

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI
COLLEGE OF HUMANITIES AND SOCIAL SCIENCE
KNUST SCHOOL OF BUSINESS**

KNUST

**COMPUTERIZED ACCOUNTING INFORMATION SYSTEMS: LESSONS IN MMDA'S IN
ASHANTI REGION OF GHANA**

BY:

GAMA ISAAC

(Bachelor of Management Studies)

**A thesis submitted to the department of accounting and finance - Kwame
Nkrumah University of Science and Technology**

**In partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE (ACCOUNTING AND FINANCE)**

FEBRUARY, 2021

DECLARATION

I hereby declare that this submission is my own work towards the award of a Master of Science in Accounting and Finance degree and that, to the best of my knowledge it contains no material previously published by another person nor material which has been accepted for the award of any degree by any university, except where due acknowledgement has been made.

Isaac Gama
(PG9095219) Signature Date

Prof. K. O. Appiah
(Supervisor) Signature Date

Dr. Daniel Domeher
(Head of Department) Signature Date

DEDICATION

I dedicate this work to my lovely wife, Patience Serwaa and the entire Gama family for their continuous support throughout my study. May the Good Lord bless you all.



ACKNOWLEDGEMENT

My utmost thanks go to the Almighty God for the strength and wisdom given me to undertake this programme successfully.

A heartfelt appreciation also goes to my supervisor, Prof. Kingsley Opoku Appiah demonstrated skills, experience and patience with respect to supervising me to produce this thesis.

Finally, to all who contributed in diverse ways, God richly bless you.



ABSTRACT

This research has sampled three Municipal Assemblies which has been named AA Assembly, BA Assembly and CA Assembly. Also, this research relied solely on primary data, specifically responses collected through the use of sound recording devices to analysis data using content analysis and thematic analysis. This research sought to assess computerised accounting information system in selected MMDAs in Ashanti region. The findings reveal that prior to the adoption of the GIFMIS, all financial related transactions were done manually or outsourced to consultants at a fee. The findings on this objective from the survey suggest that the creation of audit trails, concern for employees, quality control, the need to increase performance, current trend, complexities in data processes and collection, legal requirements and achieving a mission or vision statement are very important motivating factors on the implementation of CAIS in MMDAs in Ashanti region. The findings of the field survey revealed that the metrics used in assessing effectiveness and efficiency of CAIS is speed, adequate use of limited resources, provision of accurate results and cost reduction. On benefits, the survey revealed that customer satisfaction, making of quick decisions, cost reduction, speed and accuracy and effective employee relation are the main advantages enjoyed with the adoption of CAIS.

In responding to the issue of challenges confronting MMDAs in the adoption of computerized accounting information system, poor connectivity of networks, security threats, high cost of installation and maintenance cost as well as lack of people with requisite personnel to handle such matters that makes implementation of CAIS ineffective was noted to be a common hindrance.

TABLE OF CONTENTS

Table of Contents

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF TABLE	ix
LIST OF FIGURES	x
CHAPTER ONE	1
1.1 Background of the study	1
1.2 Statement of the Problem	4
1.3 Objectives of the Study	5
1.4 Research Questions	6
1.5 Significance of the Study	6
1.6 Scope of the Study	7
1.7 Overview of Methodology	7
1.8 Limitation and Delimitation of the Study	7
1.9 Organization of the Study	8
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1 Introduction	9
2.2 Conceptual Review	9
2.2.1 Information Systems	9
2.2.1.1 Accounting Information Systems (AIS)	10
2.2.2 The Manual Accounting System	13
2.2.3 Concept of Computerized Accounting System	14
2.2.4 Accounting Information Software System (AISS)	16
2.2.5 Benefits of Computerized Accounting Systems in Organization	17
2.2.6 Factors that influence the adoption of Computerized Accounting Information System in Organization	19

2.2.7	Computerised Accounting Information system utilization in Organization.....	21
2.2.8	Computerised Accounting Information system utilization in MMDAs	22
2.2.9	Challenges associated with the use of Computerised Accounting Information System in Institution	24
2.2.10	System Quality and Organisational Performance.....	26
2.3	Theoretical Review	27
2.3.1	System Theory.....	27
2.3.2	Diffusion of Innovation Theory	28
2.3.3	The Technology Acceptance Model	28
2.3.4	Agency Theory	29
2.5	Conceptual Framework.....	30
CHAPTER THREE		31
RESEARCH METHODOLOGY.....		31
3.1	Introduction.....	31
3.2	Philosophical Consideration	31
3.3	Research Strategy.....	32
3.4	Research Design.....	32
3.5	Population of the Study.....	33
3.6	Sampling Technique and Sample Size.....	33
	Source: Field data, 2020	34
3.7	Sources of Data	34
	3.8 Data Collection Instruments and Procedure.....	34
	3.9 Data Analysis	35
CHAPTER FOUR.....		36
DATA ANALYSIS AND INTERPRETATION		36
4.1	Introduction.....	36
CHAPTER FIVE		48
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS		48
5.1	Introduction.....	48
5.2	Summary of Findings.....	48

5.2.1 Objective 1 – To identify the conceptions of computerized accounting information systems in MMDAs.....	48
5.2.2 Objective 2 – To examine the factors that motivate the implementation of CAIS in MMDAS in Ashanti Region	49
5.2.3 Objective 3 –To examine how MMDAs assess their computerised accounting system	49
5.2.4 Objective 4 –To identify the benefits of CAIS in MMDAs.....	49
5.2.5 Objective 5 –To identify the challenges faced by CAIS in MMDAs in Ashanti Region....	49
5.4 Recommendation	51



LIST OF TABLES

Table 3.1: Population and Sample Size	34
---	----

KNUST



LIST OF FIGURES

Figure 1 Conceptual Framework.....	30
------------------------------------	----



CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In recent times, the business environment is characterized by technology irrespective of the nature of activities engaged. Organizations that fail to employ requisite technology for their activities are prone to be less competitive on the market (Rogers, 2016; Martson, 2014). The manual or traditional way of conducting accounting systems is becoming a thing of the past in most organizations. In most developed and developing countries like Ghana, both private and public sectors consider adoption of computerized accounting information system as a catalyst in ensuring effective and efficient flow of information utilization to achieve organizational goals and objectives. This has the potential of enhancing smooth flow of information for stakeholders to promote effective and sound managerial decision making on corporate issues and sustainability (Appiah, 2014; Platt & Platt, 2012).

Organizations have realized the essence of computerized accounting information systems since it enhances good recording, processing and analysis of data on financial issues (Manson, McCartney & Sherer, 2001). Managing financial information systems in public institutions like Metropolitan, Municipal and District Assemblies (MMDAs) is somehow complex and require effective managerial skills and better systems to achieve desirable outcomes (Sekyere et al., 2017). Oladejo and Yinus (2014) emphasized that the contribution of technological advancement which computerized accounting information system is no exception and a crucial indicator of development in modern society. The adoption of computerised accounting information system is paramount in ensuring better operational performance of institutions, which MMDAs of Ghana is no exception. Wiggins (1991) therefore espoused that the survival of organizations largely depend on accounting information systems adopted to manage finances. Organization's need accurate,

timely and well-updated information on accounting practices in order to survive (Amidu & Abor, 2005).

The financial status of organisations are monitored and analysed through accounting systems by preparing documents to facilitate taxation and preparing documents to facilitate taxation and other necessary activities to support operational activities. Organizations without better accounting systems are likely to encounter challenges in assessing their performance (Akande, 2016). According to Elliot and Elliot (2006), several organizations adopt different accounting information systems for managing their activities but does not utilize fully its potentials. Adjei (2013) stressed on the need for organisations/ institutions to have sound accounting systems to enable effective decision-making, policy directions and implementations. However, decisions on choosing either manual or computerized accounting information system is the prerogative of organisations alone (Adjei, 2013). Chang (2011) held the view that computerized accounting information enhances effectiveness towards organizations in a competitive environment.

The most significant information feasible from external source on institutions is financial statements. Despite the growing trend of adopting computerized accounting information systems in developed countries, the same cannot be justified in developing countries like Ghana. The use of technology to perform accounting practices has not gained adequate momentum in institutions like MMDAs of Ghana to be specific. This has contributed partially to institutions not recognizing and realizing the relevance of effective computerized accounting information systems in their operations. There is a growing concern towards the uncertainty in relation to the adoption of accounting information systems in institutions since it provides grounds for dealing with vendors, customers and employees (Daniel & Inim, 2019; Chang, 2011).

In the field of accounting and finance, computerized accounting system has replaced the use of manual method, making it easy, convenient, accurate and speedy to report, process and store financial data through accounting softwares (Kharuddin et al.,2010).

MMDAs in Ghana have not been exception in this digitization since there has been the implementation of the Ghana Integrated Financial Management Information Systems (GIFMIS) which was to replace all stand-alone legacy system rolled out in 2012 following a forum with all stakeholders and has had 60 MMDAs fully enrolled out of 216 MMDAs (Ghana News Agency, 2017). The then Finance Minister- Mr. Ken Ofori-Atta- remarked that “the implementation of GIFMIS is in line with government efforts aimed at creating a more business friendly environment and invariably harness opportunities for the people of Ghana through improved fiscal discipline, containing deficit, and eliminating corruption as part of concerted efforts to ensuring good governance”. The then Controller and Accountant General also added that he had the strong conviction that upon fully implementation of GIFMIS across all MMDAs and MDAs is consistent with the Public Financial Management Act 621 (2016) and also be a tool for reducing external queries.

Governments across the world desire efficient distribution of available resources to its citizens and gain control over performance of its departments and other units to achieve better utilisation of scarce resources. In the quest to achieve this, it focuses on information on financial performance of the said units, cost incurred on services provided, how efficient is programmes are implemented to achieve desirable goals and objectives (Al-Sakha & Al-Sindi, 2010). Provision of accountability is a significant feature which effective accounting system seeks to achieve (Oladipupo & Ajabe, 2013). As emphasized by Otieno et al., (2013), at the local government level, little has been done at the ministerial level in relation to enhancing adoption of effective computerized accounting

information systems. Despite this, budgeting decisions are conducted at the local level which gives calls for concern by stakeholders if countries seek to achieve proper financial management practices (Otieno et al.,2013).

1.2 Statement of the Problem

Broadly, institutions develop IT systems to assist users in carrying out tasks with ease and convenience. This is done usually to enhance proper communication, knowledge management and decision support. Accounting information system is crucial to stakeholders of institutions in making decisions and policy directions (Daniel & Inim, 2019). Lack of effective and efficient accounting information systems in MMDAs tend to jeopardise administrative and operational activities of local government. The emergence of information technology has changed significantly development of accounting programs with specific reference to computerized accounting information systems (Strong, Joel, Kris & Bruce, 2016). Through this, technology has its own risks like threats, security and breach of confidentiality to users and institutions as a whole (Abu-Musah, 2005). The manual system of performing accounting transactions is fading out and being replaced with computerised accounting information systems gradually (Elena, Raquel & Clara, 2011).

There have been a worrying trend of local government authorities experiencing various degree of challenges due to poor accounting information system practices and failure to utilize effectively existing computerized accounting information systems where they exist in MMDAs in Ghana with specific reference to Ashanti Region. Simpson (2012) noted that there are few public sectors with proper computerized accounting information systems. This indeed is worrying since; it adds to the reason why there have been several reported cases of misappropriation of funds by some MMDAs

by the Auditor- General on yearly basis. Lack of effective accounting information systems have contributed largely towards the shortfalls in revenue generation and mismanagement by some authorities of MMDAs in Ghana with reference to selected MMDAs in Ashanti Region.

