed a weak correlation between the eCitie ICT system and information management.

### **5.3.3 Social systems and information management**

Results showed a weak relationship between the social systems and information management in the Revenue Department at K.C.C.A; therefore meaning even though it was clear from the study that there existed a peer to peer support and that top management was in full support of the ICT systems (eCitie); that support had no significant influence on the eCitie System and therefore no significant relationship with information management function in the Revenue Department at K.C.C.A.

## **5.4 Recommendations from the study**

This section presents the recommendations of the study based on the conclusions drawn from the specific objectives of the study;

### **5.4.1 Communication channels and information management**

The following recommendations could be drawn from the study findings;

Communication channels should always be given first priority upon considering ICT systems because they are the links, vehicles or means that allow for the flow of information from one point to another.

The Revenue Department Leadership and the Authority at large should ensure that the intranet and internet connections are always online and a backup plan to ensure they are restored as soon as possible in case of any failure.

The internal communication channels should be given uttermost priority because they enable effective communication within the organization thereby causing an ease in the operation of services to the external client.

### **5.4.2 Infrastructure and information management**

Based on the findings of the study, the following recommendations on the infrastructure and information management could be drawn;

The Department should continue to train their staff on the use of different hardware and software used in the organization. The software should continually be updated and using more upgraded hardware will also allow for a more effective use of the eCitie ICT system.

The Department should establish what other components comprise the infrastructure and how they interplay with the hardware and software. This will help identify what should be given the biggest priority and what to invest in the most at the end of the day.

The Department should ensure that there is indeed a one to one ratio of the infrastructure to staff so that there are no time lags during the running of operations to make more efficient and effective the information management process.

### **5.4.3 Social systems and information management**

The following recommendations could be drawn on social systems and information management in the Revenue Department.

The Department Authorities should pick up more interest in the relationships and interactions between the staff as these enable team work and team support

The Authority should continue to encourage top management or leadership engagement and involvement in the use of the different ICT systems as this encourages the staff to pick up the use of the systems.

## **5.5 Limitations**

The researcher faced some limitations. One of them was collecting the data was cumbersome because those who had it (Revenue Officers) were mostly field workers; getting a hold of them was extremely difficult. However the researcher mitigated the challenge by reaching out to the respondents very early before they went to the field or later on when they returned, this however delayed the data collection process.

Another challenge was the insecurity that always mostly happened at the organization because of different conflicts within and without the organization. The researcher resorted to meeting the respondents outside the office and outside working hours which was more costly. Finally there was a difficulty in accessing some required information at times. The researcher however considered various channels of accessing the information and upon clearly stating the objectives of the research, was allowed to gain such information.

## **5.6 Areas of further study**

From this study, it was found that the eCitie ICT system had a positive significant relationship with information management mostly influenced by communication channels used in a given unit. Despite a weak correlation between the social systems and infrastructure with the influence of the eCitie system, there is a need to carry out additional research on the effect of organizational culture as a whole as part of the social systems and available technical staff to run the infrastructure and how these would influence the relationship of ICT systems and information management in the end.

From this study, research should be done on a broader scale on the relationship between the eservices and their influence on how information is managed.

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# **APPENDICES**

## **APPENDIX I: RESEARCH QUESTIONNAIRE**

**Research Topic**: *The relationship between the eCitie ICT system and Information management in the Revenue Department at K.C.C.A.*

Hello,

Good day!

My name is Isaac Kisembo, a Masters researcher from the Uganda Management Institute and I’m conducting a study examining the relationship between the eCitie ICT system and information management in the Revenue Department at K.C.C.A.

I humbly seek your input to this study by completing the short questionnaire attached.

For purposes of anonymity and confidentiality, your identity will not be disclosed in the discussions of this study.

For all sections, kindly answer by putting a tick (**✓**) in the appropriate box or filling the spaces provided.

Thank you.

**SECTION A: BACKGROUND INFORMATION**

Note: For each of the questions, tick (**✓**) against your response or write your response in the blank space provided.

