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Assessment of the prospects and challenges facing technology in internal audit in public sector: a case of Dodoma municipality and Chamwino district council

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ASSESSMENT OF THE PROSPECTS AND CHALLENGES FACING TECHNOLOGY IN INTERNAL AUDIT IN PUBLIC SECTOR: A CASE OF DODOMA MUNICIPALITY AND CHAMWINO DISTRICT COUNCIL

By

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dodoma, a dissertation titled "**Assessment of the prospects and challenges facing technology in internal audit in public sector: A case of Dodoma municipality and Chamwino district council"** in partial fulfillment of the requirements for the degree of Master of Business Administration of the University of Dodoma.

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Dr. Ahmed M. Ame

(Supervisor)

Date……

DECLARATION AND COPYRIGHT

I, Mashiku Mchele Makwani, declare that, this dissertation is my own original work and that it has not been presented and will not be presented at any other University for a similar or any other degree award.

Signature……

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DEDICATION

This dissertation is dedicated to my father Mr Makwani and My late beloved mother Kashinje Magege (May God be pleased with her) who laid the foundation of my education.

ABSTRACT

This study was established to assess the contribution of technology on internal audit in the public sector. The study has examined the perceptions of audit officers in application of information technology in audit issues, explored the contribution made by IT in implementing audit activities and investigated on the challenges facing the application of IT in internal audit issues in the public sector. The research used a case study methodology where multiple cases were taken and collected data and information using questionnaire, direct interviews and documentations. Participants involved in the study were management of the Chamwino district council and Dodoma Municipality, internal auditors and accountants. The collected data and information were mainly analyzed using explanation building and pattern matching.

The study identified that all the respondents agreed that that the auditors in the public sector are happy with IT audit because it assists them more than manual audit. Further, the study revealed that the IT audit is important in all audit activities. This is explained by its contributions such as; easier to track error and mistakes, helps to control fraudulent actions, easy to arrive into best opinion, mitigates risks, provides more accurate results and is cost effective and time consuming.

Furthermore, the study observed that lack of experienced and skilled personnel, shortage of work force; problems arising from the use of Epicor, management perceptions over internal auditors, lack of IT policy that limits system accessibility and unreliable electric power supply are likely to impede the application of IT in internal audit issues.

The study recommends that more staff should be employed, more training should be provided to staff, and staff should be sensitized to follow policies in the public sector. In addition, the management is advised should do away with the culture of

perceiving internal audit as a police unit. It should look at it as a friend in providing vital information for decision making. Moreover, the central government is requested to take a lead in ensuring that the IT policy is put in place.

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ABBREVIATIONS

CAG	Controller and Auditor General
LGAs	Local Government Authorities
LPO	Local Purchase Order
IT	Information Technology
IFMS	Integrated Financial Management System
SAS	Statement on Auditing Standards
AICPA	American Institute of Certified Public Accountants
PCAOB	Public Company Accounting Oversight Board
ICT	Information and Communications Technologies
COBIT	Control Objectives for Information and related Technology
PHC	Population and Housing Census
URT	United Republic of Tanzania
IPSAS	International Public sector Accounting Standards
MOF	Ministry of Finance

CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

This chapter explains the history of Information Technology and the modern internal auditing in the public sector environments. It begins with the background of the study, statement of the problem, research objectives and questions and winds up with the significance of the study.

1.1 Background to the Study

1.1.1 Historical Background of Information Technology in the Public Sector

Tanzania has a total population of 44,928,923 (URT, 2012), and it is amongst the East Africa's most populace country. The World Bank, the International Monetary Fund and bilateral development partners have provided funds to help rehabilitate Tanzania's economic infrastructure, and to alleviate poverty. The key challenge was to put the country's accounting and financial management on a firmer footing by introducing control on commitments, and expenditures through an appropriate approval hierarchy and a control system specific to the public sector.

The convergence of information and technology, the influence that technology has on accounting, auditing and the need to efficiently manage information, have made Information Technologies (IT) to be among the highest strategic priorities in public sector in Tanzania (URT, 2007).

The first computer in Tanzania, an ICT 1500, was installed in the Ministry of Finance in 1965. By 1974, there were seven computers in the country and the Ministry of Finance had already acquired a new computer, an ICL 1900. The

introduction of computers was beset by problems in almost all installations; installations were totally dependent on foreign experts. In some cases, these experts were not adequately qualified or experienced. Applications tended not to be properly documented and thus could run only if these foreign experts were around; when they left the country the applications stopped functioning. After the failure to computerize the government accounting system and the consequent heavy financial loss, the government came under great criticism from members of parliament and the general public in which they pointed out other failures. In 1974 through the Government Gazette, the government banned the importation of computers and all related equipment into Tanzania (URT, 2007).

The Ministry of Finance later appointed two teams to carry out a study of the viability and utilization of computers in the country. The first team was made up of members from the National Institute of Productivity and the International Labour Organization of the United Nations. This team advised the government to formulate a national policy on computer technology (acquisition and utilization), and a national training programme in computer science.

The second team was called the Government Computer Task Force. Where most of its members came from the Government Computer Service Centre at the Ministry of Finance. The team was to report on computer utilization in existing installations, applications running on the computers, the manpower base in the country and those computers that should be surrendered to suppliers. The team recommended that a computer advisory committee be formed to advise the Minister for Finance on computer matters, and that the government should lay down detailed guidelines on computer acquisition in Tanzania. The team advised the Minister returning any damaged computers to suppliers. According to (URT, 2007), the government adopted

all the recommendations from the second team and implemented them. It adopted some of the recommendations of the first team but did not implement them.

However, attempts by the Government in most public sectors, especially Local Government Authorities to integrate IT in their operations resulted to an introduction of accounting and auditing software commonly known as EPICOR (URT, 2008).

1.1.2 Historical perspective of internal audit in the public sector

The history of internal audit in Tanzania started during the colonial era but it was manual audit, and was based on involvement of paper work. Internal audit is an independent appraisal function within a Local government authority, for the review of activities as a service to all levels of management. It is a control that measures, evaluates and reports upon the effectiveness of internal controls, financial and others as a contribution to the efficient use of resources within a Local Government Authorities (URT, 2006).

The manual audit was introduced to bring together general information relevant to the work of the audit section and all instructions issued to internal audit staff, so that the aims and policies of internal audit function are clearly laid down and a uniform and consistent approach can be achieved. The Local Government Finances Act No.9 of 1982 requires the accounts of every District and Urban council to be audited internally by an internal auditor employed by the authority concerned. Internal audit is part of the internal control system established by the council management. (URT, 2005).

1.2 Statement of the problem

Financial Sector reforms in Tanzania have been under way since 1992. While large parts of the financial management system continue to be paper-based, the

Government has been progressively computerizing various aspects of its financial management functions and moved from a manual accounting system toward a computerized system. In the past, Ministries, Departments and Agencies (MDAs) originated and effected their own payments through a decentralized system, and this inhibited control of public resources (URT, 2007).

The Integrated Financial Management System (IFMS) was initially introduced as part of the Civil Service Reform Programme in 1996 in order to strengthen expenditure management. By 1999, all 43 of the MDAs had been incorporated into the system, and the 12 revenue collection points of the Tanzania Revenue Authority in Dar es Salaam were brought on-line in July 2001. Customized versions of the accounts payable, accounts receivable, general ledger, cash management and purchase order modules have been installed for Ministries in Dar es Salaam. As a result, all central government budgetary expenditure are now implemented through the system (WB, 2002).

Information Technology (IT) assists the Local Government Authorities (LGAs) to transform the way they operate and support public service delivery initiatives and improved efficiency, functionality and/ or automation. While technology and related improvements present LGAs with efficient services delivery, they also involve new or enhanced risks. LGAs in Tanzania have started using information technology to improve the quality and effectiveness of internal controls and audit report.

LGAs, for instance in Dodoma Municipality, Prime Minister Office – Regional Administration and Local Government and Treasury, within five years back started using EPICOR accounting package to record, classify, posting and preparation of the financial statement (URT, 2007).

Epicor Enterprise Financials as a customizable and scalable solution was chosen as

the universal framework across all Tanzanian governmental Ministries, Departments and Agencies. According to (Nyoni, 2007), the Implementation of an Epicor-based Integrated Financial Management System (IFMS) as a single system across the Government provides critical controls over commitments and expenditures, consolidation of the national accounts with accurate reporting, rapid integration of additional government offices and rapid skills transfer. The Epicor-based IFMS has helped Tanzania to significantly eliminate over expenditure, contain the country's debt burden and restore confidence of international development partners (URT, 2007). This effort combined with the solid economic policies of the Tanzania government has led to real GDP growth of more than 5.2% in 2004. Despite all the challenges surrounding the IFMIS system functionality, architectural incompleteness and short of some key expected benefits, the overall implementation of EPICOR based IFMIS has been quite a remarkable and impressive achievement for the Tanzania Government (Richard, 2009).

According to (URT, 2011), the assessment of accounting systems shows that, many Councils' IFMS/Epicor accounting package are either not operational or their utilization is still at low levels. Also, we noted lack of refresher and user training on IFMS/Epicor, EPICOR not compliant to IPSASs and implementation of Epicor Version 9.02 did not fully meet the LGAs requirements. Our review indicates that the efforts made to strengthen the Internal Audit function, there are still capacity gaps that need to be addressed in order to make the internal audit function more effective so as to achieve the required outcome (URT, 2011).

However this study wishes to understand the relative perceived IT contribution (EPICOR) and challenges of information technology in the internal audit towards

improving the quality and effectiveness of internal controls in terms of revenue and expenditure patens.

1.3 Research objectives

The main objective of this study was to find out the prospects and challenges facing application of Information Technology in the internal audit function in public sector. Specifically, the study intends to meet the following objectives;

i. To understand the perceptions of audit officers with regards to the application of Information Technology in audit issues.
ii. To understand the contribution made by IT in implementing audit activities.
iii. To investigate on the challenges facing the application of IT in audit activities.

1.4 Research Questions

In order to meet the above stated objectives, this study aimed at finding answers to the following research questions.

i. What are the perceptions of audit officers in the application of Information Technology in audit issues?
ii. What is the contribution made by IT in implementing audit activities?
iii. What are the challenges facing the application of IT in the internal audit issues?