Existing studies on computerized accounting information systems have centered on several domain or field of study. Appiah (2014) emphasized on state-owned enterprises, Senyo et al., 2021 addressed Ghana's paperless port, Boateng (2019) stressed on Ghana Education Service's financial information software processing, Imeokpharia (2013) focused on banks, Otieno and Oima (2013) dealt with local administrative units, Olandipupo and Ajape (2013) focused on small-scale and medium-sized enterprises, Ahmad (2013) and Yaser (2013) stressed on income tax departments and el-Dalabeeh and Alshabiel (2012) concentrated in medical services to mention but a few. From the literature search, it appears there is little focus on computerized accounting information system adoption among MMDAs (Appiah et al., 2014, Senyo et al, 2021; Boateng, 2019) and this current study seeks to fill the gap.

1.3 Objectives of the Study

The study generally assesses the CAIS in some selected MMDAs in Ashanti region of Ghana, Kumasi. Specifically, the research study intends:

1. To identify the conceptions of CAIS by MMDAs?
2. To examine the factors that motivate the implementation of CAIS in MMDAs in Ashanti Region?
3. To examine how MMDAs assess their CAIS?
4. To identify the benefits of CAIS application to MMDAs?
5. To identify the challenges faced by MMDAs in applying CAIS?

1.4 Research Questions

The research seeks to find answers to the following:

1. What are the conceptions of CAIS by MMDAs?
2. What factors motivate the implementation of CAIS in MMDAs?
3. How do MMDAs assess their CAIS?
4. What are the benefits of CAIS application to MMDAs?
5. What are the challenges faced by MMDAs in applying CAIS?

1.5 Significance of the Study

The study is expected to provide additional insight to existing body of knowledge on computerized accounting information systems in MMDAs. To academia, this research contributes to the wealth of literature available as well as providing future researchers on scholars to build on extend the debate on the relevance of computerized accounting information system as this research provides future research areas yet to be explored.

On stakeholders, specifically –the Ministry of Finance and Accountant General Department- this research provides them with first-hand information on the outcome of the implementation of GIFMIS since 2012 and may find the results of this analysis relevant as it highlights the grass roots understanding of the system, their assessment criteria and challenges that they are facing currently in order to streamline policies to correct or improve the successful adoption of the system.

Accountants, Audit departments and key officials of MMDAs benefit from this research as their responses will be communicated through this research to strengthen and provide enough reinforcement for their voices to be heard on the implementation of computerized accounting information system.

1.6 Scope of the Study

The study is focused on three selected MMDAs within Ashanti Region with specific reference to Suame Municipal Assembly, Asokore Mampong Municipal Assembly and Ejisu Municipal Assembly respectively. The study covers key issues like motivating factors for the adoption of computerized accounting information system, challenges associated with the use of the system and effects on activities of the assemblies as well as financial performance. Participants in the study consist of all chief executive officers, account officers and IT officers. Moreover, employees from general central administration department, audit officers and employees of information and control unit within the selected assemblies are included. Selecting employees from these departments are expected to provide comprehensive information on computerized accounting system usage in the various assemblies and determine how it has been effective since its inception. The study was conducted in the selected municipalities due to the existence of computerized accounting information system put in place to handle financial accounting practices.

1.7 Overview of Methodology

This research invokes the qualitative research design and analyze the responses of the interviewees using content and thematic analysis.

1.8 Limitation and Delimitation of the Study

This study does not capture entire MMDAs of Ashanti Region and therefore it will be difficult but not impossible to generalize its findings to cover other MMDAs apart from the selected ones for the survey. In view of this, computerized accounting practices from other MMDAs cannot be captured due to this limitation and the sample size is confined to the selected MMDAs for the study. Since the study is descriptive in nature, it is assumed that when data collection procedures

are erroneous, it will have consequences on the accuracy of responses provided by respondents and flaw the entire study.

1.9 Organization of the Study

This study is structured in five sections: Chapter one covers background of the study, statement of the problem, general objectives, research questions, scope of the study, limitations and significance of the study. Literature review which focused on existing theories, concepts and empirical works on accounting information systems are contained in the chapter two. Chapter three deals with the methodology employed to conduct the study. It captures major themes like research design, population, sampling techniques and sample size, sources of data, data collection tools and procedure, pilot study, data analysis and ethical considerations. Chapter four deals with the results and discussion. The summary of key findings, conclusions, recommendations as well as suggestions for future studies are captured in the chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section of the study presents review of related literature on accounting information systems in organisations. It provides vivid description of issues related to computerized accounting information system adoption in organizations. It captures comprehensively on the adoption of computerized accounting information systems in organizations, significance associated with it and challenges confronting the use of such systems. These are achieved based on existing concepts, theories and empirical studies undertaken by earlier authors.

2.2 Conceptual Review

This section delves into the underlying concepts of accounting information system. It gives an information system,

2.2.1 Information Systems

Information systems (IS) basically involve several components of a system which produce information through interactions and network (Monk, 2012). According to Sharma and Bhagwat (2006), smooth flow of information within organizations/ institutions determine to a large extent its sustainability and survival regardless of its nature, scope, size and mode of operation. In this current dispensation of business activities, availability of sound information systems in organizations provide competitive advantage to its implementers and influence the survival of these entities (Shaman, 2013; Sharma & Bhagwat, 2006). In some advanced countries like China, a success story regarding innovations on effective utilization of competitive accounting

information systems have been told in most institutions. Providing effective intervention programmes like British Overseas Trade Intelligence Service (BOTIS) has contributed immensely towards provision of efficient information on products, services, markets, technical data and business opportunities across the world to enhance development of trade (Bughin, Chui & Manyika, 2010).

2.2.1.1 Accounting Information Systems (AIS)

According to Gutierrez et al., (2011), accounting information system involves adoption of systems for generating, processing and reporting information on business activities to facilitate business decision making by management of organizations. Okello-Obura (2009) define accounting information system as an integrated body of components inherent in a system to gather, process, retrieve, store and distribute information to enhance dissemination of information flow for business activities. He further pointed out that aside information systems providing management with necessary data for effective decision making, it facilitates the analysis of problem, identifies complex issues and create avenue for innovative products and services to promote good customer satisfaction (Okello-Obura, 2009).

3

Ensuring sustainable accounts on activities of institutions is critical to its performance and success irrespective of whether the institutions are profit or non-profit oriented (Ury, 2011; Okello-Obura, 2009; Gutierrez et al., 2011). As espoused by Romney and Steinbart (2017), in business environment, accounting is seen as a language that serves as a catalyst to provide necessary intelligence on information needed to undertake activities to achieve corporate goals and objectives (Romney & Steinbart, 2017). Amidu, Effah and Abor (2011) and Amaefule and Iheduru (2014) considers accounting information system as a component management information system for managing financial data in organisations. Accounting in its traditional form is considered by

stakeholders as an information system involving a three stage-cycle to process transactions to produce financial statements (Mancini, Dameri & Bonollo, 2016). Accounting information systems supply managers with necessary information to make choices or preferences among several alternatives to use scarce resources for attaining goals of organisations. Reliable information through an effective accounting system can be ascertained by users to make informed decisions in institutions (Pirayesh, forouzandeh & Louie, 2018).

Malait, Naibei and Kirui (2017) emphasized that with the emergence of IT in organisations, the medium and mode of generating information has changed rapidly which accounting systems are not exempted. The availability of well-updated information on financial issues through proper systems provide an avenue to share accurate information among stakeholders in organisations. It is paramount for accounting systems to be able to capture non-financial information to aid financial information for good decisions to be made on issues within organizations (Brecht et al.,1996). It is incumbent on management of institutions to ensure that accounting information systems have the capacity to produce reliable, timely and accurate information for its users in this era of IT age. Smooth and effective implementation of good accounting system will serve as a tool in ensuring improvement in work-flexibility, quality of work done, improved performance and increase in productivity as a whole (Fang et al., 2006). Organisations with better accounting systems are able to manage their activities through reduction of inventories, enhanced customer service provision, good data analysis and increased customer service provision and increase in profit margins (Fang et al., 2006). Accounting systems go beyond production of reports on financial issues in organizations but serve as controlling mechanisms in the area of budgeting (Malait et al.,2017). Gelinas et al., (2005) noted that accounting system combines concepts and principles in addition

to concept of information system to produce financial data for users to embark on effective decisions.

Akande (2016) indicated that one of the main purposes of accounting information system is to process data on events as they occur in organisations with its possible effect on sustainability. It involves collection, processing, maintaining and sharing of information to stakeholders (Stefanon, 2006). In modern times, innovations arising out of technology have dominated the centre-stage of business operational performance with accounting information systems. Computers and software have made it possible for organisations to employ computerized accounting systems for their activities (Stefanou, 2006; Akande, 2016).

In the submission of Boame (2014), organisations financial managers are expected to have data on past performance of their activities to enable them forecast into the future through enhanced accounting information systems. The outcomes of accounting information systems are used by management at different levels within organisations/ institutions as well as other stakeholders to make strategic decisions at the operational, tactical and administrative levels (Lalin & Sabir, 2010). Beke (2010) asserts quality decisions are achieved as a result of improved accounting information systems due to easy access to information by stakeholders. Borthick and Clark (2009) established that accounting systems are adopted to satisfy a need in organization for information generation purposes. The relevance of accounting data can be achieved when the needs of its users are met on timely basis with ease (Barthick & Clark, 2009). Investors of organizations normally rely on financial reports to make decisions on their investment since they are not directly involved in the firm's performance. Financial statements provide adequate highlights on the financial position of organisations for investors to take concrete decisions on their participation motives (Beke, 2010; Borthick & Clark, 2009).

2.2.2 The Manual Accounting System

Traditionally, manual accounting involves the use of pen and paper to perform accounting transactions. The use of this method is not difficult but cumbersome and unbearable when loads of transactions are expected to be processed within very limited timeframe. With this approach, a mistake can trigger all entries made to be inaccurate and difficult to correct since it affects everything from beginning to the end. The adoption of manual system is slow and prone to errors (Fowler, 1993). The manual accounting system has several advantages like cheap workforce and independence from machines. However, adoption of manual accounting systems has setbacks in the area of reduction of operational speed, slow reporting, workload increases and poor backups (Akande, 2016; Adjei, 2013).

The invention of double entry of accounting in the 14th Century led to the inception of manual system (Alexander, 2002). The use of handwritten records in notebooks popularly known as ledgers and this led to developing terms like bookkeeping (Ury, 2011). Dacosta et al., (2012) maintained that manual accounting system is repetitive in nature and generates boredom at the workplace. The issue with backups was not left out since it was considered herculean due to many books involved. In developing countries like Ghana, a lot of financial records have been lost due to fire outbreaks, flooding and theft because of poor backup systems associated with the manual approach of performing accounting transactions (Dacosta et al., 2012).

Ama (2004) emphasized that special journals are used to streamline journalizing and procedures for posting entries. She further claimed that large volumes of transactions can be handled effectively through classification using special journals. Reporting can be done by employing double entry bookkeeping practices. One significant factor in relation to the manual system is, users or accountants' ability to reconcile individual accounts within the ledger based on

information contained in the books in an orderly way. With this method, users can make notes on accounts that need corrections and clarifications (Ama, 2004).

2.2.3 Concept of Computerized Accounting System

Munide (2013) defined computerized accounting information system as a system where software is adopted in the gathering, processing, storing and retrieving of accounting information. To ensure accuracy of financial reports in organizations, a clear position in terms of its asset's debt ratio, profit margins to mention but a few should be genuinely captured in the accounting records (Abdulrazak, 2013). Decision making processes in organizations are facilitated by the development of computerized accounting information systems. This is because these systems are highly accompanied by better speed, accuracy, timeliness, reliability, accessibility and quick analysis (Amviko, 2011; Amidu, Effah & Abor, 2011; Mohd, 2012). A well-instituted computerized accounting system according to Adjei (2013) stand the chance of processing financial transactions and other events more accurately based on user's requirement.

