

UNIVERSITY OF GHANA

**INSTITUTIONAL EFFECTS ON IMPLEMENTATION AND USE OF
E-GOVERNMENT FINANCIAL SYSTEMS: A CASE STUDY OF
GHANA'S CONTROLLER AND ACCOUNTANT GENERAL'S**

DEPARTMENT

BY

HUBEIDATU NUHU

(10203910)

**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA,
LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF MPhil IN MANAGEMENT INFORMATION
SYSTEMS DEGREE**

JUNE 2015

DECLARATION

I do hereby declare that this work is a result of my own research and has not been presented by anyone for any academic award in this or any other university. All references used in the work have been fully acknowledged. I bear the sole responsibility for any shortcomings.

.....

.....

Hubeidatu Nuhu

Date



CERTIFICATION

We hereby certify that this thesis was supervised in accordance with procedures laid down by the university.

.....
Dr. John Effah
(Supervisor)

.....
Date

.....
Dr. Richard Boateng
(Co-Supervisor)

.....
Date



DEDICATION

This study is dedicated to the Almighty God, who has granted me the wisdom, life and health to undertake this research.

I also dedicate this study to Dr. Joyce R. Aryee, Madam Salamatu Saani and Mr. George Aryee, for their immerse contribution to my education and my life.



ACKNOWLEDGEMENT

My special appreciation goes to my mentor and lead supervisor, Dr. John Effah, for his encouragement and the time. I wish to state that even in my state of confusion during the inception of this project he encouraged me to continue. I would also want to extend a hand of gratitude to my co-supervisor, Dr. Richard Boateng, for his support throughout this study. Many thanks also goes to Dr. Erasmus Addae, Dr. Kwaku Ohene-Asare, Dr. Banuro, Dr. Afful Dadzie and Mr. Prince Senyo of the OMIS Department. Additionally, I would like to also thank all my colleagues, especially to Alfred Sekyere Mbrokoh, Richard Opoku, Michael Agbeko, Charles Ofori, Charles Turkson and Nana Yaa Frimpong for their support throughout the period of writing this thesis.

Furthermore, I also thank the workers of Controller and Accountant General's Department (CAGD) and the GIFMIS Secretariat, especially, Mrs. Juliet Nana Yaa Opoku-Manu, Mr. Vincent Ampem, Mr. Paul Abanga, Mr. Evans Mbrokoh, Mr. Antwi Boasiako, Miss Getrude Adenkra and Mr. Bello Shaibu, for the support they gave me during the data gathering process.

Finally, my special gratitude goes to God for the strength and wisdom granted me throughout my education.

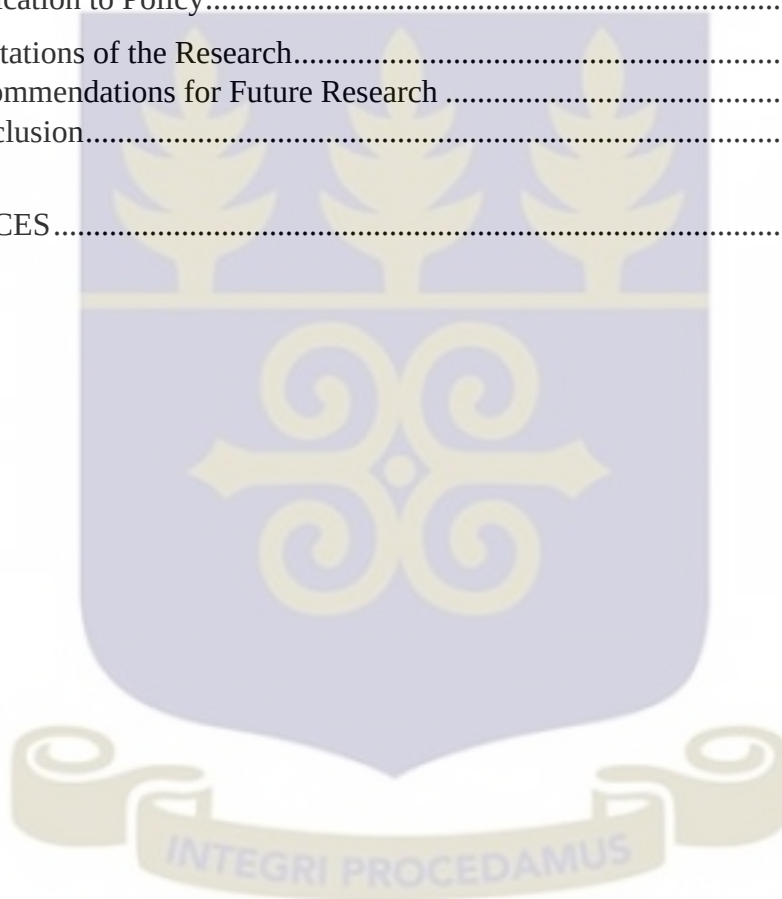
TABLE OF CONTENTS

DECLARATION	i
CERTIFICATION.....	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES AND FIGURES	ix
LIST OF ABBREVIATIONS	x
ABSTRACT	xi
 CHAPTER ONE: INTRODUCTION	 1
1.1 Research Background.....	1
1.2 Research Problem.....	2
1.3 Research Purpose	5
1.4 Research Questions	6
1.5 Research Context.....	6
1.6 Chapter Outline	6
 CHAPTER TWO: LITERATURE REVIEW	 9
2.1 Introduction	9
2.2 Overview of Concepts	9
2.2.1 Definition and Conceptualization of E-Government.....	9
2.2.2 Defining and Conceptualizing E-Government Financial Systems	11
2.2.3 Defining and Conceptualizing IFMIS.....	13
2.3 Institutional Effects on E-Government Systems	14
2.4 Thematic Areas on E-Government and Developing Countries' IS	18
2.4.1 Benefits of E-Government Financial Systems.....	19
2.4.2 Implementing E-Government Financial Systems	20
2.4.3 Challenges of E-Government.....	22
2.4.4 Challenges and Failure of E-Government Financial Systems	24
2.5 Selected Cases in Developing Countries.....	25
2.6 Information Systems and Corruption	28
2.7 IS Based Financial Innovations in the Public Sector	28
2.8 Public Sector Culture	29
2.9 Gap in Methodological Approaches.....	30

2.10	Theories and Conceptual Approaches to E-Government and IFMIS	31
2.10.1	Theories used in E-Government and IFMIS Research	31
2.11	Conceptual Approaches in E-Government Financial Systems Research	35
2.12	Research Issues from Theoretical and Contextual Approaches	36
2.13	Implication for Research	37
2.13.1	Research Gap – Why the Focus on the Institutional Environment.....	37
2.14	Research Paradigm – Why the choice of Interpretive Paradigm	37
2.15	Summary	38
CHAPTER THREE: THEORETICAL FOUNDATION		40
3.1	Introduction	40
3.2	New Institutional Theory: Overview.....	40
3.3	The Theoretical Foundation	40
3.4	Choice of Theory: Justification	43
3.5	New Institutional Theory in IS Research	44
3.6	Limitation of the New Institutional Theory	45
3.7	Force Field Analysis.....	46
3.8	Summary	47
CHAPTER FOUR: METHODOLOGY		48
4.1	Research Methodology	48
4.2	Research Paradigm	48
4.2.1	Positivist Paradigm	49
4.2.2.	Interpretive Paradigm	51
4.2.3.	Critical Paradigm	52
4.3	Choice of Interpretive Paradigm: Why Interpretive Paradigm is Most Suitable	53
4.4	Research Methodology	54
4.4.1	Quantitative Methods.....	54
4.4.2	Qualitative Methods.....	55
4.5	Choice of Qualitative Interpretive Case Study Method of Research	56
4.6	Selection of Cases and Fieldwork	59
4.7	Data collection.....	61
4.8	Data Analysis	63
4.9	Summary	64
CHAPTER FIVE: RESEARCH FINDINGS		65
5.1.	Introduction	65
5.2	Background of the Case Study	65
5.2.1	Background of CAGD	65

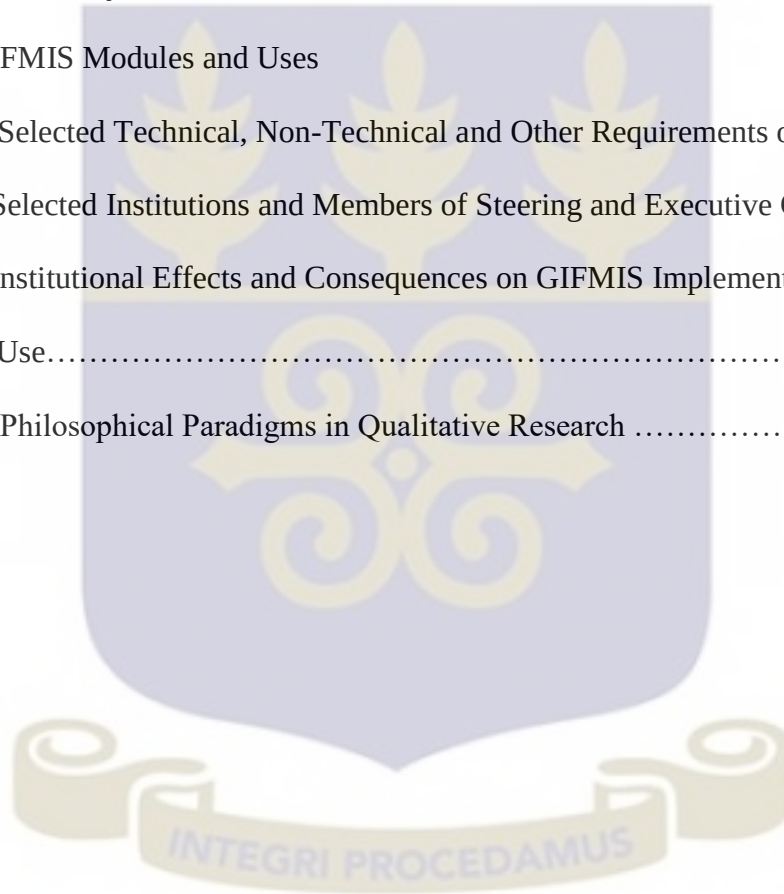
5.3	Financial Systems at CAGD before GIFMIS.....	67
5.4	Integrated Financial Management Information Systems (IFMIS)	70
5.5	Ghana Integrated Financial Management Information Systems (GIFMIS)	75
5.6	Implementation of GIFMIS.....	83
5.6.1	Phase One	86
5.6.2	Phase Two.....	91
5.6.3	Phase Three.....	96
5.7	Factors that Helped GIFMIS Implementation and Use.....	101
5.8	Summary	102
CHAPTER SIX: ANALYSIS OF FINDINGS.....		104
6.1	Introduction	104
6.2	Institutional Effects on GIFMIS Implementation	104
6.2.1	Regulatory Effects on Implementation	104
6.2.2	Normative Effects on Implementation.....	107
6.2.3	Cultural-Cognitive Effects on Implementation.....	113
6.3	Institutional Effects on GIFMIS Use	114
6.3.1	Regulatory Effects on Use	114
6.3.2	Normative Effects on Use.....	117
6.3.3	Cultural-Cognitive Pillar on use	121
6.4	Consequences of Implementation and Use of GIFMIS	123
6.5	Factors that Facilitated the Implementation and Use of GIFMIS	124
6.6	Summary..	131
CHAPTER SEVEN: DISCUSSIONS OF ANALYSIS OF FINDINGS		132
7.1	Introduction	132
7.2	Effects of the Institutional Environment on E-government Financial System Implementation.....	132
7.4	Effects of Institutional Environment on the Use of E-government Financial System	140
7.5	The Consequences of implementation and use of E-government Financial Systems..	148
7.6	Factors that Helped GIFMIS Use.....	149
7.7	Reflections on the Use of the New Institutional Theory	150
7.8	Summary	151

CHAPTER EIGHT: SUMMARY AND CONCLUSION	153
8.1 Introduction	153
8.2 Review of Research Purpose and Questions	153
8.3 Contribution to Knowledge	156
8.4 Contribution to Theory	156
8.5 Offering of Rich Insight	157
8.6 Implications of the Study	158
8.6.1 Implications to Research.....	158
8.6.2 Implications for Practice	158
8.6.3 Implication to Policy.....	159
8.7 Limitations of the Research.....	160
8.8 Recommendations for Future Research	161
8.9 Conclusion.....	162
REFERENCES.....	164



LIST OF TABLES AND FIGURES

Table 2 1: Selected E-Government Definitions	11
Table 2 2: Institutional Effects on E-Government Financial Systems	14
Table 2 3: Selected Theories Used in E-Government Financial Systems Research	32
Table 3 1: Constructs of New Institutional Theory According to Scott.....	40
Table 4. 1: Summary of Interviews Conducted.....	62
Table 5 1: IFMIS Modules and Uses	71
Table 5. 2: Selected Technical, Non-Technical and Other Requirements of IFMIS	74
Table 5 3: Selected Institutions and Members of Steering and Executive Committee	81
Table 5 4: Institutional Effects and Consequences on GIFMIS Implementation and Use.....	126
Figure 3 1: Philosophical Paradigms in Qualitative Research	49



LIST OF ABBREVIATIONS

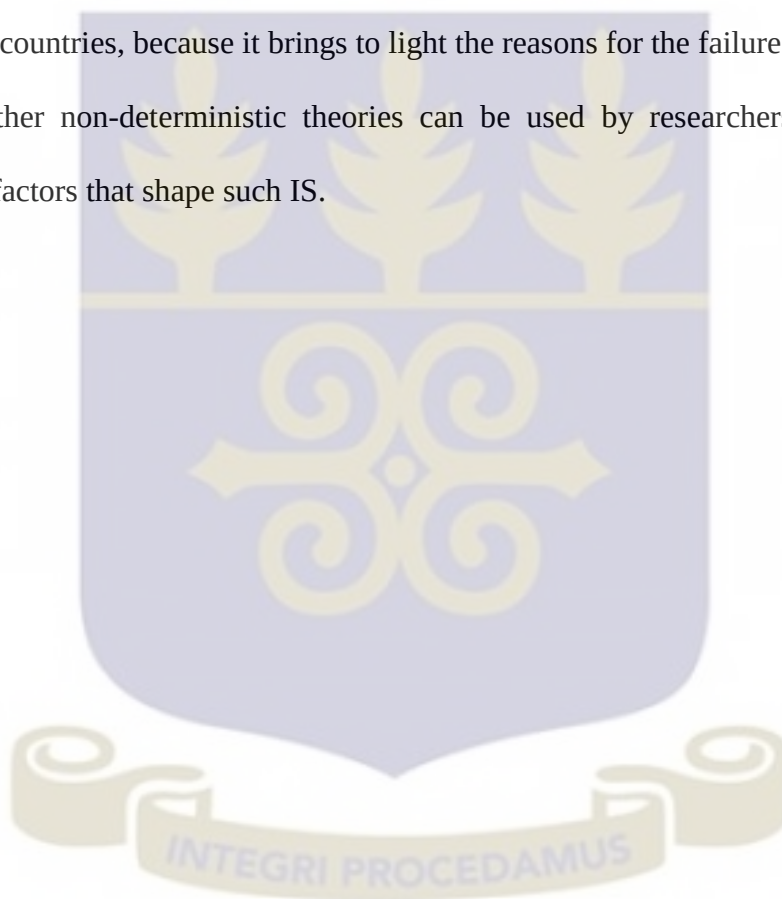
BoG	-	Bank of Ghana
BPEMS	-	Budget and Expenditure Management Information System
CAGD	-	Controller and Accountant General's Department
CCPMT	-	Cultural Change Process Management Team
DP	-	Development Partners
E-SPV	-	Electronic Salary Payment Voucher
EU	-	European Union
FAR	-	Financial Administrative Act
GIFMIS	-	Ghana Integrated Financial Management Information System
GoG	-	Government of Ghana
HRMIS	-	Human Resource Management Information System
IFMIS	-	Integrated Financial Management Information System
ISS	-	Internal Sub Support
IS	-	Information Systems
IPPD	-	Integrated Personal Payroll Database
ITIL	-	Information Technology Infrastructure Library
MTEF	-	Medium Term Expenditure Framework
PUFMARP	-	Public Financial Management Information System
PFM	-	Public Financial Management
PIC	-	Project Implementation Coordinators
S/MTAP	-	Short Term and Medium Action Plan
TTT	-	Trainer of Trainers

ABSTRACT

The purpose of this study is to understand the institutional effects on the implementation and use of E-Government financial systems in developing countries and its related consequences. Research in E-Government financial systems and E-Government in developing countries have focused more on issues relating to the challenges and failure of such information systems (IS). In light of this, little is known about the institutional effects and the consequences of implementing and using such IS from a developing country's perspective. With the aim of addressing this gap, this study investigates the case of the Controller and Accountant General's Department (CAGD) in Ghana in order to examine the institutional effects and the consequences of implementing and using these E-Government financial systems.

This study uses the new institutional theory and force field analysis as the theoretical and analytical lens, and a qualitative interpretive case study as the methodological stance. The findings show that regulatory, normative and cultural-cognitive pillars have effects on E-Government financial systems implementation and use in Ghana. Concerning the regulatory pillar the Financial Administration Act required heads of departments to approve the payroll of personnel within their unit electronically while the Sarbanes Oxley Act required independence of auditors, which gave "view only" access to financial data. The normative pillar led to phased implementation approach, training and sensitization of end-users as required by the development partners. The cultural-cognitive pillar on the other hand encouraged the introduction of teams such as the Cultural Change Process Management Team (CCPMT) and the advocates to aid end-users and change public sector culture. In these pillars were inherent constraints and enablers on implementation and use of the IS. Thus

both national and international laws and standards had an effect on the IS, and their inadequacy represented constraints. The study recommends that developing countries and development partners (DP) should consider the institutional environment before and during implementation and use of E-Government financial systems due to their inevitable effect on such IS. Finally, as an add on to other stated recommendations, the study calls for future research to focus on implementation and use of E-Government financial systems in developing countries, because it brings to light the reasons for the failure and challenges. In addition, other non-deterministic theories can be used by researchers to help identify contextual factors that shape such IS.



CHAPTER ONE

INTRODUCTION

1.1 Research Background

Information system is the unification of components that work together to collect, process, store and disseminate information to support coordination, decision making, analysis and organizational visualization (Laudon & Laudon, 2011). The emergence of information systems has led to changes in the recording of public sector financial information of both developed and developing countries. This change has resulted in the discontinued use of manual systems to IS. In view of this, extant researchers have argued that the introduction of IS in public sector finances has led to the promotion of transparency and accountability in the sector (Bonsón-Ponte, Escobar-Rodríguez, & Flores-Muñoz, 2006; Pérez, Bolívar, & Hernández, 2008). This transformation in government financial system through the application of IS is engineered by the implementation of e-government financial systems (Terpsiadou & Economides, 2009).

E-government is the application of information systems in the public sector to improve the effectiveness and efficiency of internal administration and government citizen relationship (Gichoya, 2005). The introduction of information systems and its related technologies has enabled most governments around the world to align with its benefits by implementing such software's in the various sectors of the public sector of which the financial sector is very essential. . The benefits of using e-governemt financial systems include increase profit and thereby reduce time, cost and the enhancement of efficiency and effectiveness (Altameem, Zairi, & Alshawhi, 2006).

E-government financial systems have been attributed with different names in e-government literature, these include New Public Management (NPM) (Pollitt, 1993), Public Financial Management (PFM) (Rodin-Brown, 2008), Tax Information System (Terpsiadou & Economides, 2009) and now Integrated Financial Management Information System (IFMIS) (Diamond & Khemani, 2006). All these e-government financial systems are geared towards ensuring transparency in public finances in developing countries (Pérez *et al.*, 2008). Hence, Rodin-Brown (2008) have posited that IFMIS refers to the use of the internet or computer networks by the public sector in the performance of tasks to support financial information such as the preparation of budget and the carrying out of financial accounting and reporting by using an integrated system .

Moreover, e-government researchers have argued that the implementation of information systems by public sectors have failed and is far behind in terms of its implementation and use in developing countries (Norris, 2001). On the basis of this, some authors have argued that public sector organizations in developing countries do not support the efficient and effective utilization of new technology (Irani, 2002; Irani & Love, 2001; Jones, Irani, & Sharif, 2007). Hence, this study seeks to understand the effects of the institutional environment on such IS through the lens of the institutional theory from the field of IS and also to unearth the constraints and enablers of the institutional environment from the perspective of force field analysis.

1.2 Research Problem

Research on e-government financial systems in developing countries has focused more on challenges that hinder successful implementation and failures (Heeks & Stanforth, 2007; Hendriks, 2012b; Ibrahim & Dauda, 2014; Standforth, 2006). These challenges include: e-

illiteracy; inadequate ICT infrastructure; inadequate change management; inadequate political support; and software complexity (Dada, 2006). In addition to the above, most of the theories used for studying E-Government financial systems in both developed and developing countries focused more on the technical aspect of the software. The theories used in these studies are the technology acceptance model (Chen, 2012; Colesca & Dobrica, 2008). However, with the Actor Network Theory (Cavalheiro & Joia, 2014; Heeks & Stanforth, 2007; Standforth, 2006), the limitation was that it focused more on the actors with the neglect of the institutional environment; and the relational expectation theory (Minani, 2012).

Few studies that employed the new institutional theory in the study of e-government financial systems were from the field of finance. These studies however failed to consider the institutional environmental factors that either enabled or constrained e-government initiatives; they also focused more on single pillars than assessing all the pillars (Currie, 2008; Gil-Garcia & Martinez-Moyano, 2007; Silva & Westrup, 2009). Thus, there has been less research that employed the new institutional theory to study e-government financial systems from the field of IS which focused on employing all the pillars to determine their effects on such systems.

The above-mentioned explanations on existing studies on E-Government financial systems present the research gaps, which informed this study. In view of this, the identified research problems are summarised below:

- In terms of focus gap, studies on E-Government financial systems in developing countries focused more on the challenges and failures. According to (Heeks, 2002, 2003), about one – third of E-Government innovations fail totally while one-half

fail partially. This has led to various E-Government researchers to concentrate more on the challenges, failure and citizen participation (Bwalya, 2009; Dada, 2006; Heeks & Stanforth, 2007b; Hosman, 2010; Nkwe, 2012; Zheng, 2013) to the neglect of relevant and prevailing factors such as institutional environmental effects on the implementation and use. Studies have also noted that there is little research on the phenomenon of ICT project implementation in developing countries (Atsu, Andoh-Baidoo, Osatuyi, & Amoako-Gyampah, 2010). There is thus a need to pay attention to the implementation and use of E-Government financial systems, which is the focus of this study.

- On institutional gap, Hyndman and Connolly (2011) stated that, there is a need to empirically examine the institutional environment of public sectors because situations of irregularity between how information systems are intended to operate and how they turned out is related to the differing cultural beliefs and norms in different contexts. Yildiz (2007) also noted that there are specific factors that are lacking in E-Government research; such factors include a deeper recognition of the complex institutional environment. There is thus a need to investigate the institutional factors that have effects on such information systems. Scott (2008) explains that the new institutional theory is relevant when a researcher seeks to explain how interactions and social actions are shaped by the components of social structures which include regulations, norms and the process of cognition that have been set up. Powell (2007) and Scott (1983) argue that, technology and resources are not the only components of organizational structure. Organizational structure also constitutes myths; regulations;

knowledge acquired through professionalism and education, and also community based opinions (Powell & DiMaggio, 2012; Scott, 2013). It is also noted that e-government is likely to succeed when the process of implementation takes into consideration the unique characteristics of the institutional environment (Chen, 2012). Accordingly, there is the need to extend current research to cover the institutional environmental effects on implementation and use, to embrace areas such as the regulatory, normative and cultural cognitive pressures.

- In relation to theory gap, most of the theories used in developing research do not reflect on the effects of the institutional environment on e-government information systems (Heeks & Stanforth, 2007; Miheso, 2013; Minani, 2012; Stanforth, 2007). These theories also failed to recognize that the prevailing institutional environment could influence e-government financial systems. Since e-government financial systems are implemented in specific environments or contexts, there is a need to understand the institutional effects of such systems.

1.3 Research Purpose

Hence, with the aim of contributing to the body of knowledge by addressing the limitations stated above this study employed the information systems interpretive case study approach (Walsham, 2006); the new institutional theory (Scott, 1995) and force field analysis (Lewin, 1946) to understand the implementation and use of E-Government financial systems and the related consequences. The purpose of this study is to understand the effects of the institutional environment (regulatory, normative and cultural-cognitive) on implementation and use of E-Government financial systems and its consequences.

1.4 Research Questions

In order to achieve the research purpose and address the research problem the study considered three research questions:

1. How does the institutional environment in a developing country shape E-Government financial systems implementation?
2. How does the institutional environment in a developing country shape E-Government financial systems use?
3. What are the consequences of implementation and use of E-Government financial systems in a developing country?

1.5 Research Context

This section expands on the research background noted above and explains the context within which this study was carried out. Over the years, there has been an increase in the use of IS in the public sectors of developing countries. These IS have been implemented and used especially in the financial sectors of public sectors in developing countries. The study examines the institutional environment that affects the implementation and use of financial information systems (IFMIS) and the consequences within the context of a developing country (Ghana).

1.6 Chapter Outline

To understand the institutional effects on E-Government financial systems implementation and use in developing countries, it is important to examine literature on E-Government in general and the phenomenon in particular. The significance of using the most applicable theoretical, paradigms and methodological approaches that can possibly account for the

institutional factors that influence GIFMIS implementation and use in Ghana should be studied. The thesis is therefore organized in the following way:

Chapter 2 provides a review of literature in the study area, the methodologies, and the conceptual approaches of e-government and IFMIS. This enabled the unearthing of the existing body of knowledge and contribution of the phenomena. It further enabled the identification of relevant gaps existing in e-government and IFMIS literature that necessitated this study.

Chapter 3 contains a discussion on the theoretical foundation of the study. In this chapter, the new institutional theory and its constructs (regulative, normative and cultural-cognitive) are discussed in detail as well as its relevance to the study. The justification of the choice of new institutional theory as the theoretical lens is also addressed. The limitation of the theory that led to the use of Force Field Analysis in the discussions and recommendation is also discussed.

Chapter 4 discusses the general philosophical assumptions and methodologies and those employed in this study. This chapter further discusses the reasons for the choice of interpretivist paradigm and qualitative methodology, the choice of qualitative interpretive case study method of research, the selection of cases and field work, data collection and the data analysis technique.

Chapter 5 presents an overview of the case study and findings as evident from the data collection. The findings presented are based on the available data. The chapter contains the background of CAGD and GIFMIS. The subsequent sections presents the required information gathered during the case study relative to the institutional environment. The

accounts of the respondents was gathered from the GIFMIS Secretariat and users from CAGD.

Chapter 6 discusses the analysis of the finding relative to the data collection. This enabled the extracting of the dominant themes arising from the findings. This chapter analysed the findings from the previous chapter in relation to the new institutional theory.

Chapter 7 presents a discussion and lessons learnt from the previous chapter with an aim of answering the research questions. The chapter therefore significantly addresses the research questions in the light of Chapter 2 and the empirical findings from the cases reported in Chapter 5 as well as their consequential analysis in Chapter 6. The chapter begins with the institutional effects of GIFMIS – followed by a discussion on the how the institutional environment shapes GIFMIS implementation and use.

Chapter 8 provides a discussion of the summary, conclusion, limitations, directions for future studies and contribution of the study to practice, policy and research. This chapter examines and responds to the research questions and discusses how they were addressed in the study. It further presents the contribution of the study to knowledge and thereby offers relevant insight on the implementation and use of GIFMIS within the context of a developing country and an additional discussion of implication for research, policy and practice. The Chapter offers recommendations based on the force field analysis for future research and presents the general conclusion of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The previous chapter discussed the purpose of this study, which is to understand the effect of the institutional environment on the implementation and use of e-government financial systems and its consequences in Ghana. The first section of this chapter defines e-government in general, e-government financial systems, IFMIS, and the institutional effects of E-Government financial systems. This chapter further discusses the main thematic issues evident in E-Government financial information systems literature within the context of developing countries. The chapter finally provided a summary.

2.2 Overview of Concepts

The following section gives a broad overview of the prominent concepts related to this study. The concept of E-Government and E-Government financial systems are conceptualised and defined in this section. With the aim of overviewing the relevant concepts, this section is narrowed down to the phenomenon of interest, IFMIS. The definition and implementation of IFMIS.

2.2.1 Definition and Conceptualization of E-Government

In order to understand E-Government financial systems, there is a need to situate it within the concept of E-Government. E-government have attracted different definitions; Kumar, Mukerji, Butt, and Persaud (2007) asserted that there is no clear definition of E-Government. The improvement of government services through the use of ICT is what is termed as E-

Government (Srivastava, 2011). The Worldbank (2014) defined E-Government as “the use of information technology by government agencies to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information”. To define the change in the relationship between government and citizens terms such as e-government, e-democracy and e-governance have been coined (Kardan & Sadeghiani, 2011).

The relevance of information systems in government have led to the use various forms of social media communications as mediums to interact with citizens by governments. Thus facebook, twitter and youtube are some of the most utilized social media applications (Abdelsalam, Reddrick, Gamal, & Al-shaar, 2013). In China government agencies have indoctrinated the use of social media to enhance participation by citizens and increase the level of international influence (Zheng, 2013).

.

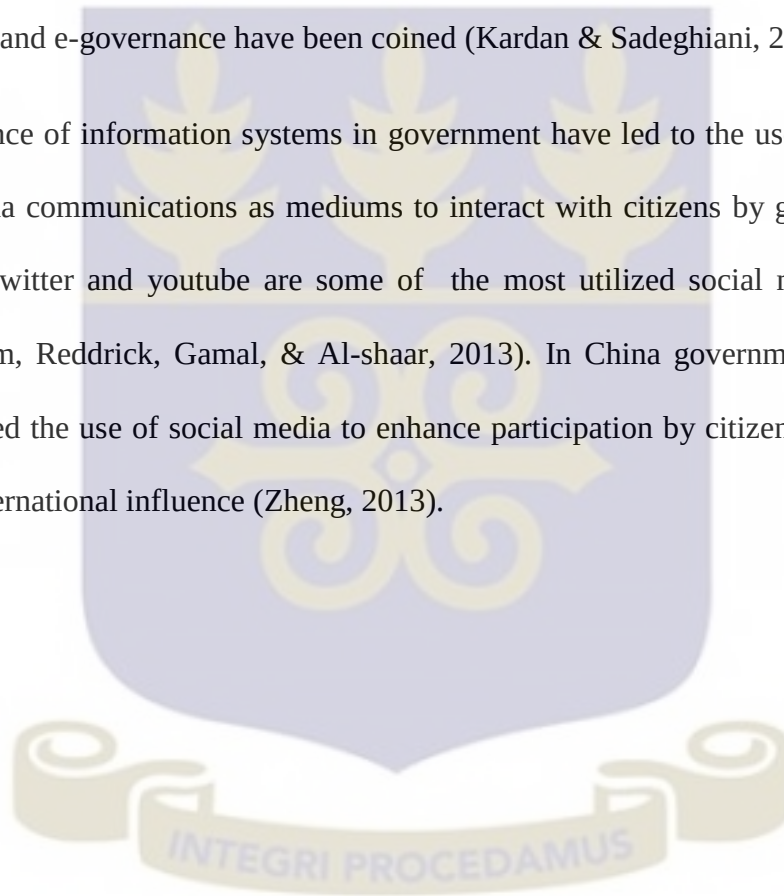


Table 2 1: Selected E-Government Definitions

Definition	Authors
The incorporation of a comprehensive variety of strategic intent, which is facilitated through ICT and thus must be formulated and implemented within a multifaceted and different political environment is termed as E-Government.	Hackney, Desouza, and Chau (2008)
E-Government is the use of information technology to deliver services electronically by public administrations with the aim of supporting public governance.	Zheng, Chen, Huang, and Cheng (2013)
E-Government is “the use of IT to support and improve public policies and government operations, engage citizens and provide comprehensive and timely government services”	Scholl (2008)

Source: Author’s Construction

2.2.2 Defining and Conceptualizing E-Government Financial Systems

E-Government financial systems have been implemented in the financial sector of most developing countries. E-Government financial systems is the use of integrated or computerized systems to capture, process real time, online inquiry and updating financial information (Hermanson, Hill, & Ivancevich, 2000), it involves the use of multiple computer processors, complex software programs, and distribution processes in a networked environment. E-Government systems are evaluated based on the economic efficiency of the hardware and software, policies, procedures and outcomes of public sector innovations (Bretschneider, 1990). As noted extant literature, most of the information systems evaluation

of the public sector is focused on the E-Government financial system (Newcomer & Caudle, 1991).