1. **Please specify your gender**
2. Female ( )
3. Male ( )
4. **What is your age bracket?**
5. 16-25 years ( )
6. 26-35 years ( )
7. 36-45 years ( )
8. Over 46 years ( )
9. **A. How long have you worked with the organization?**
10. Less than 2 years ( )
11. 2-5 years ( )
12. 6-10 years ( )
13. Over 10 years ( )
14. Other ( )

**SECTION B: eCitie SYSTEM AND INFORMATION MANAGEMENT.**

1. Please indicate your level of agreement, by inserting a tick (**✓**), with regard to the following statements linking the eCitie system and its impact on information management. Use the following scale: (**1**) Strongly Disagree, (**2**) Disagree, (**3**) Don’t Know, (**4**) Agree and (**5**) Strongly Agree
2. ***Information Management***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Statement** | **Response** | | | | |
| **1** | **2** | **3** | **4** | **5** |
|  | Information is always availed on time. |  |  |  |  |  |
|  | Information is acquired from the right people. |  |  |  |  |  |
|  | Information is acquired from the right people or sources. |  |  |  |  |  |
|  | Information is availed for reference when needed. |  |  |  |  |  |
|  | Information is availed in the right format. |  |  |  |  |  |
|  | Information is securely kept. |  |  |  |  |  |
|  | Information is classified according to subject. |  |  |  |  |  |
|  | Information is quickly updated upon new changes. |  |  |  |  |  |
|  | Information is disseminated to the right users. |  |  |  |  |  |
|  | Information is disseminated on time. |  |  |  |  |  |
|  | High user confidentiality is observed during information dissemination. |  |  |  |  |  |
|  | Information is ready for use when disseminated. |  |  |  |  |  |
|  | Information is fully utilized. |  |  |  |  |  |
|  | Information is used in the most appropriate manner. |  |  |  |  |  |
|  | Information is amendable for decision making. |  |  |  |  |  |

1. ***Communication Channels***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Statement** | **Response** | | | | |
| **1** | **2** | **3** | **4** | **5** |
|  | Clear communication channels exist between users. |  |  |  |  |  |
|  | Well known communication channels exist between users of the system. |  |  |  |  |  |
|  | The intranet is the quickest communication channel. |  |  |  |  |  |
|  | The intranet is mostly always online. |  |  |  |  |  |
|  | The intranet is the most reliable communication channel. |  |  |  |  |  |
|  | The internet connection is always reliable. |  |  |  |  |  |
|  | The internet is the fastest communication channel. |  |  |  |  |  |

1. ***Infrastructure***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Statement** | **Response** | | | | |
| **1** | **2** | **3** | **4** | **5** |
|  | Hardware resources are always available for use. |  |  |  |  |  |
|  | Hardware resources work in good condition. |  |  |  |  |  |
|  | Backup hardware resources are available. |  |  |  |  |  |
|  | The software is always up to date. |  |  |  |  |  |
|  | The software can be used remotely. |  |  |  |  |  |
|  | Users are fully equipped to use the software. |  |  |  |  |  |

1. ***Social Systems***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Statement** | **Response** | | | | |
| **1** | **2** | **3** | **4** | **5** |
|  | A peer to peer support exists between users. |  |  |  |  |  |
|  | The peer to peer support is quick to find. |  |  |  |  |  |
|  | The peer to peer support is always encouraged. |  |  |  |  |  |
|  | Top management always generously supports the budget towards ICT. |  |  |  |  |  |
|  | Top management is very supportive of the system users. |  |  |  |  |  |
|  | Top management highly use the system. |  |  |  |  |  |

**Thank you for your co-operation**

# **APPENDIX II: INTERVIEW GUIDE**

**Research Topic**: *The relationship between the eCitie ICT system and information management in the Revenue Department K.C.C.A.*

Dear respondent,

My name is Isaac Kisembo, a Masters researcher from the Uganda Management Institute and I’m conducting a study on the relationship between the eCitie ICT system and information management in the Revenue Department.

I humbly seek your input to this study by answering the questions attached in the following questionnaire.

For purposes of anonymity and confidentiality, your identity will not be disclosed in the discussions of this study.

Thank you.

1. What is the most commonly used communication channel used for sharing or distributing information in the organization?

………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Briefly describe what significant change or technology infrastructure you have witnessed introduced and implemented while at the organization.