For every accounting system to meet standard, it is imperative for the system to meet generally accepted accounting concepts and principles. This will enhance easy generation of reports and maintenance of records. For computerized accounting system to be sustainable, there is the need for a computer hardware and software to operationalize the events or sequence of activities undertaken. Adjei (2013) further reiterated that a particular kind of accounting system adopted by organisations influence their choice of hardware to be procured and these are done taking into consideration a number of factors like number of users, confidentiality and nature of activities conducted by various departments or units within organizations (Adjei, 2013).

Financial statements from computerized accounting information systems should provide basic guide for interested parties like potential investors and regulators on the strength and weakness of the financial position of organisations for prudent and decisive decision making (Barako et al., 2013). Irrespective of the nature and size of entities, accounting systems are designed to present periodic information on financial position of firms (Oluoch, 2014). The author further stressed that quarterly reports, performance assessments, audits, annual reports and evaluations are tools that can be generated out of computerized accounting system for entity development and growth (Oluoch, 2014). Munide (2013) points that central to fiscal discipline and management of firms largely depends on the existence of sound accounting information system suitable for the entity.

Prudent fiscal accountability can be achieved through a formidable structured computerized accounting information system that has clear objectives set out by managers of the organization (Amidu & Effah, 2010; Munide, 2013). For a computerized accounting information system to be effective, a clear set of instructions ought to be made with precise computations in order to generate desirable outcomes for its users (Abor, 2005). Departments and units within organizations/institutions are able to function well due to existence of computerized accounting systems with its inherent just-in-time accounting information. Availability of reliable financial information on computer-based systems make it highly possible for accountants and other users to prepare reports and analyse operational situations which gives authorities needed update on services provided by institutions. With this, profit and loss accounts, cash flow statements are accessible to stakeholders with a computerized system. Computerized accounting systems have features that ensures that accounts are effectively balanced before preparation of financial reports are captured. Entries input by individuals are recorded appropriately in the journals (Yeboah, Kwarteng & Oppong, 2014). Shanker (2008) indicated that the inculcation of ICT in organizational

activities facilitates cost reduction on transactions, removes barriers on distance and geographical boundaries.

2.2.4 Accounting Information Software System (AISS)

Accounting information software consists of a well-packaged software that is functional on an active computer system meant for conducting all kinds of accounting tasks. This can be through inputting, storing, retrieving, analyzing and disseminating of needed information among categories of stakeholders based on organizational structure and user-needs of individuals at each level as required (Hunton, 2002; Spathis, 2006). The use of software enables sharing of information among stakeholders across different departments and units of organizations/institutions and this can be both internal and external (Dalci & Tanis, 2004). Large mainframe computers have been replaced by small-personal -computers at a relatively cheaper cost that is somehow affordable to most organizations/ institutions in modern times (Adjei, 2013).

Most accounting software have embedded features like accounts receivable and payable, payroll and trial balance. In recent times, several accounting software can be generated online for performing accounting activities in institutions based on their specifications. Amidu (2011) emphasized that software can be designed to suit specific needs of small and large institutions/organisations. For him, entities that acquire software for their activities on large platforms usually contact the software vendors for other technical support to enhance their usage effectively. Amidu further stressed there exist three types of commercial accounting information system software and these include vender support systems, turnkey and backbone systems respectively. In most cases, turnkey software is finished and properly tested for them for their capacity and functional properties. These softwares are easy to be implemented in business activities and common examples are Oracle and Enterprise Resource Planning (ERP) systems.

With backbone systems, there are existing structures for vendors to build various user-interfaces for organizations based on specifications required or needed for the firm's activities. Vendor-supported systems are customized to suit a particular need of client. The vendor designs the system, helps in its implementation stages and offer maintenance assistance to the client that acquired the software (Adjei, 2013).

2.2.5 Benefits of Computerized Accounting Systems in Organization

Rogers (2013) held the view that entities without requisite technologically innovative systems become less competitive on the market which they operate due to lack of efficiency and effectiveness in their operations. The World Bank ICT Development Index in 2016 shows that despite developing countries having the least adoption of ICT application for performing tasks in both private and public sectors, there have been continuous improvement in the usage of ICT modules to conduct businesses and perform transactions than developed countries (Rogers, 2016).

Inghirami (2013) claimed most entities in recent times adopt accounting information system with ERP and therefore AIS systems accommodate transactions as well as reliable instruments appropriate for analyzing data for effective decision making to achieve development and smooth implementation of strategies at the management level (Bodnar & Hopwood, 2012). A study conducted by Alshebeil (2010) in Jordan showed a positive significant effect of accounting information systems on competitive advantage of banks. There were cost reduction in banking services, improvement in the level of speed at which services were provided to customers and increase in market share (Alshebeil, 2010). In the work of Amveko (2011), there was a positive correlation between computerized accounting information systems and timeliness, accuracy on financial reports in Kampala. Good computerized accounting information systems were found to have positive influence on quality of financial reports meant for publication.

El-Dalabeeh (2012) in his work established that cost of providing medical services were much lower in hospitals with computerized accounting information systems than the ones with non-computerised systems. Agbim (2013) maintained that the adoption of computerized accounting information systems has contributed to effective accounting operations for institutions. For instance, receipts can easily be generated based on timely transfer of records into required accounts in the system. Agbim (2013) reiterated that computerized accounting information systems are reliable and offer a lot of transparency at the organizational levels. Hutton (2012) conducted a study and found a strong positive correlation between computerized accounting information systems and effectiveness of organizational activities. This suggest that as information on accounting practices, become easily accessible, it will lead to effective discharge of organisational tasks by its employees and satisfy the need of customers appropriately.

Masenda (2019) indicated that schools that have adopted computerized accounting information system as opposed to stand-alone legacy systems and/or are still using the manual form of accounting recorded less cases of financial malpractices. This implies that efficiency and effectiveness of resources can be achieved since less resource will be wasted or unaccounted for and though the ultimate aim for adoption of computerized accounting systems is to increase speed, accuracy and timeliness, it also assists in providing checks and balances of financials.

Yeboah et al., (2014) stressed that the inception of computerized accounting systems have made it possible and easy for accountants to process large volumes of data into meaningful information timely. Complex and cumbersome data that in actual sense would have taken couple of months to handle are easily dealt with at a lower or affordable cost (Yeboah et al., 2014). Adjei (2013) emphasized that banks have benefited greatly from computerised accounting system through accessibility of information for audit purposes. With this, payments and receipts are easily

identified by the system and lessen the burden of auditors having to scrutinize large volumes of accounting records for decisions making. Morris (2014) conducted a study in Uganda on accounting information system effects on profitability of small-scale businesses. The study found a positive relationship between accounting information system and profitability of small-scale business. A similar study conducted by Haddad and Ahmah (2007) in Jordan found a positive relationship between information systems but negative correlation between accounting information systems and strategic decision making. Studies conducted Siamak (2012) and Sarai, Zariyawati and Annuar (2010) show that better accounting information systems have the potential of affecting performance of organization through improved efficiency and effectiveness.

2.2.6 Factors that influence the adoption of Computerized Accounting Information System in Organization

As espoused by Alsaaty (2012) and Rogers (2016), the existence of poor accounting practices in organisations call for the need to adopt better computerized accounting information systems. Abor and Quartey (2010) on the other hand rather focused on the use of inappropriate IT systems and concluded that it has partly contributed to the need for sustainable computerized accounting systems in firms. These issues prompted authors like Murthy (2016) and Moffitt et al., (2016) to suggest that a critical look into effective and efficient approaches to sound accounting systems should be paramount and germane to the heart of organisations' operational issues. Mancini et al., (2016) argue that accounting data and information should be easily accessible to interested stakeholders without hindrance or restrictions. This should cut across entities, groups and other functional units of an organisation.

Mancini et al., (2016) further posits accounting data and information are needed to be shared among various stakeholders to serve purposes for which it was produced. Keer, Rouse and De

Villiers (2015) and Mancini et al., (2016) shared similar views that there is need to reuse accounting information and report on issues concerning social, environmental and governance system practices to stakeholders. To achieve this, calls for swift need to inculcate computerized accounting information system in organizations. The existence of such practices lead to integration of variables to promote accountability, transparency, effective communication and formalized beliefs of firms.

According to Gokhale (2011) and Mancini et al., (2017), there is a drastic shift from the use of traditional method of performing accounting transactions to computerized systems. This taste in technological change has led to the adoption of internet services for enhancing communications and sharing of information in organisations. Tools employed in social networks like social messaging like Facebook, Twitter, to mention but a few has gained momentum in most firms to improve dialogue among stakeholders. Mancini et al., (2016) noted that in modern times, most entities have in place social media platforms where they report and disclose certain information that they may be relevant to stakeholders. Institutions annual reports, profit and loss accounts, financial statements are posted onto platforms like Facebook and Twitter for easy accessibility.

Several authors like Al-Qirim (2007), Sam et al., (2012), Thong (1999) and Zhu and Kraemer (2005) shared similar positions that organisations whose authorities are more IT inclined are likely to adopt computerized accounting system for their activities. It was found that most small-scale and medium-sized enterprises owners with broader IT knowledge adopted it to provide services to their customers in countries like France, Singapore, Germany, China, US and Mexico where the studies were focused. Al-Qirim (2007) and Battish et al., (2007) established that there was a significant influence of competitive pressure on decisions taken by entities in relation to adoption of computerized accounting information systems. This assertion however was debunked by

Rahaya and Day (2015) who laid emphasize that adoption of computerized accounting systems was not influenced by competitive pressure from business environment where SMEs operated. Niclolaou (2000) and Greehalgh et al., (2004) share common knowledge on the issues of compatibility, norms and values as key factors which influence the decision to adopt computerized accounting systems in organisations. Management of organisations are likely to accept computerized systems that fit their operations and can facilitate the rate at which execution of activities are done effectively with such innovative technologies.

2.2.7 Computerised Accounting Information system utilization in Organization

In Ghana, the National Information and Communication Technology for Accelerated Development Policy meant for promoting ICT-based socio-economic activities in various sectors of the economy was introduced in 2003. Though existence of the policy is laudable but it appears its implementation and acceptance have not gained adequate prominence in most Ghanaian organizations/institutions. Ghana was ranked 109th in the world based on ICT Development index in 2017.

Beggiato et al., (2016) emphasized that most institutions and organisations in developing countries are not computerized-based and this trend was worrying which needs urgent attention by concerned stakeholders. According to Taragola et al., (2001), firms' decision and willingness to employ accounting software for their operational activities is highly dependent on favourable environment and positive attitudes towards accounting. The authors reiterated that the size, computer literacy level of management, innovation and growth potentials of an institution influence the adoption of computerized accounting systems in entities. Zulkifflee (2013) was emphatic and categorical in concluding that good accounting systems adoption by entrepreneurs engaged in SMEs were directly related to the kind of competent staff recruited and good

recordings. Breen et al., (2003) conducted a survey in Australia on computerized accounting systems and found that 96% of owners of SMEs adopt it base on their level of knowledge in the use of software packages like Quickbooks and attache. Ismail et al., (2007) established that through computerized accounting information systems information can be shared vertically, horizontally and laterally among stakeholders in organizations to provide accurate guide on financial management to relevant government agencies and departments for taxation purposes.