1.5 Significance of the study

The study has a number of contributions to make in the respect of knowledge, policy and management practices. For the case of knowledge contribution, the finding of the

study has improved our understanding on the use of public money and efficiency in the delivery of services. With respect to policy application, the findings will assist the policy planners to formulate and implement policies that will generate improved development performance. Finally, the study findings may be of great importance to management as it will help to build IT awareness to most controls that relate to the effectiveness and efficiency of various management decision making processes which are relevant to the internal audit or assessment of control risk in order to optimize performance.

1.6 Scope of the Study

The study was conducted in Dodoma Municipality and Chamwino District council because these two places they apply IT in their audit functions. In additional, it was found convenient to conduct this study in Chamwino and Dodoma Municipality.

1.7 Layout of the Research Report

In this chapter, background of information to the problem is provided. Statements of the problem to the study, objectives and significance of the study all have been described. Chapter two gives the definition of key terms, theoretical perspectives, and empirical review of literature and then summarizes conceptual framework that guided the study. At the end of this chapter knowledge gap is given signifying the needs for study in the context of Tanzania environment. Chapter three provides a detailed discussion on the way the research was conducted. It shows the design employed, data sources and sample size and selection of the units of analysis together with sampling methods used. The chapter close with the matter pertaining to data collection, analysis techniques and data quality issues. Chapter four presents the

research findings as guided by research objectives laid down in chapter one. It gives precise interpretation and discussion of the findings. Finally, chapter five is the last one that concludes the findings of the study. It points out the contribution of the study by providing theoretical and policy implications. The chapter ends up by showing the limitation of the study and finally provides the way forward for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The Literature review of this study will focus on the earlier introduced research objectives, the review will analyse how different authors recommend best practice on IT audit process. The chapter begins with the description of each of these concepts and the theories related to IT in audit process. Later, it presents the empirical studies on the issues related to IT strategies in the internal audit systems which cover both on the contributions and challenges of its application in the public sector. The chapter winds up with conceptual framework of the study.

2.1 Conceptualization of Key Terms

This part will focus on the earlier introduced research objectives, the review will analyse how different authors recommend best practice on IT audit concepts.

2.1.1 Internal audit

In order to appreciate the role and responsibilities of internal auditing, it is worth noting the changes in definitions to reflect the changing role, responsibilities and activities. According to Patrick (1998) Auditing is a systematic process of objectively obtaining and evaluating evidence regarding assertions about economic actions and events to ascertain the degree of correspondence between those assertions and established criteria and communicating the results to interested users. By identifying the changing role of internal audit, it forms a base for surveying how

the internal auditor views these changes in light of practical experiences working in the public sector.

According to CIAA (1999) Internal auditing is an independent, objective, assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve effectiveness of risk management, control, and governance process'. The role of internal audit is to provide independent assurance that an organization's risk management, governance and internal control processes are operating effectively. Internal auditors deal with issues that are fundamentally important to the survival and prosperity of any organization. Unlike external auditors, they look beyond financial risks and statements to consider wider issues such as the organization's reputation, growth, and its impact on the environment and the way it treats its employees (IIA-UK, 2000). The current definitions for internal audit therefore imply that the role of the internal auditor has moved on from that of an appraisal, monitoring and evaluating function, to that of a providing assurance, consultancy, assistance and advice.

2.1.2 Useful Tools of Trade for Auditors

In the past, where large volumes of transactions were involved, auditors relied on samples of transactions to perform their tests (Arens and Loebbecke, 1994). Within the IT audit literature, there are a variety of resources to guide practitioners at the operational level. For example, the Information Systems Audit and Control Association's (ISACA) Control Objectives for Information and related Technology (COBIT) provides a detailed series of potential controls and checklists. Additionally, there are many publications (Davis, 1997) and textbooks (Hall and Singleton, 2005;

Hunton et al., 2004) which provide overviews of IT audit processes and specific direction for audit tasks.

Technology allows them to perform test from 100% records drawn from the clients system. According to EDPACS (2000), the majority of leading software now enables users to download data into transportable files, such as Excel, Lotus, or ASCII text. Similarly, using auditing software, data can be downloaded from accounting programs into laptop computers where auditors can perform their audit functions more easily and with little inconvenience to the client. As part of Computer Assisted Audit Tools and Techniques (CAATTs), auditors can use interrogation software. This may include many types of tools and techniques, such as generalised audit software, utility software, test data, application tracing and mapping, and audit expert systems.

2.1.3 The Future of IT Auditing

The changes in technology are continuous and it is never known when there will be a constant application of non-volatile technology.

The future is, of course, difficult to predict but certain trends seem inexorable. Globalisation; aggregation of providers; the development of niche markets; and bewildering array of information sources on one hand and commercial homogenisation on the other, are examples of such trends (Scammer, 1999). Market competitions also add to the need for modifying IT products and hence more changes in technology. According to Jean (2003), auditors can expect most accounting transactions and other data to be in electronic form without any paper documentation because electronic storage becomes more efficient. In this case auditing can be influenced by technology in limitless ways, and how it will be changed is subject to

match conjecture. Siltow (2001) asserts that, auditors as well as other professions are the most pressing question for the future. Accordingly, it is not how information technology will change, but how the process will be managed. In addition to that, is how will the profession manage to cope in terms of standards, skills and tools of audit.

2.1.4 The difficulties of IT-Audit

In the view of information technology (IT), internal auditor are faced with two problems or difficulties which need them to think of clearing them (Brown, 2002):

1) How to give assurance that the strategic risks associated with the management's decision to computerize are properly managed (IT audit),and;
2) How to audit the financial information that is being processed using computers (Auditing in computerized Information Systems).

2.1.5 Risk and Security concerns

Despite the fact that improvements in IT give organizations efficient methods of recording, processing, storing and transmitting information, there are major concerns that come with these new developments. Similarly, Lynch and Gomaa (2003), argue that while on one hand the infusion of progressively advanced information technology into business organisations can improve the capturing, processing, and reporting of critical decision- making information across the enterprise, on other hand it can create an environment that is more vulnerable to fraud. Consequently, auditors can be in dilemma on which system to select. This can even lead to what is known as duplication of task performance (Jean et al 2003). That is using both systems (manual and IT-related).

In the past few years, there was little access to corporate systems of corporate data via networks, terminals or workstations, provided the computer premises were physically secured and the whole system of inputting and processing was controlled and tracked (Dormer and Corlett, 2001). But due to the emergence of end-user processing for all in the 1980s, the situation changed. The remote access of networks and sharing of data, and later the rise of terrorism, hacking, viruses and the provision of new ways of performing inter-business processing and providing new network-based customer services have emerged. Everyone wants security, since the new technology is not only useful to the legitimate users and inventors but also abusers are working 24 hours to outperform new controls.

To stay viable, changes are inevitable, however, it is also true that each time when a system is changed, replaced or updated, organisations run a risk of weakening the underlying internal controls and opening a door to error or fraud as it may take some times for users of a new system to be conversant with it. It may however, take a couple of times for auditors to familiarise themselves with the new system. The benefits that are associated with incoming technology often attract the management to rush to it without first seeing and being pre-cautionary to the associated risk of its coming. Moreover, the rush for these benefits has a syndrome of making most organisations disregard the maintenance of controls.

The weakening of controls and threat of new kinds of vulnerability touches the core of internal controls bestowed under the responsibility management who in turn rely on (internal) auditors to provide assurance.

2.1.6 Risk in IT Environments

Organizations that use IT face three kinds of risks (Chambers and Rand, 1997) namely: strategic, security and operational risks. They are further outlined below as follows.

- **Strategic IT Risks**

Strategic Information Technology (IT) risk is when IT is used as the enabler to key processes used by the organization to develop, deliver, and manage products, services, and support operations e.g. in banks.

- **Security Risks**

Security here means confidentiality, integrity and availability of information to right person, time and place. Security risks come from hackers, interested computer novices, dishonest vendors or competitors, disgruntled current or former employees, organized crime, or even agents of espionage.

- **Operational IT Risks**

Operational risks come into three types:

  - First is the volume forecasts risks, this is when the organization misjudge the level of activity and as a result may acquire IT facilities that do not match to its volume of operations;
  - Secondly, is on the flow of Management Information Systems (MIS) that happens when IT becomes a hindrance in passing information from one part to another, and;
  - Third are risks related to outsourcing of IT services

2.1.7 Information Technology Control Activities

Vanstapel (2004) in the guidelines for internal control standards for the public sector expresses that information systems imply to specific types of control activities. Actually information technology controls consist of two broad groupings, which are general controls and application controls as discussed below.

a) General Controls

General controls are the structure, policies and procedures that apply to all or a large segment of an entity's information systems - such as mainframe, minicomputer, network, and end-user environments - and help ensure their proper operation. They create the environment in which application systems and controls operate. General controls relate to the overall information-processing environment and has a large effect on the organization's computer operations. Types of general controls include:

- Organizational Controls that includes segregation of duties controls;
- Data Center and Network Operations Controls that ensures the proper entry of data into an application system and proper oversight of error correction;
- Hardware & Software Acquisition and Maintenance Controls that includes controls to compare data for accuracy when it is input twice by two separate components;
- Access Security Controls that ensures the physical protection of computer equipment, software, and data, and is concerned with the loss of assets and information through theft or unauthorized use;
- Application System Acquisition, Development, and Maintenance Controls that ensures the reliability of information processing, and;
- Managerial controls to ensure that there is no unauthorized access to IT assets

According to (Rand,2007), the major categories of general controls are:

i. Entity wide security program planning and management that provide a framework and continuing cycle of activity for managing risk, developing security policies, assigning responsibilities, and monitoring the adequacy of the entity's computer-related controls.

ii. Access controls which limit or detect access to computer resources (data, programs, equipment, and facilities), thereby protecting these resources against unauthorized modification, loss, and disclosure. Actually, access controls include both physical and logical controls.

iii. Controls on the development, maintenance and change of application software that prevent unauthorized programs or modifications to existing programs.

iv. System software controls that limit and monitor access to the powerful programs and sensitive files that control the computer hardware and secure applications supported by the system.

v. Segregation of duties which implies that policies, procedures and an organizational structure are established to prevent one individual from controlling all key aspects of computer-related operations and thereby conducting unauthorized actions or gaining unauthorized access to assets or records.

vi. Service continuity controls that help to ensure that when unexpected events occur, critical operations continue without interruption or are promptly resumed and critical and sensitive data are highly protected.

b) Application Controls

Chambers (1997) points that application controls and the manner in which information flows through information systems can be categorized into three phases

of a processing cycle namely, input, process and output. Input is where data are authorized, converted to an automated form, and entered into the application in an accurate, complete, and timely manner;

Processing is where data are properly processed by the computer and files are updated correctly;

Output is where files and reports generated by the application reflect transactions or events that actually occurred and accurately reflect the results of processing. Output also concerns about the extent to which reports are controlled and distributed to the authorized users.