The main responsibility of E-Government financial systems is to safeguard the health of the financial sector: this is basically because, it is well positioned to meet this responsibility (Khademian, 2009). E-Government financial systems have attracted different code names by different countries: in the Greek public sector, for instance, it is known as TAXIS (TAX information system) which is used as a support to the employees Inland Revenue Service to serve citizens of the state (Economides & Terzis, 2008; Terpsiadou & Economides, 2009); in Nigeria and South Africa the system was implemented to improve transparency in public sector finances (Ibrahim & Dauda, 2014; Hendriks, 2012b).

E-Government financial systems vary across countries and there is evidence of different attitudes towards such innovations in terms of both strategy and content (Benito, Brusca, & Montesinos, 2007; Broadbent & Guthrie, 2008; Caperchione & Lapsley, 2011; Ellwood & Newberry, 2007; Hyndman & Connolly, 2011). The experiences of various countries have revealed that a situation of irregularity between how the information system was intended to operate and how it turned out is related to the differing cultural beliefs and norms in different country contexts (Hyndman & Connolly, 2011).

The transformation of the public sector financial management in general has been a gradual process. Public sector financial systems have gradually shifted from a manual or paper based system to an integrated system with the aid of information systems (Cîrstea, 2014). E-Government financial system is the use of an integrated information system to aid in government finances such as budget formulation, accounting, payroll and reporting. E-Government financial systems provide solutions that improve the efficiency and impartiality

of government financial information thereby leading to an increase in transparency, accountability and participation (Blackburn & Forgues-Puccio, 2010). In China E-Government financial systems are directed to build strong relationship between accounting and reporting systems; these IS were directed at standardizing accounting practices and enhancing the reliability of information disclosed by the public sector (Percy, 2007).

2.2.3 Defining and Conceptualizing IFMIS

IFMIS is a computer based system designed to aid in financial activities such as government financing, control and allocation of financial resources (Boland & Hirschheim, 1987). Thus IFMIS is a form of financial strategic innovation implemented by governments with the aid of information systems.

IFMIS have been adopted mostly by developing countries. IFMIS have been implemented in countries such as Sri Lanka (Heeks & Stanforth, 2007; Stanforth, 2006) ; Romania (György *et al.*, 2011); South Africa (Hendriks, 2012); Nigeria (Ibrahim & Dauda, 2014); and Zambia (Bwalya, 2009). IFMIS is adopted as a result of the inconsistencies and high rate of corruption and mismanagement of public funds (Blackburn & Forgues-Puccio, 2009, 2010; Bwalya, 2009; Estache *et al.*, 2009). These studies narrowly focused on the challenges and failures of the software .

IFMIS is supported by development partners (DPs) including the World Bank and the Danish International Development Agency (Danida) (de Renzio *et al.* (2011); this donor support is significantly related to the quality of the IFMIS. de Renzio *et al.* (2011) also noted that the difference in the quality of PFM systems is related, most importantly, with economic factors while aid-related factors have a more limited explanatory power. Although DPs play a

critical role in IFMIS, the main responsibility of IFMIS is its ability to safeguard the health of the financial sector. This is basically because the system is well positioned to safe guard public sector finances (Khademian, 2009).

2.3 Institutional Effects on E-Government Systems

This sub-section focuses on literature that has considered the significance of institutional effects on E-Government financial systems. The table below provides a summary of related literature.

Table 2 2: Institutional Effects on E-Government Financial Systems

Factors	Publication	Theory	Key Issues
Regulatory	(Gil-Garcia & Martinez-Moyano, 2007)	Institutional theory	Rules and standards
	(Liu, Ke, Wei, Gu, & Chen, 2010)	Institutional theory	Coercive pressures
	(El-Haddadeh, Weerakkody, & Al-Shafi, 2013)	Institutional theory	Forceful changes in national policies
	(Gosain, 2004)	Institutional theory	National laws
	(Currie, Finnegan, & Gozman, 2011)	Institutional theory	Maintaining regulatory compliance
Normative	(Khuong, Harindranath, & Dyerson, 2014)	Institutional theory	Norms, values and authoritative control
	(Liu et al., 2010)	Institutional theory	Adoption intention
Cultural – Cognitive	(Martinsons & Westwood, 1997)	Institutional theory	Cultural variations
	(Thatcher & Zhu, 2006)	Institutional theory	Significance of culture

Source: Author's Construction

The significance of institutional effects on E-Government innovations has resulted in discussions in literature across several disciplines. Institutional forces and pressures are

considered as important embodiments of institutions and serve to bind public sectors to fundamental choices about how organizational activities should be organized (Sia & Soh, 2007). Latour (1992), for instance, noted that creators of information systems, comprising of software developers, have their vision of the world inscribed in the technologies they create. Thus, the world view of the designers is subjected to their own institutional context (Sia & Soh, 2007) and misalignments that arise in organizations because of the existing dissimilarity in the institutional context assumed by developers and the public sectors.

Studies have employed the new institutional theory to explore the interconnection between changes in E-Government financial systems and the context in which the changes occurred (Carpenter & Feroz, 2001; Hyndman & Connolly, 2011). The regulatory pressure consists of formal pressures enforced through legislation and informal pressures exerted by organizations on employees (Carpenter & Feroz, 2001; Connolly, Reeves, & Wall, 2009). This is because the underlying idea is that the organizations providing resources that are critical for the existence of another organization gain the opportunity to exercise authority or power over the dependent organization (DiMaggio & Powell, 2000; Mizruchi & Fein, 1999). Adhikari, Kuruppu, and Matilal (2013) asserted that this pressure appears to be a key element in unfolding the relationship between international organizations, in particular the World Bank, the IMF and developing countries. Mir and Rahaman (2005) noted that the World Bank and the IMF are able to influence the articulation of innovations and policy making in developing countries because they possess the much needed information systems.

The normative pressures which resulted from uncertainties make the public sector adhere to the path undertaken by similar organizations that were regarded as successful (Covaeski & Dirsmith, 1988). Thus the public sector is likely to mimic the practices of the private sector,

which is perceived to be more effective and efficient in dealing with uncertainty (Hassan, 2005). Studies have linked the transformation of the public accounting system from manual or paper based to information systems in both developed and developing countries as part of the normative mechanism (Carpenter & Feroz, 2001; Irvine, 2011).

The normative pillar suggests that, organizations attempt to implement information systems practices and procedures that are widely propagated by proficient organizations (Adhikari *et al.*, 2013). There is, therefore, the collective struggle by proficient organizations and consultants to determine the appropriate conditions and methods for adhering to their standards (Carpenter & Feroz, 2001; DiMaggio & Powell, 2000). Consequently a study in China and Russia noted that donor partners' selection decision for developing countries is influenced by the institutional environment (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004).

E-government studies have argued that because China's institutional environment is more stable and supportive, it has enabled a long-term view of alliance partner selection by focusing more on the intangible assets together with the information system's capabilities of a potential partner. However, Russia with a less stable institutional environment had a short term view when selecting potential donors to support financial information systems; that is, they have a more turbulent economy (Hitt *et al.*, 2004). Studies have further shown that institutional forces affect the implementation of information systems, also authoritative control through norms and values is associated with the characteristics of the use of information systems (Khuong *et al.*, 2014).

However, Martins & Westwood (1997) suggest that there are variations in cultures between governments with regard to the acceptance of information systems: for instance, factors

such as paternalism, personalism and context of high communication will continue to shape the use of management information systems in Chinese business culture. Findings from interviews in Benign and Shanghai proved that institutional pressures produce results that have specific consequences for public sectors, and their responses to these pressures can substantially affect the ability to achieve the potential of information systems (Heikkilä, 2013).

Additionally, empirical studies conducted in the public sector revealed that, in order to improve upon the efficiency, effectiveness and transparency, governmental departments have implemented electronic services (El-Haddadeh, Weerakkody & Al-Shafi, 2013). With the institutional theory as a lens it was concluded that the dynamic nature of information systems create unanticipated pressures which can obstruct the implementation and institutional process in the public sector. This dynamic compels changes in national policies by the central government which results in the need to make prompt changes by local government agencies and ministries.

Changes in institutional pressures by central governments can cause major shifts in not only public but private sectors. For example, an emphasis on coercive pressure in the institutional theory by Tsamenyi, Cullen, & González (2006) revealed that regulatory changes compelled major Spanish electricity companies to adopt similar organizational structure. Furthermore, Currie, Finnegan & Gozman (2011) argued that in maintaining regulatory compliance, financial information systems can act as the carriers for institutionalised practices; they can be channeled with institutionalized compliance related practices, utilizing symbolic systems, procedures and artifacts used to convey issues related to regulative, normative and cultural-cognitive.

Furthermore drawing on empirical evidence from E-Government information systems implementation in Ethiopia, Mekonnen & Sahay (2008) noted that the concept of ‘mediation’ can be explained using the institutional theory; also institutional theory can be used to explain the analysis of the process of change and its limits. Thatcher & Zhu (2006) conducted a quantitative study in China and the United States of America and disclosed that a powerful facilitator at the initial stages of e-government implementation is encouragement from the government. It further recognized the fact that the institutional environment exerts a significant impact on the decisions taken by the public sector as to whether to implement an information system or not; the issue of the effect of culture and country also proved to be significant.

From the above it is evident that the studies had a narrow focus of the institutional environment. The studies focused on specific institutional factors that affect E-Government financial systems. The purpose of this study is therefore to bring to light the various institutional factors that enable or constrain such information systems.

2.4 Thematic Areas on E-Government and Developing Countries’ IS

This section and the subsequent sub-sections focused on discussing the major themes in E-Government financial systems research. These studies were limited to challenges, and failure of e-government financial information systems (Heeks & Stanforth, 2007; Hendriks, 2012; Ibrahim & Dauda, 2014). Thus, in this study the themes of E-Government financial systems will focus on the benefits, implementation, phases, challenges and failure of such IS.

2.4.1 Benefits of E-Government Financial Systems

Developing countries have adopted E-Government financial systems due to the benefits. The benefits of E-Government financial systems as related to this study include an increase in transparency and reduction of corruption in public sector service delivery which results in huge cost savings to government (Bwalya, 2009). To achieve these benefits, studies have mentioned websites which include personalization and customization to attract end-users and citizens (Thorbjørnsen, Supphellen, Nysveen, & Egil, 2002); loyalty programs (Kumar *et al.*, 2007); and navigation and aesthetics (Coleman, 2005).

The impact of E-Government financial systems at the government level can be traced to policy making, program administration and compliance (Srivastava, 2011). Impact at the citizen level is related to finance, political, social, ideological and stewardship and these impact either at the state, local or central levels of government, thus leading to efficiency and effectiveness enhancement (Srivastava, 2011).

Other benefits include: improving upon the quality of service's are increase in the level of efficiency of administrative process, the ability to encourage a more effective participation and engagement with service users (Ask & Grönlund, 2008; Helbig, Ramón Gil-García, & Ferro, 2009). From a global point of view improvement in the opportunities related to connection, availability and modes of interaction between citizens and the various levels of government are what E-Government is associated with (Altameem *et al.*, 2006; Arvidsson, Holmström, & Lyytinen, 2014).

Dorotinsky and Matsuda (2002) analyzed the benefits of e-government financial systems (IFMIS) from the lens of improving upon budgetary performance at three main levels, the

macrofiscal stability level, strategic allocation of resources level, and operational efficiency level. The microfiscal stability level offers benefits such as better yearly spending by government in order to facilitate effective financial management. IFMIS implementation provides comprehensive data that gives a clear picture of the state of the budget. More real time financial data is provided during the fiscal year which provides an opportunity for yearly corrective interventions (Dorotinsky & Matsuda, 2002).

2.4.2 Implementing E-Government Financial Systems

E-Government financial systems implementation has attracted limited research. Some developing countries have implemented the IS to aid in the capture, access and retrieval of financial data in a more efficient and timely manner to strengthen government control of its finances; to improve upon the provision of service by government; and to promote accountability and transparency in relation to budgets with the aid of information systems (Worldbank, 2014). In some developing countries, both the government and public sectors have implemented IFMIS. In view of this, Minani (2012) have argued that the majority of financial managers with the intension of promoting effective decision making use IFMIS tools to generate information on financial planning while some financial managers use such tools for capital budgeting.

2.4.2.1 Phases of Implementation

The process of implementing the phenomenon, IFMIS, has attracted inadequate research on the effects of the institutional environment on such information systems. The information system is implemented in a phased approach, most of the activities within each phase differs (Heeks & Stanforth, 2007; Hendriks, 2012; Stanforth, 2007). The phased implementation

approach is mostly an incremental process (Hendriks, 2012b), thus implementation phases constituted activities and deliverables that spearheaded the subsequent phases. Studies have noted that user participation and the recognition of the significance of legacy systems in the implementation process of IFMIS are very essential (Heeks & Stanforth, 2007; Stanforth, 2007). Though, the phased implementation process has been adopted, there are evidence of challenges. As noted by Hendriks (2012), the implementation of the software faced challenges such as complexity of the software in relation to the size, lack of capacity, weak attitude towards commitment to change and technical challenges.

Diamond and Khemani (2006) also noted these challenges as hindrances to successful implementation of information systems in the public sector. Specific guidelines have been provided that could help in successful implementation of IFMIS in developing countries. These include: change management, adequate commitment of change, adequate legal framework and adequate response to technical challenges (Hendriks, 2012). Ibrahim and Dauda (2014), on the other hand recommended frequent government financial accountability, effective training, monitoring, effective security measures, and punitive actions against both officials and users to aid in controlling corruption after the implementation of IFMIS. Legal framework- considered to be mostly set by the donors (Adhikari *et al.*, 2013; Ibrahim & Dauda, 2014); training and capacity building - this is provided by both the developing countries and the international donors (Heeks & Stanforth, 2007); and finding solutions to challenges that are technical in nature. Moreover, some studies have revealed that a context-oriented method is required to successfully implement E-Government in developing countries (Andoh-Baidoo, Babb, & Agyepong, 2012).

2.4.3 Challenges of E-Government

In this section, the classification was done using E-Government literature because, as noted from the overview of the main themes, E-Government is seen as the umbrella, which houses IFMIS. These challenges have mostly resulted in the failure of e-government as a whole. Studies have argued that about one-third of E-Government initiatives fail totally while one-half fail partially (Heeks, 2002, 2003). This high rate of such IS failure is very alarming due to the limited amount of resources available to developing countries (Dada, 2006). As noted by Nkohkwo and Islam (2013), the main challenges are associated with E-Government implementation.

Given that e-government performance heavily rely on infrastructure, extant researchers has identified infrastructure as the most challenging aspect of successful e-government implementation (Anderson, 2006; Hosman, 2010; Ngugi, & Pelowski, 2012). In view of this some studies have focused on the issue of digital divide (Zheng, 2013) which consists of inadequate internet access and connectivity (Hosman, 2010; Kor, Orange, Elsheikh, Cullen, & Hobbs, 2008), and unstable power supply (Andersen, 2006; Ogembo, Ngugi, & Pelowski, 2012) which is evident in most developing countries and possess as a major challenge. This makes it extremely difficult to deploy the needed ICT infrastructure appropriate for successful e-government implementation. Another challenge to a successful E-Government implementation is the issue of finances; every E-Government initiative needs money to drive it to successful implementation. The most salient theme under this challenge is funding (Bwalya, 2009; Misuraca, 2007) and the cost for E-Government services (Dwivedi & Sahu, 2008; Hosman, 2010).

Various constraints exist that contribute to the challenges of successful E-Government implementation in Sub-Saharan Africa; these include the cost of E-Government services, other financial constraints, and the cost of internet connectivity. Political issues also comprise of subjects such as leadership (Dada, 2006; Isaacs, 2007; Ndou, 2004), political situation (Isaacs, 2007; Ndou, 2004), and lack of support from such leaders together with inadequate rules, policies, laws, regulations and legislations act as challenges. In light of this, some studies have revealed that, for a successfully implement E-Government initiatives; there is the need for the initiative to be driven or supported by government leadership because it is normally coupled with inevitable changes.

Other issues are organizational with themes such as leadership (Matavire *et al.*, 2010) and change management. Good organization skills (Fuchs & Horak, 2008) and effective communication can help maintain the values of stakeholders and visions of any E-Government initiative. However, the corrupt nature of governments in developing countries stands as a major threat to the implementation of most E-Government initiatives. Thus socio-economic issues such as: the corrupt nature of developing countries (Almarabeh & AduAli, 2010; Ifinedo, 2006) and high poverty levels (Ifinedo, 2006; Mundy & Musa, 2010) of Sub-Saharan African countries is a major challenge to successful E-Government implementation. other most dominant sub-themes are illiteracy (Dwivedi & Sahu, 2008; Jaeger & Thompson, 2003; Nkwe, 2012) and language barriers. The relevance of these sub-themes brings to light the importance of cultures or socio-cultural issues in ICT implementation and use. For issues that are human related, the most significant themes are awareness and training (Bwalya, 2009; Nkwe, 2012), and capacity training (Bwalya, 2009; Bwalya & Healy, 2010; Hosman, 2010).

Moreover, to better address why e-government fail, Jaeger and Thompson (2003) have argue that, governments' inability to be actively trained through education in order to increase awareness about the immense value of E-Government is often the cause of failure of e-government. Also e-government policy makers have not been able to bring about a more responsive and efficient e-government services despite the significant investment made in the area (Heeks & Bailur, 2007; Helbig *et al.*, 2009). Furthermore, Dada (2006) have posited that e-government is failing in developing countries because pre-defined goals and anticipated benefits are not met by the system.

2.4.4 Challenges and Failure of E-Government Financial Systems

Given the complexity of information systems (the modules running on the system and the size), Stanforth (2007) have established that E-Government financial systems' failure are caused by late delivery, inflated costs, inadequate functionality, and loss of resources.. Hendriks (2012) have also stated that a major challenge faced in South Africa during the implementation of E-Government financial systems was the size and complexity of the software. Notwithstanding in implementing an e-government financial system in Romania, György *et al.* (2011) revealed that the challenges related to the implementation process is not only risk related with regards to the malfunctioning of the technology but also poor functionality. Thus, György *et al.* (2011) suggested the need to get less complex systems that are smaller, or can adapt based on their capacity. In view of this, it can be said that, from a broader point of view or perspective specific issues such as technology, politics and origin of organizations are taken for granted in the practice of government, these issues however turn to become major challenges encountered during an E-Government implementation (Sarikas & Weerakkody, 2007).

In addition to the above the cost of IS is a major challenge in developing countries. For instance, a study in Kenya revealed that, the a major challenge that influenced E-Government financial systems was cost; thus the authors suggested that financial resources should be made available and accessible (Karanja & Ng'ang'a, 2014). Furthermore, the issue of inadequate technical skills and capacity was a challenge that caused failure of the system. This was a major problem in Kenya during the implementation, design and pilot study of the IFMIS (Karanja & Nganga, 2014), together with work force motivation. One of such studies (Diamond & Khemani, 1999) noted that “careful evaluation of the salaries and package for the relevant staffing of the public sector should have been done; including an assessment of the implications of improved salaries for the broader public sector environment. Such software should thus be beneficial to both employees (that is, it should cause positive changes in their conditions at work and the payment of wages) and beneficiaries who are not within the public sector (delivery of cash bills on time) (György *et al.*, 2011).

2.5 Selected Cases in Developing Countries

The phenomena of IFMIS has been adopted and implemented in various developing countries: these include Nigeria (Ibrahim & Dauda, 2014), Tanzania (Minani, 2012), Kenya (Karanja & Nganga, 2014; King'ara, 2012; Mugambi, 2011), South Africa (Hendriks, 2012), and Sri Lanka (Heeks & Stanforth, 2007; Stanforth, 2007). It is, however, important to note that research in this area is limited.

Minani (2012) focused on the extent to which the available technology was used effectively by financial managers. Based on the study it was noted that, although IFMIS tools are being used effectively, there was a need to improve upon its use to enable timely and adequate decision making and also the generation of the required budget. Karanja and Nganga (2014)

in a descriptive study also noted that, although there was training, technical skills and capacity, the pilot implementation was unsatisfactory due to inadequate knowledge about the system. The newly hired managers by the government was a major problem with the employees, and the complexity of the software. On other hand, with regards to E-Government implementation in general there was lack of ICT policy, poor information infrastructure (reluctance to share information), inadequate human skills and digital divide. There is also a mismatch between the current and future systems which results in the gap between social, cultural, economic, physical and other contexts between the information systems designers and the place the information system will be implemented (Kamar & Ongondo, 2007).

Other studies noted that the implementation was affected by several complex factors including: support and commitment from top management; human and technical training capacity, ICT infrastructure, phased implantation process, and change management (Kimwele, 2011; Miheso, 2013). IFMIS implementation was behind schedule because there was resistance from the ministries. This resistance was as a result of the fear of the unknown and inadequate training (Mobegi, 2009). Additional, some studies argued that the problems associated with the implementation can be attributed to culture and organizational factors (Wanyama & Zheng, 2010). A descriptive quantitative study carried out in Kenya also argued that factors such as system quality, information quality, quality of donor support and individual impact influenced IFMIS implementation (King'ara, 2012).

Ibrahim and Dauda (2014) also noted that the success of E-Government financial systems lies on its ability to successfully embrace a new government's integrated financial reforms. They further emphasized that, although such reforms are mostly directed at ensuring

transparency and accountability, in the case of Nigeria corruption persists even after the introduction of e-government financial systems. The authors therefore emphasized the need for proper monitoring of government spending in all the institutions and the need for strong application of punitive measures of corrupt officials. The study also brings to light the imperfect nature of the system. These punitive measures demands for strong regulatory institutions in E-Government.

In Zambia, Bwalya (2009) noted that corruption and inefficient practices, profuse red tape in the public sector and inefficiencies are the major setbacks in the widely known and used indigenous information system in the country. With the above noted challenges in the public sector of Zambia E-Government financial system implementation will result in a more responsive and transparent public sector, the promotion of citizen empowerment by making knowledge and other resources openly available. Bwalya (2009) puts forward these challenges to successful E-government implementation in the country: inadequate ICT infrastructure and political will, illiteracy or the provision of English content as against local languages, inadequate procedures in proper change management, and the non-contextualization of e-government practices.

Finally with the case of Sri Lanka (Heeks & Stanforth, 2007; Stanforth, 2007) it was found that the first attempt to introduce the IS failed because of lack of commitment from stakeholders. From the perspective of the actor-network theory, the studies noted that three factors define E-Government project paths. These three factors include organising global network actors who are considered a resource to the project, organizing local network actors who implement the project, and imposition of the project as a link between the above named networks.

2.6 Information Systems and Corruption

Corruption is the abuse of entrusted power for private benefit and is progressively recognized as an outstanding problem in developing countries (Klitgaard, 1988). The level of corruption in a country is determined by its historical, cultural roots and the level of economic development ('Hakeem Ishola, 2012). Some noted causes of corruption include over/under regulation of private activities, weakened security, delayed public procurement and lengthy public sector employment (Collier, 2000; Rose-Ackerman, 1997). Countries have engaged in the process of significantly changing their public sector finances. This change is a way of modernizing public management by employing IS to help constrain and control public sector spending (Benito *et al.*, 2007). It has been argued that developing countries tend to have a higher corruption rate (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999), hence the need for innovations to curb it. Public sector financial innovation is considered to be inseparably associated with the problem of corruption (Analoui & Fitzsimons, 2009).

These public sector financial innovations are directed towards promoting transparency in public finances in developing countries. E-Government is noted to be a solution to corruption by bringing about transparency in public administration (Von Haldenwang, 2004). However, studies in Nigeria have argued that the phenomenon of corruption still persists even after the implementation of IFMIS, a public sector financial innovation (Ibrahim & Dauda, 2014).

2.7 IS Based Financial Innovations in the Public Sector

The use of an information system for public sector finances can be observed from the context of the widespread nature of public access and accountability. Wastell (2006) noted that there is a need to open up the discourse of E-Government within IS, thus incorporating into IS the

programme of institutional restructuring. Financial transparency can be enhanced with the aid of IS (Bertot, Jaeger, & Grimes, 2010).

Chen and Bennett (2013) add that information transparency is about ultimately making financial and business information available embracing collection analysis and dissemination of not only business and financial information, but also organizational performance of such functions to further guarantee the health of the financial systems. Although IS was incorporated into the financial sector of public institutions the integrated approach was viewed to be the most suitable to achieve the purpose of implementation. As noted by Stantial (2007), in order to enhance the various reporting objectives, as well as business intelligence, an integrated view of financial IS is the most suitable.

2.8 Public Sector Culture

Culture is very essential in IS research: every institution has its own culture that has defined them and has been sustained over time. Organizational culture is defined by Koskosas, Kakaulidis, & Siomos, (2011) as a set of practices exhibited throughout the organization and noticeable through the consciousness of the end user and has the ability to determine the success or otherwise of the information security process of an organization. Thus, an organization is essentially its culture. Studies by Callen, Braithwaite, and Westbrook (2007) established that there exists a significant relationship between organizational culture and employees attitudes towards the use of IS.

Organizational culture is also considered a significant factor to consider when adopting IS, thus successful adoption or failure is dependent on the culture existing in the organization (Jackson, 2011). As E-Government financial systems brings about changes in organizations,

there is a need to understand the culture setting of these organizations. Research on organizational culture has indicated that culture is central to the change process and the attainment of organizational objectives; this has raised the concern of the lack of understanding of public sector culture (Bluedorn & Lundgren, 1993).

Hence, it is significant to be aware of the existing culture within public sector organizations; this awareness is needed to develop organizational strategies designed to achieve new forms of public management (Parker & Bradley, 2000). Further, Parker & Bradley (2000) argue that an awareness of the nature of public sector organizational culture offers a basis for explaining and assessing the appropriateness and outcomes of the current reform process from a policy perspective. The issue is: can culture really be changed? Studies have suggested that it is difficult to change organizational culture because culture is deeply rooted or indoctrinated in the underlying norms and values of an organization and thus cannot be imposed by management (Molinsky, 1999).

This explains the reason why public sector culture remains different from the prescriptions of new management reform, thus managerial support for change cannot be used as a sufficient grounds to change organizational culture (Parker & Bradley, 2000). Studies further suggest that cultural barriers to change do not only exist at the worker or employee level, it also exists at the management level (Rowlinson, 2001).

2.9 Gap in Methodological Approaches

This section presents a review of the methodologies and paradigms used in e-government financial information systems research. Studies in e-government financial information systems research have employed qualitative methodology (Heeks & Stanforth, 2007;

Standforth, 2006) quantitative (Miheso, 2013; Minani, 2012), no specific methodology (György *et al.*, 2011). The positivist school of thought as used by some of these researchers had some limitations which has necessitated the use of the interpretivist approach in this study. Positivists concentrated on objective, statistical treatment of the predominant variance of implementation; this does not uncover the subjective understanding of the implementation and use of the information system (Datta, 2011). Interpretivists on the other hand, bring to light users' understanding and construction of reality. The interpretive perspective on an information system examines the continuous interaction between users and their subjective construction of reality that is driven by their own experiences (Datta, 2011). This study therefore employs the interpretive case study approach in answering the how question and provides an in-depth understanding of the phenomenon as described by (Yin, 2014).

2.10 Theories and Conceptual Approaches to E-Government and IFMIS

This study has an intention of applying and using the new institutional theory as a lens. Thus, this section of the literature review will concentrate on the dominant theoretical foundations and conceptual approaches used in E-Government and IFMIS in developing countries.

2.10.1 Theories used in E-Government and IFMIS Research

There is an increase in employing E-Government and specifically IFMIS by developing countries. Theories most of the time can be grouped under either of these categories, namely, the diffusion approach or category; the adoption approach; and the domestication approach (Titah & Barki, 2006). The most dominant theories were the technology acceptance model (TAM) (Sang, Lee, & Lee, 2010; Shyu & Huang, 2011), actor network theory (Heeks & Standforth, 2007; Standforth, 2006), structuration theory (Hendriks, 2012b); diffusion of

innovations theory (Nam, 2014; Sang et al., 2010), and stakeholder theory (Yıldız & Saylam, 2013). The table below provides a summary of the theories and the issues that the authors considered.

Table 2 3: Selected Theories Used in E-Government Financial Systems Research

Theory Used	Issues	References
Technology Acceptance Model (TAM)	Adoption (integration of trust)	(Belanche, Casaló, & Flavián, 2012)
	Adoption and use	(Shyu & Huang, 2011)
	End-user acceptance	(Sang et al., 2010)
Diffusion of Innovations Theory	Use	(Nam, 2014; Sang et al., 2010)
	Factors that influence diffusion	(Yeloglu & Sagsan, 2009)
	Challenges	(Fedorowicz & Gogan, 2010)
Saturation Theory	Implementation, challenges and risk	(Hendriks, 2012b)
Actor Network Theory	Implementation, mobilization, interaction and disintegration	(Heeks & Stanforth, 2007a; Stanforth, 2007)
Saturation Theory	Understanding the discourse	(Yıldız & Saylam, 2013)

Source: Author's Construction

The technology acceptance model (TAM) has been widely used in E-Government research. TAM models how users come to accept and use a particular technology. The constructs include perceived usefulness, which is “the degree to which a person believes that using a particular system would enhance his or her job performance”; and perceived ease-of-use, which is “the degree to which a person believes that using a particular system would be free from effort”, and “a person’s perception that most people who are important to him think he should or not perform the behaviour in question” as the subjective norm (Davis, 1989). TAM has been critiqued on specific grounds; for example, (Chuttur, 2009) criticized TAM on the grounds of its limited explanatory and predictive power and also its heuristic value which is

questionable. In IFMIS research TAM has been employed by (Colesca & Dobrica, 2008) who used it to discover the factors that could affect citizens' adoption of E-Government services in Romania.

Another theory that has been widely used in E-Government research is the diffusion of innovations theory (DOI). Rogers (2010), posited that the process by which innovation is communicated through specific channels over a period of time among participants in a social system is what is termed DOI. The theory therefore seeks to explain how, why, and at what rate new ideas and technology spread through cultures. Giesler (2012) explained that a one-way model such as DOI is insufficient and thus multiple communication flows is needed to be examined especially in environments where the adopter is receiving information from voluminous sources and is returning feedback to the sender. In E-Government research, DOI has been used in different scenarios. Dimitrova and Chen (2006) mentioned that one thing that is lacking in E-Government research is the ways in which citizens learn about government websites, thereby suggesting the existence of two different information channels namely interpersonal (from family, friends and co-workers) and mass media channels used mainly to inform citizens about the services provided by E-Government. Also media channels are more important among the earliest adopters of E-Government services than are interpersonal channels (Dimitrova & Chen, 2006).

Actor network theory (ANT) is another theory that has been widely used in E-Government research and IFMIS in specific. ANT argues that there is no fundamental difference between science and other social activities (Latour, 2005): an actor can either be a person, an object or an organization and are important to a social network; these actors cause the smooth running of social order thus anytime an actor is removed there is a breakdown of social order.

Pollitt & Harrison (1992) noted that the actor-network perspective helps appreciate the complexity that is inherent in the project of E-Government; this complexity is because of broader accountabilities, broader objectives and also broader networks that exist within public sector projects as compared with the private sector. Heeks and Stanforth (2007), noted that actor-network theory is unable to explain the connection with network mobilization.

The above critically examined theories mostly concentrated more on either technology, communication or on the users, and less on the effects of the institutional environment. There is thus a need to consider the important effects of the institutional environment on E-Government innovations. This need has thus propelled this study to adopt the new institutional theory as the theoretical foundation of the study.