2.2.8 Computerised Accounting Information system utilization in MMDAs

MMDAs in Ghana are governed by the Local Government Act which provides directions and information on how activities at the local level are supposed to be dispensed to promote socio-economic development in communities. The assemblies are expected to provide efficient and effective avenues to mobilize revenue to undertake developmental projects. For this to happen, Boachie Danquah (1996) stressed the need to be self-reliant in terms of finances by MMDAs. Prudent financial management practices are needed to achieve sustainable financial success among MMDAs. Awaitey (2003) espoused that financial management involves adequate and effective planning, budgeting and controlling resources of entities to achieve set goals and objectives. With this, a good financial management system ensures prudent allocation of funds to firms, maintaining proper controls and how appropriate the funds are spent to achieve desired objectives of organizations.

Public institutions in Ghana are regulated by Ghana Public Financial Management system that entreats all public sector institutions to conform to the Financial Administration Act 2003 (Act 654) to mention but a few. It presents how fiscal activities by institutions which MMDAs are no exceptions should be handled. It provides information on budgeting and accountability issues

needed to be observed by the assemblies in the quest to enhance financial discipline (Boachie-Danquah, 1996).

Asibuo (1992) gave a clarion call for the implementations of effective financial control mechanisms to curb the alarming rate at which financial malfeasance were perpetuated by public sector workers in Ghana due to poor accounting information systems. One of the major entities that top such worrying occurrences were MMDAs where accountability on financial practices were prominent. Due to decentralization, finances of local government are regulated by standard principles set out to ensure good mobilization and spending behaviour of assemblies based on the Local Government Act, 1993 (Act 462). Fosu, Krah and Obeng (2013) assert that effective financial management practices can be achieved when Central Governments programmes or decentralisation are appropriate and has the tendency to enhance financial autonomy by the assemblies. Boateng (2019) documented that accounting information software is positively related to efficiency of processing financial information in New Juaben Municipality.

Sanyo et al (2021) indicated that digitization influences goal-oriented organizational actors which in turn produces relational affordances to provide digital transformation and transformational outcomes such as digitalized processes, improved efficiency, digital innovation, and improved value creation.

In Chirika (2019) study, the researcher documented that computerized accounting information system has a direct relationship with the success of SMEs in Harare largely due to the improved performance as a result of accurate financial statement and the speed in decision making due to readily available information.

Authorities of Local Government in developing countries like Ghana over the years have been criticized severely for their inability to perform well in the area of prudent spending. In addition, their performance in relation to developmental projects have not been the best to the satisfaction of the general public. These issues among others have provided the ground for effective financial accounting systems among MMDAs operations to achieve better revenue targets (Fosu et al., 2013; Financial Memoranda for MMDAs, 2004). Chan (2003) gave three factors as the main purposes for accounting practices among government institutions. The first has to do with safeguarding public treasury, two, promoting effective financial management and the third been ensuring good accountability on the activities of these institutions. For this happen, funds are expected to be spent and managed according to enacted laws and procedures through sound accounting information systems.

2.2.9 Challenges associated with the use of Computerised Accounting Information System in Institution

Huge cost of designing and implementing computerised accounting information system has been regarded as key factors hindering its adoption by firms for providing products and services to the public (Adjei, 2013). He further stressed that better components are needed to build an efficient system and usually cost of software to be procured from vendors are high thereby making management reluctant to adopt computerised systems (Adjei, 2013). The issues of breakages in relation to hardware's, poor connectivity on networks, software failure, piracy, breach of confidentiality and virus attacks on installed programmes makes it difficult for some firms to adopt computerised accounting information systems (Lin et al., 2011). Appiah et al., (2016) raised concerns on the issue of security threats, unauthorised access to the system, damages caused by fire outbreaks and rain as well as deliberate destruction of data on accounting practices. To them,

these are critical factors that challenge the adoption of computerised accounting information system in organisations.

3

Abu-Musah (2006a; b) detailed that disclosing and sharing of passwords among users, data destruction, dissemination of information to unauthorised individuals, virus attacks and misdirection were dominant factors towards poor utilization of computerised accounting systems in most Saudi Arabia organisations and banks in Egypt. Romney et al., (2009) emphasized that errors inherent in softwares, political disaster and poor function of computer equipment due to their obsolete nature accounts for the apathy towards adoption of computerised accounting systems in most firms. Hood and Yang (1998) reported that security threats bothering the use of computerised accounting systems in entities like the banking sector in China were perpetuated by external sources through various hacking mechanisms. This assertion was debunked by Dhillon (1999) who was categorical that threats that hinder smooth usage of computerised accounting information systems emanated from internal sources within organisations. Green (2003), Abu-Musah (2004) and Swann (2004) later stressed that employees of organisations were potential threats to the sustainability of computerised accounting systems. The adoption of computerised accounting information systems in organisations are faced with myriad of challenges like lack of personnel with requisite expertise to run the system, unbearable maintenance cost and computer failure (Sekyere et al., 2017). Adjei (2013) indicated that there was a rising cost on computers and its peripherals making it difficult for some firms to purchase. He posits for example that a desktop computer sells at GHS 1500 and beyond, whereas laptops can cost GHS 4000 and above. This is considerably high on the market and this deters its patronage to undertake computerised accounting systems in firms. Bolton and hand (2002) note that there was high cost incurred on learning how

to use computerised accounting systems and this influence managers of firms to swerve its patronage and acceptance.

Hazem et al (2019) in his work emphasized that Malaysian Local Authorities ePBT system suffers from lack of financial support and low level of technical skill for system integration. Accountants of the sampled local authorities stated these as their concerns “our vendor currently does not fulfill our requirement to customize the system; the company not following what we prescribed; vendors also lacking the understanding about the integrated system and our organisations are reluctant and are only willing to implement the successful model following implantation among other organisations”.

2.2.10 System Quality and Organisational Performance

User satisfaction derived on utilization of well-designed system depends to a large extent on quality. This has influence on the desire to conduct business activities by users of the system. Improved user satisfaction on accounting system have positive influence on individual and organization performance (Doms et al., 2004). A system of good quality attribute consists of good design, well-implemented and user-friendly components developed to produce meaning information for users. A system poorly designed is prone to system crashes with its accompanying issues like apathy to use by users. This situation has the potential of increasing the cost of operations in order to deliver products and services to customers (Zimmerman, 1995).

2

The quality of data stored in a computerized system is positively related to the quality of information generated by users when right instructions are entered. The quality of information generated can be linked to effective decision making by management, increase in productivity as well as effective operationalization of organizational tasks to achieve efficiency. The competitive

advantage of firms adopting computerized accounting system is directly related to the nature of its software quality. The quality of a well-designed system is measured by its speed, accuracy, user-friendliness, security and ability to store adequate data for easy sharing and communication. Some researchers like Daniel and Inim (2019) hold the position that benefits of entities and system quality are positively related. However, reliability of a system does not guarantee effectiveness and increase in productivity of firms. They found that there was no correlation between system quality and individual performance (Daniel & Inim, 2019).

2.3 Theoretical Review

2.3.1 System Theory

Robert Kahn, Daniel Katz and James Thompson in the 1960s developed the systems theory (Jones, George & Hill, 2000). Accounting information systems either computerised or traditional method can be assessed using systems theory approach. Marfo-Yiadom (2005) stressed a system consists of well-integrated units which come together to undertake specific actions to achieve desired objectives. There are two kinds of systems inherent in systems theory and these include open and closed systems. An open system has the capacity to accommodate and take inputs from external sources whereas a closed system does not allow or receive inputs from external sources since they are self-contained (Jones et al., 2000). Computerised accounting information as well as the manual system best suit the open type since it has the ability to contain both systems based on accounting principles. Accounting as a system require inputs that are processed into meaningful information using accounting softwares to provide financial statements on operations of firms required for decision making by authorities of firms.

2.3.2 Diffusion of Innovation Theory

The diffusion innovation theory basically involves bring out certain idea, systems, products, services that can be regarded as new to people (Rogers, 2003). According Rogers (2003) DOI is categorized in two folds with the first been ability to create the invention and the second has to do with being able to convert the intended inventions into something concrete, practical and applicable to serve a purpose. Rogers (2003) emphasized the innovation could be expressed in terms of newness attached to knowledge and the apathy to employ such ideas for certain activities. For instance, replacing new systems in organisations may not considered as been innovate in its normal sense since the new system may be chosen as a result of the obsolete nature of an old system in existence. The situation where communication on new systems are done to enlighten users is known as diffusion (Rogers, 2003). The communication can be effected through meetings, advertisement, interpersonal relations at the workplace among employees.

2.3.3 The Technology Acceptance Model

The Technology Acceptance Model is concerned with issues surrounding the acceptance of an information technology system by individuals, entities and general public (Molinillo & Japutra, 2017). This theory is highly premised on the assumption that individuals and organisations are likely to adopt and accept a particular technology when a careful analysis depicts that the new technology will facilitate and enhance their performance on job activities. Moreover, new technologies are more likely to be adopted when it is easy to use for purposes for which it was created without difficulties (Davis, 1989). Ngadiman (2014) conducted a survey on accounting information systems guided by variables like system compatibility, quality and relevance based on TAM theory. There was positive correlation between system quality, relevance and that of intention to employ the said systems by the firms selected for the study due to the usefulness of the system.

2.3.4 Agency Theory

Nang (2017) claimed that agency theory has been adopted by most firms in ensuring effective accounting information system practices over the last 20 years. This theory is premised on the assumption that the system allows integration of mechanisms ranging from conflict of interest to major controls using models that easily accessible to deal with issues so far as accounting practices for example are concerned (Kaplan & Norton, 1993). With this theory, both the principal and agent act based on their self- interest and this can result in conflicting motives and objectives. Usually, consensus and equilibrium are reached when there is compensation contract to ease the conflicting objectives. The allocation of outcomes between principals and agents is termed as contract and this could be in the form of oral or written based on the terms reached by the parties (Nang, 2017).