Rand (1997) discusses that application controls may be categorized by the kinds of control objectives they relate to, including whether transactions and information are authorized, complete, accurate and valid. Authorization controls concern the validity of transactions and help ensure transactions represent events that actually occurred during a given period. Completeness controls relate to whether all valid transactions are recorded and properly classified. Accuracy controls address whether transactions are recorded correctly and all the data elements are accurate. According to Rand (1997), controls over the integrity of processing and data files, if deficient, could nullify each of the above mentioned application controls and allow the occurrence of unauthorized transactions, as well as contribute to incomplete and inaccurate data. Application controls thus include programmed control activities, such as automated edits, and manual follow-up of computer-generated output, such as reviews of reports identifying rejected or unusual items.

Brown (2002) suggests that, General and application controls are interrelated and both are needed to help ensure complete and accurate information processing. Because information technology changes rapidly, the associated controls must evolve

constantly in order to remain effective. This becomes imperative because the audit's primary role, except in areas of management advisory services, is to provide a statement of assurance as to whether adequate and reliable internal controls are in place and are operating in an efficient and effective manner.

2.1.8 Practicing information technology auditing for fraud

Dale and Ellis (2008) model fraud as an incidence that is often difficult to detect and even harder to prove in a court of law. The authors provide insight into common practices applicable to practicing professionals who are auditing for fraud in an information technology (IT) environment. Whether or not an auditor is auditing for fraud, all auditors are expected to assume responsibility for detecting fraud and assessing antifraud programs. (AICPA, 1999) emphasizes auditors exercising their professional skepticism to identify risks that may result in a material misstatement due to fraud. (PCAOB, 2001) also requires auditors to evaluate fraud-related activities as a component of an internal audit function. With rapid advancements in information communications and technologies (ICT) and an increasingly mobile accessible environment (i.e., wireless networking), it is no surprise that companies are increasingly reliant on IT equipment and applications for the delivery of operations. With this regard, IT audit provides a vital role in the prevention, detection and investigation of fraud.

(ACFE, 2007) argues that an effective system of internal control will help prevent material misstatements, whether due to error or fraud, from occurring in a company’s financial statements. In fact much recent work has gone into ensuring that controls are in place, documented and tested to provide evidence that they are designed and operating effectively (AICPA,1999). However, all this work is for naught if

employees are able to circumvent the control structure. A recent study by the Association of Certified Fraud Examiners (ACFE) documented the limitations of internal controls for fraud detection when it found that internal controls were not the first but the fourth most common way to detect fraud (ACFE, 2007). Thus, to make a valuable contribution toward fraud control, requirements need to be elaborated on and understood by the IT auditor with respect to the various IT processes and types of fraud, each of which contributes to the development of fraud risk assessment.

2.1.9 IT Processes

Control Objectives for Information and related Technology (COBIT) provides excellent coverage of IT processes. IT process, according to COBIT, can be classified into one of four specific domains:

- Plan and Organize (PO)

Effective information security requires a comprehensive, integrated set of security, management and governance processes to plan, organize and counter the organization's information security risks.

- Acquire and Implement (AI)

In acquisition and implementing the objectives for operating IT systems, inputs need to be transformed into outputs to measure and satisfy the requirements.

- Deliver and Support (DS)

In delivery and supports, supports security needs to be addressed as a part of every business function. While only one process is specifically devoted to security, control objectives that will provide excellent coverage of processes.

- Monitor and Evaluate (ME)

Monitoring as a procedure and practice structures designed to provide reasonable assurance that business objective will be achieved and undesired events will be prevented or detected and corrected.

2.2 Theoretical Framework

This section reviews the appropriate theoretical framework for the study. Accordingly the Syde"s theory of Morden paradigm of internal audit was deemed modest in explaining issues of internal audit. The theory is presented in black and white below.

2.2.1 Syed's theory of Modern Paradigm of Internal Audit

In the modern paradigm of management the role of internal auditors has changed significantly. Internal audit has evolved from being part of the internal control system into a service that adds value by providing assurance and consulting services to the management. The theory of modern paradigm was invented by Syed Muhammad Ali Shah in 2002, the theory talks about the analysis of different relationship between feature complexity and technology acceptance in the internal audit profession. As feature complexity increases, feature usage decreases due to a decrease of perceived ease of use. Technology features have a large impact on technology acceptance in the internal audit profession as influencing system usage and its contributions to internal controls.

In justifying the evolution, Syed (2002) points out that developments in the public sector and corporate failures have raised the profile of internal audit and widening of their role from their traditional protective or compliance audit role to include

constructive audit role of management/operational audits; management consultancy and educational roles to assist management in all areas. Within this expansion of internal audit roles, several debatable issues have arisen, one being the balance between assurance and consulting services relating to their objectivity and independence, and the other, the level of internal audit involvement into crucial project and system designs and implementation.

In fact, Syde"s theory has been used by various scholars (example, Bagranoff and Vendrzyk, 2003; Daigle etal., 2005; Messier et al., 2004; Curti, 2008) in IT based studies. However, little has been done by the theory to consolidate and rationalize the various factors into a framework of IT audit quality. Recent work by Merhout and Havelka (2005) towards developing a theory for the IT audit processed utilized group data gathering techniques with IT audit practitioners, internal and external, to create a framework of logical factors related to IT audit quality. Additionally, Merhout and Havelka (2005), intentionally focus on IT auditors in their data gathering.

2.3 Empirical Literature Review

Mwasalwiba (2003) argues that less internal audit involvement was one among several causes of failure in IT strategies in business organizations. It is necessary to find out what type and level of involvement will both help the process succeed and at the same time maintain internal audit's independence in future audits. Advocating internal audit involvement, The IIA-UK and Ireland, (2000) points out that the modern and most likely, future scope of internal audit involves, to a greater or lesser degree, an amount of consultancy and hence value adding activity. Based on that, it is suggested that, it is important to note that management of any development project is crucial to the success of the business and the involvement of internal audit could help to improve the effectiveness of the project. This view is of the same opinion

with that of Maher and Akers (2003) that, the development of the role and management's expectations of the internal audit function as related to information technology has been an evolutionary process. In a study that sampled CEOs to ascertain their opinions on internal audit's involvement in planning issues and IT systems usage and development, including whether internal auditors' independence is compromised by such involvement, the result obtained was in agreement with the prevailing sentiments that internal auditors should only be involved, primarily, in testing the accuracy of the IT project or software to give assurance that objectivity and independence are observed. This argument placed more importance on auditor independence than any other issue in relation to the IT planning process. With this regard, further, it is advised that to maintain independence, internal audit should only act as a consultant to provide information on controls that need to be considered as the planning process evolves.

Anderson (2003) on the study titled "Assurance services on IT planning" explains the assurance as an objective examination of evidence for the purpose of providing an independent assessment on risk management, control, or governance processes for the organization. To provide such services, Ruud (2003) argues that, internal auditors need to be independent and objective, implying integrity, competence, due care, and ethical behavior. The Internal audit section is well placed in performing its assurance duty on new initiations, like IT planning and usage, by conducting reviews and pre-event audit services. Its' review in IT development should focus on assessing that, there are adequate controls set within the IT strategic planning project. Internal audit can have a positive effect on the project by providing assurance that control objectives are achieved (IIA-UK and Ireland, 2000). Further, internal audit may

provide such assurance through a post implementation review of the IT strategy by reviewing both business and technical objectives.

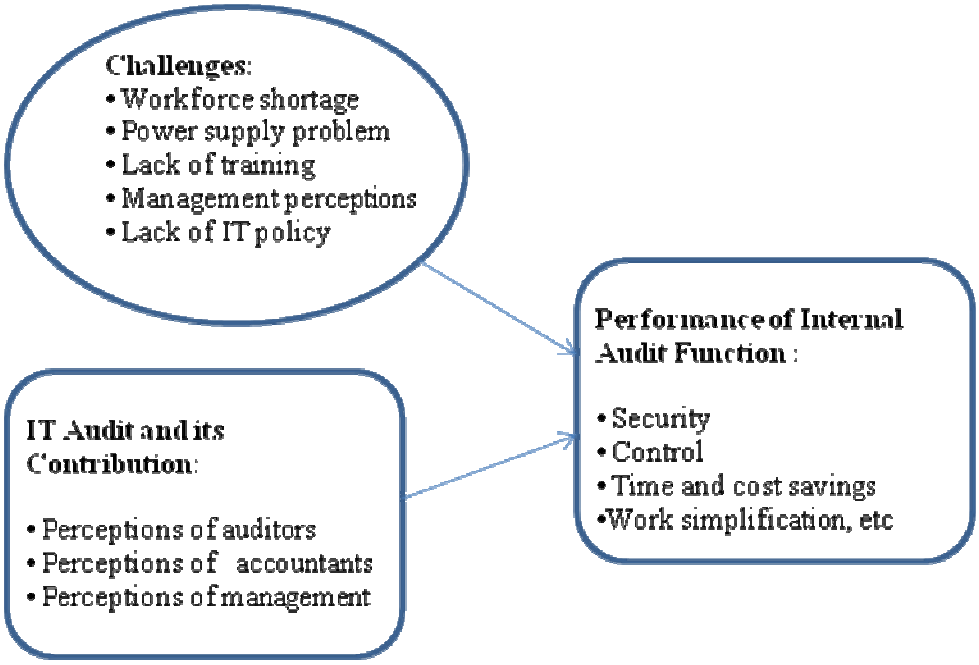
Davies (2001) in his study, comments the importance of traditional ticking in this era of advanced information technology. He states that, traditional ticking and vouching is still important to auditors. Audit has evolved due to the development of techniques that have built on past knowledge and experience and as such the audit itself has changed without becoming a "new" service. For this reason, everything learnt in the past is still important although not placed in such a predominant position.