However, constructs of the theory were modified to suit the context of the study. In this study the term “regulatory” is explained as the clearly defined obligatory international and national laws that affected the implementation and use of GIFMIS. It is therefore analysed as the laws, rules and legislations that have affected the implementation of GIFMIS. In this study normative is defined as both national and international standard operating procedures that guide practices. Finally, the cultural-cognitive pillar is discussed as traditions that existed at CAGD, which affected the implementation and use of GIFMIS.

Institutional theory has been used by e-government researchers in diverse ways. E-Government is directed more towards sophisticated and complex systems of rules and standards due to the issue of numerous mechanisms (Gil-Garcia & Martinez-Moyano, 2007). Rules are solutions, that is, guiding mechanisms in their investigation of norms (Roberts & Dowling, 2002; Sørensen, 2002). Ensminger and Knight (1997), noted “in some cases members of a society will create norms consciously; in other cases, the norms will emerge

as unintended consequences of the pursuit of strategic advantage. In each case the focus is on the substantive outcome; the development of the norm is merely a means to that end”. In the case of public sectors it was expounded that “the bureaucrat’s enthusiasm for instantaneous implementation of E-Government appears to be fuelled by strong confidence in the capacity of government to securely provide services and respond to citizen’s needs” (Moon & Welch, 2005,pg 105).

The limitation of the new institutional theory has prompted the use of the force field analysis (Lewin, 1946). The new institutional theory has been criticized on its inability to determine how the institutional factors shape IS by identifying those that are enablers and those that are constraints.

2.11 Conceptual Approaches in E-Government Financial Systems Research

The limited studies on E-Government financial systems that focused on developing countries have failed to examine both the implementation and use of the software. Studies that focused on implementation mostly investigated the challenges of E-Government implementation in developing countries (Heeks & Stanforth, 2007; Hendriks, 2012b; Ibrahim & Dauda, 2014; Stanforth, 2007). Heeks and Stanforth (2007) employed ANT to provide an understanding of the trajectories and the uncertainties that surrounds e-government projects based on the high degree of failure, they did not fail to mention the deliberate use of the theory. Hendriks (2012) also concluded that the challenges and risks encountered during the implementation of E-Government financial systems could be associated with the size and complex nature of E-Government projects.

The few studies that used the institutional theory had some inherent limitations. The limitations include:

1. Some of the authors who conducted empirical investigations of the institutional environment focused more on the regulatory aspect and ignored the others (Currie *et al.*, 2011; El-Haddadeh *et al.*, 2013; Gil-Garcia & Martinez-Moyano, 2007; Gosain, 2004).
2. These authors failed to consider the consequences of the pillars in terms of constraints or enablers and the effects on the implementation and use of E-Government projects especially from a developing country's context (particularly Sub-Saharan Africa) and therefore provides adequate recommendation.

This thus points out the need for a study that will investigate not only the institutional effects of E-Government financial systems, but also bring to light which of the institutional pressures can enable or constrain its successful implementation and use.

2.12 Research Issues from Theoretical and Contextual Approaches

The following assumptions can be made as a result of the information presented in the above sub-sections.

- I. It is evident that there is a need for E-Government research to focus on a particular E-Government project in a developing country to use more non-deterministic theories.
- II. There seems to be limited studies on the effects of the institutional environment on the implementation and use of E-Government projects in developing countries.

2.13 Implication for Research

2.13.1 Research Gap – Why the Focus on the Institutional Environment

In the previous section there was a review and detailed discussions of earlier research on E-Government and IFMIS based on existing literature on developing countries. This was done with the purpose of putting forward the argument that IFMIS is an information system phenomena, and to identify the prevailing gap in literature. As presented above the intention of this study is to empirically investigate the effects of the institutional environment on E-Government financial systems from the context of a developing country.

Thus, the resolution to study this available gap is informed by:

1. The need for more research on the effects of the institutional environment on the implementation and use of E-Government financial systems in a developing country.
2. The need for research into and to unearth the consequences of the institutional environment on the implementation and use of E-Government financial systems.
3. The need to employ a non-deterministic theory to understand how the institutional environmental shapes the implementation and use of E-Government projects from a developing country's context.
4. The prerequisite to fulfil departmental expectation for writing an information systems grounded thesis.

2.14 Research Paradigm – Why the choice of Interpretive Paradigm

There are a lot of non-technology deterministic theories which have been used in information systems research to study e-government and IFMIS. Such theories include: actor network theory (Latour, 2005), social shaping of technology (Williams & Edge, 1996), social

construction of technology (Klein & Kleinman, 2002; Leonardi, 2009; Leonardi & Barley, 2010), new institutional theory (Scott, 2008) and social materiality (Leonardi, 2013; Orlikowski, 2007). As expected, all these theories have their own constructs and the phenomenon they seek to expound on and measure. The non-technology deterministic theories such as the actor network theory (Latour, 2005), and new institutional theory have been used in E-Government research; however, few of the studies that employed the use of the new institutional theory have focused on the institutional effects of the implementation and use and the consequences on E-Government financial systems. The new institutional theory is a non-technology deterministic theory that was considered a suitable choice because it helped identify the gap which is how to understand how the institutional environment shapes the implementation and use of E-Government projects and its consequences. The new institutional theory together with its constructs and application in literature and in this study are explained in detail in Chapter 3 following.

2.15 Summary

The main purpose of this chapter was to explore the theme of E-Government and IFMIS as an area in information systems research, with an aim of finding the most researched issues, and the most used theoretical approaches in the area and thus to suggest the need for more research. The various evidence presented and the subsequent discussions suggest the need for more research that is devoid of focusing on challenges, failure and adoption research that presently dominate in e-government research. Thus, this study identified and chose to focus on the institutional effects on IFMIS and its consequences from the context of a developing country. As the identified gap required a probing into the institutional environment of the

public sector in a developing country's context to understand the institutional effects of e-government financial systems. Contained in the chapter is an overview for the choice of interpretive as an appropriate paradigm. The succeeding chapter presents an overview and a detailed discussion of the new institutional theory as adopted as the theoretical foundation of this study.



CHAPTER THREE

THEORETICAL FOUNDATION

3.1 Introduction

This chapter discusses the theoretical foundation adopted in the study. The previous chapter brought to light specific gaps existing in literature on the implementation and use of E-Government financial systems and also the existing theoretical gap, which is the limited use of the institutional theory in IS literature. This study aims at contributing to academia by using the new institutional theory. This theoretical foundation was adopted because its constructs will best aid in the answering of the research questions and the unveiling of various issues surrounding the research area. Force field analysis is also discussed in this chapter as an additional theory in response to the limitations of the new institutional theory.

3.2 New Institutional Theory: Overview

Table 3 1: Constructs of New Institutional Theory According to Scott

Theory Element	Regulative	Normative	Cognitive
Basis of Compliance	Expedience	Social obligation	Taken for granted
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules, laws, Sanction	Certification, accreditation	Prevalence, Isomorphism
Basis of legitimacy	Legally, Sanctioned	Morally governed	Culturally Supported, Conceptually Correct

Source: (Scott, 1995, 2008)

3.3 The Theoretical Foundation

According to Scott (2008) institutionalization is a process as well as a practicable property.

Institutionalism is structured around the maintenance and diffusion of elements such as

regulative, normative and culture-cognitive processes, thus institution is a socio-cultural system that is characterised by either single or multiple traits (Currie, 2008). An institution can exhibit either of the above elements or constructs, social behavior is also driven by legal institutions and practices that are both social and cultural. The institutional approach turns to the institution and therefore tends to define itself as a multifaceted organization that has lasting structures which are composed of symbolic elements, social activities, material resources and a relative position to change (Scott, 2005)

Institutional theory further confirms the non-existence of independence of organizations as a result of exogenous factors (Carroll & Huo, 1986; Zucker, 1987). Institutional theory recognizes these facts: that there exists differences in institutional context and as a result of interaction with the environment over time, institutional structures develop increasingly; different institutional structures are developed by organizations in different environments; and these structures tend to be persistent due to the fact that they serve to provide not only meaning but also access to resources from the environment (DiMaggio & Powell, 1983). However, before the new institutional theory, there was what is considered the old institutional theory. Barley and Tolbert (1997) mention that the old institutional theory is structured around organizational based decision making derived from the rationality of technology and economics.

As presented in the above table, the new institutional theory as posited by (Scott, 1995, 2008), has three major pillars. These include the regulatory, normative and cultural-cognitive pillars. The regulatory pillar provides an explanation into what drives social action, these are both the legal and illegal framework. The regulatory pillar constitutes sanctions and formulation of rules. Scott (2008) mentioned that regulatory professionals enforce

jurisdiction with support from the state. Systems of rules that exist in organizations can be conceptualized as a means of control (Hauser, 1995; Schauer, 1991).

Regulations exist to guide the behaviour of users in the process of IS implementation and use. Currie (2008) noted that regulative bodies such as governments enforce strict rules to make E-Government financial systems better. The rationale behind the regulative is to coerce a uniform response across all organizational fields in order to stimulate organizational isomorphism in terms of environmental compliance (Scott, 2005). In this study the regulatory pillar was considered as both national and international laws that affected the implementation and use of GIFMIS and its related consequences. These laws demanded forceful compliance and thus attracted sanctions when violated.

The normative pillar refer to the guidelines that are used by organizations to establish actions or behavioural patterns (Scott, 2005). O'Reilly and Chatman (1996) argued that control systems are based on shared norms and values that influence employees' focus of attention and interpretation of events and guide their attitudes and behaviour. In this study the normative pillar was explained as both national and international standards that affected the implementation and use of GIFMIS and thus required compliance. The public sector is likely to mimic other countries as well as the private sector (Hassan, 2005; Irvine, 2011a). The normative pillar is brought to light by government and industry standard bodies, through normative pressures for users (Campbell, 2007; Murugesan, 2007).

The cultural-cognitive pillar constitutes meaningful and understood frameworks and conceptions which are shared across the organization (Scott, 2008). In this study the cultural-cognitive pillar is referred to as the traditions that exist at CAGD and which consequently affected the implementation and use of GIFMIS. Studies have revealed that the influence of

both normative and cultural-cognitive pillars are more subtle, yet they are nevertheless effective in shaping organizational responses towards the implementation and use of information systems (Butler, 2011).

Each pillar contains elements of compliance or conformity which is determined by expedience and obligations that are socially grounded or taken for granted. The existing mechanisms can be persuasive, normative (causes similarity in organizational behaviour). They are also logically instrumental, appropriate or suitable and orthodox. For sanctions based on rules and laws, official recognition constitutes the indicators while actions that are considered as legitimate can be morally grounded and supported by culture or sanctioned legally.

3.4 Choice of Theory: Justification

New institutional theory is relevant for this study because it provides an understanding of the regulatory, normative and cultural-cognition effects on E-Government financial systems. Studies in E-Government financial systems have demonstrated that international organizations have applied numerous mechanisms through “best practices” and the provision of IS assistance to push their ideas in developing countries (Mir & Rahaman, 2005; Uddin, Gumb, & Kasumba, 2011). The theory also helped in the unearthing of the regulatory, normative and cultural-cognitive factors that affected the implementation and use of GIFMIS, and the subsequent consequences. The new institutional theory suggests that institutional pressures affect IS (DiMaggio & Powell, 1983; Pina, Torres, & Yetano, 2009).

Scott (2008) further explains that the new institutional theory is relevant when a researcher seeks to explain how interactions and social actions are shaped by the components of social

structures which include regulations, norms and the process of cognition that have been set up. It can be argued that organizations constitutes several dependent structures of which technology and resources are not the only aspects of organizational structure. Organizational structure constitutes myths that are sound, regulations, knowledge acquired through professionalism, education and community based opinions (Powell & DiMaggio, 2012; Scott, 2013).

Currie (2009) noted that there is a need for IS researchers to fully use institutional theory because it is conceptually rich and it can be used more appropriately in analysis; it also provides an understanding of complex social phenomenon. Avgerou (2001) also noted that technology should not be the only driver in information systems research. Organizational survival is not only dependent on technology, it is also dependent on the recognition of institutional expectations (Scott, 1987). Thus, when a researcher seeks to empirically examine the existing relationship between the social environment as a whole, the organization and innovations that are IS based, the new institutional theory is considered most appropriate (Orlikowski & Barley, 2001). This informed the choice of the new institutional theory in this study.

3.5 New Institutional Theory in IS Research

The theory has been employed by some IS researchers including Effah (2013) who studied it from a developing country perspective, and noted that bureaucracy and inadequate regulations as well as the entrepreneurs cognition stood as constraints to the application of IS in entrepreneurship. An IS innovation should take into consideration the existing institutional factors. Other IS researchers that have used this theory include Cukier, Shortt, & Devine (2001); (Chatterjee, Grewal, & Sambamurthy, 2002; Cukier, Shortt, & Devine,

2001; Lamb & Kling, 2003). Lamb & Kling (2003) identified the new institutional theory as a way of bringing to light the value of IS usage from a social perspective. In addition to the above, Zheng *et al.* (2013) noted that institutional factors such as regulations played a major role in E-Government implementation.

3.6 Limitation of the New Institutional Theory

Although the new institutional theory has been recognized to be essential for the study of IS innovations (King *et al.*, 1994), it is not devoid of some limitations. The use of new institutional theory in process-oriented studies pose theoretical and methodological challenges. The theory is dominated by relational actor models, and with strategic choice there is a need to consider the empirical and theoretical shortcomings of the theory in situations where the concepts can be ambiguous and vague (Powell & DiMaggio, 2012). However, the theory has been employed in this study because there is a need for IS researchers to adopt the it in core sectors such as financial information systems (Currie, 2009).

Additional limitations of the new institutional theory as outlined by current studies is focused on the inability of the theory to explain the process by which institutionalized ideas and practices are established and decomposed at intra-organizational levels (Ezzamel, Hyndman, Johnsen, Lapsley, & Pallot, 2007; Liguori & Steccolini, 2011). Irvine (2011) also noted that the role of internal forces at work, specifically the role of agency and power relationships among organizational agents at different levels, have been neglected by institutional theories. More recent studies have regarded the institutional theory as a repetitive process, with the power of members of the public sector at different organizational levels acknowledged (Conrad & Guven Uslu, 2012; Irvine, 2011). Thus, despite confronting

similar environmental pressures, public sectors respond differently, leading to different outcomes of the proposed changes (Liguori & Steccolini, 2011). As a result, public sectors are increasingly perceived as static rather than moveable entities (Yang & Modell, 2012). Consequently, behaviours in the public sectors are subject to change.

3.7 Force Field Analysis

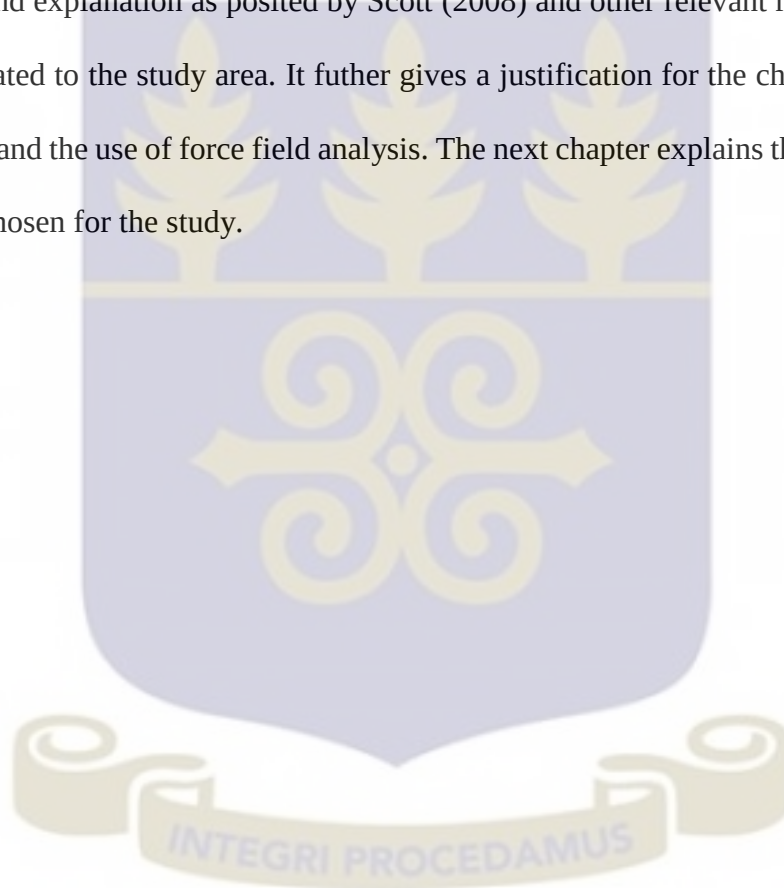
According to Lewin (1946) force field analysis is grounded on change, thus behaviour is not considered as a static habit within an institutional setting; behaviour is rather a dynamic balance of forces working in opposite directions. Force field analysis is based on the assumption that the balance between two forces constitutes any social situation: the entirety of forces against change (restraining forces) and the entirety of forces for change or the drivers of change (Lewin, 1946). In this study the restraining forces are considered as the institutional effects that constrain the implementation and use of GIFMIS while the driving forces are considered as the institutional effects that enable the implementation and use of the IS. The employment of force field analysis was based on the fact that it can be used to plan and implement organizational changes (Thomas, 1985).

Force field analysis is relevant to this study because it enables the identification of the two main forces within the institutional environment (driving forces and restraining forces). The model is, however, criticized on the grounds that the analysis may cause division within a group; also for effective analysis there is the need for participation by all the members of a group (Lewin & Cartwright, 1952). Force field analysis was used in this study as a result of the inability of the new institutional theory determine which institutional pillars or factors are constraints or enablers in the study. To this effect, after the identification of the institutional factors in the environment through the lens of the new institutional theory, the

force field analysis will be used to state which of the issues inherent in the constructs (regulatory, normative and cultural-cognitive) were either constraints or enablers.

3.8 Summary

In sum, this chapter contains the theoretical foundation of the study, that is, the new institutional theory and force field analysis. It provides detailed description of the theory, an overview and explanation as posited by Scott (2008) and other relevant researchers that are directly related to the study area. It further gives a justification for the choice of the theory, limitations and the use of force field analysis. The next chapter explains the methodological approach chosen for the study.



CHAPTER FOUR

METHODOLOGY

4.1 Research Methodology

The preceding chapter discussed the theoretical foundation and position of this study, why the new institutional theory and force field analysis are best suited for this study despite their challenges. This chapter will probe into the research methodological stance for investigating the institutional effects on the implementation and use of E-Government financial system: a case study of CAGD. This chapter will further discuss the research paradigm, research method, data collection procedure, selection of case study, fieldwork study and the technique for data collection and analysis.

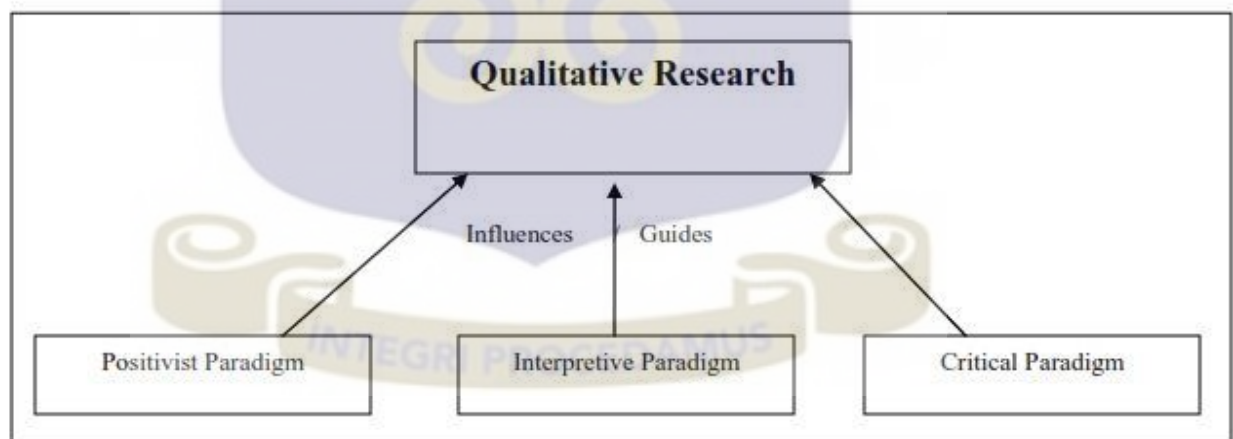
4.2 Research Paradigm

There are varying disciplines within academia and each has its own view with regards to methods, paradigms and approaches used in research (Richardson & Robinson, 2007). As posited by Hevner, March, Sudha, and Park (2004), organizational use of technology is the focus of IS researchers. Paradigms are aimed at structuring research within specific and acceptable concepts. Thus, in order for researchers to understand the phenomenon they are investigating, they need an awareness of their philosophical commitment in their research strategy (Johnson & Clark, 2006). According to Myers (1995) paradigms do not only give a definite definition of research, that is ‘valid ‘research, they provide for a study the most appropriate and applicable methods to use. Paradigm, according to Guba and Lincoln (1994), is the “basic belief system or world view that guides the investigation”. A researcher’s

question applied in the chosen paradigm is of primary importance, more so than questions applied research methods (Guba & Lincoln, 1994).

A researcher's philosophical stance is very important. As argued by Johnson and Clark (2006), it is not about the researcher's philosophical know-how or the ability to reflect on a particular philosophical choice, it is about the researcher's ability to defend the choice relative to other possible alternatives that can be adopted. Various paradigms are employed in qualitative research, and include positivist, interpretive and critical paradigms (Myers, 1997; Myers & Klein, 2011). Although three main paradigms are presented here, the most dominant ones in IS are interpretivism and positivism (Lee, 1991; Mingers, 2001; Weber, 2004c). The diagram below presents these paradigms as posited by Myers (1997). The diagram is accompanied by explanations as given by researchers.

Figure 3. 1: Philosophical Paradigms in Qualitative Research



Source: Myers, 1997a

4.2.1 Positivist Paradigm

In positivist research paradigm the researcher is independent of the study; it employs direct observation by a researcher, and facts are only established by taking aspects of a

phenomenon and examining its various parts (Krauss, 2005). According to Weber (2004), positivists do not only assume the existence of reality or the real world that exists beyond the cognition of human beings, they also assume that acquiring the objective knowledge of reality or the real world is possible. Ontologically positivists argue that reality does not only exist beyond human creation but its existence is independent of the actions and knowledge of human beings (Orlikowski & Baroudi, 1991). They further mentioned that in information systems research, positivists place emphasis on quantifiable variables that can be measured, hypothesis testing based on phenomena sampled from the population acknowledged in the study and the proposition of evidence that is formal in nature.

Lee (1991) noted that positivists perceive the stable nature of reality, thus such phenomena can be studied by a researcher objectively without any bias. With regards to methodology, Guba and Lincoln (1994) argued that in the process of studying social phenomena positivists employ scientific methods from the natural sciences. Within the sphere of epistemology positivists assume that, although there is an existence of objective knowledge this type of knowledge can only be attained by independent and objective study of reality.

The positivist paradigm have been criticized on specific based on some limitations. For instance, Orlikowski and Baroudi (1991) criticized positivism on the following grounds: its inability to study the subjective nature of reality socially- positivists have avoided historic and contextual concerns (this consists of the phenomena and the participants who part took in the study) due to their quest for universally based laws. Also positivists explain and predict reality, that is independent of human beings, they fail to account for the complexities in the social world (Orlikowski and Baroudi,1991). The critical paradigm cannot be used in the study due to its failure to acknowledge the subjectivity of social reality as noted above.

4.2.2. Interpretive Paradigm

Interpretive researchers assume the existence of reality or the real world, however knowledge of this reality is subjective and not objective (Weber, 2004). This implies that in interpretivism objective knowledge is non-existent. According to Myers (1997), interpretivism assumes it is through only social constructions such as conscious language and meanings that are shared that reality can be accessed. Information systems researchers who use the interpretive paradigm focus on understanding the context and how information systems impact and are impacted in the context (Walsham, 2006).

Ontologically, Walsham (2006) argued that in interpretive research understanding reality is inherently within the domain of humans and thus reality can be understood. In his earlier work Walsham (1995) presented two main forms of interpretive reality: reality that is built between respondents and researcher (inter-subject reality); and reality constructed from groups of people and individuals (subjective reality). Interpretive research accommodates the idea of multiple reality, thus human creation can influence reality. This therefore implies that between people reality is distinct, and across space and time. Thus the main aim of an interpretive researcher is to investigate how these multiple realities occur, continue and/or are altered over time (Morgan, 1980).

From the epistemological point of view, Weber (2004) states that, between the respondents and researchers knowledge is intentionally constituted. Walsham (2006) mentioned that there is an interconnection between facts and values in interpretive research therefore knowledge is as a result of human composition. This further brings to light the fact that human (respondents and researchers) perception change is as a result of their interaction with each other (Myers, 1997). With regards to methodology, interpretive researchers during a

study adopt what are considered socially based methods rather than methods that are scientific (Walsham, 1995). The main aim of interpretive research in information system is to understand the give-and-take relationship between a phenomena and the context in which it exists. It thus focuses on the collection of data about phenomenon and their habitation, and therefore employs methods that aid in achieving this aim (Walsham, 1995).

4.2.3. Critical Paradigm

Critical realist researchers assume that social reality is unfair; their research is therefore aimed at trying to change the existing status quo (McAulay, Doherty, & Keval, 2002; McGrath, 2005). Because critical realists view the world as unfair or unjust, they have centered their studies on issues such as gender in IS, IS failure and power respectively (Kvwasny, Greenhill, & Trauth, 2005; Mingers, 1992; Wilson & Howcraft, 2002). Critical realist researchers further have a concern about rationality in terms of how it is applied and understood (Varey, Wood- Harper, & Wood, 2002). This paradigm has been used by a number of IS researchers. Jonsson (1991), critiqued interpretive researchers for not giving recognition that conflicts and contradictions are inherent in social relations and, in addition, proposed the use of action theory in IS. Also with an aim of seeking insight into key participants rather than drawing on generalization based on statistical significance, McGrath and Maiye (2010) adopted and used this paradigm.

Smith (2010) used this paradigm to empirically study the issue of citizen trust in E-Government in Chile with a focus on tax administration and e-procurement systems. He noted that, since trust is not impossible, there is a need to consider confidence in E-Government rather than trust.

4.3 Choice of Interpretive Paradigm: Why Interpretive Paradigm is Most Suitable

The aim of this study is to throw light on e-government financial systems from the context of a developing country and further provide a detailed understanding on such innovations by using the new institutional theory as the theoretical foundation. This aim has necessitated the use of the qualitative research paradigm for the study. According to Walsham (1995) the essence of interpretive research in IS to enable researchers to understand the existing relationship between both the phenomenon to be studied and the context. With this explanation, this study is intended to research into the phenomenon (GIFMIS) and the context (CAGO). This study thus holds on to the idea that it is through contact, interaction and use that we become knowledgeable about things in the world and not through the discovery of pre-existing regularities, complex observation, intertwining of dependencies of multiple actors and organizations and the rareness of available empirical data (Heidegger, 1962). Further, although IS researchers have used the interpretive paradigm in their various works, its use in E-Governance financial systems is limited. Thus this study is in line with the argument by Byrne and Sahay (2007) that in order to contribute to knowledge there is the need to use the interpretive research paradigm. To further defend this choice, the paragraph below explains why the other paradigms were not chosen.

According to Walsham (1995), the IS researchers choice of positive paradigm may lead to a difficulty in investigating phenomena that are socially constructed and hence require complexity in the understanding of the various interactions existing between the phenomena and the context. However, the positivists paradigm has been successfully employed within the natural sciences. Thus, the positivist paradigm could not be employed in this study. On

the other hand, the critical paradigm was not employed in this study because as evident in the theoretical framework taken for granted issues is considered important initiators of change in the social, political and economic arena (Klein & Myers, 1999).

4.4 Research Methodology

On the other hand a researcher's choice of methodology is dependent on the area of interest, thus different methodologies can be employed in analysing different phenomenon (Krauss, 2005). This implies that a researcher's chosen methodology is not dependent on the type of paradigm chosen but rather the goal the researcher is trying to attain (Cavaye, 1996). Research methodology can be defined as the varying formats or methods employed in research (Crotty, 1998). According to Myers (1997), there are varying ways of classifying research methods, however the common and most used ones are quantitative and qualitative. In the following sections detailed description of the two major or common classifications are presented.

4.4.1 Quantitative Methods

This methodology has the following characteristics: it employs an objective approach therefore the researcher is independent from the phenomena that is being studied; values are mostly emotive; it uses the process of deduction, cause and effect and it is not bounded by the context; and quantitative research is context free. It further employs the impersonal voice; it uses a formal process; and it is based on a set of decisions (Creswell, 1994). Minani (2012) employed this method to study how IFMIS enhances effective financial decision making in Tanzania. Zheng, Schachter, and Holzer (2014), also used the methodology to

study the extent to which government structures influence the e-participation opportunities that jurisdictions offer users.

4.4.2 Qualitative Methods

As posited by Myers (1997b) this approach can be defined as a set of techniques designed with the aim of enabling researchers to obtain an understanding of the immediate social-cultural surroundings within which people live. Thus, qualitative research enables researchers to study socio-cultural phenomenon (Myers, 1997b). Myers (1997b) noted that in qualitative research, data is collected from sources such as interviews, observations, a researcher's notions and reactions and documents. Its advantages include:

- Qualitative research brings to light the understanding of the perspectives of participants and the context of a particular phenomenon. Using the quantitative method this is lost as a result of data quantification (Kaplan & Maxwell, 1994).
- In qualitative research more contextual and in depth data is collected as opposed to quantitative research (Myers, 2009).

Various E-Government researchers have used this methodology. Zheng (2013) employed the qualitative inductive approach to find out the challenges and capabilities of the Chinese government in its use of micro-blogging. This methodology was drawn on to study how information is shared across the boundaries of government agencies both horizontally and vertically (Yang, Pardo, & Wu, 2014). Wang (2014) also used the qualitative methodology to examine the utilization of government websites. The aim of this study is to gain an in-depth understanding to the institutional effects on E-Government financial systems in Ghana.

4.5 Choice of Qualitative Interpretive Case Study Method of Research

This study chose the qualitative research methodology because of the inherent characteristics posited by (Creswell, 1994). The subjectivity and multiplicity of reality from the point of view of the participants in a study; there is communication or interaction between participants and researchers (Creswell, 1994), in a study that employs qualitative research methodology, values are considered to be relatively personal and therefore they need to be understood. Language used in qualitative research is a bit informal, decisions evolve and there is the need for a personal voice; it utilizes the process of induction, shaping emerging factors in a simultaneous and mutual manner and the design is context bound (Creswell (1994).

The choice of a qualitative interpretive case study is a result of these factors: Walsham (2006) stated that a interpretive case study enables researchers to gain answers to the “how” and “why” questions about modern day happenings that the researcher can either have an amount of control or no control. It also encourages the investigation of present-day phenomenon that is set within the context of real life and when the exiting boundaries between them are not clearly stated (Orlikowski & Baroudi, 1991; Walsham, 2006). The GIFMIS is a present day phenomenon and is set within a particular context.

In addition this study further follows Walsham (2000) application of (Pettigrew, 1985, 1998) methodology that was used in explaining how the relevant determining influential factor of understanding and implementing information systems is derived from explaining the context and its inner forces and not solely statistical correlation and cross-selected comparisons. Hence, the idea of employing a qualitative interpretive case study is to unfold the implementation and use of E-Government financial systems in a developing country. The

qualitative interpretive case study has, for instance, shed light on the fact that social values are often manifested not only beyond organizations but also within organizations: these social values are considered to be intangible (Chen & Bennett, 2013).

Since this is aimed at studying present-day real life happenings, it is very important to conduct the study in its natural context. This will enable the researcher to find explanations for the various constructs and elements that make up the chosen theoretical foundation. In interpretive case study relevant knowledge is revealed when the study is conducted in an environment that changes rapidly (Myers, 2009; Walsham, 2006).