2.5 Conceptual Framework

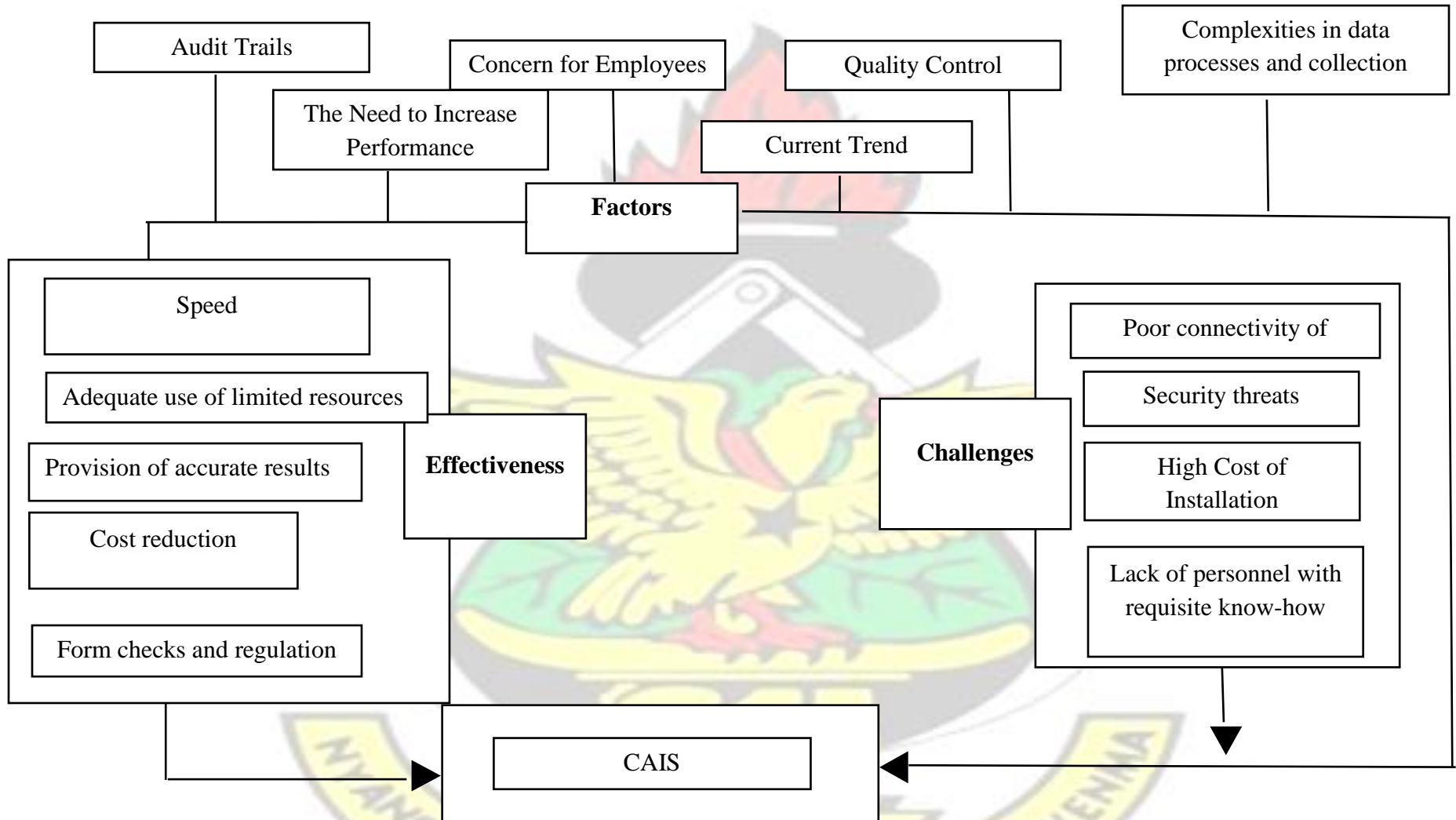


Figure 1 Conceptual Framework

Source; Author's Own construct (2020)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Chapter three of this study deals with methodology employed by the researcher to conduct the research. It consists of techniques, strategies and methods adopted to collect and analyse data to produce meaningful information on the subject under investigation.

3.2 Philosophical Consideration

A chosen research paradigm guides the philosophical stand of a research work. Pollack (2013) defined research paradigm as a set of commonly shared assumptions ideas or tenets within a community which constitutes and guides the way of perceiving reality. Since the definition refers to a common shared assumption within a group of people, research paradigms vary with conditions. Consequently, a number of positions are presented from which the most suitable for this study is chosen. Epistemology is concerned with what is portraying what is regarded as true knowledge about the social world (Panas & Pantouvakis, 2010.) Saunders et al., (2009) stated that the epistemological philosophy describes the researchers position on what is regarded as acceptable knowledge. Several researchers have identified the two main paradigms of the epistemology philosophy as Positivism and Interpretivism. The positivist view is concerned with the quantitative approach and that of the interpretivist leans towards the qualitative approach. Farrell et al., (2011) on the positivist approach of the Epistemological philosophy indicated that verified facts established through scientific study in an objective manner for replication constitute the positivist approach. Interpretivism, on the other hand, believes that the researcher and the society interact with each other such that what is believe to be facts are not static and lacks objectivity as they are subjected to the ideas of the research (Agbodjah, 2008). It relies on the interaction and the experience of the researcher and the social world to understand the phenomena.

Panas and Pantouvakis (2010) classified the Ontological philosophies into Objectivism which is concerned with the investigation of social phenomena without social interactions, as well as Constructivism which postulate that social phenomena are not static therefore require social interactions. Objectivism leans towards the quantitative approach whereas constructivism is linked the qualitative approach.

This study leans towards the positivism and interpretivist paradigms of the epistemological approach since it is guided by objective evaluation and predictions. The main objective of this study is to assess the effectiveness of computerized accounting information system in some selected MMDAs using Kumasi Metropolis as the case study.

3.3 Research Strategy

The overall approach adopted stipulated a quantitative approach and qualitative approaches. Quantitative Research is concerned with measurement in the collection and analysis of data (Bryman, 2004). According to Bryman (2004), measurement is important so as to distinguished between people in terms of characteristics in question, provide a consistent yardstick for gauging differences and provide a more accurate estimate of degrees relationship. The peculiar nature of quantitative approach in terms of its epistemological and ontological features, position it to mean more than the presence of mere numbers (Agbodjah, 2008). Meanwhile, the qualitative approach deals with handling data using words and this was done through interviews conducted.

3.4 Research Design

This study employs descriptive and exploratory research approaches. The approach is justified since the researchers' goal is to collect first-hand information and quality information (Creswell, 2012). Qualitative method has been employed to analyze the outcomes from interviews. Due to the fact that the data used is sourced from primary data and will be analyzed using content analysis,

hence qualitative methods is justified (Yilmaz, 2013). In addition, the case study approach has been employed since this research has been situated in MMDAs in Ashanti region, hence it takes it the appropriate choice of study (Yin, 1994).

3.5 Population of the Study

For this study, the target population consist of employees of the selected MMDAs with specific reference to AA, BA and CA assemblies. These MMDAs were selected for the survey due to the existence of computerised accounting information systems adopted to undertake accounting practices. Specifically, employees working at the Finance Office, Budget unit and Procurement unit will be highly focused. Since the research problem is one, which has been barely explored, there is the necessity to use participants with valuable experience and knowledge in the accounting practices.

3.6 Sampling Technique and Sample Size

The sample frame for this study involves employees of selected MMDAs for the study. Convenience and purposive sampling techniques were adopted to select the sample size. The purpose aspect was meant to select Accounts Personnel, Budget Officers and Procurement officers since they are responsible for day-to-day running and management of operational activities with the use of computerized accounting information systems. The purpose was to ensure that the people of interest to the study were reached to ensure smooth and adequate responses are elicited from respondents. Convenience sampling was employed to select other employees with the motive of ensuring easy accessibility of respondents. The brain behind this move was to ensure people who are willing and available at the time of the survey were selected for the sample. To achieve this, a formula by Nwana (1992) which states that it was appropriate to 50% of a population in few

hundreds as the sample size, 20% for more hundreds, 10% for few thousands and 5% for more thousands. Details of the population and sample size are contained in Table 3.1.

Table 3.1: Population and Sample Size

MMDAs	Department	Population	Sample size
AA ASSEMBLY	Finance	10	5
	Budget	4	2
	Procurement	3	1
BA ASSEMBLY	Finance	8	4
	Budget	4	2
	Procurement	4	2
CA ASSEMBLY	Finance	8	5
	Budget	3	2
	Procurement	2	1
Total		46	24

Source: Field data, 2020

3.7 Sources of Data

Data collected for this study emanate from primary and sources only. With the primary data, it comprises of first-hand data which is not known to the public and it emanates from the questionnaire and interviews conducted.

3.8 Data Collection Instruments and Procedure

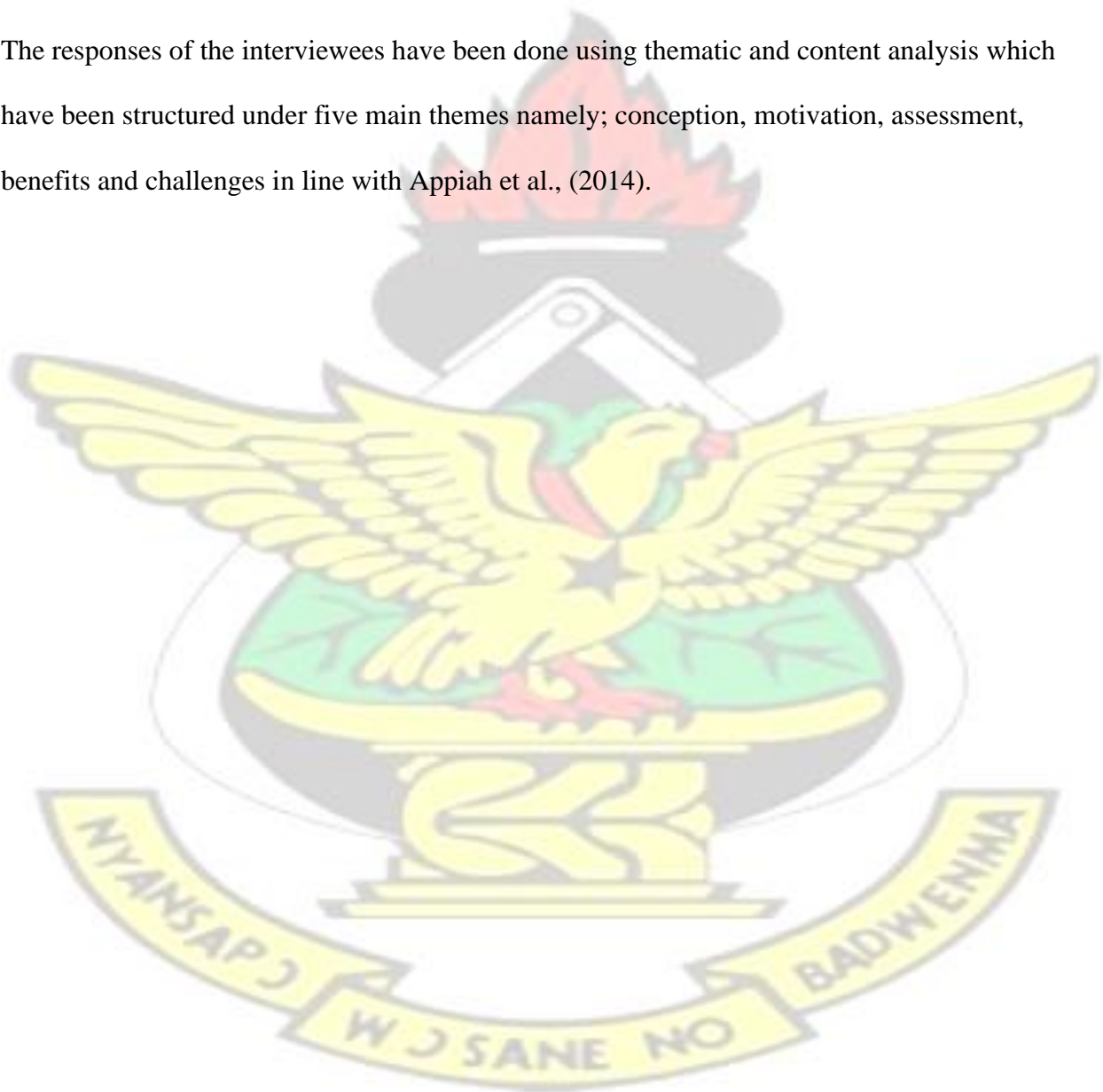
3.8.1 Interview guide

A semi-structured interview was designed to enhance the qualitative aspect of the study. Some stakeholders like Municipal Chief Executives and the Coordinating Directors of the selected

MMDAs. This was to enhance adequate understanding of key issues on computerized accounting information system usage in MMDAs. Most of them are very busy and therefore may find it difficult in responding to questionnaires and this motivated the researcher to use interview guide instead. Details of the interview guide can be found in appendix A.

3.9 Data Analysis

The responses of the interviewees have been done using thematic and content analysis which have been structured under five main themes namely; conception, motivation, assessment, benefits and challenges in line with Appiah et al., (2014).



CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

The chapter four of this study deals with the presentation of results which emanated out of the analysed data and the discussion which accompanies it. Critical issues dealt in this section include demographic characteristics of respondents, factors that motivate MMDAs to adopt computerised accounting information system, benefits of computerised accounting information system, accuracy of computerised accounting system and financial reporting as well as challenges confronting MMDAs toward the adoption of computerised accounting information system.

4.2 Conceptions of CAIS by MMDAs

From the field survey, the responses of the respondents provide enough evidence to support what is done in practice against the theoretical definitions provided in a study environment.

4.2.1 Definition of CAIS in MMDAs

Respondents define the term 'CAIS' in their own understanding and words. Most of the respondents agreed on the constituents and outcomes of information systems. Summarizing the definition under common keywords used CAIS is the software that is used in the management of financial transactions. Another respondent from AB district also define CAIS as a system that is used in the generation of meaningful accounting information devoid of mistakes.

Again, another interviewee from AC district stressed that automation has come to stay such that there is a current facility that is being pursued by their district named DLM (Deposit Local Management) system which is mainly meant for internal use to be used by revenue officials or collectors to collect revenues from taxpayers and which gives an immediate update to the district supervising manager on which taxpayer is defaulting or honour tax commitments.

One of the managers from AA district defined “CAIS” is a software used to gather information which are related to expenditure and revenue. Another respondent’s definition is an accounting information systems that is used in the collection, storing and accounting processing financial and accounting data that are used by decision-makers. In BA respondents’ view, CAIS is any system that is used by an organization to ensure the achievement of efficiency and effectiveness in financial transactions. CA respondent also defines it as a comprehensive computerised software that generate processed accounting reports.

4.2.2 Constituents of CAIS in MMDAs

From the field survey or interview conducted, the emerging components of CAIS is the revenue mobilization software and the GIFMIS (Ghana Integrated Financial Management Information Systems), DLM (District Local Management) system. Interestingly, within MMDAs they still maintain some manually aspects in their operations just like state owned enterprises stated by Appiah et al., (2014). These main reports include record keeping which comprise of the preparation of payment vouchers, asset register, contract books and cash receipts in all the three selected MMDAs.

As noted by Appiah et al., (2014), authorising and preparing of documents within the Ghanaian public sectors is regulated by statutory provisions such as the Public Financial Management Act 921 (2016), Financial Administration Regulation (2004), the Financial Administration Act (2003), the Internal Audit Agency Act (2003) and the Public Procurement Act (2003). Another interesting revelation from the survey is that all the respondents stressed that the Public Financial Management Act 921 (2016) impose and require all MMDAs to use a computerised accounting information system, specifically the GIFMIS, for the payment of any item from the district.

Even with the aspect done manually, they are later entered on a computerised accounting system software Microsoft Office Excel and the GIFMIS to generate trial balances and financial statements in all districts. Additionally, due to the Public Financial Management Act 921 (2016), without the automating of payment voucher into the GIFMIS, money disbursement cannot take place and or is difficult. The system has been designed in such a way that it is centralized and whatever activities being done on the system is monitored and checked by others.

4.2.3 Inputs and Outputs of CAIS in MMDAs

Within all the selected districts, there is the need to enter the information onto the platform ranging from receipts of licenses, property rates and fees from taxpayers under the expenditure system and tax payers address. This contradicts Appiah et al., (2014) and Romney and Steinbart's (2009) assertion that inputs and outputs of a CAIS vary from one company to another, largely as a result of disparity in operations. In this case, the selected districts perform the same operations just situated in different geographical area and serving different consumer market. All district assemblies are on the GIFMIS system with AB district having plans to adopt another computerised accounting system to be used within the assembly for the mobilization of revenue from taxpayers, named Deposit Local Revenue Management System (DLRM).

Another interesting feature common to all the districts used employ CAIS for payment and revenue expenditure.

4.2.4 Users of the Output of the CAIS in MMDAs

Categorizing the feedbacks generated on the responses based on the outputs of the CAIS under internal and external users.

4.2.4.1 Internal Users

Internally, executive management and staff situated at the budget, finance, procurement and accounting department are the beneficiaries of the output of the CAIS. Access and the use of the system is restricted to only key staffs of the budget, accounts and procurement. The procurement departments generate the warrants for the payment of expenditure before the accounts department cannot issue payment vouchers. Another interesting feature is that the payments have been categorized under relaxed or third party payments. The relaxed payment is an activity which is undertaken by the assembly personnel such as allowance meetings, expenses for the meetings paid through the coordinating director and donations and support while third party payments refers activities which is undertaken by a third party such as a consultant and include the making of a purchase order or stores receipts advice.

There is a restriction or a firewall (in the form of virtual private network) which prevents outside or unauthorised users from logging unto the system. Additionally, there is a feature which is unique to each department such that one department cannot use the features of another department. Citing an example, the accounts department only have access to the preparation of payment vouchers and then entering of receipts, make funds enquiry while the budget officer prepare expenditure warrants. This reinforces the assertion of security checks outlined by Rommey and Steinbart (2009) and Appiah et al., (2014).

4.2.4.2 External Users

The findings indicate that CAIS adoption has improved the reporting of financials through the provision of timely mandatory reports to external users in all three districts. Respondents assert that the CAIS ensures mandatory compliance with the Public Financial Management Act 921 as well as improve high quality reports. As early on stated, the coordinating directors of the various

directors are mandated to make preparation of trial balances and the preparation of composite budget using the GIFMIS system. It was unanimously decided that data processing is not as tedious as it often used to be or tiring within the manual reporting. That said, information provided from CAIS is relevant, timely and faithful represent the information it purports to represent.

4.3 Motivations of CAIS in MMDAs

The origin of CAIS within MMDAs has been in operation and in use for not more than five years. One of the respondents confidently stated that within their district AB, the introduction of GIFMIS stated in the year 2016 while AC district stated affirmatively that the adoption of GIFMIS is only 2 years ago and is one of the newly established districts. Although mass adoption of IT has been in existence far as 30 years ago. Prior to the adoption of the GIFMIS, all financial related transactions were done manually or outsourced to consultants at a fee.

Dominating the change to the current system for CAIS is to create audit trails. An interviewee from AB district echoed the assertion that the manual system was biased and did not encourage transparency as such verification and errors seems to be the norm of the day such that the correction of audits took a longer period of time. It is against this premise that the mandatory adoption as stated by the Public Financial Management Act 21 was appealing and interesting adventure to pursue.

Interviewees were asked to answer “Yes” or “NO” in agreement or disagreement to whether these factors brought about the change to CAIS, that is concern for employees, quality control, the need to increase performance, current trend, complexities in data processes and collection, legal requirements and achieving a mission or vision statement, out of the 24 interviewed, over 90 percent responded affirmative that these factors brought about the change. These factors have been expounded while others also shared the cause for the change aside the outlined above below.

In responding to the issue of factors influencing the adoption of computerized accounting information systems in MMDAs, existence of poor records keeping system at the workplace. The occurrence of poor records keeping system among some MMDAs have given rise for the need to adopt comprehensive and well-designed computerized systems to manage accounting information. It has been a common phenomenon of employees finding it extremely difficult to retrieve tangible data or information meant for specific purposes in one way or the other. Some account officers sometimes do not adhere to proper bookkeeping practices and this makes the adoption of manual way of records keeping a bit challenging and unreliable in some cases. When records keeping activities on accounting processes at the assemblies are in shambles, it prompts management to undertake rigorous measures to curb the situation thereby calling for the introduction of computerized systems to handle information on accounting records better to achieve institutional goals and objectives. From the interview, it was captured as stated by one of the Municipal Coordinators that:

“The use of computerized accounting information systems nowadays at MMDAs has become urgent and necessary to curb the high rate of revenue generation shortfalls usually engineered by officers using loopholes in the manual system”

This finding is in line with earlier assertions made by Sekyere et al., (2017), Manson et al., (2001), Akande (2016), Adjei (2013) and Daniel and Inim (2019) who indicated that most institutions adopt technological advance systems to manage their accounting records effectively and efficiently to achieve development and successes in their operations.

From the responses, it was established that lack of accessibility to accounting records in MMDAs gave room for the need to adopt computerized accounting information systems. Sharing of

information among stakeholders of MMDAs is crucial to its success and therefore any impediment to such a course needs to be treated with the level of urgency it deserves. The storage and retrieval of information on accounting records at the assemblies selected for the study to execute their operations were manually conducted and found to be tedious and uncomfortable with missing incidence of some key files. This situation made transparency and accountability to some extent difficult over the years. The situation made it imperative for management to consider the use of computerized systems to store accounting data to enhance smooth dissemination of information among users and stakeholders of MMDAs. With these new systems, difficulties encountered with the manual or traditional method of keeping accounting records are expected to decrease. From the interview, a respondent stated that:

“One of the main reasons why the assembly changed from manual way of keeping accounting records was the difficulty inherent in access to basic information when the need arises. He further emphasized that sometimes one need some files to get information on revenue collected and some of the receipts would be difficult to trace and this makes the work very difficult with complications”

Without proper and easy access to information on accounting records, actual income and expenditure on revenue generated by MMDAs will be difficult to ascertain. This supports earlier findings by Mancini et al., (2016) who stressed that computerized accounting information systems were highly adopted by organizations to achieve better accessibility of information by its stakeholders without hindrances.

The third factor enumerated by the interviewee to have influenced the choice of computerized accounting information systems over the manual method has to do with the need for reliable and huge data storage capacity for accounting records. Due to huge sums of data accumulated daily by

the operations of MMDAs, it becomes prudent to use computerized system that can store large data to enhance reliable information management on accounting records. Computerized systems have the capacity store large volume of data without occupying physical space in offices compared to the manual method where papers are packaged in their volumes. MMDAs that encountered these frustrations on data and information storage capacity called for the computerized system, unlike the manual system where volume of information on accounting records are captured on papers, ledger note books to mention but a few. Adjei (2013) and Sekyere et al., (2017) held similar views that the traditional method of keeping and managing accounting records was cumbersome and stressful since it occupies huge space for keeping accounting documents in fields and folders at the workplace.

4.4 Assessment of CAIS by MMDAs

From the assessment, it came to light that the budget department have migrated from the use of “Activate” to the GIFMIS. Interviewees define efficiency as the ability of a system to generate the maximum output while effectiveness is the ability to perform a task up to the required time. Appiah et al., (2014) assert that the most appropriate way to assess a system is to compare it with a previous systems or a competitors’ system and improves employee efficiency and effectiveness.

AA District: The interviewees opine that CAIS helps the district to be efficient and effective. In their opinion, the facilitating role of CAIS to make work easy and fast for the preparation and delivery of services to users makes it effective. Another interviewee assessed efficiency and effectiveness using the criteria of timely delivery of information as premise that guarantees effectiveness and efficiency. Another interviewee brings about an interesting revelation that the introduction of CAIS has improved cordial relationship with employees of the districts.

AB District: One interviewee stated that the metrics used in the assessment of efficiency and effectiveness of CAIS is speed, adequate use of limited resources and the provision of accurate results. Moreover, another interviewee assert that it also serves a secondary function of providing an avenue for checks and balances as well as promoting transparency. Expounding on adequate use of limited resources, the interviewee provided that when time is not wasted and/or the cost of providing the desired output comes at a zero cost or near zero cost. One interview also stressed that competency in performance in terms of meeting deadlines on timelines for the submission of financial statement is met on time.