Stewart (cited in Williams, 2000) argues that "an auditor could not comply with the Auditing Practices standards, unless the audit was IT-based". It is a fact, however, that for many private and public sector organizations, there is now a complete dependence on IT services. One of the most critical issues they now face is how to manage, control and direct IT- especially given the difficulties of finding the right, qualified people (Thomas, 2000).

2.4 Conceptual framework

The conceptual framework that guided this research is presented below as figure 2.1. It was generated by putting together the various literature reviewed.

Figure 2. 1: Conceptual Framework for the Study



Discussion of the Framework

As shown in the diagram above, it is anticipated that IT audit has many contributions to make in order to enhance internal audit function performance. Such performance enhancement include but not limited to security management, fraud control, time and cost savings and work simplification as shown in the diagram. However, it is not known how key stakeholders (managers, auditors and accountants) perceive the IT audit which is one of the areas of contention that this study intended to study. While embracing IT audit in order to reap its contributions, there are numerous challenges which act as barriers in smooth IT audit implementation. These are also shown in the diagram. They also include but not limited to power interruption, workforce shortage, lack of training, management perceptions and absence of IT policy. The arrows shown in the model suggest some link or contravening effect of issues raised in one group against those in another.

2.5 Conclusion

Literature has disclosed that there are prospects and challenges facing Technology on internal audit units. Despite the contribution of IT audit, there is a real danger that if the challenges shown in the literature are not encountered, they might outweigh the prospects. Apart from that, literature is silent on the perceptions of the key stakeholders on the application of IT audit. It is on that basis that this study was put in place to address such concerns including investigating further on more challenges and contributions which emanates from the study context. There were expectations of coming up with recommendations which would improve the existing situation.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter is about the methodological issues regarding this study. It begins with discussion on the research setting – the place where the research was actualized. This is followed by the presentation of research design together with research approach. Furthermore, the discussions on the selection of sampling units and sample size, data type and the collection methods are presented. Finally, the chapter presents data collection procedure, data analysis techniques employed and winds up the issues of data quality (reliability and validity concerns).

3.1 Research Setting

The study was conducted at the Dodoma municipality and at Chamwino district council. These places were selected because of three main reasons. First, in these two places they apply IT in their audit functions. Secondly, the areas were selected because of convenience which according to Kothari (2004) is a strong justification to select setting for conducting a research. Thirdly, the setting for this study was selected because there was a possibility to access data and information necessary to fulfill the research objectives. In other words, there was an opportunity to learn. According to Stake (1998), opportunity to learn is the most important consideration to be made when selecting a case for studying.

3.2 Research Design

This study has essentially adopted a multiple embedded descriptive case study design. It was multiple embedded because it has been staged at two districts. According to Strauss (1987), multiple embedded case studies are good because they facilitate comparison especially if the cases selected are not identical. Further, this case study design is descriptive because the attempt in study was to describe a situation regarding what happens as argued by Yin (1994). The design was found out to be proper due to the requirements of the set research questions, resource availability and convenience to the researcher as is the case when considering appropriateness of research design for a study (Saunders et al., 2000).

3.3 Research Approach

The main stream research approach might be classified as qualitative or quantitative (Saunders et al., 2000; Remenyi et al., 1998). While quantitative research approach is rooted from the natural sciences and thus based on measurements of quantities, qualitative approach originates from social sciences is based on how people experience real life situation and is based on qualitative data and information. However, recent researchers have been advocating the use of mixed methods approach (Chung, 2000). For the advantage of triangulating methods as being one of the strength of case study design, this study adopted the mixed methods approach. In this particular approach, there has been triangulation of methods right from sampling to data analysis techniques. This was found out to be modest in order to improve validity of the research findings.

3.4 Selection of Sampling Units and Sample Size

This study has collected primary data and information from three types of respondents, namely auditors, accountants and executives. Both auditors and accountants were selected based on opportunity to learn the approach as suggested by Stake (1998). That is, all auditors and accountants were requested to participate in the study. Those who agreed were taken on board, while those who declined were not forced. Auditors also were found to be relevant to the subject for this study because they are the ones undertaking the audit assignment. On the other side, accountants were found as relevant information givers for the study because they are the ones whose accomplishments are audited. For the case of executives, their

selection was based on purposive sampling. They were actually selected based on the positions they hold because they are in fact information rich.

Altogether, the number of participants who took part in this study was 37, out of them two were executives, 14 were auditors and the remaining 21 were accountants. Accordingly, this sample size was found to be adequate because according to Hogg and Tanis (1979), in most situations which require analysis and reporting, 25 to 30 observations would be adequate. Further, this study would not count numbers ostensibly because it was more qualitative than it is quantitative. In fact, data collection would be more governed by saturation as recommended by Gummesson (2000).

3.5 Data Type and the Collection Methods

This study employed both primary and secondary data. Primary data was obtained from three types of respondents as described above. Moreover, the data were collected using two different techniques. With respect to data and information obtained from auditors and accountants, questionnaire method was employed. Data and information from the executives was gathered using direct interview technique. The questionnaire method was adopted because of its strengths which include making the data collected become more standardized in nature, hence allowing easy comparison (Vaus, 1996). In addition, questionnaires are so familiar to most people that nearly everyone has had some experience of completing questionnaires and that they generally do not make people apprehensive. Further, questionnaires, especially when are delivered in hand and then collected as was the case for this study, increases response rate (Saunders et al, 2000; Lohr, 1998). Furthermore, questionnaires reduce bias due to their uniformity in question presentation.

On the other side, direct interview technique was employed to executives because of three reasons which are; 1) there were only two executive involved in the study and data required from them was mostly qualitative; 2) These people are normally pressed with time, if any other data collection method was used to collect data and information from them, it would not have worked out properly, and; 3) It was purposely done in order to avoid good wording syndrome from the executives (Ame, 2005). The direct interview techniques was found proper to encounter this dilemma because, it could always be exercised well by asking additional and cross checking questions.

According to Fisher (2004), common methods used for data collection are interviews, questionnaire, panels, observations, documents and many others. Out of these recommended methods, this study adopted two of them in the collection of primary data.

Apart from primary data, this study employed secondary data as well. For this case, various sources were consulted. These include; books, journal articles, internet based materials, some reports from the organizations which formed the platform of the study, etc.

3.6 Data Collection Procedure

The first thing that was done before data collection was to prepare the required instruments used to gather the data and information pertinent for fulfilling the research objectives. This was followed by pilot testing the instruments in order to ensure presence of validity and reliability of data to be collected. It is stressed by several authors that pilot testing of the study instrument is necessary and especially for qualitative based study (Yin, 1994; Fink, 1997; Janesick, 1998) because the

measures (validity and reliability) cannot be assessed afterwards. This was done by conveniently selecting some friends to fill in the forms to observe if the questions put forward were clear. After pretesting was accomplished, the instruments were then amended for field work. The field work itself started after permission was granted by the office of Graduate Studies.

3.7 Data analysis

Zikmund (1984) points out that describing responses or observations typically is the first form of analysis. The research design applied in this study resulted into two sets of data: quantitative data from the questionnaire and qualitative data from the in-depth interviews. Thus, the data analysis techniques used in this study were mainly qualitative. However, quantitative data analysis methods were also minimally utilized. For the case of qualitative data analysis, the principal techniques recommended by qualitative research experts were adopted (Yin, 1994, Miles and Huberman, 1994, Janesick, 1998). These were; pattern matching of data and information from accountants, auditors and executives. This method also helped to validate the data and information obtained. Other methods were comparison of data and information between the two cases and strong explanation building where discussion was put forward tactfully to describe and support the results obtained.

As far as quantitative data analysis is concerned, data was analyzed using frequencies, percentages and tables. In generating frequencies and percentages SPSS software was utilized.

3.8 Data Reliability and Validity

Reliability refers to the consistency with which repeated measures produce the same result across time and across observers (Patton, 2002). Also, Joppe (2000) defines reliability as the extent to which results are consistent over time. Validity on the other hand, is the extent to which a test measures what it claims to measure (Saunders et al., 2000). Babbie, (1992) defines validity as the extent to which the concept one wishes to measure is actually being measured by a particular scale or index, i.e. the extent to which an account accurately represents the social phenomena to which it refers. For his case, Patton, (2002) states that validity and reliability are two factors which any qualitative researcher should be concerned about while designing a study, analyzing results and judging the quality of the study. This statement is further supported and emphasized by Appiah-Adu et al., (2000), who asserts that validity and reliability are more qualitative in nature than they are quantitative. Based on that, some qualitative measures need to be taken before data collection to ensure presence of the variables.

Following from the above discussion, this study undertook the following measures in order to ensure presence of reliability and validity of data and information collected.

c) The study triangulated methods of data collection (questionnaires, interviews and documentary review were employed);

d) The study triangulated sources of data (data was collected from auditors, accountants, executives and from documentary sources), and;

e) Data collection was preceded by pilot testing as proposed by Yin (1994); Babbie (1992); Janesick (1998) and Fink (1995).

3.9 Ethical Issues Consideration

Data were collected after permission was granted by the responsible authorities of the University of Dodoma. Further, confidentiality of data and information has been observed throughout the research process.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presents results and findings of the study. The chapter begins with presentation of the case (Chamwino District and Dodoma municipal councils being the case). Thereafter, the chapter presents the findings of the study by following the chronology of the research objectives.

4.1 Background information about the cases

This section provides a short description about the cases where the study was staged. The description covers important issues like location, physical characteristics, climate, administrative setup, population, economy, etc.