It is therefore of necessity that this study employs the qualitative interpretive research method. Below are reasons for the choice of the qualitative interpretive research method:

- The phenomenon to be studied (GIFMIS) is a contemporary phenomenon in developing countries.
- For this study to be successful and significant it can not be devoid of its natural setting; that is, CAGD.
- Infering from the theoretical foundation, this study must be devoid of any manipulations.
- The subjective view of the respondents and the interaction between them and the researcher is very important in this study that is based on the constructs of the theoretical foundation.
- Interpretive qualitative case study method of research was chosen because constructs can be examined from a subjective point of view.

- Interpretive method of research is “aimed at producing an understanding of the context of the information and the process whereby the information system influences and is influenced by the context”.

Every research method used in IS has its own criticisms. In the case of a research method that employs a case study (as evident in this study), the main critique is about its inability to generalize its findings (Lee & Baskerville, 2003; Walsham, 1995). According to Walsham (1995), there are four main types of generalization. These are enumerated below:

- The employment of developing concepts;
- The process whereby specific implications are illustrated or drawn;
- Contributions that are discerning and insightful; and
- Generalization of the theoretical foundation.

The following presents the researcher’s attempt to address the problem of statistical generalization inherent in a case study (as stated above) within the context of this study:

- This study was generalized based on the adopted theoretical foundation: theoretical generalization (new institutional theory) enabled the researcher to draw specific implications based on it (theoretical foundation).
- Thus, the contribution of this study will be the use of the new institutional theory in a novel way and offering rich insight.

Authors researching in E-Government have used qualitative case study in diverse ways. Grimsley and Meehan (2007) used a qualitative interpretive case study and argued that greater personal control and a sense of influence is associated with the extent to which people

feel that E-Government services enhance their sense of being well informed. It was further used to study the analysis and early design of solution based E-Government in developing countries by (Ciborra, 2005). A study in Nigeria by (McGrath & Maiye, 2010) utilized the qualitative interpretive case study to understand the significant role institutions play in the adoption and use of information systems in the public sector.

The following section provides detailed explanation of how the researcher successfully utilized the above-mentioned approach (multiple interpretive case study approach) in the design and conduction of fieldwork.

4.6 Selection of Cases and Fieldwork

The fieldwork for the study can be classified into the following periods:

- In September 2014, the initial selection of cases began. The CAGD was selected as the case for the study. This selection was a result of the implementation and use of GIFMIS. Because this institution falls within the public sector domain a formal introductory letter was submitted to seek approval before proceeding to data collection. However, another introductory letter was submitted to the GIFMIS Secretariat (which is under CAGD) because they were in charge of the project implementation.
- In October 2014, informal interviews were conducted to unearth the extent of the effects of the regulative, normative and cultural-cognitive environment on the implementation and use of the GIFMIS.
- Collection of data began in November 2014 and was finalised in December, 2014. Data were gathered from the CAGD and GIFMIS Secretariat.

- In January 2015, the author revisited the field in order to seek more in-depth and clearer information. Other data were gathered with phone calls, emails and whatsapp.

This study employed purposeful sampling as propounded by (Creswell, 1994). With the purposeful sampling CAGD was selected. The snowball sampling method was also used to enable the author access and acceptance in the field (Fraugier & Sargeant, 1997). With this in mind the author contacted a friend, who had a colleague at the CAGD: he in turn, directed the author to various individuals who were needed for the study. The author sought to find the following information amongst others.

- The implementation and use of GIFMIS;
- Users views and awareness of the GIFMIS;
- Other IS that have been implemented over time; and
- The purpose and expectations of GIFMIS.

This study therefore employed a single embedded case study. An embedded case study is a detailed analysis containing more than one sub-unit of examination (Yin, 2003). Thus, this study examined both the implementation and use of GIFMIS at CAGD in Ghana. The choice of a single embedded case was based on the fact noted by Sarker, Xiao, and Beaulieu (2013), namely that the quality of a case study is not determined by the numbers; and when a single case is done well it is totally acceptable. Single embedded case studies empirically understand more than one unit or object of analysis within a single case (Roland & Olaf, 2002). Thus, this study attempts to understand the implementation and use of GIFMIS at CAGD.

4.7 Data collection

According to Walsham (2006), interpretive researchers can gather data from sources including the following: informal interviews or discussions, documents (broachers, manuals, pamphlets, fliers), semi structured face-to-face interviews, observations, and follow up interviews with participants. The researcher thus used this method for data collection in order to conform to the process laid down by interpretive researchers. The data collection started with the researcher conducting informal interviews with executive managers at GIFMIS Secretariat in order to attain a prior knowledge of the system.

A semi-structured interview guide was used by the author in order to gain adequate knowledge of the research topic relative to views, concepts and themes. It brought to light the emergent views, concepts and themes of the topic and the research questions. However, other questions and in-depth findings come up which were not initially part of the interview guide. Thus, there were follow up questions depending on the participant's response. The interviews were conducted at the premises of the CAGD, GIFMIS Secretariat and at venues suggested by the participants. The author had to meet most of the respondents outside CAGD for their convenience. The researcher was given access to use the GIFMIS and had the opportunity to observe the system while the end users, namely, executive management, were using it (participant observation).

The time range for the formal and informal interviews was between thirty (30) minutes and an hour, and between five (5) to ten (10) minutes respectively. The researcher took notes and there was a recording session to enable the researcher to transcribe effectively. The notes were essential because some of the interviewees were not comfortable using the voice recording. The notes taken, which were answers to the questions in the interview guide and

other leading questions were transcribed at the end of each interview. Participants were assured of privacy with respect to the information they provided. Table 4.1 presents a summarized process in which the interviews were conducted.

Table 4. 1: Summary of Interviews Conducted

Case	Participants/ Roles	Number of Interviews
CAGD	Users (payroll, budgeting, accounting, pensions, IT, help desk)	15
GIFMIS Secretariat	Management (project directors, administrators, heads of finance, head of IT, heads of systems support, head of budget section)	8

Source: Authors Construction

The participants at the management level (supervisors, technicians) were asked questions on their knowledge on the implementation, use, reasons for its implementation, its purpose and their overall expectations of the GIFMIS. Questions were also asked about their views of the relevance of regulative, normative and cultural-cognitive environment or issues that have affected the implementation and use of the GIFMIS. The regulative aspect is discussed as the laws that have affected the implementation and use of the IS while the normative is discussed as set the standards of implementation and use. However, during the interviews it came to light that there were both national and internal laws and standards that had an effect on the implementation and use of the software. The cultural-cognitive factors were analysed as the tradition: the way things are being done at the CAGD in the past and how it has affected the implementation and use of the software.

A question regarding the monitoring process based on the performance of the system and the users was also asked. However, this leading question came up during the interview. The respondents were also asked if there was any system in place, which the GIFMIS came to

replace; answers to these questions were obtained from documented sources and online sources. Leading questions were asked about the implementation, reasons for the development, possible upgrades and expectations of the GIFMIS.

Information was also gathered about the various IS that have been used over time, the number of years it was used, reasons for their implementation and possible reasons why they were changed. These questions were asked as a follow up questions. Some of the participants unwilling gave out this information during the interview. This information was gathered from available documents, management, internet resources and users.

In addition to the above methods of data collection (formal interviews and informal interviews or discussions), the researcher utilized other methods of collections such as the website of GIFMIS and CAGD, documents (training manuals, conference proceedings and brochures on the IS), and annual reports. The interviewees provided the training manuals, brochures, magazines, fliers, PowerPoint presentations, policy documents and annual report.

In order to obtain adequate and in-depth information the author used the internet as a source, since the GIFMIS can be accessed online. This provided the author knowledge about the existence of such initiatives in other developing countries which enabled a better perspective and background of the research. Data accessed on the internet included newspaper articles (from their various websites), reviews, opinions and commentaries about the GIFMIS.

4.8 Data Analysis

With the background information provided in Chapter 1, the research purpose and questions as well as the various constructs and elements in the theoretical foundation the researcher started the analysis. The analysis was done with reference to the works of Baxter & Jack

(2008) and (Walsham, 1995). With regards to the study of Baxter & Jack (2008), the researcher analysed data collected from the various named sources numerous times (training manuals, brochures, magazines, fliers, PowerPoint presentations, policy documents, website of CAGD and annual report) to bring out the emerging themes and concepts. This called for the researcher to re-visit the field in order to gather more relevant data. Baxter & Jack (2008) noted that, in interpretative research, there is the evidence of data collection and analysis of data in a simultaneous and iterative manner. Also successive analysis of data, was shaped by the findings that were sprouting up which influenced subsequent data that were collected (Walsham, 1995). Based on the constructs of the new institutional theory, force field analysis and research questions, the identified emerging concepts form the individual case (CAGD). These concepts and themes presented diverging views and perceptions of the GIFMIS.

4.9 Summary

The approach used to conduct the study was discussed in this chapter, as well as the various paradigms, research methods, and justification of why a qualitative and interpretative case study was chosen. The chapter also discussed the process of case selection and fieldwork for the study, data collection and analysis. The next chapter will present findings from the study based on the application of the methodology presented in this chapter.

CHAPTER FIVE

RESEARCH FINDINGS

5.1. Introduction

The previous chapter discussed the various research paradigms, why the interpretive research paradigm and case study methodology were considered the most suitable in this study, and how they influenced the data collection methods. This chapter presents a discussion of the findings of the study as related to the background of the case study, background of CAGD, before GIFMIS, IFMIS, GIFMIS and the implementation and use of GIFMIS at Ghana's CAGD. The data presented in this chapter were the findings gathered from the interviews and other sources (training manuals, websites, pamphlets, conference reports and participant observation).

5.2 Background of the Case Study

The sub-section discusses the background of the case study namely, CAGD.

5.2.1 Background of CAGD

CAGD was established 1885 and is referred to as the 'Treasury'. However, in 1937 the name was changed to CAGD. It was established under the Civil Service Act, 1960. The Financial Administration Act 2003, (Act, 654) and Financial Administration Regulation (FAR) 2004 (LI. 1803) offers the legal framework that oversees the activities and functions of CAGD. CAGD is an agency of the government responsible for providing financial management services to the government and the general public through efficient, skilled, well-inspired and dedicated staff by using the appropriate IS. CAGD is responsible for receiving and securing all public funds, makes all government payments, and pays the wages, salaries and

allowances of all government workers. Other responsibilities of CAGD are processing and paying pension gratuity for civil servants; to capture, process, and disseminate public financial information on consolidated fund monthly and annually; and promote the development of efficient accounting IS in all government departments. These responsibilities have made CAGD dependence on IS inevitable as quoted by one manager and a technical team member:

“With the amount of data that we handle every day we cannot do away with information systems, it is our strength to ensure transparency, efficiency and effectiveness in public financial information”.

Information flow starts from CAGD through to the departments and agencies and vice versa. To ensure effective use of IS, CAGD has an active IS policy document that provides the acceptable use of IS, patch management, security (anti malware, risk assessment, vulnerability audit, server security, password policy), and security incidence responses. User access to IS resources is dependent on prudent and responsible use. IS resources are shared across CAGD in an equitable manner and users may not participate in any behaviour that unreasonably interferes with the fair use of IS resources. As required by CAGD, full data backups are retained on a monthly basis on IS on all information captured, processed, stored and disseminated at CAGD.

Access to the network of CAGD via remote access is controlled using a one-time password authentication key system with a strong passphrase. Users of IS are required to be trained in the basics, intermediary and advanced levels of the required software. A disciplinary committee ensures compliance and continuous supervision and monitoring of IS use. IS use at CAGD has been a gradual and a continues process. CAGD has gone through various

transformational phases, all of which are steps towards the provision of transparency, quality and effective financial information using IS as a tool.

5.3 Financial Systems at CAGD before GIFMIS

In an attempt to meet and improve upon the financial needs of Government of Ghana (GoG) and its citizens, CAGD implemented and used various financial systems, which started in late 1990s. From 1999 to 2008 CAGD introduced the Public Financial Management Reform (PUFMARP) package. Before engaging with a vendor or donor the information contained in their application is considered to determine whether their service will meet the requirement. Thus funding of PUFMARP was supported by International Development Association (IDA) and co-funded by Department for International Development (DFID), Canadian International Development Agency (CIDA) and European Union (EU). The main goal of PUFMARP was to promote efficiency, transparency and accountability in public financial management (PFM). It aimed at improving monetary discipline and to promote macro-stability. To achieve these goals, the IS focused on the medium term expenditure framework (MTEF), which was also a financial IS. The modules that run on PUFMARP were the budget preparation programme, budget implementation, accounting and reporting, and fiscal decentralization. Procurement, audit reform, revenue management including tax identification numbering (TIN), aid and debt management, integrated personal payroll (IPPD) and legal and regulatory reform were part of the modules in PUFMARP.

The challenges of this software were: weak budget formulation and preparation; lack of helpful regulatory framework; lack of a proper accounting and auditing system; outdated and weak compliance with financial management procedures; and lack of quality and timely submission of data. The challenges were noted to have resulted from the fact that PUFMARP

was not an integrated IS. However, it is important to note that the implementation and use of IS at CAGD followed a ‘parallel’ process; that is, additional IS are brought in to support the previous ones or replaced the specific modules that faced the challenges. Thus, the next IS to be discussed was implemented to replace the budget module.

Under the PUFMARF program, CAGD implemented and used the budget and public expenditure management system (BPEMS) in 1997, and it became operational in 2003. BPEMS was an IS which automatically linked the financial activities of all the ministries and departments by capturing their data using disparate IS. With BPEMS all government financial operations were computerized using one common chart of accounts and a centralized database that linked the work stations of ministries, departments and agencies by wide area network (WAN) and local area network (LAN) infrastructure. The modules included cash management, aid and debt, revenue management, procurement, auditing, legal framework, and human resource development. The modules were used respectively to: improve data and link it with CAGD and BoG, introduction of VAT, unique taxpayer identification number and IS to capture and report tax data, formulation and compliance to national procurement standards, development of national audit standards and report, review of rules and regulations and training of end-users in the various modules.

The implementation and use of BPEMS were faced with these challenges: unstable power supply; lack of user capacity; lack of user commitment; lack of management support; low level of user confidence; and low level of ownership by users. As noted by a management member during the interview:

‘The information system could not help in providing information for decision making because it could not adequately capture, process and disseminate an accurate uniform chart of accounts automatically’.

Other noted challenges were irregularity in budget formulation; delays; lack of certifying and approving payment vouchers; logistics challenges; lack of validating payroll payment; and weakness in implementation.

A Short Term and Medium Term Action Plan (S/MTAP) application was introduced from 2006 to 2009. The S/MTAP acknowledged that the push of innovation was to be anchored on the implementation of: an IS based BPPEM; integrated Payroll and Personnel Database (IPPD-2) and integration of MTEF. The purpose of this system was to address issues such as unreported extra-budget costs; good and timely public access to key fiscal information; reduction of average debt collection arrears; regularity and timeliness in revenue allocations to the consolidated fund; improved timely in-year budget implementation reports and annual financial reports as well as improvement in the effectiveness of and timely external audit examination. S/MTAP failed as a result of: failure to implement adequate accounting controls and capacity building; weak enforcement of regulations (example, provisions of FAA (2003) and FAR (2004)) which resulted in the constant annual disclaimers by the Auditor General; and weakness in reconciliation which affected the reliability of financial information including public debt. Other weaknesses included: weak budget formulation; preparation and lack of ownership; weak expenditure monitoring and control; lack of a proper accounting and monitoring system; lack of quality and timely data on government resources; and outmoded regulatory framework.

In general, poor governance and weak accountability undermined the success for implementing and using S/MTAP. This led to the installation and use of multiple stand-alone servers and computers, which did not help with the analysis of data across the departments and agencies. This led to the introduction of GIFMIS, which is a customized form of IFMIS.

5.4 Integrated Financial Management Information Systems (IFMIS)

The need to integrate financial data with the aid of IS, and to promote accountability and transparency led to the implementation and use of IFMIS. The software operates on Oracle Relational Database Management System (RDBMS) and operates as, stand-alone personal computer, LAN, WAN and across the internet. The software is built on a web-based application support, web service support, operating systems, hardware and database technology platforms. The system is a packaged generic solution to public sector finances based on best practices and permits prompt implementation. The software has a user-friendly interface and an all-encompassing online help. IFMIS was sponsored by DP like the World Bank, DANIDA and CIDA and is implemented and used in developing countries. The public financial solution offered by IFMIS is integrated and hence capable of customization and a phased implementation process.

IFMIS is used for specific purposes depending on the module integrated into the system via an interface. The software is used for budget preparation, budget appropriations, payment management, payroll, revenue management, accounting (general ledger), cash/ fund management, commitment/ purchasing, asset/ inventory management and financial reports. Thus the modules are: procurement, accounts payable, accounts receivable, revenue (tax and customer interface), payroll interface, cash management/ commitment control, budget

planning, and other modules or interfaces. The reporting modules are comprised of budget reports, statutory financial reports and other reports.

The non-financial modules are the human resource management information system, data warehouse, interfaces and workflow management. The software can be customized, configured and implemented with accounting practices. It comprises of a range of operational, management and analytical reports designed to provide public sectors with an adequate management overview and control capabilities. The financial report suite provided by implementing and using the information system is based on the standards of international financial reporting in the public sector. The table below provides a summary of the modules of IFMIS and their uses.

Table 5 1: IFMIS Modules and Uses

Module	Use
Procurement Model	Procuring and managing contract
Accounts Payable Module	Process and generate payments with the aid of IFMIS built-in checks to ensure that the invoices match approved inputs
Accounts Receivable Module	Process and records receipts (non-tax and tax revenue input) and produce bills
Revenue (tax and custom interface)	Revenue administration and management
Human Resource/ Payroll Interface	Payroll and human resource management
Cash Management Module	Monitor and forecast cash flows and reconciliation between bank accounts and IFMIS stored records.
Budget Planning Module	Budget preparation

Source: Author's Construction

The software offers a platform on which financial information is a major input with the general ledger as the core component. The software's general ledger captures and stores inputs and then allocates budget funds. All transaction inputs are simultaneously captured and processed by the general ledger and then disseminated to the suitable module based on

the rules enforced by the standardized chart of accounts. Every input captured, processed and disseminated by the general ledger of IFMIS is stored permanently in the IS which is the source that helps generate all reports and financial information automatically.

The software has both non-technical and technical requirements. The non-technical requirements for IFMIS are adequate political support from the recipient country, thus the government through parliament should approve of the system, there is a need for adequate management commitment, which would lead to management owning and championing implementation and use of the software. After the above requirements have been met by the recipient country, the country then proceed to form a project management team. An experienced project manager with adequate knowledge in IT, accounting and budgeting should head the project team. The project team should be made up of a well-organized steering committee to provide guidance. It is also required to have an improved institutional and human capacity structure. There should be financial and budgeting units, improved capacity of end users, they should possess change management skills and a maintenance culture. IFMIS requires the training of both technical and non-technical end users with the aid of well-researched course manuals. This enabled the quick and easy communication and transfer of knowledge and skills which thereby reduce the length of time for the implementation.

The functional technical requirements include:

- IFMIS is operated on a variety of hardware platforms ranging from personal or portable computers to a multi-processor server system, which is dependent of the quantity of end users. The system should be rolled out to LAN, WAN and leased networks.

- Security measures were implemented as a requirement of the hardware, systems software, adequate technology solutions, and levels of application. This therefore provides a highly secured platform related to both implementation and use. The implementation and use of the software required a structured budget and account system, thus there is a need for end users to have started working with common technological tools and language in the form of budget categorizations and charts of accounts to ensure consistency in all administrative units.

Other requirements of IFMIS include end-user training strategy (capacity local technical support and process alignment with current systems). The implementation and use of the software demanded an improvement and a streamlining of current systems and processes of the public sector. The public sector should have adequate reporting structures, changed or improved institutional and policy reforms and the current systems used in the public sector should have a control structure that documents, controls transaction levels, system access controls and a commitment to accounting goals. IFMIS implementation and use also requires institutional support such as a clear legal framework that oversees the complete PFM and a business process that is guided by fundamental changes in operating procedures and a detailed analysis of functional processes, techniques, end-user profiles and requirements that the system must support. The system also required a centralized treasury for operations because the software is mostly complemented by the consolidation of all public sector financial data into the Treasury Single Account. Finally, the public sector should have identified their priorities which assists proper planning and phased implementation of IFMIS. The table below provides a summary of the technical and non-technical requirements of IFMIS.

Table 5. 2: Selected Technical, Non-Technical and Other Requirements of IFMIS

Technical Requirements	Non-Technical Requirements	Other Requirements
Adequate personal computers or portable computers	Adequate political support	Adequate end-user training
Hardware infrastructure	Adequate management commitment	Local technical team
Systems software	Project management team	Process alignment
Multi- processor web servers	Institutional and human capacity structure	Upgrade of current systems
Local Area Network (LAN)	Financial and budgeting units	Adequate reporting structures
Wireless Area Network (WAN)	Centralized treasury operations	Changed and improved institutional reform
Leased Network	Adequate network connectivity	A clear legal framework
Adequate systems security infrastructure	Adequate power supply/ generators in case of inadequate power supply	Proper planning and phased approach
Common technological tool and language		

Source: Authors' Construction

IFMIS is considered an agent of change by improving government financial management performance. IFMIS develops government finances by improving upon service delivery, satisfactory financial management performance, better-quality audit and evaluation and promoting transparency and accountability. The success of IFMIS is reliant on strong political support and ownership by government, and adequate internal information systems team to lead implementation. Other factors are: phased implementation process, compliance to national and international standards, qualified staff, change management, legal framework (that points out sanctions and demand compliance) and adequate supervision. IFMIS can therefore be regarded as a means to an end, its success is dependent on several factors. However, the system is not considered a perfect system: it is not a solution to all the financial challenges faced in the public sectors. The success of the system is inevitably dependent on ownership, and users of the system can make its usefulness inevitable.

5.5 Ghana Integrated Financial Management Information Systems (GIFMIS)

GIFMIS encompasses the use of Enterprise Resource Planning (ERP), which is a centralized electronic system to improve the management of public finances in Ghana. GIFMIS has been implemented and used by CAGD in collaboration with the Ministry of Finance. The software is built on Oracle E-Business Financial Suit version R12.1.3. It was launched in May 2009 as a follow up to BPEMS, it constituted four modules. The software runs on the GIFMIS platform-database and the applications are on a Windows platform at the MoF and CAGD. GIFMIS embraces the full and effective implementation of Oracle E-Business Suite Financial Software Modules, which covers selected modules from the IFMIS software. The modules include: General Ledger, purchasing, Account Payable, Budget Preparation, Cash Management, Accounts Recievables and Fixed Assets.

The following table discusses the modules in implemented under GIFMIS and their respective uses:

Table 5. 3: Modules and their Uses

Module	Use
Purchasing	Used to purchase request, order, sales and re-purchase agreement
Account Payable	Used for classifying invoices, generating accounts, tracing liabilities and multi-year commitments.
Accounts Recievable	Used for revenue tracking.
Cash Management	Used for bank account management, bank transfer, bank reconciliation, cash pooling and cash forecasting.
General Ledger	Used as a respository of all account information or data.
Fixed Asserts	It is a register used for tracking asserts

Source: Authors Construction

GIFMIS financial module included: Purchasing – used for purchase request, purchase order and sale and repurchase agreement; Account payable – used for classifying invoices,

generating accounting, tracing liabilities and multi - year commitments; Account receivable – used for revenue tracking; Cash management – used for bank account management, bank transfer, bank reconciliation, cash pooling and cash forecasting; general ledger – used as a repository of all account information or data and Fixed Assets – it is a register used for tracking assets. The software to be used for the financial modules should be able to integrate or interface with specific software's from MoF, BoG and GRA. Programme Based Budgeting, Payroll and Human resource management information system, electronic monitor (for non – tax revenue-MoF), PIMS (MoF), TRIPS and GCMS (GRA) T-24 and SWIFT (BoG) and electronic procurement (Public Procurement Authority).

GIFMIS implementation and use was a response to the problems stated in sub-section 5.3 above. It is also based on the need to capture all public finances at a centralized location; the establishment of a uniform chart of accounts (accounting, reporting and budgeting); and developing, implementing and using re-engineered information systems innovation for government expenditure management that are considered best practice. Others include the integration of applications including management and payroll database onto a single upgraded Oracle Financial platform; the need to consolidate the reporting of all government finances; and introduce an IS program-based budgeting system that supports improved fiscal management and service delivery outcomes across all the sectors of government. The focus of GIFMIS is on budget comprehensiveness and consolidated cash management, monitoring and control of outstanding commitments, and payroll management. The software is also expected to strengthen external audit and executive accountability. The requirement for installing and using GIFMIS is the same as the noted requirements for IFMIS in Table 5.2.

The main objective of GIFMIS is to improve PFM by producing timely and credible information for better service delivery. GIFMIS is considered a technological tool to assist users to efficiently manage public sector finances. Other objectives include: promoting efficiency, transparency and accountability in public financial management through rationalization and modernization of budgeting and public expenditure; promoting timely dissemination of information for financial management; rationalizing the financial administrative regulations; improving efficiency and effectiveness of revenue collection and maximising payment and commitment control through the use of an integrated IS. In order to achieve these objectives, the focal point of one of the modules, programme based budgeting (PBB), is to provide training and technical support for all the staff of CAGD and budget preparation. Thus, implementation and use of GIFMIS does not change the dynamics of public sector finances, it only reinforces the status quo through IS.

GIFMIS was implemented and used to promote the e-Ghana project, to address the issue of lack of integration between the preparation of budgets and execution systems and providing an interface between the various PFMS in Ghana. Addressing the subject of unnecessary delays in processing transactions; lack of available data to be used in the preparation of effective fiscal plan; and delays in financial reporting, a management member asserted:

The implementation and use of GIFMIS is to help reduce ghost names, and corruption among other functions, like promoting transparency and consistency in financial reporting, GIFMIS is basically a re-launch of BPEMS' (see sub-section 5.2.2).

The implementation and use of GIFMIS is expected to result in specific outcomes such as: improve budget preparation, strengthen budgetary controls, interface or integrate data from

all existing data centers, strengthen the internal controls and auditing capabilities, improve cash management and management reporting, improve record keeping on public financial transactions. Other expected outcomes after GIFMIS implementation are to store and disseminate timely and accurate financial reports and information and improve human resource management of CAGD.

The acquisition of the software by the GoG followed a specific, but complex process due to the need for compliance to the standards set before implementing and using IFMIS. The specific reasons why GIFMIS was needed was identified, as quoted by the Minister of Finance at a workshop organized at CAGD:

“GIFMIS is desirable within the public service as it will help do away with unnecessary problems that crop up when it comes to managing public accounts. We are moving from the manual way of keeping records onto an automated documentation system. With GIFMIS, every public account will be automatically documented while all government transactions including consolidated revenues, loans, grants and other categories of expenditure will be coded.”

The Acting Project Director of GIFMIS also stated at the same workshop organized by CAGD:

“Currently, no ministry, department or agency can make procurement outside the system. Money allocated by the finance ministry for these agencies will be released through the system to the Controller and Accountant General’s Department; so if you need to make any purchase that is where you should go.

The computerized system will also spearhead timely and speedy transactions among public agencies, while alleviating the ghost names on payrolls.”

The GoG, together with CAGD and the MoF, identified the functional requirements of the modules to be implemented and used in the software. The purpose of the budget module is to improve the entire budget system by using an IT based budget solution system. Thus, the GoG required a budget preparation software that is amenable to these requirements: the software should be able to integrate with GIFMIS; it should be able to process a budget and enhance consistency of budget data in both applications and adequacy in the whole budget preparation process and administrative cycle. The MoF and CAGD should be able to lessen the time related to preparing and producing budget information, and producing management reports either externally or internally by using the software.

Once the GoG had identified the needs and functional requirements, the next stage was to bid for GIFMIS implementation. A tender was thus submitted to the World Bank, the funders of the software. After the bid there was a need for CAGD to undergo major changes based on the requirements of IFMIS (see sub-section 5.2.3), and this led to the implementation process.

To oversee the activities of GIFMIS implementation and use, a secretariat was established in 2010 within CAGD known as ‘GIFMIS Project Secretariat’. The GIFMIS Project Secretariat was supervised by a Project Director who was supported by two deputies and nine technical expert teams. The nine technical expert teams were from the finance and accounting team; cash management and treasury team; payroll team; legal team; quality assurance team; monitoring and evaluation team; budget team; cultural change and process management team; and the human resource management information systems team. As a

requirement manuals were prepared by the GIFMIS Secretariat to aid in easy implementation and use of GIFMIS. These manuals were Electronic Salary Payment Voucher Operations (e – spv) Manual and Ghana Integrated Financial Management Information System (GIFMIS) Practical Steps for P2P and Cash Management Manual and Newsletters.

Individual members were drawn from various institutions in Ghana to form a team known as the ‘Steering Committee’. This team was responsible for the provision of policy direction of the GIFMIS project. The ‘Steering Committee’ was supported by an Executive Committee which was responsible for giving strategic direction to the entire management and implementation process of GIFMIS project. The table on the next page provides a summary of the members of the teams and the various institutions that they were selected from.

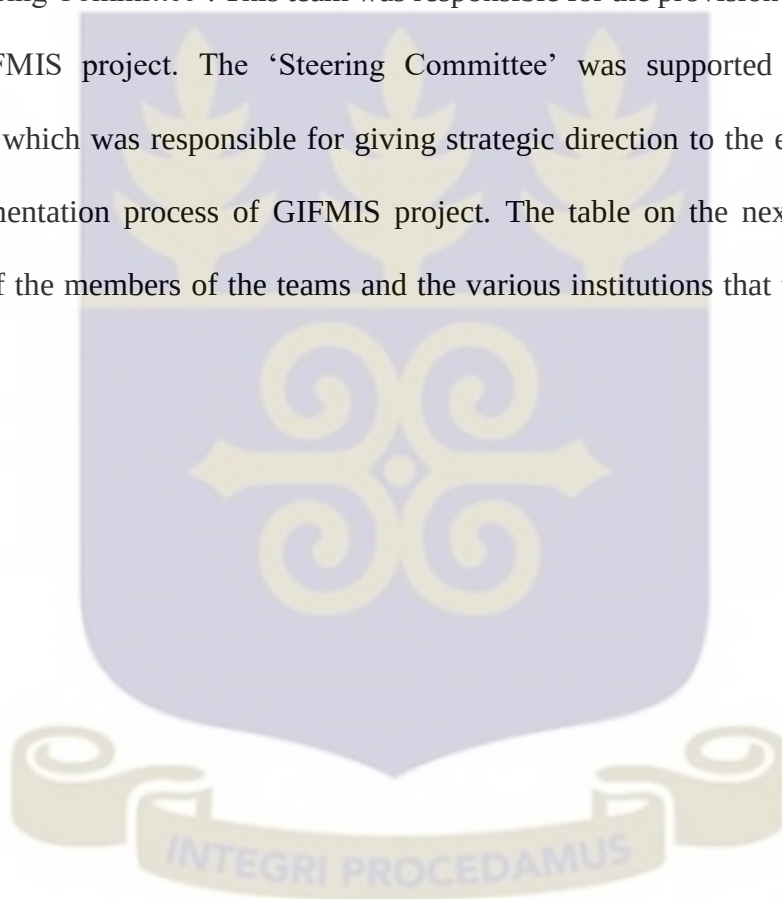


Table 5 3: Selected Institutions and Members of Steering and Executive Committee

Steering Committee		Executive Committee	
Institution	Member	Institution	Member
Ministry of Finance	Minister	Ministry of Finance	Minister
Ministry of Local Government and Rural Development	Minister	Public Service Commission	Chairman
Parliament	Chairman of Finance Committee of Parliament	Office of the Head of Civil Service	Head of Civil Service
Public Service Commission	Chairman	Controller and Accountant General's Department	Controller and Accountant General
Office of the Head of Civil Service	Head	Budget Division of the Ministry of Finance	Director of Budget
Controller and Accountant-General's Department	Controller and Accountant General	Bank of Ghana	Governor
Budget Division of Ministry of Finance	Head of Budget	Ghana Revenue Authority	Commissioner General
Bank of Ghana	Governor	Ministry of Finance GIFMIS	Chief Director
Ghana Revenue Authority (GRA)	Commissioner General		Project Director
Association of Ghana Industries	President		Project director of PBB
National Development Planning Commission	Executive Secretary		Project Director of GRA
Public Procurement Authority	Chief Executive		Deputy Controller and Accountant General, Treasuries

Source: GIFMIS Manual

A back-office team was established with the responsibility of procurements and management of financial funds under the GIFMIS project. An internal team was also established that was in charge of the operational or use aspects of GIFMIS implementation. The team known as the GIFMIS Internal Support Team (GIST) consisted of functional managers; a team of trainers; advocates; internal Oracle experts; and project implementation coordinators who were responsible for providing timely implementation support to end users. The requirement for each team member was to be a professional with extensive experience in the assigned area and IT. Some of the teams were supported by individual consultants and additionally national and international consulting firms. The consultants provided technical support to the implementation teams.