AC District: An interviewee linked effectiveness and efficiency to cost cutting and the timely generalization of result. One of the interviewees noted that the system has brought about significant improvement in the reduction of system abuse as well as improvement in performance. An interviewee posits that through the limits imposed is enough to check abuse on the system. Another interviewee brings a different view that the internal control systems assign an officer to check, monitor and regulate the activities being performed on the platform. Most of the respondents who were interviewed, clearly state that there are very comfortable and familiar with the systems as a result of the routine use over the couple of years and are conversant with all the features of the system.

4.5 Benefits of CAIS in MMDAs

The benefits of CAIS to MMDAs include, but not limited to, customer satisfaction, making of quick decisions, cost reduction, speed and accuracy and effective employee relation. This is consistent with the findings of Appiah et al., (2014). The results from the field survey provides strong evidence that the introduction of CAIS is the reduction of errors which highly characterized the manual system and hence ensuring accurate and reliable information provision. This finding is

in line with Appiah et al., (2014) and Wood and Sangster (2008) who documented that speed and accuracy, error detection and reporting improvements are the main benefits derived from the implementation and introduction of CAIS.

Picking each factor, the views of the interviewees on CAIS are for customer satisfaction, one interviewee explained that due to less time spent on attending to the customers' needs such as the checking of arrears. On decision making and communication, one of the interviewed explained that through the provision fast and reliable financial statements less time is spent on debating and making of policies. The dominating benefit which is cost reduction was explained as that due to the removal of excess man-power on the performance of an activity, more is saved in terms of cost while productive use is made out of man-hours. Also, still on cost reduction, one of the interviewees echoed the fact that the cost incurred on stationary is reduced drastically.

4.6 Challenges of CAIS Application to MMDAs

In responding to the issue of challenges confronting MMDAs in the adoption of computerized accounting information system, poor connectivity of networks that makes implementation of CAIS ineffective was noted to be a common hindrance. Computerised accounting information system normally run-on network platform where activities are connected to achieve desired purpose in organisations. The existence of network enhances easy sharing of information among stakeholders of institutions which MMADs are no exception. However, when there is poor connectivity in the networks, it slows the pace of activities conducted at the workplace. The occurrence of poor network makes computation of transactions very difficult, stressful and in some extreme cases impossible. This has the potential of halting operational and administrative activities at the MMDAs and authorities may be compelled within a given circumstance to adopt the manual

system as an alternative when such incidents occur. This may not instill better confidence in users of the system. From the interview a coordinator noted that:

“One of the most worrying issue which needs to be addressed always is poor network connectivity which slows the system and makes work sometimes difficult to undertake. Indeed, that is a problem that requires attention to build trust in its usage”.

The likes of Adjei (2013), Lin et al., (2011) and Appiah et al., (2014) established that poor connectivity of networks was a major hindrance to the smooth implementation of computerized accounting information systems in organisations.

Respondents alluded that there was huge cost of designing and implementing CAIS among MMDAs. The cost of acquiring a computerized system in most cases is expensive starting from design, implementation and maintenance. Building a system with appropriate programmes require compatibility issues that ought to be considered. There is the need to ensure the new system is compatible with the old system that would be replaced. Failure to ensure this will create smooth implementation problems and cause various setbacks to the operational and administrative use of the system to satisfy the needs of stakeholders. The cost involved in building software or purchasing from vendors come with a lot of cost and it sometimes get worse when maintenance cost become unbearable to management of MMDAs. Apart from the purchase of computers and its peripherals, there is the need to hire experts to handle and manage the system effectively to achieve favourable results and maximize its use. In most cases, the experts are scarce and the cost involved in their services are sometimes overwhelming which deter management to adopt computerized accounting information system These support the views of Adjei (2013) and Sekyere et al., (2017) that computerized accounting information system adoption in organizations are hindered by huge cost of its implementation, lack of personnel with requisite expertise to run the

system and huge maintenance cost. Security threats was the third most dominant factor that hinders smooth usage of computerized account information system. The use of computerised system for accounting records keeping have some lapses in the area of security. The privacy and confidentiality of information in the system can be breached by unauthorized people or hackers to be precise. Systems with weak security measures are prone to the activities of hackers. Information can be generated or acquired through unapproved channels to people who do not have user- rights of such matters. This has the tendency of compromising the confidentiality of data stored within the system. The existence of such security threats makes the adoption and implementation of computerized accounting information system very difficult among MMDAs. Appiah et al., (2016), Abu-Musah (2006a, b), Hood and Yang (1998) reported that security threat was a crucial factor that impedes smooth implementation of computerized systems for managing and handling accounting records in organizations.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter five of this study deals with summarizing key findings which emanated from the analysed data and conclusions drawn from the findings. The section also presents recommendations as well as suggestions made for future studies in relation to the adoption of computerised accounting information system among MMDAs.

5.2 Summary of Findings

This research adopts the descriptive study with the aim of investigating computerised accounting information system: lessons learnt from MMDAs in Ashanti Region. This research has sampled three district assemblies which has been named AA Assembly, BA Assembly and CA Assembly. Also, this research relied solely on primary data, specifically responses collected through the use of sound recording devices to analysis data using content analysis and thematic analysis.

Generally, this research sought to assess computerised accounting information system in selected MMDAs in Ashanti region. Specifically,

5.2.1 Objective 1 – To identify the conceptions of computerized accounting information systems in MMDAs

The origin of CAIS within MMDAs has been in operation and in use for not more than five years. One of the respondents confidently stated that within their assembly BA, the introduction of GIFMIS started in the year 2016 while CA assembly stated affirmatively that the adoption of GIFMIS is only 2 years ago and is one of the newly established assemblies. Although mass adoption of IT has been in existence far as 30 years ago. Prior to the adoption of the GIFMIS, all financial related transactions were done manually or outsourced to consultants at a fee.

5.2.2 Objective 2 – To examine the factors that motivate the implementation of CAIS in MMDAs in Ashanti Region

The findings on this objective from the survey suggest that the creation of audit trails, concern for employees, quality control, the need to increase performance, current trend, complexities in data processes and collection, legal requirements and achieving a mission or vision statement are very important motivating factors on the implementation of CAIS in MMDAs in Ashanti region.

5.2.3 Objective 3 –To examine how MMDAs assess their computerised accounting system

The findings of the field survey revealed that the metrics used in assessing effectiveness and efficiency of CAIS is speed, adequate use of limited resources, provision of accurate results and cost reduction. Another, assessment criteria is its' ability to serve as a form of checks, monitoring and regulation of the activities. Another key element worthy of note is that the budget department have migrated from the use of "Activate" to the GIFMIS. Additionally, users are very comfortable and familiar with the systems as a result of the routine use over the couple of years and are conversant with all the features of the system.

5.2.4 Objective 4 –To identify the benefits of CAIS in MMDAs

On benefits, the survey revealed that customer satisfaction, making of quick decisions, cost reduction, speed and accuracy and effective employee relation are the main advantages enjoyed with the adoption of CAIS.

5.2.5 Objective 5 –To identify the challenges faced by CAIS in MMDAs in Ashanti Region

In responding to the issue of challenges confronting MMDAs in the adoption of computerized accounting information system, poor connectivity of networks, security threats, high cost of

installation and maintenance cost as well as lack of people with requisite personnel to handle such matters that makes implementation of CAIS ineffective was noted to be a common hindrance.

5.3 Conclusion

This research sought to assess computerised accounting information system in selected MMDAs in Ashanti region. This research has sampled three municipal assemblies which has been named AA Assembly, BA Assembly and CA Assembly. Also, this research relied solely on primary data, specifically responses collected through the use of sound recording devices to analysis data using content analysis and thematic analysis from finance officers, budget officers and procurement officers in the selected district assemblies within Ashanti region of Ghana during August – November, 2020. The findings reveal that prior to the adoption of the GIFMIS, all financial related transactions were done manually or outsourced to consultants at a fee. The findings on this objective from the survey suggest that the creation of audit trails, concern for employees, quality control, the need to increase performance, current trend, complexities in data processes and collection, legal requirements and achieving a mission or vision statement are very important motivating factors on the implementation of CAIS in MMDAs in Ashanti region. The findings of the field survey revealed that the metrics used in assessing effectiveness and efficiency of CAIS is speed, adequate use of limited resources, provision of accurate results and cost reduction. On benefits, the survey revealed that customer satisfaction, making of quick decisions, cost reduction, speed and accuracy and effective employee relation are the main advantages enjoyed with the adoption of CAIS.

In responding to the issue of challenges confronting MMDAs in the adoption of computerized accounting information system, poor connectivity of networks, security threats, high cost of

installation and maintenance cost as well as lack of people with requisite personnel to handle such matters that makes implementation of CAIS ineffective was noted to be a common hindrance.

5.4 Recommendation

The following recommendations were given based on the findings:

It is incumbent on authorities of MMDAs to ensure that computerised system have well-secured measures to protect the privacy and confidentiality of data contained in the system. This will help build trust and confidence among users and stakeholders of the system. Appropriate sanctions should be metred out to hackers or culprits who use dubious means to acquire information they do not have right to in the system.

Staff of MMDAs should be adequately trained on best practices toward ensuring effective accounting practices. The training provides these employees with requisite knowledge and skills to use computerised system to achieve MMDAs goals and objectives.

It is imperative for MMDAs to ensure that people with the right expertise in IT are hired to handle computerised accounting information system so that maintenance, efficiency and quality of financial reports can be achieved.

MMDAs should invest adequately into computerised accounting information system. When adequate resources are channeled into it, this will improve sustainability of the system to promote adequate revenue generation by MMDAs.

5.5 Suggestion for Future Studies

The study sought to identify the conceptions of computerised accounting information systems in MMDAs in the Ashanti Region, factors that motivates its implementation, the assessment of

computerised accounting information systems, benefits associated with it and inherent challenges in its implementation. There were no comprehensive details focused on assessing the impact of computerised accounting information system on performance and productivity in general. In view of this, future works can be focused in the area and beyond.



REFERENCES

- Abor, J. & Quartey, P. (2010). Issues in SME development in Ghana and South Africa. *International research journal of finance and economics*, 39(6), 215-228.
- Abu-Musa, A. A. (2004). Investigating the security controls of CAIS in an emerging economy: An empirical study on the Egyptian banking industry. *Managerial Auditing Journal*, 19(2), 272-302.
- Abu-Musa, A. A. (2006a). Perceived security threats of computerized accounting information systems in the Egyptian banking industry. *Journal of information systems*, 20(1), 187- 203.
- Abu-Musa, A. A. (2006b). Exploring perceived threats of CAIS in developing countries: the case of Saudi Arabia. *Managerial Auditing Journal*, 21(4), 387-407.
- Al-Hiyari, A., AL-Mashre, M. H. H. & Mat, N. K. N. (2013). Factors that Affect Accounting Information System Implementation and Accounting Information Quality: A Survey in University Utara Malaysia. *American Journal of Economics*, 3(1), 27-31.
- Alsaaty, F. M. (2012). The cycle of births and deaths of US employer micro firms. *Journal of Management and Marketing Research*, 11, 1.
- Alshbiel, S. & Al-Awagleb, Q. A. (2011). Factors Affecting the Applicability of the Computerized Accounting System: A case of Governmental Hospitals. *International Research Journal of Finance and Economics*, 64,20.
- Amaefule, L. I. & Iheduru, N. G. (2014). Electronic accounting system: A tool for checkmating corruption in the Nigerian public sector and a panacea for the nation's poor economic development status. *Sky Journal of Business Administration and Management*, 2(4), 019-028.