Case 1: Dodoma Municipal Council

Dodoma municipality was established in July, 1980 after a series of landmark decisions. The government declared Dodoma Township, new national capital in 1973. One year later, the then Dodoma district was split into two new administrative districts as Dodoma urban and Dodoma rural, with the former having a township council. In July, 1980, Dodoma town was granted a municipal status. Therefore the then Dodoma township council became Dodoma municipal council.

Location

Dodoma municipality is the capital of the united republic of Tanzania and substantive place of the union parliament. It is one of the seven administrative districts that make up Dodoma region. Dodoma municipality is located in the centre of the region, lying at latitude 6.00^0 and 6.30^0 South and longitude 35.30^0 and 36.02^0 East. It is 486 kilometres East of Dar es salaam;-the Tanzania commercial and industrial city, and 441 kilometres South of Arusha;-the headquarters of the East African Community and the leading Tanzania tourist center.

The Area and Physical Characteristics

Dodoma municipality covers an area of 2,769 square kilometres, of which 625 are urbanized. Dodoma municipality stands on a broad upland plateau with an altitude ranging between 900-1000 meters above the sea level, with beautiful stony hills such as Imagi, Isanga and Mlimwa. Due to unreliable rainfall, it has scanty vegetation, which consists mainly of bush thickets mixed with annual herbs, grasses and baobab trees.

Climate

The climate of Dodoma municipality is semi-arid, characterized by a marked seasonal rainfall distributed with a long dry season, starting from late April to late November and short wet season, starting from late November to mid April. The average rainfall ranges from 500-600 millimetres per annum. The temperature of Dodoma municipality varies from 10^0C in July to 20^0C in November.

Administrative setup

Dodoma municipality is one of the seven districts that make up Dodoma region these are Dodoma Municipal, Chamwino, Kondoa, Mpwapwa,Kongwa, Bahi and Chemba. Administratively, Dodoma municipal council is divided into four divisions, thirty wards and forty villages.

Population

The population of Dodoma municipality basing on the population and housing census of 2012 is 2,083,588 people of which 1,014,974 are male and Female are 1,068,614. The population growth rate in Dodoma Municipality is 2.3.

Economy

About 75% of the municipal income is derived from agriculture and 25% from other sectors. The contribution of the industrial sector is low due to little industrial investment and nature of the water available around the municipality. It is reported that, water around Dodoma municipality is salty that does not support several types of industries without special treatment.

The structure of the municipal council

Currently (2012-2013), the Dodoma municipal council has a total number of 2,114 employees, where 11% are working at the head office. Administratively it has three units which are: Planning and Statistics, Internal Auditing, and Legal and Security. Furthermore, it has seven departments namely:

f) Human Resources and Administration;

g) Finance and Policy;

h) Education and Culture;

i) Community Development;

j) Health cleanness and Social welfare;

k) Agriculture;

l) Livestock and Cooperative;

m) Construction;

n) Water, and;

o) Fire and Environment.

Case 2: Chamwino District council

Chamwino District Council is one of the six local government authorities of Dodoma region. It lies on the central plateau of Tanzania in the western bearing along Dar es Salaam road. The district has a total area of 8,056 km. square .The District borders Dodoma Municipal on the western front, Kondoa District on the North Kongwa and Kiteto Districts on the East and Mpwapwa District and Iringa rural on the Southwest. Also, Bahi District on south east front.

Administratively the district council is divided into 5 divisions 32 wards, 77 villages and 687 hamlets there are also two parliamentary electoral constituencies namely Chilonwa, and Mtera.

Population size and Growth

The 2012 National Population and housing Census showed that the District had the population of 330,543 people, among them females were 171,661 and males were

158,882. However, currently (2013) regional and District projections show that Chamwino District has a population of 330,543 where by females are estimated to be 171,661 and 158,882 are males. The Population density of the districy is 36 people per km 1 and the growth rate is 18.6%

Household Size

It is observed that the average household size at the national level is estimated at 5.2, where as in the district the average household size (persons per household) is 4.15 resulting from 69,038 households.

Economic Services:

Road network:

The district has a total of 875.5km of road network. Which have been divided into the following analysis:- 1) National road km 35.0, 2) Regional roads km 100, 3) District roads km 138.4 and 4) Feeder roads km 602.4. The following Table shows the condition of the road in the district.

Table 4. 1: Condition of the Road in the Chamwino District

Type of Road	**Tarmac**	**Gravel**	**Earth**	**Total**
Trunk Road (National and Regional)	-	135	-	135.0
District Road	-	50.4	80	130.4
Feeder Road	-	102.4	500	6024

Sources *District Works Department*

It is reported that the factors which contribute to the poor state of roads in the district include:

(i) Heavy torrential rains aided by uphill which leaves the earth bare of vegetation;

(ii) Inadequate budget allocation for road maintenance and rehabilitation, and;

(iii) Shortage of qualified technicians.

Railways services:

The district is well serviced by inter-regional transport links with the central line of Tanzania Railways line that passes through 2 (two) villages in the district. These villages are Igandu and Mnase. In addition there is one sub-railway station at Igandu. Railway line infrastructure which is available and its about 15.6 km.

Air services:

There are two airstrips at Mvumi and Izava villages mostly catering for flying doctors to Mvumi Hospital.

Communication facilities:

The existing communication networks in the district include TTCL, TIGO, VODACOM, ZANTEL, and AIRTEL.

Energy:

A part from the hydro-electricity power from Mtera Dam, there is also energy from diesel, petrol and kerosene, which are sources of energy for both small industries and domestic use. However, more than 95% of the population depends on firewood and charcoal as their sources of energy with exceptional to areas like Chamwino, Buigiri, Chinangali II, Chalinze, Mvumi Mission and Mvumi Makulu where they are served by the national grid of the Tanzania Electric Supply Company (TANESCO). Excessive use of charcoal and firewood leads to the destruction of eco-system, forest depletion and serious environmental degradation. As a solution to an excessive use of charcoal and firewood, environmental friendly sources of energy like electricity, solar and biogas has been strongly advocated in the district for domestic use.

4.2 Findings and Discussion

This section presents the findings of the study. It begins with the perceptions regarding IT auditing, followed by contributions of IT in audit activities. The last part presents the challenges facing the application of IT audit activities in managing the internal control system.

4.2.1 Perceptions of Auditors on IT Audit

The first objective of this research was to understand the perceptions of auditors on IT audit. To address the objective, two issues were looked at, namely; the respondents' evaluation on IT audit by considering various indicators and reasons for the goodness of IT audit with comparison to manual audit. The issues are presented as shown below.

4.2.1.1 Evaluation of Respondents on the Goodness of IT

The respondents were from two different cadres. Managerial level cadre comprised of two directors and 10 heads of departments (32.4%), nine internal auditors (24.3%), four procurement officers (10.8%), four credit IT Officers (10.8%), Four Accountants (10.8%) and Four Economists and planners (10.8%).

In making this evaluation, eight indicators were looked at. The results on the assessment are summarized in the Table below.

Table 4. 2: Assessment of Indicators

S/N	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Application of IT in audit activities is very helpful in report preparation	0	0	1	6	28
2	IT audit has reduced the difficulties during operation	0	1	1	13	20
3	IT audit is easy and friendly	0	5	2	2	0
4	IT audit helps internal control in terms of efficiency and effectiveness	0	0	0	12	23
5	IT audit helps in assessment process and mitigation of risk.	1	5	2	17	10
6	Management supports IT audit due to its positive impact on the preparation of Financial statements/reports.	1	7	5	10	12
7	IT audit is better than Manual Audit	0	9	3	16	7
8	IT audit is complicated to undertake compared to manual audit		1	4	18	12

a) Application of IT in audit in report preparation

The results have shown clearly that among the 35 respondents, (80%) strongly agreed, while (17%) agreed and (3%) of the remaining respondents were neutral. These results indicate that the public sector management and all staff agreed that IT audit assists in proper and an efficient preparation of reports.

b) IT audit has reduced the difficulties during operation

Simplification of operations by IT audit results as analyzed in the table above has revealed that 57% of the respondents strongly agreed and 37% also agreed that IT audit has reduced the difficulties during operations. Thus we, find that 94% of the respondents appreciated the assistance of IT audit in different operations which implied that application of IT audit had helped them in different aspects of their works.

c) Ease of use for IT audit

The study intended to find out if the users find it easier and friendly to use IT in auditing. The question "Is it easy and friendly to use IT in auditing?" was asked to the respondents. The above table shows that, 56% of the respondents disagree that it is easy and friendly to use IT in auditing and 22% of them were neutral to the question. This was not a good indicator to the public sector management and staff regarding the application of IT in auditing. Large percentage of auditors confirmed that it was not easy in using EPICOR based documents as evidence. In real sense if those documents were produced from the system, there would be no difficulty in using them. The other respondents never used those documents as evidence in the court of law.

d) Assistance of IT audit in internal control

In this study, 65.7% of the respondents strongly agreed and 34.3% agreed that IT audit helps internal control in terms of effectiveness and efficiency. Non among the respondents disagreed with the statement. The interview responses also proved this, for example, one interviewee mentioned that:

"You know, IT audit has reduced to the large extent the scope of committing fraud in the public sector. This is because fraud also needs skills as with IT, it can easily be discovered".

e) Assistance of IT audit in assessment process and mitigation of risk

According to the results, 76% of the respondents responded positively towards IT audit help in assessment process and mitigation of risks, On the other hand, 5.7% of the respondents were undecided and the remaining 14.3% of the respondents did not agree with the assistance of IT audit in mitigating risks. The findings have shown that, in spite of the difficulties of IT audit in reducing risks, but, it plays a part in reducing and mitigating risks as it helps in detecting mistakes and errors. This was supported by an explanation of one of the interviewees as:

"The assessment helps the management to plan for the appropriate measures of mitigating the risks".

f) Comparison between IT Audit and Manual Audit

Results as presented in the Table above reveals that a total of 63% of the respondents confirmed that the IT audit is better than manual operating audit on which they can easily make follow-up when they face difficulties, while 11.3% of the respondents were not sure of the existence of operating manual. Although 25.7% of the respondents disagreed that the existence of IT audit is better than operating manual, but the general result have shown that, to a large extent, IT audit is better than operational manuals despite of the fact that some councils still use manual audit.

g) Complication of IT Audit

The responses have shown that 85.5% of the respondents agreed that IT audit is complicated to undertake compared to manual audit. Only 11.4% were neutral to the

information and the remaining 3.1% of the respondents disagree that IT audit is not complicated to undertake. According to the respondents, it is more complicated to undertake manual audit as compared to manual audit. In addition, the application of IT audit leads to efficient and effective works.