From the end-users perspective working on the GIFMIS platform can result in a smaller amount manual work, less book keeping and more analysis, less paper work and reporting because data can be captured, processed, stored and disseminated via an integrated automated system. Using GIFMIS can also result in timely production of public accounts, provision of timely and reliable management reports for up-to-date decision making, easy access to financial information, enforced internal control required by the software and no data entry duplication which was a major problem faced in the use of the previous PFM systems. As noted by the director of the GIFMIS secretariat:

The benefits of using GIFMIS include: an improvement in Cash and Treasury Management System, provides an accurate and timely match between disbursements and the availability of revenue, having an efficient and effective budget preparation, execution, monitoring and evaluation mechanism and using

the required modules to budget for, track and monitor projects and grants by using the Project Accounting Functionality through the chart of accounts.

5.6 Implementation of GIFMIS

GIFMIS implementation is the actual set up of the software which started in 2010 with the application of basic IT infrastructure, including the systems software, servers, network connectivity, disaster recovery equipment and the necessary backups. The IFMIS database and software portal were also implemented. The IFMIS software was configured by migrating data from the required departments and agencies to aid in system testing such as acceptance testing with the aim of accepting system deliverables.

Implementation of the software was aimed at: improving budget preparation, strengthening budgetary controls, interface data from existing data stores, strengthen internal controls and auditing capabilities, improve cash management and reporting, improve record keeping on public financial transactions, publish timely and accurate financial report, improve upon regulatory framework and improve public sector human resource management (see sub-section 5.2.2).

Specific issues arose during the implementation of GIFMIS. Issues such as the payment method, which is the cheque and EFT was not centralised at CAGD Headquarters however it was considered. The budget reform (PBB) was not considered at the inception of the implementation, but it was later included in the implementation because that module on the IFMSI platform was considered to be more operative. The Human Resource Management Information System (HRMIS) was also not fully considered at the inception of the GIFMIS

project. The HRMIS was limited to the HR-Core at CAGD but was later included because it was considered to be more operational.

GIFMIS implementation and use was supported laws from Ghana and the international community. To protect the authenticity and transparency of financial data, laws such as the Sarbanes Oxley Act of 2002 and SOX (PACAOB, 2004) was applied. The national laws included Financial Administration (FAR) Act, LI 2003, Act 654 and various sub-regulations under it. The sub-regulations are FAR 306 of L.I 1802, FAR 51 L.I 1802, FAR 298 and FAR Part XIV L.I (51) 1802. The various national laws specified the responsibilities of the department and management unit heads with respect to the management of payroll and the entire software. The international laws, on the other hand focused on ensuring the independence of auditors and management during the implementation.

Access to the software is defined based on the provisions of the regulations. Access to GIFMIS is restricted depending on authority. A system administrator defined staff who were authorized to use the system. Thus, the user needs a user name, user details (example signature, photograph, telephone number) and user access rights given by the system administrator. Compliance to these regulations are enforced, as noted by management and end-users:

We have no other choice but to comply. Users can't use the system without the required password and user name. For salaried workers it is like no validation no salary for that particular month. We are finding it difficult to abide by some of the laws; they need to be changed to suit the new system. For instance Part v of the Financial Administrative Act still required the issuing of printed budgetary statements. But one of the purpose of implementing the new system is

to reduce paper work. Some of the regulations are inadequate and needs to be changed, but changing it to bring new and suitable ones will take time.

The implementation and use of GIFMIS faced delays due to slow progress from various parts of government in adopting the re-engineered innovations necessary to transform financial management systems' modules to their productive status. Based on acceptable IFMIS standards, CAGD was set to create an environment that is very favorable to improve accountability and transparency and also set the base for the transition to the widespread use of GIFMIS in CAGD. Thus the implementation needs support at both technical and political levels.

As required by IFMIS, specific standards had to be followed by CAGD; thus, the implementation process followed a phased but dependent implementation approach. 'GIFMIS One' comprised of the implementation of the financial modules which is subdivided into three phases. While 'GIFMIS Two' consisted of the implementation of the non-financial modules (HRMIS). This approach was employed because of: the complexity of the information system, experience from past PFM innovations, lessons from other developing countries who have implemented the system and a standard requirement by donor agencies. As noted by the project administrator:

The phased implementation process and training were requirements, it came with the package, so we had to comply. Also the phased process was more acceptable because of the complexity of the project. We learnt from our past experience with IS and from other countries who have implemented this IS. GIFMIS implementation in each phase allowed end users to have access to the software. Thus the modules implemented in phase one were tested for usability

by end-users after satisfactory implementation; implementation in phase two also consisted of the use and phase three also saw the use of the modules implemented.

5.6.1 Phase One

After the agreement had been reached by the Government of Ghana and the international donors and other organizations, a team of technical experts/ consultants from the international donors and other organizations helped start with GIFMIS implementation in 2010. The consultants trained the nine technical expert teams on the implementation of the software. The training took the form of a series of workshops, aimed at providing the nine member technical teams with the technical skill and knowledge of the software by the consultants.

The consultants demonstrated the software and how they would be implemented at the workshops. The technical experts were trained as trainers; that is, they were trained to train end users on the software. With an objective of training the trainers, computers and PowerPoint demonstrations were used. The GIFMIS Secretariat formed a fifteen (15) member team of GIFMIS internal Oracle experts who were trained on how to implement the complete setup of the software. The training was intended to build the capacity of the internal Oracle experts on how to complete the software set-up and thus provide support.

This team was also trained on workflows, network and software interfaces, and XML on the GIFMIS platform, and build their capacity by enabling them to efficiently use these functions on the GIFMIS platform and thus to complement the efforts of the existing internal oracle experts. The consultants, in addition to the above, trained the IT and functional teams

on the systems security of the software. The purpose of the training was to enhance their knowledge on the security issues of the system and also how to secure the software from systems attacks such as viruses, malware, trojan horses, and hackers (both internal and external). A satisfactory training of the nine technical expert member team and the internal Oracle team led to the commencement of the design, and analysis of the IT infrastructure at CAGD in 2010. Additional web servers and personal computers were installed at CAGD.

The pilot implementation focused on the budget module and cash management module by the GIFMIS team. The GIFMIS team identified and selected Hyperion as the software out of options provided on the GIFMIS platform to aid in piloting the budget module. The Hyperion needed to integrate with GIFMIS effortlessly to improve data consistency in both applications and effectiveness in the preparation and management of budgets. Also strategic planning process was included in the software and it allowed MoF reduce the time associated with preparing and producing budget information and the internal and external production of the budget report. Budget data was migrated from the required departments and agencies into the selected software on the GIFMIS platform. This data was tested to check for consistency with the data of MoF.

The pilot implementation conducted using the budget data was essential because of the inconsistencies in budget reports and data. The budget module is programmed based on the automated software programme that enables administrators to manage budget outlay in a more cost-efficient and effective manner. The modules helped to develop budgets based on the relationship between programme funding levels and expected results from the programme. The module helps the facilitation of generating reports that would lead to effective budget monitoring and improve upon decision making processes. The budget

module of GIFMIS was interfaced with the HRMIS module on the software to improve the accuracy of the compensation budget. The budget module is expected to modify the classification from activities to programmes and also introduce performance information in the budget system. Other expectations of the budget module was to guarantee a robust link between public spending and determined results; ensure the resources are allocated and utilized efficiently; ensure that the accuracy of budget information is improved upon; and change the emphasis of the management of budget from activities to focus on the delivery of outputs. The GIFMIS team also piloted the cash management module by using the required software on the GIFMIS platform. Data was again migrated from the required departments unto the GIFMIS platform.

However there were issues with delays in data migration due to the lack of information sharing culture among the departments. The delays were also as a result of the separate computers used by the various departments and agencies.

There were other non-pilot implementation at the Head Office of CAGD. The fixed asset register was activated, however, it was not the GIFMIS fixed asset management module. This was because the fixed asset programme that was being used in BPEMS was considered to be yielding results with less issues, thus there was no need to change it. The servers and software for the financial modules were procured and installed at the CAGD data centre in 2011. The financial modules used the Oracle financials. Also, there was a review of the integrated payroll and personnel database's (IPPD) internal control environment to ascertain its readiness for integration into the Oracle financials.

However, there was an issue of unavailability of baseline data for accurate piloting of the budgeting and cash management module. The previous systems that were used at CAGD did not integrate data for budget and cash management, it became a challenge to get all the data needed on the centralized internal server. The scanty, but available data were either in manual form or were scattered across different computers and server platforms. To address this challenge the second phase touched on integrating the data of all the financial collecting agencies (Bank of Ghana, Ghana Revenue Authority) in Ghana onto a single software platform (GIFMIS). This made the pilot of cash management and budget module use a challenge even after a satisfactory design and analysis.

A satisfactory pilot implementation assured usage of the modules on a pilot basis at CAGD. Thus with the pilot implementation of the budget and cash management modules, users were trained and allowed to test the module on a pilot basis. The budget module was thus tested and used for budget preparation and was considered as a strategic management process. The cash management module on the other hand was tested to determine its consistency with appropriations and expenditure and was considered as a material management for CAGD. End users were also trained in basic computer skills to assist their usage of the software. The GIFMIS team then conducted an evaluation study of the modules to ascertain its usefulness and whether it met the requirements of CAGD. As noted by an executive manager:

The satisfactory feasibility study guaranteed that the budget and cash management could be used at CAGD by executive and non-executive users.

Inadequate ICT infrastructure was another major challenge faced in this pilot phase. During the implementation and use of the cash management and budgeting modules inadequate ICT infrastructure posed a major challenge. There were problems with network connectivity

which affected the training of the technical team and the users. Persistent power outages was also a major problem which delayed the implementation process and constantly constrained users.

Despite the above challenges, staff have been trained on the new software for budget preparation and cash management at CAGD. GIFMIS manuals have been reviewed to meet the requirements of the budget module and preparation and cash management appropriations and expenditure. In order to meet the requirement of institutional and human capacity improvement and change management, steps were taken to meet these requirements, and the institutional environment of CAGD was transformed to improve accountability and transparency and also to set the base for transition to the widespread use of GIFMIS for all donor funded operations. Thus, both users and the technical team were made aware that their support was needed not only in the implementation but also in the use. To ensure adequate use of the software, strategies such as user sensitization, training, formulation of the cultural change and process management team (CCPMT) and support sub-teams were introduced to the users (see sub-section 5.2.4).

The CCPMT was trained in planning, organizing and dissemination of all functional and technical training, appraisals, training programs, post-training and follow-up monitoring to determine the effectiveness of the training. The training was conducted in a series of workshops and conferences which provided training sessions for CCPMT. The support sub-teams and help desk were also trained to aid in effective use of GIFMIS. These teams were responsible for communication and dissemination of relevant information on GIFMIS to users and stakeholders to ensure their acceptability and commitment to the software. The

responsibilities of teams were considered as a continuous one; that is, their work is relevant as long as GIFMIS is being used.

In the area of sensitization, mediums such as the internet, media (radio, television and newspapers) were used to prepare the users for effective use of the information system. Radio discussion programs were held after the implementation to enable effective use. There was also public education on how to use the budget and cash management modules using media platforms such as radio, website and press statements. Stickers of different categories were distributed among users as a way of sustaining the interest of the users.

The training was for both executives and non-executive users of GIFMIS. At the training sessions, users were trained on the requirements to enhance their knowledge of the information system, how to use the system effectively, and their job requirements. The CCPMT and SST teams were trained on the need for cultural change and guaranteed users of the security of their jobs due to fear of losing their positions. A special conference session was held for the executive users of the software to assure them that GIFMIS was only changing the dynamics of public sector service and it was only reinforcing the positions, thus their role as chief executives would not be compromised.

5.6.2 Phase Two

The satisfactory completion of the first phase assured operation of the second phase. After the pilot implementation of the budget software module (Hyperion) was activated (went live) and with adequate training and sensitisation, the GIFMIS team activated the budget and cash management software modules to all the departments and agencies. The budget process workflow definition, analysis and design of the module was thus completed and therefore

necessitated the meeting with key stakeholder and consultants for evaluation. There were, however, specific challenges with the activation of the budget module. These included institutional arrangement – systems, policies and processes used to legislate, manage and plan activities at CADG more efficiently and effectively. Programme managers were appointed to oversee the capacity of non-existence of dedicated staff, non-obtainable baseline data, distribution of compensation of employee cost to programmes and weak monitoring and evaluation mechanism. GIFMIS was then implemented into the departments and agencies, but not all the models were activated by the GIFMIS team.

The Treasury Single Account was firstly activated by the GIFMIS team which allowed the integration of the Public Accounts into the GIFMIS platform. Although there was a non-pilot review of IPPD in the first phase, in the second phase it was fully integrated into the GIFMIS platform and went live. The IPPD was a software designed to replace both the manual and un-integrated system which was inaccurate in determining the levels and number of staff thus leading to inconsistent fund accountability and salary delays. IPPD comprised of processes and procedures that are intended to gather, store and process information for effective decision making.

The objectives of fully integrating IPPD were: to aid in data sharing with human resources, help sustain accuracy, consistency and uniformity in public service personnel data, to use data for the purpose of timely decision making on the assessment of liabilities for pension and processing of gratuity payment and use an efficient computer-based integrated system for capturing, storing and processing payroll information to aid in management decision on matters with respect to recruitment, training, postings, transfers, seniority lists, promotions and processing of request for loans, retirements and salary related issues. IPPD was also

aimed at curtailing waste incurred through bulky printing of paper anytime a personnel related query was issued.

The satisfactory completion of this phase guaranteed the production of Public Accounts for 2011 using the required software in the GIFMIS platform. The Charter for Human Resource Management System Project was just a pilot in this phase because it will be launched on a separate GIFMIS project.

The Hyperion was used by the appropriate staff at CAGD for budget preparation. The budget module in GIFMIS was used for warrant processing, purchase requisition, purchase ordering, acknowledgement of receipt of stores and services, invoice processing or payment vouching, cash requirement and pooling, cash transfers, payment for transactions, bank reconciliation, cash forecasting and revenue capturing. Thus, CCPMT and the local technical team trained users on planning, organizing and dissemination of all financial data in order to help them create accurate and consistent financial reports. Training on the use of the Treasury Account module was also provided by GIFMIS. The Treasury Single Account module allowed users to create e-financial reports that is based on e-business standards for public sectors.

The Treasury Single Account was thus used to reduce the cost of doing business with the BoG. After the training there was a series of evaluation of the module by the advocates of the SST stationed in all the departments and agencies; there was also a donor review and technical advice on the modules that had been deployed and used.

This phase faced specific challenges primarily the unavailability of qualified staff (capacity). After the modules had been activated to the various departments and agencies of CAGD, it

came to light during the training session that the capacity of staff was limited. Some of the users were e-illitrates and lacked sufficient computer skills to perform their supposed role. The training session therefore exceeded the stipulated time, and even afterward the completion of the training some staff continued to have difficulties using the system. This was basically because the trained users did not practice after the training and felt that it was unsatisfactory, and therefore did not meet their demands and expectations. There was also the issue of unavailability of baseline data due to its scattered nature. Some data were either non-existent or it demanded a lot of time to change it from a manual to automated form and then further capture it into the GIFMIS platform.

The unwillingness of some departments and agencies to share information posed a challenge during the second phase. Treasury Single Account demanded the flow of information across the departments and agencies, however, some of the departments were not willing to share the data or information that they had on their individual computers. Thus the CCPMT and ISS trained users not only on the relevance of sharing information but also the act of communication. This led to the introduction of help desk manned by three (3) personnel at the GIFMIS Secretariat. The purpose of the help desk was to control reports and communication through monitoring: **daily call logs** – this is communicated to CCPMT team and other help desk responders and identified all open calls from the previous day that still need to be resolved; **weekly “past due”** help desk call – distributed to CCPMT and help desk responders, identified calls open for more than seven days; **monthly report card** – monitored trend of calls based on reasons over time, monitored trend of call by departments and agencies over time, monitored the actual response time against established stated response time, monitored the root cause analysis of calls received.

Users who had contacted the help desk to help solve problems they encountered using the software noted that the services provided were satisfactory. This was because there were times that responses delayed while other times they were timely. Some management members noted:

In this phase we also focused on the training of staff and the internal technical team on the various financial modules to be implemented in the final phase. That was why we engaged sector specialists, implementing change management and communication plan, training of staff.

As a result the advocates, Trainer of Trainers (TTT) and the project implementation coordinators (PIC) underwent a number of trainings. There was a training aimed at sensitizing them on their roles and responsibilities. This was to enable them to appreciate their core functions in the GIFMIS project. The advocates, data accounts and collection units team, TTT and PIC were further trained on report generation, electronic fund transfer (EFT) and the new dynamics of the public financial management (PFM) cycle. The training was aimed at enabling them to generate reports from the GIFMIS platform as well as prepare EFT and understand the new and changed dynamics of the PFM cycle. The management team, TTT and advocates were also trained on basic GIFMIS soft skills, in order to enhance their client relationship on the GIFMIS project.

To further enhance their skills and knowledge they were trained on presentation and knowledge transfer skills. TTT were also trained on P2P this was to enhance their capacity and support end users. The PBB secretariat were trained in monitoring, evaluation and learning to further enhance the capacity.

5.6.3 Phase Three

Phase three started with the activation of integrated operations across all the departments of CAGD. GIFMIS's fixed assets module and public accounts were implemented. The Treasury Long Term module was also activated. CAGD and GIFMIS secretariat together with the GIFMIS team implemented the other financial modules. A three-day workshop was organised to introduce GIFMIS financials. This workshop was aimed at providing the local technical team with adequate technical knowledge and skill in implementing the IS for financial accounting, and management accounting. Key accountants from CAGD were also involved in the workshop; they were considered as the 'super users'. This workshop was also designed to provide essential knowledge and understanding on GIFMIS and its use of IT in budgeting and accounting for both users and the technical team.

This training was in the form of an instructor led approach which focused on the functionalities and specification of the accounting processes of the five accounting modules (purchase order, accounts payable, accounts receivable, cash management and general ledger) to be implemented in the Oracle Public Sector Financial e-Business Suite. The essence of the workshop was in response to the requirement of providing training by the Oracle University Certified Oracle Professionals for the users. The technical training was necessary because GIFMIS was a re-engineered software which demanded different ways of implementation and use, unlike the PUFMARF and BPEMS which were previously used at CAGD. As noted by the members of the technical team:

The necessity of the training also stems from the fact that GIFMIS was an integrated system, unlike the previous systems implemented and used at CAGD in the 1990s.

This phase also saw the implementation and integration of: payroll upgrade, post production support, production, stress test using payroll data from the Ghana Education Service, electronic bank reconciliation and transfer of SWIFT and electronic fund transfers. This phase also saw the implementation of the budget process workflow. Thus, in this phase the Payroll and GIFMIS Financial were integrated in June 2014. Non-Oracle tools were setup and installed in November, 2014.

The Payroll Processing Department was trained on how to use the Approval Hierarchy and P2P. This training enhanced the knowledge and understanding of the payroll staff on the Approval Hierarchy to help them provide invoices in GIFMIS for the processing of payroll transactions. Thus the Payroll and GIFMIS Financials were used as a result of satisfactory integration. Network infrastructure was improved to provide easy access to the system by the technical team. Information systems and security infrastructure were also improved upon. The help desk was also equipped to receive and resolve user complaints promptly by providing a collaborative user and oracle experts on a single platform. Staff of CAGD across the country were sensitized on GIFMIS. This was to enhance their understanding and knowledge of GIFMIS and also build their level of commitment and ownership of the software.

Various training conference sessions were held at the GIFMIS Secretariat and the conference hall from September, 2013 to June, 2014. The training sessions adopted the instructor led training approach and self-study courses were given to technical staff. Training was also provided for the internal support team and end users. The in-house GIFMIS team for users provided documentation for the Oracle Release 12 that reflected changes in Release 12. The training was for both executives and non-executive users of GIFMIS. At these training

sessions and conferences, users were trained on the requirements and effective use of the software. Chief executives were again assured of the security of their jobs. As noted by a GIFMIS team member during a conference held for chief executives:

GIFMIS is not changing the dynamics of public sector service, it was only reinforcing the positions of the chief executives were still the “boss” and their support needed due to the crucial nature of the information system; GIFMIS valued their support and encourages them to continue supporting the innovation because at the end it would be a win-win partnership and the executives were encouraged to be the champions of change for GIFMIS.

Staff of the GIFMIS financial and accounting team were trained on period end processing of the general ledger. The aim of this training was to build the capacity of the team to enable them to produce financial reports using the required software on the GIFMIS platform. This training was extended to enable the staff members to produce final accounts from GIFMIS. The Chief Cashier unit was further trained on cash management to help them use the software efficiently for them to discharge their duties. With an aim of enhancing their appreciation of controls embedded in the software and to understand their new roles, internal auditors were trained in GIFMIS applications to help them to efficiently carry out their auditing functions by using the software. An internal audit manual (Computer Assisted Auditing Techniques (CAAT)) was developed to this effect. In addition, an all-inclusive training program was conducted to equip the internal audit team with skills in computer systems auditing. The development of the manuals and the training were aimed at choosing a suitable tool or software and train staff to enable them to use the software. The GIFMIS functional team were trained on financials to facilitate the workflow process using the

software. The staff of GIFMIS were trained on ITIL Foundation Version 3, Rac, network/ systems architecture: this enhanced their capacity in terms of knowledge of IT to help support the maintenance of the architecture of the software.

Other training that took place during this phase included: Training of Advocates –they were trained on EFT cheque printing, period end processing and generation of report. Project Implementation Coordinators (PIC) – sensitized on the use of GIFMIS and their roles; Trainer of Trainees (TTT) – orientation on GIFMIS operations; data, accounts and collection units; internal audit trainers – trained to support period end – trained on software operations; internal Oracle experts, functional managers and help desk officers – sensitized and trained on GIFMIS operations. Other support structures included: internal Oracle experts – trained on use of GIFMIS to provide technical solutions to issues reported at the help desk; functional managers – responsible for managing operations on the use of GIFMIS; and help desk – trained on temporary help desk solutions such as logging and tracking user complaints.

From a more general perspective, a well-designed GIFMIS, implemented and used can offer features that may provide assistance in detecting fraud, excessive payments and theft. GIFMIS is used for different purposes depending upon the module integrated into the system or connected via an interface to the system. These modules were activated to facilitate the easy flow of information for effective and timely decision-making. The purchasing module encompasses the database of suppliers and the information on the respective bank accounts. The module uses an automated information system to execute requisitions, standard purchasing orders, blanket purchase orders and receipt of goods, thus manual approval outside the system is not required. In using the module the software automatically creates a

hindrance and reserves the funds for requisition (memos) and purchase orders to ensure that the requested amount is less than the released budget. The software thus has a prompter that beeps when a user inputs the wrong information.

The programme based budget module is a tool used by programme administrators to manage cost-efficient and effective budget outlays. The software is thus used to develop budgets that are based on the relationship between programme funding levels and expected results from the programme. The account receivable module on the other hand is used for accurately documenting and tracking transactions that result from the provision of goods and services. Since Ghana Revenue Authority (GRA) is responsible for collection, receipt and security of all direct taxes, indirect taxes and international trade taxes, interfaces are used to transfer the summarized financial data or information from GRA systems like TRIPD, GCMC and e-monitor into the accounts receivable sub-ledger. Thus, the accounts receivable is used to generate the appropriate accounting for the interface transaction. There are two reasons for interface with GRA is to enable the system to report the cash collected and the revenue recognized based on the services presented and to enable government to report the cash collected that is recognized or not yet recognized as revenue.

Challenges faced in this phase were: getting parliament to select committees to focus on outputs or results rather than activities, the subjection of GIFMIS to too many protocols, and inadequate ICT infrastructure (power supply, inadequate computers). Other challenges include: lack of an information sharing culture, e-illitracy and inadequate allocation of compensation for employee.

Other challenges encountered in the third phase were: the appointment of program managers because they were limited in number internally with CAGD, the non-existence of dedicated

budget staff, inadequate staff capacity, non-existence or unavailability of baseline data; inadequate ICT infrastructure in the public sector of Ghana, especially network connectivity, ICT infrastructure, information sharing, and power supply, possession of data, inadequate computers; lack government website maintenance and digital divide. Concerning the ICT challenges plans have been made to ensure adequate ICT infrastructure, especially network connectivity and improve the relatively low computer literacy rate among employees at CAGD. Other challenges are perceived use of valued information systems appreciation and language and change management. In the case of change management, the expectation of end users that the system should conform to old ways instead of current and best practices became a major setback. The necessity of change management was because stakeholders ability to resist the new system which can cause the failure of the information system. This resistance can also be caused by civil servants who mostly have the fear of the unknown and existing public sector culture such as delay, apathy. It was also a major challenge to replicate the support structures in the regions and districts, continue to build the capacities of the support teams and evaluate the effectiveness of the support structures. Despite these challenges a number of dedicated IT staff were recruited, and change management and communication teams were implemented in response to the standards of IFMIS.

5.7 Factors that Helped GIFMIS Implementation and Use

Strong political support, and high levels of administrative support worked well for the GIFMIS. Good organizational skills and effective communication structures were laid down to help maintain the values of not only stakeholders, but also build a strong local technical team. Also the consciousness of past PFM systems; donor review and technical advice,

prompt release of funds by development partners (DP) and review by external agencies sent by DPs. As noted by the management member:

Specific issues worked well for GIFMIS: we had international donor support, previous IS to learn from; we have the experiences of other countries to learn from, management support and political support.

This enabled workers to easily access their payslip without having to come to the CAGD for it. One of the respondents noted:

You cannot skip the process, everything is done using the required system, and therefore you are forced to comply. With a colleague transferred to a different ministry who failed to report to post, the Management Unit Head did not validate him so he did not receive his salary for that particular month. He therefore approached me and I told him that it is the system and there is nothing I can do about it. Somebody built the system so we have to comply with the rules, laws and regulations. For instance GIFMIS has a prompter such that the moment wrong information is entered, it prompts the person entering the information or data.

5.8 Summary

This chapter discussed the findings of the study. Issues such as the background of CAGD, institutional environment of CAGD, the background of GIFMIS, and the implementation and use of GIFMIS were discussed. The next chapter provides a detailed discussion on the analysis of the findings through the lens of the new institutional theory as discussed in

Chapter 3 in order to identify the emergent themes and the concepts for discussion in Chapter 7.



CHAPTER SIX

ANALYSIS OF FINDINGS

6.1 Introduction

The purpose of this study is to examine the institutional environmental effects of the implementation and use of GIFMIS through the lens of the new institutional theory and interpretive case study; and to identify the constraints and enablers of the implementation and use of GIFMIS. The previous chapter presented the findings on the case, CAGD, pre-GIFMIS, IFMIS, GIFMIS and implementation and use of the software. In relations to the research questions in Chapter 1, this chapter draws on the new institutional theory and force field analysis to analyse the research findings in the previous chapter. The analysis of this study is about the effects of the institutional environment on GIFMIS implementation, use and how the institutional environment either constrain or enable the implementation and use of GIFMIS.

6.2 Institutional Effects on GIFMIS Implementation

From the findings, a number of institutional effects on implementation can be identified. The findings highlighted the regulatory, normative and cultural-cognitive effects of the implementation of GIFMIS, which are discussed in this chapter.

6.2.1 Regulatory Effects on Implementation

The regulatory effects on GIFMIS implementation involved both national and international regulations that demanded compliance enforcement. The major national regulation that affected the implementation of GIFMIS was the Financial Administration Regulation (FAR)

Act 2003, Act 654. Specific sections under the Act that affected the implementation of GIFMIS were Section FAR Section 306 of L.I 1802, Section FAR 51 L.I 1802, and FAR Part XIV L.I 1802; while the international regulations were Sarbanes Oxley Act of 2002 and SOX (PACAOB, 2004).

With regards to national laws section 306 of FAR L.I 1802, required heads of departments or management units to approve payroll of personnel within their units. It stated that in cases where an automated system was approved as the means of checking payroll, manual vouchers were not acceptable except authorised by CAGD. This regulation required the activation of the validation functionality during the implementation of GIFMIS. This resulted in several pilot testing to ascertain the effectiveness of the validation process during the upgrade and integration of the payroll module. The effect of this law was to curb absenteeism and control the issue of 'ghost names' which was a major challenge with the previous PFM information systems. Thus validation was considered as a critical issue during the upgrade and integration of the payroll module on the GIFMIS platform.

Furthermore Part XIV of Financial Administration Regulation Act 293 is specific with respect to authorities for approval of personnel payroll vouchers. In addition to the above FAR Act, 2003 (Act 654) required heads of departments to notify CAGD in case of delegation of duties or responsibilities. Thus the configuration and set up of the software included different levels of access to the modules. Heads of departments, accountants and personnel from human resources had access to validate end-users while the software or systems administrators had the ability to generate passwords and user names for end-users in enforcing compliance with FAR Act 306. Thus, in cases of forgotten user names and

password or when there is an associated security risk only software or systems administrators could generate new ones based on their roles and responsibilities.

In addition, Financial Administration Regulations Act Section (51) L.I 1802 sets out the responsibilities of the department and management unit heads with respect to the management of the payroll. Thus, during the implementation the system had different levels of access corresponding to defined responsibilities. Department heads with unique user names and passwords had access to most of the components of GIFMIS while non-management users such as data entry personnel had restricted access. The latter could only access the modules that were related to their job specification as structured by the setup and configuration during the implementation. This was to ensure transparency and consistency in financial information.

Although the laws helped in GIFMIS implementation they were considered to be inadequate thus the need to enact new laws that will encompass all the activities in the implementation. The issue of a supplementary budget is of necessity at CAGD, however the rules and laws that affected the implementation of GIFMIS did not include the possibility of a supplementary budget. The regulatory effects supported one of the anticipated benefits of GIFMIS implementation which was to enhance and enforce financial regulations and create an enabling environment for GIFMIS implementation.

On the other hand, the Sarbanes Oxley Act of 2002 (SOX) recognized and made public account audit oversight autonomous; promoted a strong audit committee and corporate governance; and also increased transparency, accountability of executives and protected investors. SOX introduced audit committees whose main role was to supervise and promote the quality and integrity of financial information instead of management of organizations

selecting and assessing the independence of auditors. Sanctions were fines or imprisonment. This Act affected the responsibilities of auditors in relation to reporting financial information. The effects of the Sarbanes Oxley Act of 2002 on GIFMIS implementation was aimed at promoting the discretion of auditors. The implementation of GIFMIS gave auditors restricted access ('view only' access) and could not edit any financial report and thus affect changes in financial information or data. This law also affected CAGD's Regional Directors who were also allowed 'view only' access to financial information captured, processed and stored in the software.

SOX (PCAOB, 2004) increased the confidence of investors in relation to financial reports delivered by companies. Thus responsibility of overseeing external audit and corporate governance was in the hands of the Public Company of Accounting Oversight Board (PCAOB). SOX (PCAOB, 2004) also added additional responsibilities to that of corporate managers to provide financial reports that were reliable; and with the aim of increasing the independence of auditors, limitations were placed on their duties. Sanctions were imposed by the board in case of violation. The SOX (PCAOB 2004) also affected the implementation by enforcing that the setup and configuration of the software include different access levels thereby placing different responsibilities on heads of departments, chief executives and accounts to provide reliable financial data.