………………………………………………………………………………………………………………………………………………………………………………………………………………

1. What were some of the causes of the changes in question 2 above?

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Did the changes in question 2 above have an impact on information management in the Department? Please briefly explain the effects, if any

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

1. What kind of support have you witnessed rendered towards eCitie as an ICT from the top management?

………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Have the different kind of culture, norms, values or social relationships facilitated the growth of this eCitie system? And if yes, briefly explain how.

…………………………………………………………………………………………………………………………………………………………………………………………………………….

1. What is your view on the relationship if any between eCitie and information management in the Revenue department K.C.C.A?

………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Has eCitie system increased the Revenue Department’s efficiency and effectiveness especially in terms of how information is managed? If yes, briefly describe how?

………………………………………………………………………………………………………………………………………………………………………………………………………………

**Thank you for your co-operation.**

## **APPENDIX III: DOCUMENT REVIEW GUIDE**

The list below shows the documents the researcher will be interested in.

1. Reports dated 2012 to 2016 on how Information and Communication Technology adoption and use was carried out in the Revenue Department at K.C.C.A.
2. Ministry of public service annual reports on information management in the different institutions for the period 2012 to 2016
3. SWOT and Achievements Reports from the Revenue Department for the period 2012 to 2016 which compares and contrasts the reve00nue department against other departments and how all this fits to achieving K.C.C.A’s Mission and Vision.
4. The ICT Policy of the Republic of Uganda which would help the researcher review Uganda’s position in Africa in terms regarding ICT Adoption.

## **APPENDIX IV: TABLE FOR DETERMINING THE SAMPLE SIZE FROM A GIVEN POPULATION (KREJCIE & MORGAN, 1970).**

| **N** | **S** | **N** | **S** | **N** | **S** |
| --- | --- | --- | --- | --- | --- |
| 10 | 10 | 220 | 140 | 1200 | 291 |
| 15 | 14 | 230 | 144 | 1300 | 297 |
| 20 | 19 | 240 | 148 | 1400 | 302 |
| 25 | 24 | 250 | 152 | 1500 | 306 |
| 30 | 28 | 260 | 155 | 1600 | 310 |
| 35 | 32 | 270 | 159 | 1700 | 313 |
| 40 | 36 | 280 | 162 | 1800 | 317 |
| 45 | 40 | 290 | 165 | 1900 | 320 |
| 50 | 44 | 300 | 169 | 2000 | 322 |
| 55 | 48 | 320 | 175 | 2200 | 327 |
| 60 | 52 | 340 | 181 | 2400 | 331 |
| 65 | 56 | 360 | 186 | 2600 | 335 |
| 70 | 59 | 380 | 191 | 2800 | 338 |
| 75 | 63 | 400 | 196 | 3000 | 341 |
| 80 | 66 | 420 | 201 | 3500 | 346 |
| 85 | 70 | 440 | 205 | 4000 | 351 |
| 90 | 73 | 460 | 210 | 4500 | 354 |
| 95 | 76 | 480 | 214 | 5000 | 357 |
| 100 | 80 | 500 | 217 | 6000 | 361 |
| 110 | 86 | 550 | 226 | 7000 | 364 |
| 120 | 92 | 600 | 234 | 8000 | 367 |
| 130 | 97 | 650 | 242 | 9000 | 368 |
| 140 | 103 | 700 | 248 | 10000 | 370 |
| 150 | 108 | 750 | 254 | 15000 | 375 |
| 160 | 113 | 800 | 260 | 20000 | 377 |
| 170 | 118 | 850 | 265 | 30000 | 379 |
| 180 | 123 | 900 | 269 | 40000 | 380 |
| 190 | 127 | 950 | 274 | 50000 | 381 |
| 200 | 132 | 1000 | 278 | 75000 | 382 |
| 210 | 136 | 1100 | 285 | 1000000 | 384 |

*Source: Krejcie& Morgan (1970, as cited by Amin, 2005)*

Note.—*N* is population size.

*S* is sample size.

# **APPENDIX V: INTRODUCTORY LETTER**

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# **APPENDIX VI: ANTI- PLAGIRISM REPORT**