4.2.1.2 Reasons on the Goodness of IT Audit Compared to Manual Audit

This study has documented main three reasons as to why IT audit is better than manual audit as presented by the respondents. These are; Simplicity of using the IT audit, its ability to reduce risks, its ability to strengthen control and improve security.

With regards to simplicity of using IT Audit**,** respondents indicated that it is easy to review the information since all information can easily be retrieved from audit data that has been stored. This fact was further supported by head of department who had this to say.

> *"Conducting IT audit is simpler than manual audit in terms of efficiency and effectiveness"*

With respect to the IT ability to reduce risks, respondents have reported that IT audit usually covers risks related to confidentiality and integrity. They also informed that once these risks are assessed, there can be a clear vision on what to undertake in order to reduce or mitigate the risks through either control or transfer the risks to insurance or simply accept the risks as part of the operating environment.

Finally for the case of ability of control IT audit has, it was reported that, Integrated Financial Management System (IFMS) helps to provide critical controls over commitments and expenditures and improves security over fraudulent activities.

With this regard, IT audit is better than manual audit as it helps the auditors to implement their duties effectively and more efficiently.

4.2.1.3 Discussion on the Perceptions of Auditors on IT Audit

a) Evaluation on the Goodness of IT Audit

Perceptions regarding IT auditing were looked at in eight different indicators as far as an evaluation of the goodness of IT audit is concerned. These are; Application of IT audit in report preparation, reduction of difficulties in audit operation, ease of use and friendliness of IT audit, and assistance of IT audit in internal control. Others are; assistance of IT audit in making assessment process and mitigation of risk, assistance of IT audit in providing support to management, decency of IT audit compared to the Manual Audit, and extent of IT audit complication compared to manual audit.

With respect to application of IT in report preparation, findings of this study have shown that users of the system obtain greater support when it comes to preparation of reports. Actually, it takes very little time to produce the report depending on the information one requires to be included in the report. In addition to that, the reports follow acceptable standard and appear very neat.

As far as the issue of reduction of difficulties in audit operation is concerned, it was absolutely agreed that IT audit has reduced many difficulties that were encountered by manual auditing. This is due to the fact that, it is cost effective as does not need many employees to accomplish the required operations. Apart from that, IT audit saves time because it does not involve perusing of documents which is the core activity of manual audit.

For the case of ease of use and friendliness of the system, the majority of internal auditors perceive it negatively. In fact, most of the users of IT based audit have shown their dissatisfaction on the ease of use as well as unfriendly nature of the system. However, further investigations found out that, the system needs regular trainings to staff using it in order for them to well understand the attributes installed to the system. In addition, the system requires extensive experience to make a good IT audit expert.

With regard to the system's support on internal controls in terms of efficiency and effectiveness, the majority of respondents perceive IT audit to have helped so greatly. Accordingly, users and management feel that IT audit has contributed much in prevention and control of frauds in the public sector. This is so because, once there is any inconsistency in terms of recording or irregularities, the system will indicate so. The only dilemma is for the users to have the required skills to interpret and find out the nature of frauds or irregularity committed. In fact, it is hard if not impossible for manual audit to quickly detect situations of frauds.

On the side of the assistance provided by IT audit in assessment process and mitigation of risks, majority of the respondents have perceptions that the system helps in detecting mistakes and errors. Such mistakes and errors would include wrong posting of transactions, misreporting of transactions, non-reporting of transactions, and the like. In this way, the system helps the management in designing plans for appropriate measures of mitigating the risks.

For the case of perceptions on IT audit as compared to manual audit, many of the respondents confirmed that IT audit is far better than manual audit. This is due to the fact that, it is simple to conduct audit and quick to arrive into appropriate opinion. It is time saving and reduces to the great extent the audit risks. Further, it eradicates paper work and reduces interaction with other employees like accountants, management personnel, etc.

Finally, although IT audit has been ranked by respondents as better than manual audit, the respondents on the other hand perceive IT audit as more complicated to undertake compared to manual audit. On this attribute, the concern is the skills requirements and experience which many employees are lacking.

b) Reasons on the Goodness of IT Audit Compared to Manual Audit

As presented in the findings above, three reasons have been advanced by users with regard to the goodness of IT audit over to manual audit. These are; ability in reducing risks, critical control over commitments and expenditure and that IT audit is more effective and efficient.

On the aspect of IT ability to reduce risks, respondents have perceptions that the system can automatically detects errors, mistakes and frauds which are likely to be committed. The system has been reported not to allow such blunders to happen due to the inbuilt controls which have been installed. It was reported that, the system may not be able to detect errors only if there is a chain of people who participate in fraud activities. These people must first make fraud in paper work so as to deceive the system. Such a situation is seldom to happen under good governance and transparency.

With the issue of control over expenditure and commitment, it was reported that the systems does not allow over expenditure or committing the funds on something that has not been budgeted for. This is an issue of concern to auditors because they feel that the system has eradicated blames on them. With manual audit, when auditors advise the management on expending outside the budget or beyond the allocated amounts, they used to be associated with working like policeman. With IT audit, this work is simply done by the system for not accepting to process the transactions in case of over expenditure or misappropriation.

Finally, the issue of efficiency and effectiveness was put forward due to the capacity of IT audit to provide reports as per requirements. In addition, the computerized system saves time and money something that cannot happen with the application of manual audit. Further, the system provides clean reports and exercises high level of transparency and fairness.

4.2.2 Contribution of IT Audit

The second objective of this study was to understand the contribution made by IT in implementing audit activities. This study has documented seven main contributions of IT audit as presented by the respondents. These are:

1) It helps to control fraudulent actions;
2) Easy to track errors and control over expenditure;
3) Easy for comparability and arriving into opinion;
4) It provides fairness and transparency on reports;
5) It is cost effective and time saving

6) It contributes to assessment process and mitigation of risks, and;

7) IT provides more accurate results.

The contributions are further discussed below as follows:

4.2.2.1 It helps to control fraudulent actions

Control of fraud in the public sector is one of the mentioned contributions made by IT implementing audit activities. The respondents mentioned that it has helped much in this area as any fraudulent action can easily be identified. In explaining this, one interviewee said:

> "The *implementation of IT audit across the Government provides critical controls over commitments and expenditures, consolidation of the national accounts with accurate reporting, rapid integration of additional government offices and the control of frauds"*.

4.2.2.2 Easy to track errors and control over expenditure

The respondents mentioned that implementation of IT audit has helped both central and local government to easier tracking of errors and therefore eliminate over expenditure. Apart from that, it contains the country's debt burden and restores confidence of international development partners. For instance, one of the respondents had this to report in expressing this concern:

> *"IT audit has helped to reduce operational cost as it enables early detection of unlawful activities and it also reduces the exposure to future risks"*.

Another respondent the municipal director argued the following in connection to this contribution of IT audit:

> *"In the near future, the government will fully utilize capabilities due to implementation of IT audit that has led to easier and traceable purchase orders*

and payments. Actually, it allows tighter control on commitments and expenses and provides swifter response on honoring of purchase agreements. It helps significantly in the proper asset management, inventory management and enhances procurement management."

4.2.2.3 Easy for comparability and arriving into opinion

The respondents (mainly internal auditors) explained that, by implementing IT in audit activities, it has helped them in comparing and enabling quick arriving into opinion. With regard to this, one respondent said;

"The issue of adequacy in arriving into proper opinion has a direct relationship with audit system. With manual auditing, IT takes a long time to arrive at the proper opinion due to lots of paper works. However with IT audit, it has become easier to arrive at the best opinion. It has also strengthened the internal audit function by increasing independence from the control of the Executive Directors".

Most of the respondents further recommended that, the implementation of IT audit in the audit offices in the public sector should be strengthened by increasing the number of performance auditors (IT audit experts) and widening the scope of audit activities in the public sector.

4.2.2.4 Provision of fairness and Transparency

Most of the respondents mentioned provision of fairness and transparency in application of IT audit as opposed to manual audit in the public sector. This has been a result of the existence of database where all queries can get answers from the system. For this case of manual audit, auditors use to demand support of several

documents and also ask numerous questions. This creates non cooperation and discomfort to the informers.

One of the internal auditors commented this with high level of concern.

> *"One of the challenges we face as internal auditors is that sometimes management considers internal auditors as the police officers of the local government, thus they become less cooperative, especially for manual auditing where we need some documents from them, but with IT audit their perception is different , they think it is a little bit fair .*

4.2.2.5 It is cost effective and time saving

All the respondents both at the managerial level and the staff in general commented that IT audit is cost effective because it does not need a large number of auditors to perform the work. Further, it takes very short time to detect errors and mistakes through system than through manual works as it involves perusing different files. In fact, the head of internal audit department emphasized on this by saying the following:

> *"IT audit has helped in the final preparation of financial statement activities to be easy because all the necessary information has been sorted out clearly and on time and thus, the overall costs can be much reduced"*.

4.2.2.6 IT has contributed in assessment process and mitigation of risks

The respondents at the managerial level have perceptions that IT audit has played a big role in assessing project processes in the public sector. IT audit acts as the preventive mechanism which is used by the management to prevent from risks and negative exposures that are likely to face the organization. Since the internal auditors

are there to make sure that other functions of the organization adhere to the laid down procedures and policies, it makes people follow standards (procedures), report accordingly and act effectively. In fact, one of the respondents had this to say with this regard.