6.2.2 Normative Effects on Implementation

The normative pillar consists of the shared values and standards procedures that effected GIFMIS implementation. Both national and international values and standards of procedures affected the implementation of GIFMIS. The values and standard procedures demanded

compliance but this was not always enforced, therefore did not attract sanctions when violated.

A standard international requirement was to establish a project secretariat to oversee the implementation process. Accordingly, GIFMIS Project Secretariat was established under CAGD to supervise and control the implementation, activation, upgrade, set-up, integration and configuration of the software for the various modules needed on the platform. A Project Director managed the GIFMIS Project Secretariat with help from two delegates and a nine part group made up of specialists. The nine part specialized group of specialists were a representation of the different divisions and units (constituted the modules to be actualized). The effect of this team was to involve local technical teams in the implementation based on their area of specialization. To this effect, these teams were trained, sensitized and supported on the implementation of the modules by individual consultants and international consulting firms. The teams in turn had to train both executive and non-executive end-users.

GIFMIS implementation also required political support, which led to the establishment of the Steering Committee and the Executive Committee with members from the various institutions. The Steering Committee was in charge of policy direction while the Executive Committee provided strategic support and direction on issues resulting from the implementation to the Steering Committee (see Table 5.2).

The GIFMIS internal support team (GIST) which consisted of functional managers, team of trainers, advocates, internal Oracle experts and project implementation coordinators. GIST was responsible for providing timely implementation and support end users. Each member was required to have adequate knowledge and skill in IT. Some of the teams were supported individually by consultants and additionally by national and international consulting firms.

A phased but dependent implementation process was also another international standard that demanded compliance. Although the phased implementation process was a standard the activities in each phase was not restricted. The effects of the phase was to divide complex software into smaller workable modules to enable easy implementation. In compliance with this standard, the implementation was divided into three phases for the financial modules; and an additional three phases for the human resource management information system module.

The selected Hyperion was also to affect a vigorous link between public spending units and determined results; provide efficient allocation and utilization of resources; improve the accuracy of budget data or information; and place emphasis on output rather than activities in budget management. The cash management module was also piloted by the GIFMIS team with the required migrated data from the cash management and treasury department. The testing of the budget and cash management modules were to determine if the selected software had an effect on budget preparation and appropriations and expenditure respectively.

However, some departments were slow in adopting the re-engineered process; this became a major challenge that affected the implementation. Other challenges include inadequate ICT infrastructure, poor network connectivity and power outages. Also, some heads of departments were not willing to share the independent data they had captured and stored on departmental computers to aid in the pilot implementation. This was because before GIFMIS there was no centralized data location at CAGD. Baseline data was also not available to aid in the pilot testing and implementation. This was as a result of a lack of a centralized database

storage system and the manual form of capturing, processing and storing data with the previous PFM information systems.

The first phase constituted pilot implementation and activation of the fixed assets register, budget module and the procurement of servers and the software for the financial modules. The IPDD was also reviewed to ascertain its integration with GIFMIS financials. Most of the modules piloted in phase one were activated in phase two. Thus, the Hyperion, workflow, cash management and integration of IPPD were activated in the second phase. To displace the manual and un-coordinated framework which could not determine the levels and number of staff and led to irregularity in trust responsibility and compensation delays. IPPD was integrated to influence the offering of money related information to Human Resource, help support a precise, reliable and uniform information of open administration work force. The software was also integrated to coordinate information with the goal of choosing appraisal of liabilities for the estimation of annuity and preparing payment. Other modules implemented in the second phase by the GIFMIS team include the treasury single account-to help in the procedures and techniques that were expected to capture, store and procedure budgetary data for viable decision-making. The centralized treasury was implemented. The final phase saw the activation of integrated operations, Fixed Asset and Public Account module and the Treasury Long Term module. The payroll module was upgraded in the third phase and post production support, electronic bank reconciliation and SWIFT and Electronic Funds Transfer were also activated.

GIFMIS two which constituted the non-financial modules was the next focus of the technical team. The non-financial module, HRMIS, which constituted of the core and other modules which was also implemented in a three phased process. However, the implementation of the

modules in the second stage was subject to the culmination of the first stage, approval of store accessibility of trusts and the need of GoG.

Another standard requirement comprised of an implementation team and capacity building. The consultants trained the nine member technical team to ensure they possess adequate ICT knowledge and skills to implement the software. The internal Oracle team was trained on how to implement the complete software setup, workflow, software interfaces, troubleshooting via Metalink and XML. GIFMIS functional team was also trained on Oracle financials (career enabler) in order to increase their knowledge on facilitating workflows. The project management team was trained on procurement processes in order to increase their knowledge and understanding in the procedures needed for easy management of the fund allocated for the implementation of GIFMIS. The IT and functional teams were both trained on security processes and issues related to the implementation of GIFMIS: this was to improve their knowledge on security issues and thus protect the integrity, authenticity and confidentiality of the software. They were also trained on network issues, trouble shooting, setup and configuration of the software, this was to increase their capacity to support the implementation.

Additional computers and servers were procured and was dependent on the number of software user. The first phase also saw pilot implementation of the cash management module and the selection of the software for the budget module (Hyperion). The selected software was based on its ability to integrate effortlessly into the GIFMIS platform after the pilot with migrated data from the budget department to test its consistency with the data at MoF. To improve upon the accuracy of compensation, the selected software was interfaced with the human resource management information system module. The effect of this select was to

implement an efficient automated budget module to help the programme administrators to manage budget outlays in a more cost effective and efficient manner through implementation.

The challenges encountered with the phased approach that affected the implementation of GIFMIS were: inability to get parliament to select committees that would focus on results rather than the activities affecting the implementation; and GIFMIS was subjected to too many protocols that affected the implementation. Other challenges included inadequate ICT infrastructure (computer hardware, network connectivity); unwillingness to share information or data and unstable power supply.

A monitoring and evaluation team was established as part of the national standards that demanded compliance. The purpose of implementing the monitoring team was to oversee operations, training, and ensure that relevant laws and business operations and guidelines for the software were obeyed. The process of monitoring and evaluation of GIFMIS involved activities such as input, output and the effects of the selected modules and GIFMIS as a whole. Information or data pertaining to the inputs and outputs are captured from the validators. The team was to ensure that internal and external controls in GIFMIS's implementation provided reasonable assurance to CAGD; stakeholders performed their responsibilities; reliability of validation information was captured, processed and disseminated by Heads of Departments; and that all activities carried out during the implementation of the software are in strict compliance with all the relevant regulations, policies and procedures. The monitoring team was to ensure the consistency of data or information of the validated E-SPV; and that it was consistent with the objectives of CAGD

and timely processing of validated data, adequate training of validators and effective performance of responsibilities.

It was also a requirement to have a centralized automated treasury. To this effect a centralized data centre was built to capture, store and disseminate financial information.

6.2.3 Cultural-Cognitive Effects on Implementation

The traditional and historical way of implementing PFM innovations and related activities affected the implementation of GIFMIS. A number of concepts emerged in this study in relation to the cultural-cognitive pillar: these include attitude towards agency and attitude towards legacy systems that affected the implementation of GIFMIS. Attitude towards agency was lacking - this caused delays in data migration to aid in the implementation and pilot testing of the modules. One of the requirement for GIFMIS implementation was the need for a centralized treasury or data centre, however the lack of attitude towards agency caused delays in data migration to the centralized database, and consequences in adopting the re-engineered innovation necessary to transform financial management systems to their productive status .

Attitude towards the legacy systems also affected GIFMIS implementation. The implementation of GIFMIS brought about different ways of data entry and reporting which was not in line with the historical background of PFM. The previous systems were configured to allow data entry and reporting to be done at the end of each month, payslips were manually filled and disseminated manually once in a month which caused delays and also affirmed the manual system. With GIFMIS, the data entry and reporting was done daily

and payslips were automatically captured, disseminated and integrated into the software by the GIFMIS teams during the implementation.

As a result of the effect of the historical traditions and behavior that affected the implementation, CAGD attempted to create an environment that was very favorable to improve accountability and transparency and also set the basis for the transition to be widespread. Hence teams such as CCPMT and the support sub-teams (ISS) were established to complement GIFMIS. These two teams were introduced to change the public sector culture that was affecting the implementation of GIFMIS. These teams were discussed in detailed in the preceeding chapter.

6.3 Institutional Effects on GIFMIS Use

The findings underlined a number of regulatory, normative and cultural-cognitive effects on the use of GIFMIS. GIFMIS use embraces the operationalization of the software and its actual usage by end-users. The sections will discuss these effects relative to the use of GIFMIS.

6.3.1 Regulatory Effects on Use

The use of GIFMIS was affected by the Financial Administration Regulation of 2004, specifically sub-regulation 305, sub-regulation 298, and FAR Part XIV; and Sarbanes Oxley Act of 2002.

FAR sub-regulation 305 affected the use of GIFMIS in so far as the first part of this regulation stated that it was the responsibility of the Heads of Department to examine and certify the payroll vouchers, delete names of staff on posting or transfer within three months, recover overpayment and add the names of new staff. To this effect Heads of Departments had access to validate staff under their supervision and any act of non-compliance attracted

consequences. Sub-regulation 298 also stated that Heads of Departments should instantaneously stop salary payments if a personnel was absent without requesting for leave; if she or he was found guilty of theft or fraud; or had resigned, retired, had died or was on leave of absent without pay.

Required personnel were responsible for using the E-SPV on the GIFMIS platform to validate staff. Automated validation and submission of salary payment vouchers to CAGD was a necessity to affect the payment of salaries. Validation of the E-SPV was within forty-eight (48) hours. This was in response to the challenges of the previous PFM information systems which took three (3) months to process because it was a manual system. This led to the loss of money and payment of salaries to people who were not at post. It was also time consuming, and led to double payments and ghost names. The new E-SPV is an upgrade system for the payment of salaries aimed at improving efficiency and curbing delays in salary payment and receipt through validation. Validation by heads of departments demands that there is a need to increase their knowledge and skills in ICT and the internet.

The second part of this FAR 305 noted the sanctions that were meted out in cases of violation. The consequences of non-validation was the withholding of the salary of the head of department until the irregularity was rectified; in situations where non-compliance resulted in frequent financial loss to the state there was an extra monetary charge and any other sections that CAGD found to be appropriate. Thus, validation by heads of department was considered a critical factor pertaining to the use of GIFMIS. Validation should be done at real time unlike the previous PFM information systems used at CAGD.

Part XIV of FAR indicated the responsibilities of the Heads of Departments or unit heads. To this effect department heads or unit heads were to use the software to examine and certify

personnel payment vouchers. The regulation therefore stated that the payment vouchers should contain names of only staff belonging to the department or unit. Names of staff members on posting or transfer should be deleted within three months by the head of department only. Heads of department must also enforce compliance with FAR (30) 298 in cases of resignation, retirement, termination, post vacation and death. This law enforced the recovery of any excess payments made to staff under the FAR (30) 298 and the deletion of their names from the E-SPV. Failure by any Head of Department to delete the names of such persons attracted financial sanctions thus notifications should be sent to the CAGD by the heads of department to stop the payment of salaries to such persons. In cases where the salaries had already been transferred to the banks, Heads of Departments had to notify the banks and SMS should be sent to CAGD in cases where the name of the staff was deleted or not. Thus authorised names staff must be captured on the database and defined by the software during the configuration.

Regulation 305 stated the requirements of users before they can have access to the system. Thus every authorised user needs a name and password, user details (signature, photograph and telephone number) and user access rights before using the software to perform their responsibilities.

The regulatory effects on the use of GIFMIS also led to the separation of duties. Based on the Sarbanes Oxley Act of 2002 auditors were to use the software for the purpose of meeting their auditing responsibility and not being allowed to edit any information or even enter data. CAGD regional directors could also not make any changes to E-SPV vouchers when checking for anomalies before electronically sending it to the Head Office of CAGD. This regulatory mechanism limited their use to only checking for anomalies and reporting to the

department head. Auditors were provided entry access but could not change or delete any aspect of the financial information stored in the software.

The use of GIFMIS affected the work process by completely altering what was seen as acceptable ways of using E-Government financial systems. GIFMIS use has created a sense of responsibility for all users; both management and non-management are forced to comply with the rules.

6.3.2 Normative Effects on Use

National standards and values affected GIFMIS use in diverse ways. It was a national standard procedure for end-users to be trained in Information Technology Infrastructure Library Version 3 (ITIL Ver. 3). It was a standard requirement for all end-users not only to be trained in ITIL but they must comport themselves and comply with it. Another standard procedure was the need for end-users to adhere to the regulations and guidelines of the National Information Technology Agency (NITA). The IT staff and other end-users were trained on ITIL Foundation Version 3 and RAC in order to work with a common technological tool. This was to build their knowledge and capacity to support the maintenance of the architecture of the software.

International standards pertaining to GIFMIS use include training; change management and institutional transformation; user ICT proficiency; effective legal framework to guide use; ICT infrastructure (hardware, software and adequate technological solutions); adequate reporting structures; and information system access controls. Other standards included business processes steered by fundamental changes in operating procedures; training manuals; detailed analysis of functional processes; and a centralised treasury to aid in

integration of all government and public sector financial resources into the Treasury Single Account. Compliance with these standards were not enforced.

The use of GIFMIS and training on the required modules was inconsistent with the phases of implementation. However, GIFMIS use in phase one was only about pilot testing the selected software and modules identified (Hyperion and cash management module). The Hyperion and cash management modules were tested to ascertain accuracy for budget preparation and was considered as a strategic management process. The consistency of the Hyperion with appropriations and expenditure was considered as a management material. Inadequate ICT infrastructure, including network connectivity, unstable power supply and hardware affected the use of GIFMIS in phase one. GIFMIS's existing operating manuals were reviewed and new ones developed to aid users.

Users were trained by the GIFMIS teams on the software and the modules. Stakeholder involvement was achieved through the training and sensitisation of both executive and non-executive users. As a standard, end-users were trained and sensitised through various communication mediums like the internet, media (radio, television and newspapers); and an instructor led approach of training was used to prepare the users for effective use of the information system. Radio discussion programmes were held after the implementation to enable effective use. There was also public education on how to use modules via media platforms such as radio, website and press statements. Stickers of different categories were distributed among users: this was a way of sustaining the interest of the users. The training sessions were not only for end-users but also for CCPMT, advocates and SST.

GIFMIS use in phase two encompassed the use of integrated software for capturing, storing and processing payroll information; and, in the case of the pilot, use of the charter for

HRMIS. The technical teams and Oracle team trained users on how to use the financial modules to plan, organize and disseminate accurate and timely financial reports automatically on the GIFMIS platform. The challenge of inadequate end-user ICT proficiency came to light in this phase. It was realized that, because there were issues of inadequate computers at the departments and agencies, users could not practice after the training so mostly forgot what they had been trained on. Some of the users were also semi e-illiterates and therefore could not completely understand the training and their new responsibilities.

The responsibility to enter the required data therefore rested on the advocates who were stationed at the various departments and agencies to help the end-users to effectively use the system and for the purpose of monitoring and evaluation. Baseline data was inadequate to help end-users during the training and the actual use to the software to execute their responsibilities. End-users and heads of departments shared data and communicated easily as they faced challenges using the software. To this effect, the help desk team was introduced at the GIFMIS Secretariat to report, control and monitor daily calls, weekly calls and monthly calls. The calls were about challenges encountered by all end-users; the help desk in turn communicated the information to the necessary team to provide timely and accurate assistance. They were also trained on how to not only receive user complaint but also how to resolve it in real time; and to aid in promoting collaboration between users and the Oracle expert team on one platform.

To effectively assist end-users the advocates and TTT were trained on the use of the software and their roles were stated. There was another training for the advocates, TTT, PIC, data accounts and collection unit teams. The training was basically to help the teams use the

software to accurately generate reports; for electronic fund transfer; and to increase their knowledge on the new PFM cycle. Training on basic software skills for the management team, TTT and advocates was given to provide them with the required knowledge on client relations, presentation, and knowledge transfer skills. For users to get the help they needed on P2P, TTT were trained on P2P while the PBB secretariat was also trained on effective monitoring and evaluation. To further enhance the knowledge and understanding of the Payroll Processing Department on using GIFMIS process payroll transactions, they received training on using the Approved Hierarchy and P2P. To effectively use the software network connectivity and security infrastructure were improved upon.

The normative effects on use was also about activities and procedures that are considered as a “**must**” when using GIFMIS. Thus to access GIFMIS payroll, an authorized staff **must** be set up and defined by a system administrator. It was a **must** for the head of payroll to send payroll reports to the various management unit heads for validation via the the Electronic Salary Payment Voucher (E-SPV) system. Users **must** type a verification code that appeared on the login page. The validation ‘**must**’ be done within forty-eight hours. At all times human resource managers ‘**must**’ verify the information on the E-SPV before further validation and submission by the department head to CAGD. Submission **must** be done using the required module by the management unit head because he is the spending officer of the management unit. Heads of departments and HR **must** receive SMS notification when the E-SPV is ready to be validated.

To this effect Ghana has submitted to the International Financial Reporting Standards which is a required standard for GIFMIS implementation and use.

6.3.3 Cultural-Cognitive Pillar on use

The culture-cognitive pillar was built around apathy, and work ethics (inadequate information sharing culture, delays, resistance to change) that affected the use of GIFMIS. Users had no commitment to GIFMIS, thus they felt GIFMIS was not a personal property as they put it in a local Ghanaian language “enye wu papa dia”. They therefore did not see the reason why they should get totally involved. GIFMIS was seen by users as just another E-Government financial system that had failed over the years. A specific work ethic that affected the use of GIFMIS was users resistance to change. Users were not ready to change their old ways of working to use GIFMIS and saw the IS just like the other PFM they have used over time. Users also had a fear of losing their jobs and being replaced by “machines”. Chief executives also had the fear of losing their jobs and positions as a result of the use of GIFMIS this led to a process of sensitisation to change their perception.

As a result of the use of the previous PFM information systems users were used to the manual approach to data entry and the long period of time it took to submit reports. Thus GIFMIS posed major problems to this culture of delay that has become a cognition work ethic because the use of the software demanded timely and real time data entry and dissemination of reports. The lack of information sharing culture also affected the use of GIFMIS. Users were not willing to share their concerns with GIFMIS with the right personnel. There was a challenge with the change management process because end-users, by tradition, expected GIFMIS to support old ways instead of best practices.

On the other hand, the cultural-cognitive effects include attitudes that were considered as desirable which specify how things should be done. These are unwritten but violation results

in the form of gossiping and insults. It is shared by the workers and has been sustained over time. This is a standard set by the workers to guide their activities. It is an acceptable behaviour for users to help one another in the performance of their responsibilities; however, this affected the use of GIFMIS. The use of GIFMIS spelt out separation of duties and responsibilities for all users. Users were allowed access to the software required to perform their roles and responsibilities based on job specialization.

With the aim of changing the culture-cognition towards the use of GIFMIS, CCPMT was used as a tool. CCPMT is responsible for planning, organizing and reporting on all functional and training programmes, appraisal of training programmes and post follow-up monitoring to ascertain effectiveness of training. As an assistance to cultural change what this team sought to do is change the prevailing culture progressively. They started with sensitizing the various users at the departments and agencies. They then trained them on the use and relevance of communicating and changing the existing traditions. There was followup by this team during use and advocates were placed at the departments and agencies to monitor users and provide necessary assistance. The GIFMIS Secretariat also introduced the ISS. ISS and the various mechanisms under it were directed at restructuring the existing culture to aid in the use of GIFMIS. These teams affected the use of GIFMIS by ensuring shareholders, executives and users had the opportunity to be change agents in making strategic choices in the use of GIFMIS.

The help desk was another move directed at changing the culture-cognition related to lack of communication and delay in resolving technical and non-technical challenges encountered by users. Their main responsibility was control, monitor all call reports, and

redirect complaints to the required team. This therefore resulted in easy and quick reporting and response to end-user queries.

6.4 Consequences of Implementation and Use of GIFMIS

This sub-section will analyse the consequences of the institutional effects from the perspective of force field analysis. The use of force field analysis brings to light the institutional effects that can be considered as enablers or constraints in order to improve upon the implementation and use of GIFMIS. Specific issues under the regulatory, normative and cultural-cognitive would be discussed to determine whether they are constraints or enablers to the implementation and use of the software.

With regards to the regulatory effects, compliance with the laws were regarded enforced. Thus auditors could do no other function than to audit which was a positive consequence because it prevented auditors from making any changes to financial report captured and stored on the software. Another positive consequence was national laws that clearly stated the responsibilities of both management and non-management end-users. Successful receipt of salary by staff signified heads of departments, accountants or HR managers have validated the payroll voucher. This was aimed at ensuring that heads of departments, accountants and HR managers have performed their responsibilities by ensuring that only qualified personnel received their salary. This was to ensure that the issue of ‘ghost names’ were controlled on the payroll software. Refusal to validate staff by management resulted in the inability of personnel to receive salary for that particular month. Refusal to validate the payroll vouchers also attracted some sanctions as required by law. However, despite these positive consequences, the laws (both national and international) were insufficient to ensure

successful implementation and use of GIFMIS. End-users unawareness (because they were not adequately informed on the legal issues) of the legal requirements of the software increased their level of ignorance pertaining to the use of GIFMIS.

With regards to the normative effects (standard), specific consequences arose which were both positive and negative. Meeting the standard of training and sensitization made both the teams and end-users aware of the implementation and use of the software. However, inadequate computers for use by end-users to practice after the training sessions resulted in a negative consequence because the end-users could not remember what they were trained on which led to lack of appreciation for the software and advocates taking up the responsibilities of end-users. Other standards that had negative effects on the implementation and use of GIFMIS were inadequate ICT infrastructure, inadequate network connectivity and unstable power.

In relation with the cultural-cognitive effect, attitude towards agency, attitude towards legacy systems, apathy and work ethics had several negative consequences on the implementation and use of GIFMIS. Attitude towards agency resulted in data migration from the various departments to the centralized database. End-users did not have an attitude of responsibility towards legacy systems which negatively affected GIFMIS. The positive consequence of the cultural-cognitive effect was the response to these issues by establishing teams that were aimed at controlling traditions and historical inclinations at CAGD.

6.5 Factors that Facilitated the Implementation and Use of GIFMIS

The implementation and use of GIFMIS is not only about challenges, specific factors worked in favour of the software. These factors are strong political support-even though GIFMIS is

enjoying strong political support it was gathered that there is a need for new laws, and regulations to guide the GIFMIS since the existing ones were for the legacy IS. This concept will be further elaborated upon in the sub-section ‘regulative environment’. Administrative support - this includes good organizational skills and effective communication intended to help maintain the values of stakeholders and end-users, a strong local technical team, consciousness of past PFM systems, donor review and technical advice, prompt release of funds by development partners (DP) and review by external agencies sent by DP.

Table 5.2 provides a summary of Chapter 6.

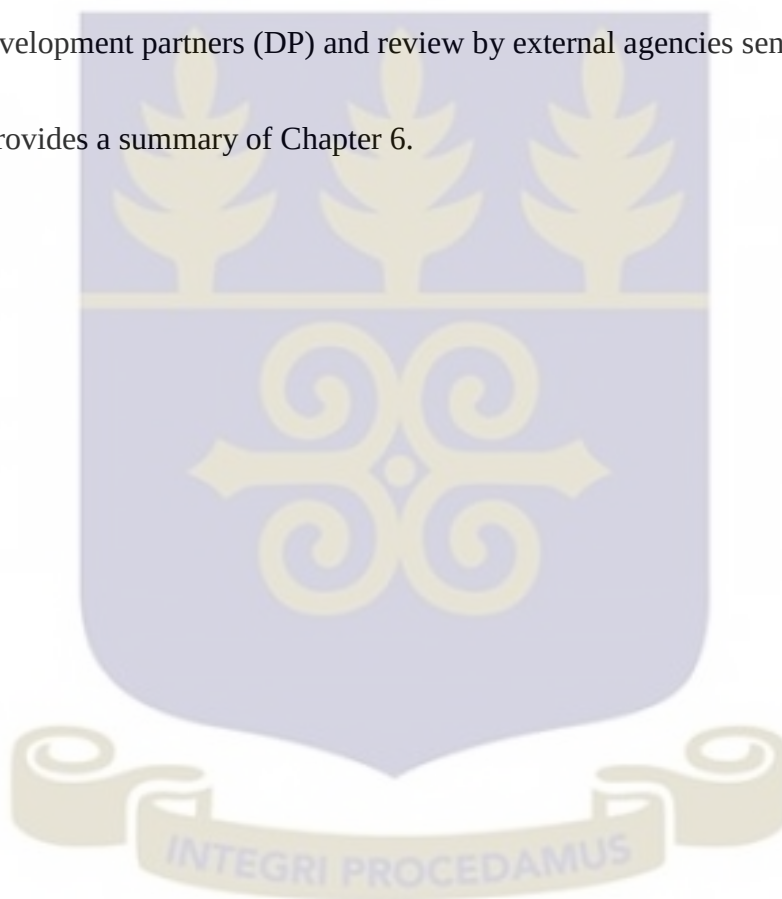


Table 5 4: Institutional Effects and Consequences on GIFMIS Implementation and Use

Institutional Effects on Implementation	Sub-regulation	Descriptions	Effects on Pre – GIFMIS	Effects on GIFMIS	Consequences
Regulatory Financial Administration Regulation (FAR) Act 2003, Act 654	FAR 306 of L.I 1802	Heads of Departments were to ensure that the payroll voucher contained only names of staff under their supervision	Heads of Departments had to manually crosscheck the information on the payroll before personally sending the voucher to CAGD	The validation function on the GIFMIS platform was activated to enable Heads of Departments to validate staff	All Heads of Departments had access to the validation function on the software.
	FAR Act 293 and 654	Stated specific authorities in relation to approve payroll vouchers	Heads of Departments were responsible for approving payroll	The software was configured to generate unique user names and passwords	Systems administrators had to generate user names and passwords were generated from the software by the systems administrators
	FAR Act 51	Stated the responsibilities of Department Heads with respect to the payroll	Heads of Departments, Accountants and HR had different responsibilities	Configuration and set up of GIFMIS had different access levels such that not only Heads of Departments can validate end-users but Accountants and Human Resource personnel could perform the same functions	The implementation clearly defined responsibilities based on different levels of access

	Sarbanes Oxley Act of 2002	Promote discretion and independence of auditors with respect to financial data of organizations	This law had no known effect on the previous software	- Auditors ‘view only’ access - CAGD Regional Directors ‘view only’ access	Auditors and CAGD Regional Directors did not affect any changes or edit any financial information on the software.
Regulatory Effects on Use Financial Administration Regulation (FAR) Act 2003, Act 654	FAR 305	Sanctions of non-validation of payroll by Heads of Departments	Withholding of salary of the Head of Department until the anomaly was rectified, extra charge when non-compliance resulted in financial loss to the state and attracted any other sanction that CAGD deemed fit.	Withholding of salary of the Head of Department until the anomaly was rectified, extra charge when non-compliance resulted in financial loss to the state and attracted any other sanction that CAGD deemed fit. (not automated)	All Heads of Departments, Accountants and HR validated the automated payroll vouchers of the software
	PART XIV of FAR 2004, L.I 2004 1802	Responsibilities of Heads of Departments and Unit Heads	Heads of Departments were responsible for payroll verification and examination	Heads of Departments or Unit Heads had the responsibility of using the software to examine and certify personnel payment vouchers. They must ensure payment vouchers contain the names of personnel belonging only to their department	All Heads of Departments or Unit Heads examined and certified the payroll automatically by using the required module on the software
	FAR (30) 298	Specifies actions that should be taken in cases of	Remove the names of staff who have resigned, retired,	Use the software to delete the names of staff who have resigned, retired,	Heads of Department had to delete the names of

		resignation, retirement, termination, vacation of post and death	terminated contracts, vacated post and death	terminated contracts, vacated post and death; and further reports to CAGD and the Banks in case salary have been paid.	staff who have resigned, retired, terminated contracts, vacated posts and are deceased. Heads of Departments must send automated SMS to CAGD to this effect and in other cases, the banks
	FAR 305	User requirements before using any PFM software		User name, passwords, user details (signature, photograph and telephone numbers) were necessary requirements before access was granted to use the software and any of the modules. Access is based on job requirement and specification.	

Institutional Effects on Implementation	Requirement	Effects on GIFMIS	Consequences
Normative (standards)	Project Secretariat for implementation and supervision	GIFMIS Secretariat • Project Director • Two deputies	One secretariat to oversee implementation of the GIFMIS
	Political support: committees were formed with membership from various government institutions	Steering Committee (see sub-section 5.2.4) Executive Committee (see sub-section 5.2.4)	Spearhead implementation
	Implementation Team and Capacity Building (training of teams)	• Technical Expert Team • Internal Oracle Team • Payroll Team • Monitoring and Evaluation Team • Advisers and Consultants • Legal Team • Quality Assurance Team	Built the capacity of the implementation teams for effective and efficient implementation
	Centralized Treasury	Built a centralized data centre at CAGD	Common data storage centre
	Phased Implementation Approach	• Three phased implementation for the financial modules • Three phased implementation for the HRMIS modules	Broke down a complex software into small workable modules.
Institutional Effects on Use			
Normative (Standards)	Change management and institutional transformation	• Human capacity building (see sub-section 6.3.2) • Project Implementation Coordinators (PIC)	Users were equipped with the right training to understand and use the software
	Use of common technology based tool by end-users	End-users were trained in Information Technology Infrastructure Library Version 3 (ITIL Ver. 3)	All end-users worked with a common tool

Institutional Effects on Implementation	Issue	Effects on GIFMIS	Consequences
Cultural-cognitive (attitudes and traditions)	Attitude towards agency	Caused delays in data migration	Implementation of Help Desk, CCPMT and ISS
	Attitude towards legacy systems	Resulted in resistance to change (implementing GIFMIS)	
Cultural-cognitive Effect on Use			
	Work ethics	Establishment of teams to help change the existing work ethics • CCMPT • Sub-Support Team • Advocates • Help Desk	Advocates had to perform the duty of data entry by some end-users because of their inability to use the software after the implementation
	Apathy	Inadequate stakeholder responsibility	Led to sensitization of end-users and executive managers on the software
	Attitude towards legacy systems	It caused lack of responsibility and ownership towards GIFMIS	

Source: Author's Construction



6.6 Summary

The chapter analysed the case study findings of Chapter 5 in relation to the research questions in Chapter 1 and identified the emergent themes and concepts. The analysis presented the activities that were carried out during the implementation and use of GIFMIS. The next chapter discusses the emerging themes of the analysis of findings and presents the final level of abstraction with reference to the research questions in interpretive study.



CHAPTER SEVEN

DISCUSSIONS OF ANALYSIS OF FINDINGS

7.1 Introduction

The above-mentioned chapter analysed the findings of the study in relation to the research questions, formulated with respect to the new institutional theory and force field analysis. This unearthed the emergent themes and concepts related to the new institutional theory and force field analysis as evident from the research findings. This chapter discusses the findings as related to the reviewed literature in order to address the research questions outlined in the introductory chapter. The current chapter brings to light the literature findings from Chapters 2 and 3 and the empirical findings from Chapters 5 and 6. The chapter begins with a discussion on the institutional effects of implementation and use and the consequences of the institutional effects. This chapter ends by reflecting on the use of the new institutional theory and force field analysis in E-government financial systems studies.

7.2 Effects of the Institutional Environment on E-government Financial System

Implementation

This section addresses the first research question as stated in Chapter 1.

As related to the institutional environment, the regulatory pillar had effects on the implementation of E-government financial system. The issue of separation of duties led to the implementation of different access levels during the implementation of GIFMIS. As discussed in the analysis of findings these levels of access were supported by both national and international regulations. These laws included the Sarbanes Oxley Act of 2002, and SOX

(PACAOB, 2004). SOX (PCAOB 2004) has brought about specific changes with regards to international regulations governing the financial sector by placing additional accountability and responsibilities on both IT professionals and senior executives which demands compliance (Currie, 2008). The national laws comprise of FAR Act, 2003, Act 654 with sub-regulations, including FAR 51 L.I 1802, Part XIX L.I 1802 and FAR 306 of L.I 1802. These were enforced to restrict access during the implementation. The regulatory pillar entails formal pressures enforced by legislation and informal pressures exercised by DP (Carpenter & Feroz, 2001; Connolly *et al.*, 2009).