- Amidu, M., Effah, J. & Abor, J. (2011). E-accounting practices among small and medium enterprises in Ghana. *Journal of Management Policy and Practice*, 12(4), 146-155.
- Amoako, A. (2012). The impact of information and communication technology (ICT) on banking operations in Ghana. *International Journal of Business and Management Tomorrow*, 2(3), 1-7.
- Battisti, G., Hollenstein, H., Stoneman, P. & Woerter, M. (2007). Inter and intra firm diffusion of ICT in the United Kingdom (UK) and Switzerland (CH) an internationally comparative study based on firm-level data. *Economics of Innovation and New technology*, 16(8), 669-687.
- Beke, J. (2010). Review of international accounting and information systems. *Journal of Accounting and Taxation*, 2(2). 139-161.
- Boame, I., Solace, K. & Issaka, S. (2014). Adoption of accounting practices and its effects on SMEs; Financial perspective of sachet water producers in Northern Region of Ghana. *Research Journal of financial and Accounting*, 5(17), 166-179.
- Boateng, C., 2019. Evaluating the impact of the use of accounting software on the processing of financial information. a case of Ghana Education Service, New Juaben Municipality (Doctoral dissertation, University of Cape Coast).
- Bodnar, G. H. & Hopwood, W. S. (2012). *Accounting information systems*. Pearson Higher Ed.
- Bughin, J., Chui, M. & Manyika, J. (2010). Clouds, big data, and smart assets: Ten tech-enabled business trends to watch. *McKinsey Quarterly*, 56(1), 75-86.
- Dacosta, A. B., Frimpong, E., Agyei, J., Frimpong, B. O. & Duah, R. (2012). *The impact of the use of computerized accounting systems in financial reporting, A case study of rural banks,*

- Ghana. BA Thesis, Christian Service University College, Kumasi, Ghana. Retrieved May 5, 2020 from: <http://ir.csuc.edu.gh:8080/xmlui/handle/123456789/83>
- Chirika, J., 2019. The role of computerised accounting information system in the success of small and medium enterprises (SME) in Zimbabwe; a survey of Harare (Doctoral dissertation, BUSE).
- Creswell, J. W. (2012). Research design: A qualitative and mixed method approaches. *London and Thousand Oaks: Sage Publications*
- Davis, F. D., Bagozzi, R. P. & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management science*, 35(8), 982-1003.
- Dhillon, G. (1999). Managing and Controlling Computer Misuse. *Information Management & Computer Security*, 7(4):171-175.
- Dincer, B., & Dincer, C. (2016). Literature Review on the Use of Technology and Information Systems in SMEs. *International Journal of Academic Research in Business and Social Sciences*, 6(12), 678-684.
- El-Dalabeeh, A. & Alshbiel, S. (2012). The role of computerized accounting Information systems in reducing the Costs of Medical Services at King Abdullah University Hospital. *Interdisciplinary Journal of Contemporary Research in Business*, 4(6), 893-900.
- Ferguson, C. & Seow, P. S. (2011). Accounting information systems research over the past decade: Past and future trends. *Accounting & Finance*, 51(1), 235-251.
- Gokhale, V. (2011). *The 2011 IBM Tech Trends Report: The Clouds Are Rolling In... Is Your Business Ready.*

- Gordon, T. P (2010). Five Dimensions of Effectiveness for Nonprofit Annual Reports. *Non-profits Management and Leadership*, 21, 2, 209–228.
- Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P. & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Quarterly*, 82(4), 581-629.
- Haddad, S. & Atmeh, K. (2007). Accounting information system (1st Ed.). Amman: Al Mareekh.
- Hazam, S.R.T., Mansor, N. and Bahari, A., 2019. INTEGRATED REPORTING AND ePBT SYSTEM IMPLEMENTATION IN MALAYSIA LOCAL AUTHORITIES. *International Journal of Accounting*, 4(22), pp.90-100.
- Hood, K. L. & Yang, J. (1998). Impact of Banking Information Systems Security on Banking in China: The Case of Large State-owned Banks in Shenzhen Economic Special Zone: An Introduction. *Journal of Global Information Management*, 6(3), 5-15.
- Hoopes, D. G., Madsen, T. L. & Walker, G. (2003). Guest editors' introduction to the issue: why is there a resource-based view toward a theory of competitive heterogeneity, *Strategic Management Journal*, 24, 10,889-902.
- Hunton, J. E. (2002). Blending information and communication technology with accounting research. *Accounting Horizons*, 16(1), 55-67.
- Imeokparia, L. (2013). Information Technology and financial reporting by Deposit Money Bank in Nigeria. An Empirical Study. *Research Journal of Finance and Accounting*, 4 (11), 39-47.
- Inghirami, I. E. (2013). *Defining Accounting Information Systems Boundaries*. In *Accounting Information Systems for Decision Making*, Springer, Berlin, Heidelberg, pp. 185-201.

- Kitonga, K. G. (2013). The relationship between financial management practices and financial performance in the shipping industry in Kenya. Unpublished MBA project University of Nairobi, Kenya.
- Lalin, H. & Sabir, R. I. (2010). Research on Usage and Usefulness Perception of Financial Accounting Practices in Less Developing Countries: A case of Cambodia. Proceedings of the Proceedings of the 7th International Conference on Innovation & Management, 1881-1885.
- Laudon, D. P. & London, J. P. (2007). *Business information systems*. New York: HBJ, College Publishers.
- Mancini, D., Dameri, R. P. & Bonollo, E. (2016). *Looking for synergies between accounting and information technologies*. In Strengthening information and control systems, Springer, Cham pp. 1-12.
- Masenda, A., 2019. Making effective use of accounting information system (s) to curb financial malpractices. (A case of secondary schools in Mufakose District) (Doctoral dissertation, BUSE).
- Mia, A. H., Rahman, M. A. & Debnath, N. C. (2007). Consumer behavior of online banking in Bangladesh. *Journal of Business Studies*, 28(2), 1-12.
- Moffitt, K. C., Richardson, V. J., Snow, N. M., Weisner, M. M. & Wood, D. A. (2016). Perspectives on Past and Future AIS Research as the *Journal of Information Systems* Turns Thirty. *Journal of Information Systems*, 30(3), 157–171.
- Molinillo, S. & Japutra, A. (2017). Organizational adoption of digital information and technology: a theoretical review. *The Bottom Line*, 30(1), 33–46.
- Monk, E. & Wagner, B. (2012). *Concepts in enterprise resource planning*. Cengage Learning.

- Morris, H. (2014). *Why Businesses Keep Accounting Record?* 2nd edition, Houghton Mifflin Company. pp. 1- 4.
- Murthy, U. S. (2016). Researching at the Intersection of Accounting and Information Technology: A Call for Action. *Journal of Information Systems*, 30(2), 159-167.
- Nicolaou, A. I. (2000). A contingency model of perceived effectiveness in accounting information systems: Organizational coordination and control effects. *International Journal of Accounting Information Systems*, 1(2), 91-105.
- Norton, D. & Kaplan, R. (1993). Putting the balanced scorecard to work. *Harvard Business Review*, 71(5), 134-140.
- Okello-Obura, C. (2009). *Business information systems design for Uganda's economic development: the case of SMES in northern Uganda* (Doctoral dissertation), Uganda.
- Oliveira, T., & Martins, M. F. (2011). Literature review of information technology adoption models at firm level. *The electronic journal information systems evaluation*, 14(1), 110-121.
- Pike, R. H. (1986). The design of capital budgeting processes and the corporate context. *Managerial and Decision Economics*, 7(3), 187-195.
- Platt, H. & Platt, M. (2012). Corporate board attributes and bankruptcy. *Journal of Business Research*, 65(8), 1139-1143.
- Poston, R. S. & Grabski, S. V. (2000). Accounting information systems research: Is it another QWERTY? *International Journal of Accounting Information Systems*, 1(1), 9-53.

- Rahayu, R. & Day, J. (2015). Determinant Factors of E-commerce Adoption by SMEs in Developing Country: Evidence from Indonesia. *Procedia - Social and Behavioral Sciences*, 195, 142–150.
- Rogers, A. D. (2016). *Examining Small Business Adoption of Computerized Accounting Systems Using the Technology Acceptance Model* (Doctoral dissertation, Walden University).
- Romney, M. B. & Steinbart, P. J. (2009). *Accounting Information Systems*, Eleventh Edition, New Jersey: Pearson Education Inc,
- Saira, K., Zariyawati, M. A. & Annuar, M. N. (2010). Information system and firms' performance: the case of Malaysian small medium enterprises. *International business research*, 3(4), p28.
- Saunders, M. N. & Lewis, P. (2012). *Doing research in business & management: An essential guide to planning your project*. Pearson.
- Senyo, P.K., Effah, J. and Osabutey, E.L., 2021. Digital platformisation as public sector transformation strategy: A case of Ghana's paperless port. *Technological Forecasting and Social Change*, 162, p.120387.
- Sharma, M. K. & Bhagwat, R. (2006). Practice of information systems: evidence from select Indian SMEs. *Journal of Manufacturing Technology Management*, 17(2), 199-223.
- Stefanou, C. J. (2006). The complexity and the research area of AIS. *Journal of Enterprise Information Management*, 19(1), 9-12.

- Swann, J. (2004). Always on the Case: Engaging Your Staff in Bank Security. *Community Banker*, 2004; 13(3): 44 - 47.
- Thong, J. Y. L. (1999). An Integrated Model of Information Systems Adoption in Small Businesses. *Journal of Management Information Systems*, 15(4), 187–214.
- Wu, C. C. (2016). Status quo bias in information system adoption: a meta-analytic review. *Online Information Review*, 40(7), 998-1017.
- Yaser, S. (2013). The Impact of accounting information systems used in the income tax department on the effectiveness of tax audit and collection in Jordan, *JETEMS*, 5 (1): 19-25
- Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical and methodical differences. *European Journal of Education*, 48 (2), pp.311-325.
- Yin, R.K (1994). Discovering the future of the case study. Method in evaluation research. *Evaluation practice*, 15(3), pp. 283-290
- Zhu, K. & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: cross-country evidence from the retail industry. *Information systems research*, 16(1), 61-84.

Appendix A: Interview Guide

This interview guide is designed to provide data for an academic research, and thus, information so provided would be treated confidentially.

Conception of Accounting Information System in MMDA's: what and how.

1. From the perspective of your organization, how will you define an accounting information system?.....
.....
2. What is your AIS made of / What constitute your AIS?
.....
3. What are the inputs of and outputs of your system?
.....
4. Who are the users of the system?
.....

Origin and motivation of AIS application in MMDA's

5. What system was used before the current system?
.....
.....
6. When did the company adopt using a Computerised Accounting Information system?.....
7. How many years has the organization used the current system?.....
8. Why the change to the current system?
.....
.....

9. Did any of the following influence the change:

- Concern for employees
- Quality control
- The need to increase performance
- Current trend /Status required it
- Complexities in data processing and collection.
- Legal requirement
- Achieving a mission and or vision statement.

Assessment of AIS in MMDA's

10. How do you define efficiency and effectiveness of a system?

.....

.....

11. On what basis do you determine an efficient and effective system.

.....

.....

From your definition, is your system efficient and effective?.....

12. How has AIS application contributed to the growth of your organization?.....

13. How has the system improved on the following:

- Performance of employees,

- Productivity,
- Employee motivation and relationship with customers?

14. What measures are in place to check abuse of the system?

.....

.....

How comfortable are you with the system?.....

Related Benefits associated with AIS application

15. How has the system helped in achieving the organisational objective in the following ways:

- Customer satisfaction
- Decision making and communication
- Cost reduction
- Speed and accuracy of processing data and accessing information
- Effective employee relation and motivation

Challenges of CAIS application to MMDA'S

16. What are the major problems encountered in your application of these systems?.....

17. Is the organisation planning to change the system soon or in the future?.....

18. If yes, why?.....

19. Do you think there is a way to improve the operation of the system?

.....

.....