> *"With proper operational IT audit in place, the local government can be made with more assurance, risk levels can be lowered or at least better understood, and overall costs can be minimized".*

4.2.2.7 IT provides more accurate results

The study has revealed that IT audit provides accurate results and opinion due to its easiness in detecting errors in producing reliable financial information, tracing areas of weaknesses. This helps in improving the situations before it becomes worse or causes damage to the organization. Further, the system enables quick and efficient reporting since everything can simply be retrieved from the database. With regard to this, one respondent said;

> *"Assessing by using IT audit helps the management in getting the results in time and more accurate at the same time"*

4.2.2.8 Discussion on the Contribution of IT Audit

As shown above, IT audit basically have made seven main contributions which are further discussed below as follows:

a) Support in controlling fraudulent actions

With this regard, it was reported that IT audit helps in controlling frauds because in fact, the system itself has checks and controls. It checks if all the approvals have

been granted for any transaction to be honoured. If any of the approvals from the top management or from the audit section has been provided, the system cannot provide a green light for such transaction. This contribution that is made by IT audit is also acknowledged by CAG report of 2008 that puts that IT audit in the public sector has much in detecting of fraudulent actions.

b) Tracking of errors and controlling over expenditure

In this case, IT audit does track errors of posting which are results of either omissions or commissions. Such errors cannot be detected automatically by manual audit. On the other side, IT audit would not allow any transaction to be effected if the code that represents the expenditure does not have enough money to support it. In fact, the system blocks misappropriation or leakage of funds. Without IT audit, it is quite possible to use money that was allocated for say, buying of spare parts, to go for sports activities or travelling to a meeting by a boss. This cannot take place when IT audit is in place. Actually, this was supported by the municipal director who said that:

> *"In the near future, the government will fully utilize capabilities due to implementation of IT audit that has led to easier and traceable purchase orders and payments. Actually, it allows tighter control on commitments and expenses and provides swifter response on honoring of purchase agreements. It helps significantly in the proper asset management, inventory management and enhances procurement management."*

c) Contribution of Comparability and Quickness to arrive to appropriate opinion

With IT audit, the implementer can easily make comparison on different aspects of performance between the current audit period and the previous audit period. This is

facilitated by the data that is provided by the database. The activity can just be done quickly without requiring consulting any documentation. In addition, IT audit has been reported on its ability to help

users to quickly reach the appropriate opinion. It is well known that, the objective of conducting audit is to enable the operator to reach some sort of opinion that with then induce action. Arriving of this opinion is made easy by IT compared to manual audit. For instance, it is easy for IT audit to conclude that something like corruption, misappropriation, fraud and like have happened. It may not be easy to reach to such a conclusion for manual audit.

d) Fairness and transparency on reports

Actually, this is more on the side of those being audited. They feel that the system is reports fairly and is actually very transparent on the performance of the organization. This is the case because what is given as output of the system is one used to prepare general report. There is no room for reporters to document things which portray their opinions. They report and translate what is produced by the system. On the side of auditors themselves, fairness is translated on the aspect of neatness and content of the reports. Basically, reports based on IT audit show what has been requested from the system.

e) Cost and time saving Contribution

The cost reduction contribution of IT audit appears from three issues, which are few employees required to run the system, avoidance of overtime payment and reduction of paper work. Few employees arise from the fact that, being a computer based system, IT audit is technically done by a great support of computers. That is, more

can be done for a short time period. Based on that, few people can run the system and implement something that could have been accomplished by many people. Avoidance of overtime payment occurs because a lot are accomplished for short time period. There is no room for employees to claim for payment resulting from working after office hours since the system can do more than what is needed just during normal working hours. Reduction of paper work arises because no files and paper based information is required to support the various transactions. All the information needed is obtained from the database.

f) Contribution of the assessment process and mitigation of risks

IT audit has been reported to be very helpful in assessment process of the various transactions or activities. It secures the approvals of transactions and fast track the processes. Apart from that, it helps in mitigation of risks by detecting any possibility of errors, mistakes, frauds, and likelihood of committing corruptive actions or misappropriation. IT audit not only detects areas of contentions, but also easily and quickly prevents bad things to happen. In emphasizing on this capability of IT audit, one of the auditors had this to comment.

> *"With proper operational IT audit in place, the local government can be made with more assurance, risk levels can be lowered or at least better understood, and overall costs can be minimized".*

g) Provision of accurate results

Accuracy of results has to do with the correctness of the various financial reports that are provided. Such reports are normally free from errors which arise from omissions or commissions. IT audit eliminates the possibility of human error or such errors which are done in attempt to make corruptive or fraud activities.

4.2.3 Challenges facing the application of IT Audit Activities

The third and last objective of this study was to find out the challenges facing the application of IT audit activities in the public sector. Putting together the various challenges as documented from the respondents of all levels, the main and most serious challenges facing the application of IT audit activities in the public sector are; shortage of workforce, lack of experienced and skilled audit personnel, the increased burden to the government, problems arising from use of EPICOR, unreliable electric power supply, management perceptions over internal auditors and lack of IT policy that limits system accessibility. The challenges are further discussed below as follows:

4.2.3.1 Shortage of Work Force

The respondents mentioned shortage of audit staff as one of the major challenges that face both the local and central government authorities. They mentioned that due to shortage of staff in this profession, some of the audit activities that are required to be performed on timely basis are not done. In emphasizing this point, the municipal director had this to say:

> *"Shortage of staff is a major problem to our municipality. It makes the small audit team we have to fail to perform all the required audit activities on timely manner, thus, as management we fail to get the required financial information for decision making."*

One of the staff members added the following with respect to the question of shortage of audit personnel:

> *"Most of IT (EPICOR) experts do not want to work in remote areas like districts level in which its infrastructure system is poor''.*

4.2.3.2 Lack of Experienced and Skilled Audit Personnel

The respondents mentioned lack of experienced and skilled personnel as one of the challenges faced by IT audit in the public sector. Thus, for those with short time on experience like one year or so lacked necessary skills, knowledge and techniques of IT audit activities. One of the Senior Internal Auditor had this to comment with this regard:

> *"I am the only one with three years audit experience here. The rest of the employees in this section have one year of experience or less. This is a challenge because auditing needs skills, experience and knowledge".*

4.2.3.3 The Increased burden to the government

The Senior department heads when responding to the question on the challenges facing the application of IT audit in the public sector mentioned that, due to understaffing problem for the EPICOR experts, the internal auditors are required to work extra hours to comply with the requirements. Since the extra hours have to be compensated for, it adds cost to the government. The municipal director had also the following to say:

> *"Payments of extra hours and allowances have been the most challenging issue at our municipality, this doubles administrative costs and of course this has been the result of understaffing of IT audit experts".*

4.2.3.4 Problems arising from the use of EPICOR

Some of the respondents mentioned the problem of the use of EPICOR which has resulted into the possibility of frauds and errors. Errors arise either because of the problems with the system or lack of knowledge. The respondents have views that most of the internal auditors do not know how to use EPICOR system properly. In

addition they mentioned the problem of length of time required to process data as among the problems which hinder the operations of EPICOR in the public sector. These weaknesses and shortcomings hamper efficient application of the system. In responding to this dilemma, one of the auditors had this to comment with regards to the application of EPICOR:

> *"There is a need for all internal auditors to go for further training on graded EPICOR software. We are now on Epicor 9.05 system where only one auditor has gone for training. For the LAWSON system (human resources software) there is no one who has gone for training.*

4.2.3. 5 Unreliable electric power supply

Most of the respondents revealed that IT audit in the public sector is faced with the problem of frequent system breakdown that causes delay of some activities. This happens because when there is power shortage the whole system fails and all users become unable to access database from the system. In supporting this concern, one of the auditors reported the following:

"Many of the local government authorities suffer from electricity problems, this hinders on time delivery of services"

Also the head of the audit unit also had this to comment with this regard:

"There are frequent breakdowns due to network failure and power interruptions. In addition, IFMS has not been rolled out to some LGAs".

The implication of the above problem is that, the organization may not achieve their full potential. In fact, the electricity challenges are likely to lead to inefficient and ineffective operational risk management which in turn can lead to operational loss.

4.3.6 Management Perceptions over internal auditors

One of the internal auditors commented this with high level of concern.

> *"One of the challenges we face as internal auditors is that sometimes, management considers internal auditors as police officers of the organization, thus they become less cooperative. The effect is that, much needed information is not obtained on time."*

According to those interviewed in the low management cadre, auditors are seen as people who create obstacles in implementation of various decisions. Many people feel that auditors will always have something to say in order to object various transactions by commenting like, the procedure has not been followed, regulations do not allow, this requires higher level of approval and the like. Due to that, management sees auditors as policemen who in fact create unnecessary delays to effect transactions.

4.3.7 Lack of IT policy that limits system accessibility

Many LGAs are lacking IT policy that would have set limits of system accessibility, operational procedures as well as defined physical and logical controls. One of departmental heads (finance and policy) added the following in respect to lack of IT policy that limits system accessibility:

"The absence of clear policy that limits accessibility creates more problems, people just interfere the system and cause the failure which definitely hinders effective implementation and realization of goals set by internal auditors".

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This study pointed out that before the introduction of IT audit in the public sector, much of the focus was on manual audit techniques. As the decade progressed, this shifted to techniques of IT audit. This study aimed at finding out the s of technology on internal audit in the public sector. The study had three objectives namely; understanding the perceptions of audit officers with regards to application of information technology in audit issues, understanding the contribution made by IT in implementing audit activities and investigating on the challenges facing the application of IT in audit activities.

Having seen the findings of this study in the previous chapter as guided by the research objectives outlined in the first chapter, the current chapter provides summary of findings, conclusion and recommendations based on the findings. Finally, the chapter winds up by showing the limitation of the study and puts forward suggestions for further research.

5.1 Summary of the findings

This section summarizes the major findings of the study. In so doing, the presentation has been guided by the research objectives.

5.1.1 Perceptions of Auditors on IT Audit

Perceptions regarding IT auditing were looked at in eight different indicators, namely; Application of IT audit in report preparation, reduction of difficulties in audit

operation, ease of use and friendliness of IT audit, and an assistance of IT audit in internal control. Others are; an assistance of IT audit in making assessment process and mitigation of risk, assistance of IT audit in providing support to management, decency of IT audit compared to the Manual Audit, and the extent of IT audit complications compared to manual audit.

Actually, it has been agreed by the majority of respondents that among the eight attributes investigated in this study, seven of them gave IT audit an upper hand compared to manual audit. The biggest concern of the users is that IT audit is not user friendly and that it is difficult to undertake compared to manual audit. The aim concerns of users are that IT audit requires continuous training as well as building of experiences. Without these two components, IT audit has little utility.