Auditors and CAGD Regional Directors were allowed 'view only' access during implementation. They could thus not make any changes to the information or data on the software. The financial reports processed and disseminated was based only on the data they were allowed access to during the implementation. Staff validation was done solely by their supervisors while the generation of passwords and user names was solely the responsibility of the systems administrator. Thus, the function of validation, password and user names generation were restricted to unit heads, accountants, HR and systems administrators respectively during the configuration and setup of the software.

Since compliance with the regulations were considered enforceable it resulted in specific consequences. That is, auditors and CAGD Regional Directors could not make changes to financial information and could not delegate their duties or responsibilities to staff under their supervision. Heads of departments, accountants and human resource personnel could also not delegate their responsibilities because they had unique user names and passwords. Hence, the levels of access that was implemented in the setup and configuration of the GIFMIS deterred 'top management' from pushing their responsibility downwards to 'lower

level management'. Some studies have argued that separation of duties in IT is used to manage complex information systems and it is dependent on the requirements of the system (Vidgen, 1997; Wimbrow, 1971). This therefore signified specific changes in the implementation of PFM information systems at CAGD. GIFMIS is an integrated information system that demanded different implementation process guided by specific laws. Currie (2008) stated that, with the increase in global competition, the regulatory requirement and technological imperatives, such as the need to not only keep pace with information technology to satisfy government, but also institutional, and individual investors financial firms are endlessly challenged by changes from highly regulated sectors.

As evident from the analysis of findings, the regulatory mechanisms put in place to guide the implementation were considered inadequate, thus there was a need to enact new laws (mostly national laws) that would be suitable to the system. This will take time, and the process is a bureaucratic one. For instance, the issue of supplementary budget, which was considered as a very critical function in budgeting, was not considered during the implementation and also the existing laws did not cover this issue. On the other hand, Effah (2013) observed that there were constraints in the institutional regulations because the Central Bank in Ghana is bounded by bureaucracy and inadequate regulations.

E-government studies have argued that challenges are inevitable in IS regulatory compliance in the public sectors (Abdullah, Sadiq, & Indulska, 2010; Baskerville, 1991; Chandran, Krishnan, & Nguyen, 2011; Law, Lau, Kerrigan, & Ekstrom, 2014). On the other hand, Mir and Rahaman (2005) noted that the World Bank and the IMF are able to influence the articulation of innovations and policy making in developing countries because they possess much information systems.

The effects of the normative pillar led to the involvement of the development partners. The World Bank, DFID of UK, European Commission, EU and DANIDA jointly sponsored GIFMIS implementation. Donor support is considered to be important to IFMIS implementation (de Renzio *et al.*, 2011). The involvement of the development partners led to a phased implementation process because it was a required standard. The implementation of the financial modules (GIFMIS 1) took the form of a three-phased approach while the Human Resource Management Information Systems (GIFMIS 2) also took a three phased approach format. IFMIS is thus an integrated IS aimed at providing timely financial information to management in order to enhance decision making (Hendriks, 2012b). This resulted in the breaking down of the complex software into smaller workable modules. Studies have argued that the World Bank and IMF are able to influence the articulation of innovations and policy making in developing countries because they possess the information system (Mir & Rahaman, 2005).

However, the phased implementation process encountered some challenges. Studies in developing countries have noted that these challenges are inherent when implementing e-government innovations (Andersen, 2006; Ogembo *et al.*, 2012). The challenges encountered in Ghana were: inadequate ICT infrastructure; specifically network connectivity; power supply and inadequate computers. Other challenges included delays in data migrations due to the unwillingness of some heads of departments to share the information and data they have captured and stored on their independent and unintegrated computers and servers. There was also evidence of the unavailability of baseline data for accurate piloting and testing of the budget and cash management modules. This was because the previous PRM innovations implemented and used at CAGD did not have a centralized

location for data storage. It was thus a challenge to gather all the scattered data into a centralized location. It was also noted that the available data was captured in manual forms separately at the various departments and agencies.

This resulted in the inability to determine the levels and number of staff which caused inconsistency in fund accountability and also salary delays. In addition, the implementation process also faced the challenge of the inability to get the selected committees from parliament to focus on activities rather results, the insufficient distribution of employee compensation and the too many protocols that the software was subjected to.

Change management and capacity building was normative standard that had effects on GIFMIS. Because of compliance to this standard of change, introducing a change management and capacity building team there were training sessions for the teams responsible for the software implementation. These teams consisted of the internal Oracle expert team (15 members), IT and functional teams, nine technical team, PIC and the project management team. These teams were trained in different aspects of implementing the software. The IT and functional teams were both trained on security processes and issues related to the implementation of GIFMIS: this was to improve their knowledge on security issues and thus protect the integrity, authenticity and confidentiality of the software. They were also trained on network issues, troubleshooting, setup and configuration of the software: this was to increase their capacity to support the implementation.

The internal Oracle team was also trained on how to implement the complete software setup, workflow, software interfaces, troubleshooting via Metalink and XML. The GIFMIS functional team was trained on Oracle financials (career enabler) in order to increase their knowledge on facilitating workflow. The project management team was trained on the

procurement process in order to increase their knowledge and understanding of the procedures needed for easy management of the fund allocated to the implementation of GIFMIS. The GIFMIS internal support team (GIST) was responsible for providing timely implementation support to end users. Members were professionals with extensive experience in their area and in IT. GIST included functional managers, a team of trainers, advocates, internal Oracle experts and project implementation coordinators.

Change management is part of the guidelines presented by Hendriks (2012) which is considered significant, but often neglected during the implementation of E-Government financial systems in developing countries. As evident from the analysis of findings, change management and capacity building was necessary. GIFMIS implementation was faced with the challenges of resistance to change by major stakeholders who had stakes in the old system and rejected the new information system. The resistance came from the fear of losing their jobs and positions, and there was a need to organize a workshop to reassure them of the stability of their jobs and their responsibility towards the implementation of the IS.

Another normative standard that had effects on the system was project implementation supervision. For the purpose of overseeing the implementation of GIFMIS, the standard of having a project supervision team was established. The GIFMIS Project Secretariat was established to supervise the training, implementation and use process of the software. The Project Director was the head and was supported by two deputies and a nine member technical experts team. A Steering Committee was formed to be responsible for policy direction of the GIFMIS project. However, in Sri Lanka, for instance, the purpose of the Steering Committee was to sustain the objective of supporting the growth of the national software industry by using emerging e-government innovations (Standforth, 2006). The

Steering Committee in Ghana was supported by an Executive Committee responsible for the provision of strategic direction to the entire management and implementation process of the GIFMIS.

Studies have shown that in Sri Lanka the leadership of the MoF was rebuilt: thus a new ministerial team was formed and was part of the steering committee equipped with ICT development skills together with a permanent secretary (Standforth, 2006). The noted changes in Sri Lanka and Ghana can be attributed to contextual differences and the fact that the first time the software was introduced in Sri Lanka failed because of inadequate recognition of major stakeholders in the sector (Heeks & Stanforth, 2007b). The implementation of IFMIS into public sector finance is considered to be an organizational reform that severely affects the work process and institutional arrangements that governs government finances (Hendriks, 2012b).

The selection, setup and implementation of particular modules on the IFMIS platform can be attributed to the cultural-cognition of CAGD. This can be as a result of the culture of 'familiarity' that led to the inability to let go of legacy systems. The understanding and awareness of public sector culture is very important because it offers a basis for explaining and addressing the appropriateness and outcome of current reform processes (Parker & Bradley, 2000). Familiarity also led to installation of non-Oracle tools on the servers, updating of payroll module and the late consideration of the HRMIS module.

Ghana selected the financial modules that was built on the Oracle Financial Suit on the IFMIS platform. The non-financial module was the human resource financial management information systems, HRMIS, module. This module was not considered at the inception of the GIFMIS project because of familiarity, but it was later considered and hence

implemented. However, the selection was limited to the primary or core module, secondary module and the talent modules. In addition, PBB was later considered and implemented as part of the modules.

The payroll module on the IFMIS platform was not activated as CAGD upgraded the module that was already being used to ensure it could be integrated into the software. This can also be attributed to the issue of ‘familiarity’. The issue of familiarity also led to the integration and interfacing of the software’s major financial agencies in Ghana into the GIFMIS platform, thus the institutions did not use the IFMIS software, but rather the software that they used were either integrated or interfaced with the implemented software.

The familiarity of the processes involved in the previous systems further caused implementation delays because of the slow progress to implement the re-engineered process, and delays in data migration by the various heads of departments. Studies point out that red tape in the public sector is the cause of delays in implementing information systems (Caudle, Gorr, & Newcomer, 1991). Other studies have also noted that the peculiar nature of the environment of the public sector poses challenges to knowledge or information sharing practices (Taylor & Wright, 2004).

On other hand, culture is defined as “a complex web of information that a person learns which guides each person’s actions, experiences, and perceptions” (Campbell, 2009). However, every organization has its own prevailing culture; and in the case of CAGD, the culture of familiarity had effects on the implementation of the modules. Organizational culture embraces the assumptions, tenets, practices, history and even employee’s mode of dressing, which enables them to identify with the organization and urges them to work in order to achieve the common goal of the organization (Corriss, 2010).

7.4 Effects of Institutional Environment on the Use of E-government Financial Systems

The second research question noted in Chapter 1 is answered in this section.

The regulatory effect on GIMIS use led to the creation of authorization and distinct responsibilities on users based on both international and national laws. These laws were the FAR sub-regulation 305, FAR Part XIV sub-regulation 51, FAR sub-regulation (30) 289 and Sarbanes Oxley Act of 2002. Auditors and CAGD Regional Directors could use the software only for the purpose of auditing the financial information presented to them. They could not use the system for any other responsibility aside as stated during the implementation and which is influenced by their access to the software. Department Heads were also required by law to use the software to examine, validate and certify payroll vouchers.

Heads of departments were authorized and responsible for deleting the names of personnel who had resigned, retired, terminated their contract, vacated their post, was transferred or deceased. It was the responsibility of heads of departments to notify CAGD of any such cases after the name of the personnel had been deleted from the information system. An SMS should be sent to CAGD whether the deletion of the names of the affected personnel was successful or not. This led to the use of the automated SMS in the GIFMIS platform to send such messages not only to CAGD but also to personnel as and when their salaries were deposited into their bank accounts. And in cases where salary had already been transferred to the respective banks and should not have been, CAGD has the responsibility to notify the bank. Heads of departments therefore ensure that the names on the salary vouchers automatically sent to CAGD represent the names of only the required personnel in his/her department.

All end-users were required to have unique methods of access; this led to the provision of unique user names, passwords and other detailed information (signature, photograph and telephone numbers). Thus, the use of the software or any of the modules was dependent on the job specification and requirement of the individual. To this effect every end-user had a unique entry access to the software and that was with the aid of their passwords, user names and other necessary information. In cases of forgotten or security related issues of passwords or user names new ones were generated by the systems administrators. Heads of department, accounts and HR personnel were responsible for validating employees and neglecting this responsibility meant an employee would not be receiving a salary for that particular month. Other sanctions, as stated by law, included the withholding of salary up until the point when the inconsistency was rectified, extra-charge imposed in cases where non-validation caused financial loss to the state, and any other sanction that CAGD deemed fit. These sanctions therefore influenced the responsibility of Heads of Departments, HR and Accountants such that they were all involved in the process of automated validation by using the required functionality on the software.

The validation took this process: logging into the E-SPV System (www.gogspv.com) by the required personnel to review and validate the voucher. The purpose of this activity was to guarantee that personnel information in the E-SPV system is accurate. This is done by indicating anomalies like wrong payments, missing names and unknown names that may affect the system. The HR then forwards the information (validated SPV) electronically to department heads for further review and validation. The complete validated E-SPV is sent electronically to CAGD, and the sent E-SPV is then locked automatically to ensure that the head of department re-validates the information provided. This is because the head of

department was considered the spending officer, and thus the authorized person to submit the validated E-SPV to CAGD.

All the above activities under the regulatory framework are to control the cases of corruption and control the issue of ‘ghost names’ in public sector financial information. The impact of IFMIS on corruption incorporates automated identifications of special cases to ordinary operations; patterns of suspicious exercises or operations; automated cross referencing; individual ID numbers for fraud; automated cross referencing of asset inventory management to identify theft; automated payment of cash; and identification of ghost or phantom names (Hendriks, 2012a).

End-users also noted that the regulations do not fully cover the use of GIFMIS. Law *et al.* (2014), noted that government regulations are mostly detrimental to business and also hinder public understanding of government because of their nature in terms of complexity, diversity and volume.

The goal of building end-user capacity to use GIFMIS effectively and efficiently influenced the meeting of specific normative standard requirements. Building the capacity of the end-user was necessary because of the transition from paper based and semi-paper based practices to the use of integrated information systems. Public sector financial systems have gradually shifted from a manual or paper based system to an integrated system with the aid of information systems (Cîrstea, 2014). The normative standards were considered to demand compliance and conformity by users. In order to legitimize their existence organizations need to conform not only to institutional rules, but also existing norms (Meyer & Rowan, 1977). This standard was the training and sensitization of staff or end-users through public education. Before the training different communication channels were used to sensitize end-

users; this was done through the internet and media (radio discussions, television and newspapers). The result of sensitization was to build user commitment and ownership of the software. To further sustain the interest of end-users, different categories of stickers that contained information on GIFMIS were distributed. Training and capacity building is very essential in e-government financial systems and it is provided by both the developing countries and the international donors (Heeks & Stanforth, 2007a).

Various training sessions were conducted in the form of an instructor led approach. As is evident from the analysis of findings, it was required of all end-users to use a common technological tool in their daily activities at CAGD. This, therefore, triggered the training of end users in Information Technology Infrastructure Library Version 3 (ITIL Ver.3). This training also caused end-users to comply with the guidelines of the National Information Technology Agency (NITA). The significance of this training was to build their knowledge and capacity in order to support and maintain the architecture of GIFMIS. To facilitate the use of the software, end-users were trained in basic computer skills. The GoG has also subscribed to the international financial reporting standard to aid in the preparation of public financial reports by using the software. Studies in China argued that E-Government financial systems were focused on building strong relationship between accounting and reporting systems, which were directed at employing IS to standard accounting practices and enhancing the reliability of information disclosed by the public sector (Percy, 2007).

To enable end-users to use the required software to perform various functions at CAGD, training sessions were held. The effect of this training was to build the capacity of end-users in the modules to be used for their respective responsibilities. The budget staff of CAGD were trained on how to use the required software on GIFMIS platform to do releases

effectively in a five (5) day training. IT staff were trained on network issues, troubleshooting, configuration and setup which led to an increase in their capacity to provide support for other end-users. The public debt and investment units (PDI) were trained on using GIFMIS to process transactions and perform period end processes on the general ledger module. This training led to an increase in their knowledge to effective use of GIFMIS for capturing, processing and storing financial information. In order to use the software to prepare payment and reconciliations a six (6) day training was organized for finance officers. End-users were trained on EFT, generation of cheques and reports by using the required software on the GIFMIS platform. To appreciate and understand their new roles, the audit staff were trained on how to use GIFMIS to aid their audit functions.

Top management of CAGD and directors were trained on the software. This led to an increase in the knowledge of their new roles and responsibilities, and influenced the training of regional directors on how to use GIFMIS for cash management and period end processing. CAGD staff were trained on P2P to enable them to appreciate its use on the GIFMIS platform. Incentives such as transportation allowance, snacks, notepads, pens and lunch were provided for the users to encourage their attendance. Although the training sessions took place on specific days and had attractive incentives end-users did not practice afterwards, which in turn led to forgetting what they had been taught. They complained that there were inadequate computers to use for practice.

The expected benefits of GIFMIS were: strengthen internal controls across government; complete and timely access to information to support decision making by heads of departments which will improve service delivery; enhanced financial and fiscal reporting; improved planning and budgeting; and effective cash management through TSA. Other

benefits included an improvement in the cash and treasury management system, provision of an accurate and timely match between disbursements and the availability of revenue; having an efficient and effective budget preparation; execution, monitoring and evaluation mechanism; and using the required modules to provide for the ability to budget for, track and monitor projects and grants by using the project accounting functionality through the chart of accounts. Studies have argued that the use of an IFMIS is to provide: effective planning, budgeting and financial analysis, which is built on accurate data, monitoring performance, increased productivity; a reduction in documentation or manual data processes; enhancement in transparency; and communication (Ayyad, 2009).

The implementation of GIFMIS thus sought to address problems faced in the previous PFM systems. Lack of integrating between budget preparation and execution systems; inadequate budgetary controls; lack of interface between various PFM systems across departments and regional offices of CAGD; undue delays in processing transactions due to cumbersome manual processes; poor record keeping on public financial transactions; lack of reliable data for effective fiscal transactions; weak accounting and fiscal reporting systems; lack of transparency in budget execution; and finally delays in financial reporting. Hendriks (2012b) also noted that a major benefit related to the use of IFMIS is its impact on corruption through the increase in the detection of risk. These benefits led to the use of GIFMIS in Ghana and the varying strategies directed towards the use of the software. These were shared among both top management end-users and lower level management end-users. Norms are informal rules of conduct that are present within a group, shared and sustained by their approval (Elster, 1989).

E-government studies have argued that there exists a significant relationship between organizational culture and employee attitudes towards the use of IS (Callen *et al.*, 2007). Organizational culture is also considered a significant factor to consider when adopting information systems, thus successful adoption or failure is dependent on the culture existing in the organization (Jackson, 2011). CAGD had inadequate structures in place to respond to end-users query and problems in real time. The use of GIFMIS therefore influenced the establishment of specific teams that were aimed at providing support services to end-users in a timely manner; this was as a result of the awareness of public sector culture.

The teams were the CCPMT, ISS, advocates and help desk. These teams were trained to communicate and disseminate relevant information on the software to both end-users and stakeholders and ensured their commitment to the GIFMIS project. The teams continued to develop strategies and address issues as they came up through communication and feedback. The advocates were trained on the various modules to provide immediate support to users at the departments and agencies. This led to the advocates providing the necessary help to end-users. However, as a result of inadequate practice after training by the end-users the advocates ended up performing some of the responsibilities of end-users. This has resulted in complaints by the advocates, and the end-users refusal to practice what they were trained on.

The help desk officers were to provide instant feedback on any problem encountered by end-users and further communicate the challenges with the other teams. Hence, they were trained to provide technical feedback to end-users. Their training comprised of temporary help desk solutions, how to login and how to track end-user complaints. To enable easy feedback, the officers of the help desk were skilled to provide temporary solution to end-users. The help

desk officers caused the CCPMT to enforce controls on the work processes, monitor performance and also take corrective actions. In addition to the above the teams identified the root cause analysis of end-user challenges based on the calls received from the help desk. They also identified configuration changes and solved end-user issues and finally identified reasons for inadequate performance against expected objectives; and thus could take corrective measures. This therefore influenced the establishment of a defined workflow for help desk calls.

The work ethics of CAGD towards information systems were as a result of the previous PFM systems that have been used over time. The behaviour of end-users shaped the previous PFM information systems. This was because they worked in different and independent departments therefore the PFMs used were not centralized, and every department and agency had their own computers or information systems. To this effect end-users were used to working on independent information systems which affected their information sharing and communication culture. The previous PFM information systems also required the use of manual systems alongside the computer systems; data entry was also entered once in a month and payroll vouchers were physically transported to CAGD and manually cross checked.

This resulted in delays in salary payment, an increase in 'ghost names', lack of transparency and inaccuracy in financial reports. Therefore, with the aim of changing this work ethic the use of GIFMIS brought with it a re-engineered process that required totally different ways of performing functions at CAGD. There was now a need to change the work ethics of end-users because GIFMIS use brought about a centralized data registry, daily data entry, new training and automated salary payment vouchers. The teams mentioned in sub-section 7.3.7 were established to help change the work ethics of end-users at CAGD.

This work ethic also influenced end-user behaviour towards the software. End-users had an attitude of apathy towards the information systems; they lacked commitment to the software. They thought GIFMIS would fail just like other PFM information systems so there was no need for individual commitment to make the project succeed. They also felt the software was to replace their jobs. This attitude caused their unwillingness to practice after the training and hence some could not use the software efficiently and effectively. In an attempt to solve the issue of lack of commitment the CCPMT employed mediums such as radio and television discussion programs, distribution of stickers, website was updated and policy fairs were held. Most of the workshops and training sessions organized through media coverage, that is, significant management staff were interviewed and broadcasted on both radio and television on the use of GIFMIS. In Egypt on the other hand government mediums such as website, Facebook, YouTube and twitter were used to communicate with citizens while China mostly used social media (Abdelsalam *et al.*, 2013; Zheng, 2013). However, changing this culture was challenging because end-users expected the new software to conform to their old ways which was not the case.

7.5 The Consequences of implementation and use of E-government Financial Systems

This section provides a response to the third research question stated in Chapter 1 of the study by presenting a discussion on the enablers and constraints of the IS. Institutional pressures produce results that have specific consequences for public sectors, and their responses to these pressures can substantially affect the ability to achieve the potential of information systems (Heikkilä, 2013).

The issue of promoting the integrity of payroll vouchers on the IS was supported by national laws and refusal to validate by the authorized individuals attracted sanctions by law. Thus, all authorized individuals validated payroll vouchers and personnel ensured that they were validated through the receipt of SMS. This created a sense of adhering to the responsibilities identified during the implementation and subsequently the use of the IS. Normative effects caused CAGD to put specific required national and international standards in place for both implementation and use of the software. Awareness of public sector culture by management enabled them to put up specific structures that were directed at curbing or controlling culture-cognition. Such structures included help desk personnel, CCPMT, ISS and advocates.

One constrain was the inadequacy of financial laws to support the IS. The inadequacy of the law that affected the implementation and use of the software led to both users and implementation teams to depend on the laws that affected the previous PFM. Some end-users were not aware of the laws that influenced the IS, and the standard requirement (provisions of computers and network stability) were not met, and this led to end users' inability to efficiently practice after the training. Attitude towards legacy systems and other cultural-cognitive related issues led to delay in data migration and inadequate responsibility towards the new software.

7.6 Factors that Helped GIFMIS Use

The analysis of the research findings shows that specific concepts aided the satisfactory implementation of GIFMIS. Strong political support, for example, is very essential for the success of any E-Government innovation. Thus the success of an E-Government innovation is dependent on the level of political support the initiative has or is enjoying, hence inadequate political support from leaders coupled with inadequate rules, policies, laws,

regulations and legislations can be detrimental to the success of any E-Government initiative (Dada, 2006). Even though GIFMIS is enjoying strong political support there is still a need for new laws, regulations and legislations to guide the GIFMIS since the existing ones were for the legacy IS.

A high level of administrative support includes good organizational skills and effective communication intended to help maintain the values of not only stakeholders but also the vision of any E-Government initiative (Fuchs & Horak, 2008). A strong local technical team who is conscious of past PFM systems is also essential, together with regular donor reviews and technical advice. Reviews by external agencies are sent by DPs.

7.7 Reflections on the Use of the New Institutional Theory

This section presents the reflections of the researcher on the use of the new institutional theory in the study as the fundamental theory for this study. The employment of the new institutional theory enabled the researcher to focus more on the social aspect of the implementation and use of GIFMIS. For these reasons the researcher did not employ a deterministic theory since the main focus of the study was to identify the emergent environmental factors and how they shape or influence information system implementation and use.

This influenced the researcher's choice of the new institutional theory (Scott, 2008), a non-deterministic theory, as the theoretical lens to understand how the institutional environment affects e-government financial systems. Employing the new institutional theory enabled the researcher to identify the institutional environmental factors that affected the implementation and use of GIFMIS at CAGD. The theory enabled the researcher to understand how the

institutional factors affected the implementation and use of GIFMIS. However, these pillars though presented differently are interrelated and therefore can overlap in an organization.

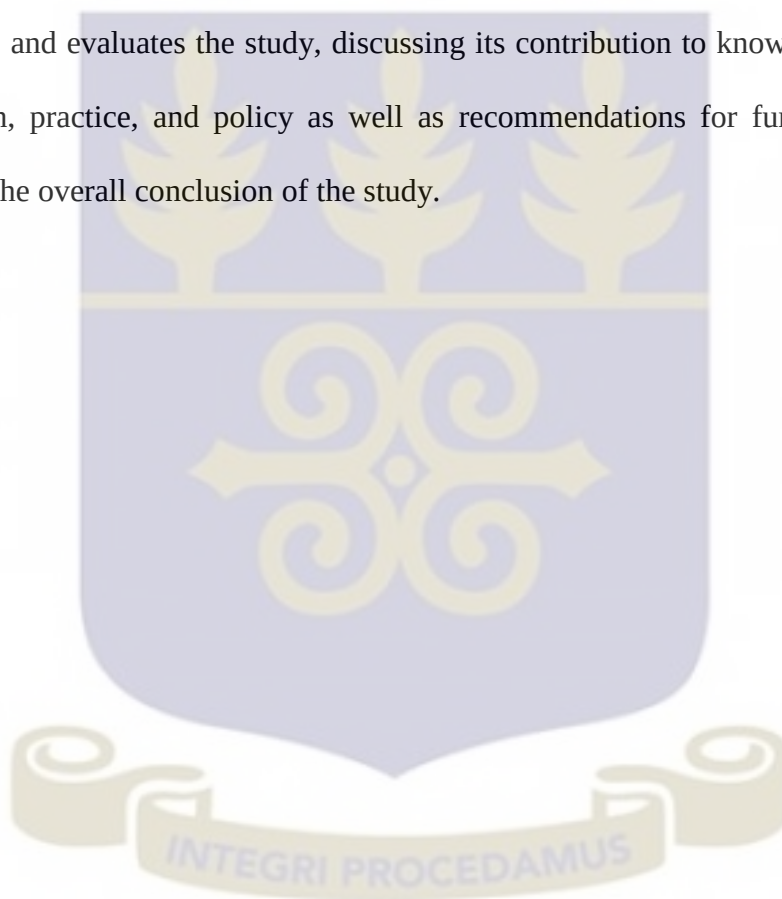
The new institutional theory also informed the researcher's data collection, analysis and discussions. The major limitation of the theory was that it limited the researcher's consideration of the environment that was external to CAGD and its effects on GIFMIS. Knowledge of the institutional environment enables practitioners to understand and take into consideration the regulatory, normative and institutional factors that affect IS. This study unearthed the fact that the institutional pillars within the theory are closely related to the field of an interpretative qualitative case study. Thus, it was a challenge to independently separate the issues in this study as related to pillars in the theory.

Much of the studies in e-government financial systems in developing countries used deterministic theories (Heeks & Stanforth, 2007b; Nam, 2014; Standforth, 2006; Yildiz, 2007). The problem, however, with deterministic theories is that they seem to confirm already known facts about the use of technologies and these known facts appear to be more of the adoption and diffusion factors (Ajzen, 1985; Davis, Bagozzi, & Warshaw, 1989). Furthermore deterministic theories assume that the environment of organizations does not shape the use of technology, but rather technology shapes organizational and societal behaviour (Leonardi, 2009).

7.8 Summary

This chapter discussed the analyses of the research findings and the literature reviews in order to address the research question outlined in the introductory chapter. Each research question in the introductory chapter was formed around the institutional theory and force

field analysis hence the discussion. The chapter began by discussing the institutional effects (regulatory, normative and cultural-cognitive) and consequences of GIMIS implementation based on abstraction and generalizations of the emergent issues. This was followed by a discussion on the institutional effects on the use and its consequences grounded on the abstraction and generalization of the emergent issues. The chapter ended by reflecting on the use of the new institutional theory in e-government financial systems. The next chapter summarises and evaluates the study, discussing its contribution to knowledge, implication for research, practice, and policy as well as recommendations for further research and presenting the overall conclusion of the study.



CHAPTER EIGHT

SUMMARY AND CONCLUSION

8.1 Introduction

The previous chapter discussed the analysis of the empirical findings and addressed the research questions in relation to the literature. The concluding chapter is a summary of the study and interprets its contribution to knowledge, the research implications and offers recommendations. It also presents the limitations of the research and the overall conclusion of the study.

8.2 Review of Research Purpose and Questions

The study began with the research purpose to understand the institutional effects (regulatory, normative and cultural-cognitive) on of implementation and use of E-Government financial systems and the consequences through the lens of an interpretive case study as stated in Chapter 1. To achieve the research purpose and provide solutions to the research problems, the study addressed the following questions:

1. How does the institutional environment of a developing country shape E-government financial systems implementation?
2. How does the institutional environment shape E-government financial systems use in a developing country?
3. What are the consequences of implementation and use of E-government financial systems in a developing country?

The research questions were addressed in the following ways:

- Chapter 2 reviewed the prevailing literature on E-Government financial systems in developing countries and institutional effects. The literature revealed that studies in E-Government financial system in developing countries focused more on the challenges and failure and paid less attention to the implementation and use. Furthermore, the chapter showed that theories that are often used in developing countries' E-Government financial systems research paid less attention to the institutional environment that shapes such information systems.
- Chapter 3 deliberated and chose the new institutional theory as the theoretical lens of the study; and to address the limitation of the theory the force field analysis was used. The theory was chosen in order to analyse and examine how the institutional pillars or environment shape E-Government financial systems implementation and use.
- Chapter 4 discussed the research methodology based on the three commonly deliberated research paradigms in IS: interpretive, positivist and critical theory in terms of their ontological, epistemological and methodological stance and selected the interpretive approach as the preferred paradigm for this study. Chapter 4 further detailed how the researcher gained access to the case organization (CAGD) and the techniques employed in the data collection and analysis.
- Chapter 5 reported the empirical findings of the research. The chapter presented an overview of the case organization (CAGD) within the context of Ghana. This chapter provided a discussion of IFMIS, and GIFMIS. It further narrated the implementation and use of GIFMIS.

- Chapter 6 analysed the findings of the study using the new institutional theory as a lens and force field analysis in order to unearth the dominant themes and concepts within each pillar and its effects in response to the research questions because they were structured around the theories. The chapter performed an analysis on the empirical findings on how the case implemented and used GIFMIS. The analysis of findings showed the effect that the institutional factors had on the implementation and use of GIFMIS at CAGD and the subsequent consequences in response to the research questions. The regulatory effect includes the activation of the validation function, defined responsibilities, sanctions and separation of duties. The normative effect include standards such as training, phased implementation approach, teams, change management and capacity building, while the cultural cognitive effects were work ethics, apathy, attitude toward legacy systems, information sharing culture, delays and resistance to change.
- Chapter 7 discussed the analysis of the findings. The chapter specifically addressed the research questions in light of the literature review and theoretical foundation in Chapter 2 and Chapter 3 respectively, and the empirical findings in Chapter 5 as well as with the subsequent analysis in Chapter 6. In all, the chapter argued that the implementation and use of GIFMIS was inevitably affected by the institutional factors. The chapter also argued the need for developing countries to consider the effects of the institutional environment on E-Government financial systems, especially due to the high record of failure involved in implementing such information systems. This chapter presented higher level of abstraction with the aim of answering the research questions and linking each theme with literature.

8.3 Contribution to Knowledge

According to Walsham (1995), there are four main ways by which interpretive research contributes to knowledge in information systems research: development of concepts, generation of theory, offering of rich insight, and drawing of specific implications. From this perspective, the study did not develop new concepts. Although the study did not develop any concepts it applied the new institutional theory in the study of E-Government financial systems within the field of information systems by offering rich insight, and draws specific implications. Furthermore, the interpretive research does not consider a statistical generalization from a sample population, but it rather provides a theoretical generalization which is the explanation of a particular empirical interpretive information system's phenomenon in other organizations and context in the future (Walsham, 1995). To this effect the contribution of this study to knowledge should be considered from the point of view of theoretical generalization and application in a novel way.