5.1.2 Contribution of IT in Audit Activities

As documented in the main findings, IT audit makes significant contribution in seven areas. These are supporting in controlling fraudulent actions, tracking of errors and controlling over expenditure, contributions of comparability and quickness to arrive to appropriate opinion, fairness and transparency on reports, cost and time saving contributions, support of the assessment process and mitigation of risks and provision of accurate results.

For the case of supporting in controlling fraudulent actions, IT audit facilitates in controlling frauds due to its ability of instituting checks and controls on the approvals any transactions to be made. With regards to its contribution on tracking of errors and controlling over expenditure, the system would always no accept to run if there

are some entries which have been omitted either purposely or by error. It can also not accept to run if some entries have been omitted.

On the issue of IT contribution on comparability and quickness to arrive to appropriate opinion, the system avails data from the database for comparison purposes on performance of consecutive periods of operations. Further, it assists the users to reach the suitable opinion by just looking at the various reports. Regarding the issue of fairness and transparency on reports, the staff being audited find it to be far better than the manual audit. This is so because; the system does not provide room for speculations or opinions. It provides clear reports for one to interpret. Auditors themselves also like IT audit due to its ability of producing clean and flexible reports as per requirements.

In as far as the issue of cost and time saving contributions is concerned, IT audit is not done by several employees, and thus it saves money from not paying for salaries unnecessarily. IT audit is also efficient thus it does not require people to work on overtime basis. The time saving arises from accomplishing the tasks quickly and efficiently as well as the eradication of the possibility of going into several documents because information is just obtained from the database.

In the case of the IT Contributions of the assessment process and mitigation of risks, the system secures the approvals of transactions and fast track the processes. It also helps in mitigation of risks by detecting any possibility of errors and frauds. Finally, accuracy of outputs produced by IT audit comes from the suitability of the financial reports that are provided.

5.1.3 Challenges Facing Application of IT Audit Activities

The study identified several challenges facing the application of IT audit activities. The main challenges found out are; shortage of workforce, lack of experienced and skilled personnel, the increased burden to the government, lack of IT policy that limits system accessibility. Others are; problems arising from the use of EPICOR, management perceptions over internal auditors and the problems of power interruptions. These create a stumbling block for effective audit function implementation both in central governments and local governments. If the challenges are not quickly overcome, there is danger of exposing the government into operational risks.

5.2 Conclusion

Based on the findings of this study, there are three areas which the study makes contribution. These are contribution to policy, knowledge and best practices as shown below.

5.2.1 Contribution to Policy

It has been reported by the main stakeholders, that one of the issues which act as vast hindrance to proper execution of IT audit in public sector was the absence of IT policy. This is important because it should be expected to guide implementation of the technology in audit issues. If the policy was there, it could really guide on provision of check and control services to inputs, outputs as well as all the systems that make up the IT based systems. It would also guide on matters of partnerships with IT industry in terms of technical consultants, computers and networking

equipment, telecommunications, database management and hosting, servers, security, firewalls, intrusion detection and software maintenance.

5.2.2 Contribution to Knowledge

This study has documented several challenges and contributions which IT audit face in its application. Some of the challenges like power interruptions, management perceptions and lack of IT policy are peculiar to this study. This adds up to the body of knowledge. Apart from that, there has been found out some perceptions which stakeholders have over the use of IT audit. Such findings add up to new knowledge and provide activation for further research.

5.2.3 Contribution to Best Practices

Findings on perceptions of the main stakeholders on the use of IT in auditing as well as challenges reported provide lessons to the managers. These include; the best way of using IT audit in connection to understanding how users perceive it and the strategies that need to put in place in order to eradicate or at least decrease the impact of the challenges in the use of IT audit.

5.3 Recommendations

Based on the findings of the study, this section provides recommendations which fall under the three categories, namely; recommendations to local governments, recommendations to central government and recommendations to auditors.

5.3.1 Recommendation to the Central Government

1) Since the mother document to guide IT audit usage is not in place, it is highly recommended that the government should take a lead to have the policy in place.
2) The government is advised to employ more staff in the section of internal audit. This will enable both central and local governments to conduct the auditing exercise fully and effectively.
3) The government is hereby advised to use both systems (manual system and IT based) in parallel. This would help to create a fallback position in case of technology associated problems which hinder accessibility of the database.

5.3.2 Recommendations to Local Governments

In order to strengthen the audit unit of the local governments as well as lessen the possibilities of encountering risks, the following are recommended to the Management of the organizations:

1) Providing a refresher training to staff so as to build their competencies in terms of how to deal with exposures to risks.
2) The management should do away with the culture of perceiving the internal audit as a police unit. In fact, this is a very important section that plays an advisory role to keep the public sector at safe zones in all the transactions it operates.
3) Staffs should be inculcated with a culture to follow the procedures and other designed policies. This should be in line with introducing heavy punishment to those who violate the regulations.

4) Management is strongly advised to provide auditors with no limit in accessing computer resources (data, programs, equipment, and facilities) as well as documentations, so that; they can protect these resources against unauthorized modification, loss and disclosure.

5) Finally, the management should have regular audit especially surprise inspections. These are important in terms of making the staff always aware of proper recording, adherence to procedures, regulations and the like.

5.3.2 Recommendations to Auditors

1) Auditors should have frequent review of documents to ensure there is proper vouching and documentation in the public sector, and approval of significant policy and procedural exceptions.

2) Auditors are advised not to become swayed by what is talked against them. They should play their roles and responsibilities of independence to enable wide operational risk management function and improved line of service management;

5.4 Limitation of the Study

This research work was based on a case study and was based only on two cases. Therefore, conclusion drawn from the study cannot be generalized statistically for all the public sector diversities. This is because the situation at one local government might be different from the rest of local authorities, even though it provides lessons to be learnt. It is thus acknowledged that if the study was conducted by widening of the scope, the findings could be richer and more interesting.

5.5 Area for Further Study

The study gives clues of what could be happen if the strategies suggested for dealing with challenges of IT are taken seriously. Therefore it is recommended that similar studies to be conducted in other local governments.

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Appendix 1: Questionnaires for Staff

This study is based at the University of Dodoma. Its major objective is to asses on the contributions and challenges of technology on internal audit in the public sector – by taking a case of Dodoma municipality and Chamwino District. Therefore, you are kindly requested to participate in this study by filling in this short questionnaire. In case the final account of this work may contain confidential information and its report could be harmful to organization or individual, confidentiality is assured by the University. Such report will be seen only by the Supervisor and Examiner for examination purposes.

SECTION A: RESPONDENTS INFORMATION

1) Please tick √ appropriately on the following:

a) Age of respondent: 11-20years ☐ 21-30 years ☐ 31-40 years ☐
41-50 years ☐ 51 and above ☐

b) Sex of respondent: Male ☐ Female ☐

c) Level of education of respondent:

Primary ☐
Secondary ☐
Degree ☐
Above degree ☐

SECTION B: PERCEPTIONS REGARDING IT AUDITING:

2) The following set of statements relates to your feelings about the use of IT in audit activities. For each statement, please show the extent to which you believe IT auditing has the feature described by the statement. For example, placing a five on the line means you strongly agree that IT has the feature, and a one means you strongly disagree. You may as well choose any of the numbers in the middle to show how strong your feelings are. There are no

right or wrong answers; all we are interested in is a number that shows your perceptions about IT in auditing. Please circle the appropriate number.

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

S/N	Statement	1	2	3	4	5
1	Application of IT in audit activities is very helpful in report preparation in your organization.					
2	Introduction of IT audit has reduced the difficulties rose during manual auditing					
3	It is easy and friendly to use IT in auditing.					
4	IT auditing adds something to internal control as compared to manual audit in terms of efficiency and effectiveness.					
5	IT auditing helps in assessment process and mitigation of risk.					
6	Management has been aggressive to IT auditing application due to its positive impact on the preparation of Financial statements/reports.					
7	I prefer manual audit to IT in audit in the local governments.					
8	IT audit is complicated to undertake compared to manual audit					

3) Why you think that IT auditing is better than manual auditing? Please mention and briefly explain at least four reasons.

a) ……
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b) ……
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c) ……
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d) ……
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e) ……
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B: THE CONTRIBUTION OF IT IN AUDIT ACTIVITIES

4) What type of computerized system has your organization implemented so far? Please mention.

……

5) For how long have you been using IT in auditing?

Less than 1 year ☐
1 year ☐
2 years ☐
3 years ☐
4 years ☐
5 years ☐
More than 5 years ☐

6) From your experience, what are the contributions of IT audit in your organization? Please mention at least five.

a) ……
b) ……

c) ……
d) ……
e) ……
f) ……

7) For each of the contributions you mentioned in question 6) above; please give a short description explaining how you feel the issue is a contribution.

a) ……
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b) ……
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c) ……
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d) ……
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e) ……
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f) ……
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C. CHALLENGES FACING THE APPLICATION OF IT AUDIT ACTIVITIES

8) What are challenges facing IT audit in your organization? Please mention at least five and give a short explanation as to why you feel is a challenge.

a) ……
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……...……
b) ……
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……...……
c) ……
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……...……
d) ……
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……...……
e) ……
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……...……
f)……
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……...……

9) In your opinion, what do you think needs to be done in order to enhance the application of technology in internal audit? Please give as many recommendations as you deem fit.

a) ..……
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b) ..……..
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c) ..……
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d) ..……
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e) ..……
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f) ..……
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g) ..……..
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h) ..……
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Thank you so much for participating in this study.

Appendix 2: Interview Guide for Managers

1. What type of computerized system has your organization implemented for internal audit?
2. Are there any feelings from employees in the use of IT in auditing? Please mention such feelings according to your experience.
3. In your opinion, what are the advantages of IT in auditing over manual approach auditing? Please mention them.
4. In your opinion, what are the disadvantages of IT in auditing over manual approach auditing? Please mention them.
5. From your experience, what are the contributions of IT audit in your organization?
6. What are challenges facing IT in auditing in your organization?
7. What do you think can be done to overcome the challenges?

Thank you very much for participating in this study.