8.4 Contribution to Theory

This study contributes to theory by applying the new institutional theory in the new context of E-government financial systems (IFMIS). Aside the application of the theory in a new context, the study has also contributed to theory in a unique way because it employed the new institutional theory to analyse the regulatory, normative and cultural-cognitive effects on the implementation and use of IS from the public sector perspective. This study also employed force field analysis to determine the enabling and constraining effects of the institutional environment. Thus, the two theories are useful and can be applied to analyse how the elements of the public sector environment shape the implementation and use of re-engineered E-government financial systems.

The contribution of interpretive case study in the field of IS research can be affirmed when the researcher generated or applied a new theory or concept (Myers & Avison, 1997) though such applied theories do not have to be new. Myers (1997b) noted that a researcher can claim contribution to a theory by applying a well-known theory in IS or from another disciplinary area in a novel way. Furthermore, in order to examine a phenomenon or an interpretative case study, researchers employ theories as a lens (Silva & Hirschheim, 2007). In addition to the above theory-informed story telling is mostly embraced by interpretive researchers (Sarker, Sarker, & Sidorova, 2006).

8.5 Offering of Rich Insight

This study's offering of rich insight is seen from the case of CAGD's implementation and use of GIFMIS. While some studies have focused on the challenges and failure of information systems in developing countries (Dada, 2006; Heeks, 2002b), this study is focused on the implementation and use of e-government financial (GIFMIS) system from a developing country perspective. It offers a deep understanding into the regulatory, normative and cultural-cognitive effects of the implementation and use of e-government financial systems from the perspective of a developing country. The study further analysed the consequences of the institutional environment on the implementation and use of GIFMIS. The study brought to light the fact that key institutional factors played significant roles in the implementation and use of the software. It also unearthed the challenges, expected benefits and strategies employed in the implementation and use of the information system at CAGD. This study thus offers a deep and detailed understanding of E-Government financial systems by focusing on a specific project with a specific context (GIFMIS-CAGD). It has been argued that an interpretive case study seeks to understand the underlying reasons that shape

views from different perspectives (Walsham, 1993), thus it seeks to provide some comprehension of the context of an information system and a process in which the IS either influences or is influenced by the context that it exists. This study has also helped explain the social dynamics of the implementation and use of E-Government financial systems from the context of a developing country.

8.6 Implications of the Study

This study offers a number of implications for research, practice and policy.

8.6.1 Implications to Research

This study presents a number of research implications. This study brings to light the need for IS researchers to consider the broader institutional context when studying the implementation and use of E-Government financial systems and E-Government as a whole. Researchers should not limit their focus on the phenomenon but also on the context within which the information system is being implemented and used. The application of the new institutional theory will force a researcher to pay less attention on the technical aspect of E-Government financial systems. However, in situations where there is a need for researchers to look at both the technical and contextual aspects of such IS, the new institutional theory can be combined with other theories.

8.6.2 Implications for Practice

This study also presents a number of practical implications for DP, developing countries and PICs. With respect to DP, public sectors and PICs, there is a need to consider training end-users on general ICT skills before, during and after implementation. This training should include working with common ICT tools. Thus, they should not assume end-users are

computer literates. There is a need for evaluation and assessment to determine the levels of knowledge and skill end-users have, and the impact and efficiency of such training. The provision of incentives are major drivers during and after the training sessions. Also end-users should not only be involved in the use of the information system but also the implementation.

Developing countries need to consider the modules that work best in their environment. This will therefore enable them to select the best module that suits their activities and also activate the functions that will improve capturing, processing, storage and dissemination of financial information. DP should also ensure that (normative) international standards become an inevitable requirement for implementation and use of E-Government financial systems (IFMIS). For instance, the standard of a phased implementation process led to effective implementation GIFMIS in Ghana.

8.6.3 Implication to Policy

In terms of implication to policy, both DP and developing countries must adequately analyse both national and international legal frameworks that have implications on the implementation and use of such IS. By doing this, DP and developing countries will know the financial laws that affect the software and for those that do not, this will bring to light a need for additional laws before beginning with the implementation and use. This implies the need for a thorough review of existing national and international laws. This review and requirement analysis of the laws should go beyond the technical to involve contextual implications on the implementation and use of the software.

To successfully conduct the review and requirement analysis of the laws that affect changes there is a need for developing countries to have flexible and less bureaucratic processes. In addition, laws that guide E-Government financial systems should be known to all end-users. This can be done in the form of documents (manuals, fliers, pamphlets) and through the use of various communication media (television, radio, newspapers, and internet). Furthermore, implementation of software to handle financial information should have in-built functions that monitor and evaluate performance. To avoid security breaches in the new IS, end-users need to be aware of the consequences of sharing passwords and user names.

Specific standards (normative) that are international and national should be considered and complied with because it affects the implementation and use of the software. There should not only be adequate training for users and teams, but enough computers should be made available to ensure end-users practice after implementation. There is also a need to consider the existing culture-cognitive of the sector and find out if there should be changes or not. Policy makers in developing countries should also consider choosing among modules that suit their environment and job requirements.

8.7 Limitations of the Research

Although methodologically this study concentrated on a single case and thus focused on a specific phenomenon within a particular developing country, nonetheless, from the interpretative case study perspective the findings can be related to IS projects that share the same characteristics in developing countries. Furthermore, even though the findings of this study are limited to the regulatory, normative, and culture-cognitive factors, its related enablers and constraints are a reflection of the consequences. The use of the new institutional

theory with other theories might bring to light different findings as related to the technical aspects of such IS projects.

8.8 Recommendations for Future Research

This study brings to light several possibilities for future research. It is, however, clearly impossible to outline every area that is worthy for future research. The following has been found to be practically interesting, relevant and significant for future research.

- The contribution of this study lies within the scope of the use of the new institutional theory and force field analysis to study the effects of the institutional environment on the implementation and use of GIFMIS and the consequences. Future research can extend this study by paying more attention to internal complexities that are beyond the scope of the applied theory and thus consider the technical aspects.
- Future studies should consider other MDAs and MMDs to unearth the institutional factors within a different context because this study focused on CAGD only.
- Other non-deterministic and contextual theories can be employed in future research to study the implementation and use of E-Government financial systems in the public sectors of developing countries. This will help unearth the environmental factors that affect the implementation and use of not only IFMIS but also other IS.

8.9 Conclusion

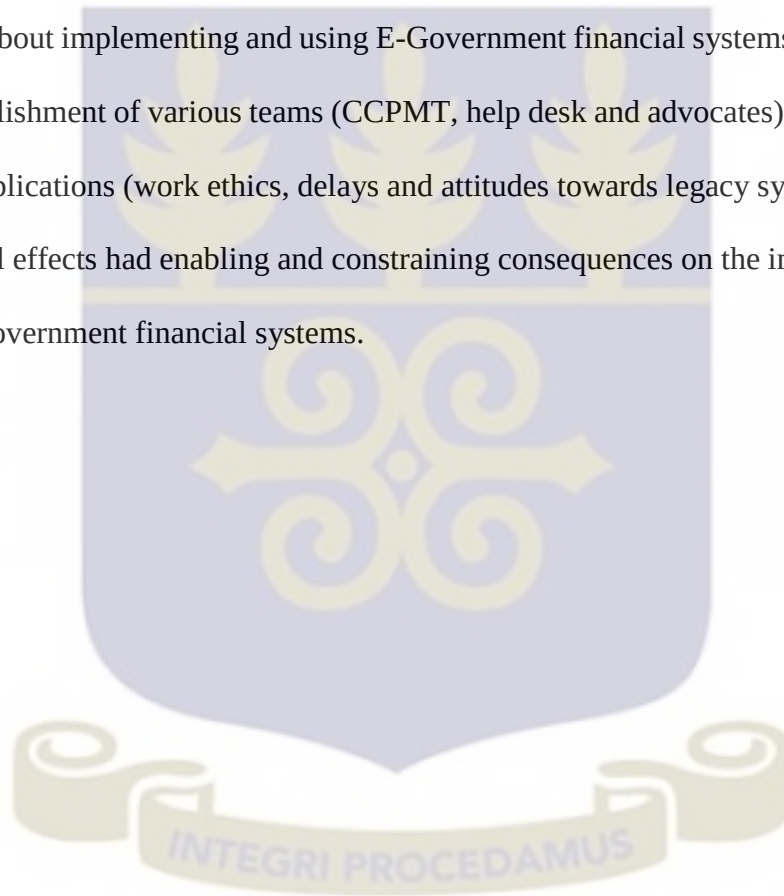
In the beginning of this study the researcher set out to understand the effects of the institutional environment on the implementation and use, and subsequently the consequences on a particular E-Government financial system (GIFMIS) within a specific context (CAGD). This study, therefore traced the background of the case (CAGD) with the aim of identifying the previous E-Government information systems that have been implemented and used at CAGD. This brought to light specific issues that influenced the implementation and use of IFMIS in Ghana and the consequences.

Previous research on E-Government financial systems focused more on the challenges and failure of the software. This brings to bare a consideration of the implementation use and consequences of E-Government financial systems. Although various theories have been used to study this phenomenon, most of the studies employed deterministic theories which were unable to account for institutional and contextual effects on the phenomenon. Studies that employed a non-deterministic theory focused more on actors.

This study employed the interpretive case study approach in response to the limitation in literature with respect to the new institutional theory and force field analysis to examine and understand E-Government financial systems in Ghana, with the aim of answering the research questions in Chapter 1. The study offers rich insight into the institutional environment and how it affects E-Government financial systems and the consequences of the effects on the implementation and use of the software.

In summary, the study found that the implementation and use of E-Government financial systems has affected the institutional environment (regulatory, normative and cultural-

cognition). There were both national and international laws that affected the implementation and use and these laws required enforced compliance by both management and non-management end-users. The normative pillar included both national and international standards that resulted in various activities (for example, the phased approach, training, capacity building and working with a common technological tool, additional computers and servers) that affected both the implementation and use of the software. The cultural-cognitive pillar was about implementing and using E-Government financial systems at CAGD that led to the establishment of various teams (CCPMT, help desk and advocates) to help control the cultural implications (work ethics, delays and attitudes towards legacy systems). Finally the institutional effects had enabling and constraining consequences on the implementation and use of E-Government financial systems.



REFERENCES

- 'Hakeem Ishola, M. (2012). Fighting corruption: an expectation augmented approach. *Humanomics*, 28(2), 133-147.
- Abdelsalam, H. M., Reddrick, C. G., Gamal, S., & Al-shaar, A. (2013). Social Media in Egyptian Government Websites: Presence, Usage, and Effectiveness *Government Information Quarterly*, 30, 406-416.
- Abdullah, N. S., Sadiq, S., & Indulska, M. (2010). *Emerging challenges in information systems research for regulatory compliance management*. Paper presented at the Advanced information systems engineering.
- Adhikari, P., Kuruppu, C., & Matilal, S. (2013). *Dissemination and institutionalization of public sector accounting reforms in less developed countries: A comparative study of the Nepalese and Sri Lankan central governments*. Paper presented at the Accounting Forum.
- Ajzen, I. (1985). *From intentions to actions: A theory of planned behavior*: Springer.
- Almarabeh, T., & AduAli, A. (2010). A General Framework for E-Government: Definition Maturity Challenges, Oppotunities, and Success. *European Journal of Scientific Research*, 39(1), 29-42.
- Altameem, T., Zairi, M., & Alshawi, S. (2006). *Critical success factors of e-government: a proposed model for e-government implementation*. Paper presented at the Innovations in Information Technology, 2006.
- Analoui, F., & Fitzsimons, V. G. (2009). A troubled relationship: corruption and reform of the public sector in development. *Journal of Management Development*, 28(6), 513-521.
- Andersen, K. V. (2006). E-government: Five key challenges for management. *Electronic Journal of e-Government*, 4(1), 1-8.
- Andoh-Baidoo, F. K., Babb, J. S., & Agyepong, L. (2012). e-Government readiness in Ghana: a SWOT and PEST analyses. *Electronic Government, an International Journal*, 9(4), 403-419.
- Arvidsson, V., Holmström, J., & Lyytinen, K. (2014). Information systems use as strategy practice: A multi-dimensional view of strategic information system implementation and use. *The Journal of Strategic Information Systems*, 23(1), 45-61.
- Ask, A., & Grönlund, Å. (2008). Implementation challenges: competing structures when new public management meets eGovernment *Electronic government* (pp. 25-36): Springer.
- Atsu, M. Y., Andoh-Baidoo, F. K., Osatuyi, B., & Amoako-Gyampah, K. (2010). An exploratory study of the contextual factors that influence success of ICT projects in

- developing nations: A case study of a telecommunications company in Ghana. *Journal of Information Technology Case and Application Research*, 12(3), 56-81.
- Avgerou, C. (2001). The significance of context in information systems and organizational change. *Information Systems Journal*, 11(1), 43-63.
- Ayyad, M. (2009). *Using the Actor-Network Theory to interpret e-government implementation barriers*. Paper presented at the Proceedings of the 3rd international conference on Theory and practice of electronic governance.
- Barley, S. R., & Tolbert, P. S. (1997). Institutionalization and structuration: Studying the links between action and institution. *Organization Studies*, 18(1), 93-117.
- Baskerville, R. (1991). Risk analysis: an interpretive feasibility tool in justifying information systems security. *European Journal of Information Systems*, 1(2), 121-130.
- Belanche, D., Casaló, L. V., & Flavián, C. (2012). Integrating trust and personal values into the Technology Acceptance Model: The case of e-government services adoption. *Cuadernos de Economía y Dirección de la Empresa*, 15(4), 192-204.
- Benito, B., Brusca, I., & Montesinos, V. (2007). The harmonization of government financial information systems: the role of the IPSASs. *International Review of Administrative Sciences*, 73(2), 293-317.
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, 27(3), 264-271.
- Blackburn, K., & Forgues-Puccio, G. F. (2009). Why is corruption less harmful in some countries than in others? *Journal of Economic Behavior & Organization*, 72(3), 797-810.
- Blackburn, K., & Forgues-Puccio, G. F. (2010). Financial liberalization, bureaucratic corruption and economic development. *Journal of International Money and Finance*, 29(7), 1321-1339.
- Bonsón-Ponte, E., Escobar-Rodríguez, T., & Flores-Muñoz, F. (2006). Online transparency of the banking sector. *Online Information Review*, 30(6), 714-730.
- Borins, S. (2002). On the frontiers of electronic governance: A report on the United States and Canada. *International Review of Administrative Sciences*, 68(2), 199-211.
- Bretschneider, S. (1990). Management information systems in public and private organizations: An empirical test. *Public Administration Review*, 536-545.
- Broadbent, J., & Guthrie, J. (2008). Public sector to public services: 20 years of “contextual” accounting research. *Accounting, Auditing & Accountability Journal*, 21(2), 129-169.

- Butler, T. (2011). Compliance with institutional imperatives on environmental sustainability: Building theory on the role of Green IS. *The Journal of Strategic Information Systems*, 20(1), 6-26.
- Bwalya, K. J., (2009). Factors affecting adoption of e-government in Zambia. *The Electronic Journal of Information Systems in Developing Countries*, 38.
- Bwalya, K. J., & Healy, M. (2010). Harnessing e-government adoption in the SADC region: a conceptual underpinning. *Electronic Journal of e-Government*, 8(1), 23-32.
- Byrne, E., & Sahay, S. (2007). Generalizations from an interpretive study: The case of a South African community-based health information system: Reviewed article. *South African Computer Journal*, 38, 8-19.
- Callen, J. L., Braithwaite, J., & Westbrook, J. I., (2007). Cultures in hospitals and their influence on attitudes to, and satisfaction with, the use of clinical information systems. *Social Science and Medicine*, 65, 635-639.
- Campbell, D. J., (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, 32(3), 946-967.
- Campbell, D. E., (2009). *Choosing democracy*: Allyn and Bacon.
- Caperchione, E., & Lapsley, I. (2011). Making comparisons in government accounting. *Financial Accountability & Management*, 27(2), 103-106.
- Carpenter, V. L., & Feroz, E. H. (2001). Institutional theory and accounting rule choice: an analysis of four US state governments' decisions to adopt generally accepted accounting principles. *Accounting, organizations and society*, 26(7), 565-596.
- Carroll, G. R., & Huo, Y. P. (1986). Organizational task and institutional environments in ecological perspective: Findings from the local newspaper industry. *American Journal of Sociology*, 838-873.
- Caudle, S. L., Gorr, W. L., & Newcomer, K. E. (1991). Key information systems management issues for the public sector. *MIS Quarterly*, 171-188.
- Cavalheiro, G. M. d. C., & Joia, L. A. (2014). Towards a heuristic frame for transferring e-government technology. *Government Information Quarterly*, 31(1), 195-207.
- Cavaye, M. A. L. (1996). Case Study Research: A multi-faceted research approach for IS. *Information Systems Journal*, 6, 227-242.
- Chandran, R., Krishnan, P., & Nguyen, K. (2011). Wildlife Enforcement Monitoring System (WEMS): A solution to support compliance of multilateral environmental agreements. *Government Information Quarterly*, 28(2), 231-238.

- Chatterjee, D., Grewal, R., & Sambamurthy, V. (2002). Shaping up for E-commerce: Institutional Enablers of the Organizational Assimilation of Web Technologies. *MIS Quarterly*, 26(2), 65-89.
- Chen, Y.C., (2012). A comparative study of e-government XBRL implementations: The potential of improving information transparency and efficiency. *Government Information Quarterly*, 29(4), 553-563.
- Chen, W. & Bennett, D. (2013). Gaining social values of wireless technology: An interpretive case study in the healthcare institutional context. *International Journal of information management*, 33(5), 802-809.
- Chuttur, M. (2009). Overview of the technology acceptance model: Origins, developments and future directions.
- Ciborra, C. (2005). Interpreting e-government and development: Efficiency, transparency or governance at a distance? *Information Technology & People*, 18(3), 260-279.
- Cîrstea, A. (2014). The Need for Public Sector Consolidated Financial Statements. *Procedia Economics and Finance*, 15, 1289-1296.
- Coleman, S. (2005). African e-governance-Opportunities and Challenges. *Commission for Africa*, 1-7.
- Colesca, S. E., & Dobrica, L. (2008). Adoption and use of e-government services: The case of Romania. *Journal of Applied Research and Technology*, 6(03).
- Collier, P. (2000). How to reduce corruption. *African Development Review*, 12(2), 191-205.
- Connolly, C., Reeves, E., & Wall, A. (2009). Isomorphism: An Explanation for the Popularity of Public-Private Partnerships? *The Irish Accounting Review*, 16(1), 1-19.
- Conrad, L., & Guven Uslu, P. (2012). *UK health sector performance management: Conflict, crisis and unintended consequences*. Paper presented at the Accounting Forum.
- Corriss, L. (2010). *Information security governance: Integrating security into the organizational culture*. Paper presented at the Proceedings of the 2010 Workshop on Governance of Technology, Information and Policies.
- Covaleski, M. A., & Dirsmith, M. W. (1988). An institutional perspective on the rise, social transformation, and fall of a university budget category. *Administrative science quarterly*, 562-587.
- Creswell, W. J. (1994). *Research Design: Qualitative and Quantitative Approaches*. Thousand Oaks, CA: Sage Publications.
- Crotty, M. (1998). *The Foundation of Social Research*. London: Sage Publications.
- Cukier, W., Shortt, D., & Devine, I. (2001). Gender and Information Technology: Implications of Definitions. *Journal of Information Systems Education*, 13(1), 7-15.

- Currie, W., (2008). *Institutionalization of IT Compliance: A Longitudinal Study*. Paper presented at the International Conference of Information Systems (ICIS), ICIS 2008 Proceedings.
- Currie, W., (2009). Contextualising the IT artefact: towards a wider research agenda for IS using institutional theory. *Information Technology & People*, 22(1), 63-77.
- Currie, W. L. Finnegan, D. J. & Gozman, D. (2011). Accounting information systems as institutional carriers: a case study of regulatory compliance in UK Asset Management Houses.
- Dada, D. (2006). The failure of e-government in developing countries: A literature review. *The Electronic Journal of Information Systems in Developing Countries*, 26.
- Datta, P. (2011). A preliminary study of ecommerce adoption in developing countries. *Information Systems Journal*, 21(1), 3-32.
- Davis, F. D. (1989). "Perceived usefulness, perceived ease of use, and user acceptance of information technology". *MIS Quarterly*, 319-340.
- 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.
- de Renzio, P., Andrews, M., & Mills, Z. (2011). Does donor support to public financial management reforms in developing countries work? : Working Paper 329. London: Overseas Development Institute.
- Diamond, J. & Khemani, P. (1999). IFMIS in Developing Countries: IMF Paper 6 October 1999.
- Diamond, J. & Khemani, P. (2006). Introducing financial management information systems in developing countries. *OECD Journal of Budgeting*, 5(3), 97-132.
- DiMaggio, P. J. & Powell, W. W. (2000). The iron cage revisited institutional isomorphism and collective rationality in organizational fields. *Advances in strategic management*, 17, 143-166.
- DiMaggio, P. J. & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*, 147-160.
- Dimitrova, D. V., & Chen, Y.-C. (2006). Profiling the Adopters of E-Government Information and Services The Influence of Psychological Characteristics, Civic Mindedness, and Information Channels. *Social Science Computer Review*, 24(2), 172-188.
- Dorotinsky, W., & Matsuda, Y. (2002). Financial management reform in Latin America: an institutional perspective. *Revista del CLAD Reforma y Democracia*, 23, 1-15.

- Dwivedi, P., & Sahu, G. P. (2008). Challenges of E-government Implementation in India: SIGeGov Publications.
- Economides, A. A., & Terzis, V. (2008). Evaluating tax sites: an evaluation framework and its application. *Electronic Government, an International Journal*, 5(3), 321-344.
- Effah, J. (2013). Institutional Effects on E-payment Entrepreneurship in a Developing Country: Enablers and Constraints. *Information Tecnology for Development*, 1-15.
- El-Haddadeh, R., Weerakkody, V., & Al-Shafi, S. (2013). The complexities of electronic services implementation and institutionalisation in the public sector. *Information & Management*, 50(4), 135-143.
- Ellwood, S., & Newberry, S. (2007). Public sector accrual accounting: institutionalising neo-liberal principles? *Accounting, Auditing & Accountability Journal*, 20(4), 549-573.
- Elster, J. (1989). Social norms and economic theory. *The Journal of Economic Perspectives*, 99-117.
- Ensminger, J., & Knight, J. (1997). Changing social norms: Common property, bridewealth, and clan exogamy. *Current Anthropology*, 1-24.
- Estache, A., Goicoechea, A., & Trujillo, L. (2009). Utilities reforms and corruption in developing countries. *Utilities Policy*, 17(2), 191-202.
- Ezzamel, M., Hyndman, N., Johnsen, Å., Lapsley, I., & Pallot, J. (2007). Experiencing institutionalization: the development of new budgets in the UK devolved bodies. *Accounting, Auditing & Accountability Journal*, 20(1), 11-40.
- Fedorowicz, J., & Gogan, J. L. (2010). Reinvention of interorganizational systems: A case analysis of the diffusion of a bio-terror surveillance system. *Information Systems Frontiers*, 12(1), 81-95.
- Fraugier, J., & Sargeant, M. (1997). Sampling hard to reach populations. *Journal of Advanced Nursing*, 26, 760-797.
- Fuchs, C., & Horak, E. (2008). Africa and the digital divide. *Telematics and Informatics*, 25(2), 99-116.
- Giesler, M. (2012). How doppelgänger brand images influence the market creation process: Longitudinal insights from the rise of botox cosmetic. *Journal of Marketing*, 76(6), 55-68.
- Gil-Garcia, J. R., & Martinez-Moyano, I. J. (2007). Understanding the evolution of e-government: The influence of systems of rules on public sector dynamics. *Government Information Quarterly*, 24(2), 266-290.
- Gosain, S. (2004). Enterprise information systems as objects and carriers of institutional forces: the new iron cage? *Journal of the Association for Information Systems*, 5(4), 6.

- Gouscos, D., Georgiadis, P., & Sagris, T. (2000). From Introvert IT Systems to Extrovert e-Services: e-Government as an enabler for e-Citizens and e-Business—A Framework of Principles. e-2000 Conference. *Madrid, October*.
- Grimsley, M., & Meehan, A. (2007). e-Government information systems: Evaluation-led design for public value and client trust. *European Journal of Information Systems*, 16(2), 134-148.
- Guba, & Lincoln. (1994a). *Competing paradigms in qualitative research*. In N. K Dezin & Lincoln (EDs). *Handbook of qualitative research*: Thousand Oaks, CA: Sage.
- Guba, E. G & Lincoln, Y. S. (1994b). *Competing paradigms in qualitative research*. *Handbook of qualitative research*, 2, 163-194.
- György, A., Câmpeanu, E., & György, A. C. (2011). Financial strategies for the Romanian local public administration. *Transylvanian Review of Administrative Sciences*(32E).
- Hackney, R., Desouza, K. C., & Chau, P. (2008). eGovernment Strategies: ICT innovation in international public sector contexts. *The Journal of Strategic Information Systems*, 17(2), 73-74.
- Hassan, M. K. (2005). Management accounting and organisational change: an institutional perspective. *Journal of Accounting & Organizational Change*, 1(2), 125-140.
- Hauser, R. M. (1995). Better rules for better decisions. *Sociological Methodology*, 25, 175-184.
- Heeks, R. (2002a). E-Government in Africa: Promise and Practice. *Information Polity*, 7, 97-114.
- Heeks. (2002b). Information systems and developing countries: failure, success, and local improvisations. *The Information Society*, 18(2), 101-112.
- Heeks, R. (2003). Most e-government- for- Development Projects Fail: How can risks be reduced? *IDPM iGovernment*(14), University of Manchester, UK.
- Heeks, R. & Bailur, S. (2007). Analyzing e-government research: Perspectives, philosophies, theories, methods, and practice. *Government Information Quarterly*, 24(2), 243-265.
- Heeks, R. & Stanforth. (2007a). Understanding e-government project trajectories from an actor- network perspective. *European Journal of Information Systems*, 16, 165-177.
- Heeks, R. & Stanforth. (2007b). Understanding e-government project trajectories from an actor-network perspective. *European Journal of Information Systems*, 16(2), 165-177.
- Heidegger, M. (1962). Being and Time. 1927. *Trans. John Macquarrie and Edward Robinson*. New York: Harper.

- Heikkilä, J.-P. (2013). An institutional theory perspective on e-HRM's strategic potential in MNC subsidiaries. *The Journal of Strategic Information Systems*, 22(3), 238-251.
- Helbig, N., Ramón Gil-García, J., & Ferro, E. (2009). Understanding the complexity of electronic government: Implications from the digital divide literature. *Government Information Quarterly*, 26(1), 89-97.
- Hendriks, C. J. (2012). Integrated Financial Management Information Systems: Guidelines for Effective Implementation by Public Sector of South Africa. *SA Journal of Information Management*, 14(1), 9.
- Hermanson, D. R., Hill, M. C., & Ivancevich, D. M. (2000). Information technology-related activities of internal auditors. *Journal of Information Systems*, 14(s-1), 39-53.
- Hevner, R. A., March, S. T., Sudha, R., & Park, J. (2004). Design Science in Information Systems Research. *MIS Quarterly*, 28(1), 75-105.
- Hitt, M. A., Ahlstrom, D., Dacin, M. T., Levitas, E., & Svobodina, L. (2004). The institutional effects on strategic alliance partner selection in transition economies: China vs. Russia. *Organization Science*, 15(2), 173-185.
- Hosman, L. (2010). Policies, partnerships, and pragmatism: Lessons from an ICT-in-education project in rural Uganda. *Information Technologies & International Development*, 6(1), pp. 48-64.
- Hyndman, N., & Connolly, C. (2011). Accruals accounting in the public sector: A road not always taken. *Management Accounting Research*, 22(1), 36-45.
- Ibrahim, S. G., & Dauda, S. (2014). Globalization and the emergence of government integrated financial management system (GIFMIS): The Nigeria's experience. *Journal of Economics and International Business Research (JEIBR)*, 2(3), 27-47.
- Ifinedo, P. (2006). Towards e-government in a Sub-Saharan African country: Impediments and initiatives in Nigeria. *Journal of E-Government*, 3(1), 3-28.
- Irani, Z. (2002). Critical evaluation and integration of information systems. *Business Process Management Journal*, 8(4).
- Irani, Z., & Love, P. E. (2001). The propagation of technology management taxonomies for evaluating investments in information systems. *J. of Management Information Systems*, 17(3), 161-178.
- Irvine, H. (2011). From go to woe: How a not-for-profit managed the change to accrual accounting. *Accounting, Auditing & Accountability Journal*, 24(7), 824-847.
- Isaacs, S. (2007). Survey of ICT and Education in Africa: Angola Country Report.
- Jackson, S. (2011). Organizational culture and information systems adoption: A three-perspective approach. *Information and Organization*, 21, 57-83.

- Jaeger, P. T., & Thompson, K. M. (2003). E-government around the world: lessons, challenges, and future directions. *Government Information Quarterly*, 20(4), 389-394.
- Johnson, P., & Clark, M. (2006). *Mapping the terrain: an overview of business and management research methodologies*. London: Sage: In P. Johnson and M. Clark. (eds) Business and management research methodologies.
- Jones, S., Irani, Z., & Sharif, A. (2007). *E-government evaluation: Reflections on three organisational case studies*. Paper presented at the System Sciences, 2007. HICSS 2007. 40th Annual Hawaii International Conference on.
- Jonsson, S. (1991). 'Action research' in information systems research: Contemporary approaches and emergent traditions. North - Holland , Amsterdam: eds H-E Klein and R. A. Hirschheim.
- Kamar, N., & Ongondo, M. (2007). *Impact of e-Government on Management and use of Government Information in Kenya*. Paper presented at the World library and information congress: 73rd ifla general conference and council.
- Kaplan, B., & Maxwell, J. (1994). *Qualitative research methods for evaluating computer information systems*.
- Karanja, J. G., & Nganga, E. N. (2014). Factors Influencing Implementation of Intergrated Financial Management Information System in Kenya Government Ministries. *Research Journal of Finance and Accounting*, 5(7).
- Kardan, A. A., & Sadeghiani, A. (2011). Is e-government a way to e-democracy?: A longitudinal study of the Iranian situation. *Government Information Quarterly*, 28(4), 466-473.
- Khademian, A. M. (2009). A public administration moment: forging an agenda for financial regulatory reform. *Public Administration Review*, 69(4), 595-602.
- Khuong, L. N., Harindranath, G., & Dyerson, R. (2014). Understanding knowledge management software-organisation misalignments from an institutional perspective: A case study of a global IT-management consultancy firm. *International Journal of information management*, 34(2), 226-247.
- Kimwele, J. M. (2011). *Factors affecting effective implementation of intergrated financial management information systems (IFMIS) in government ministries in Kenya*. University of Nairobi.
- King, J. L., Gurbaxani, V., Kraemer, K. L., McFarlan, F. W., Raman, K. S., & Yap, C.-S. (1994). Institutional factors in information technology innovation. *Information systems research*, 5(2), 139-169.
- King'ara, J. G. (2012). *A framework for post-implementation evaluation of public sector financial information systems: a case of IFMIS in Kenya*. University of Nairobi.

- Klein, H. K., & Kleinman, D. L. (2002). The social construction of technology: Structural considerations. *Science, Technology & Human Values*, 27(1), 28-52.
- Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quaterly*, 23(1), 67-93.
- Klitgaard, R. (1988). *Controlling corruption*: Univ of California Press.
- Kor, A.-L., Orange, G., Elsheikh, Y., Cullen, A., & Hobbs, D. (2008). e-Government in Jordan: challenges and opportunities. *Transforming Government: People, Process and Policy*, 2(2), 83-103.
- Krauss, S. E. (2005a). Research Paradigms and Meaning Making: A Primer. *The Qualitative Report*, 10(4), 758-770.
- Krauss, S. E. (2005b). Research Paradogms and Meaning Making: A Primer. *The Qualitative Report*, 10(4), 758-770.
- Kumar, V., Mukerji, B., Butt, I., & Persaud, A. (2007). Factors for successful e-government adoption: a conceptual framework. *The electronic journal of e-Government*, 5(1), 63-76.
- Kvwasny, L., Greenhill, A., & Trauth, E. (2005). Giving Voice to Feminist Projects in MIS Research. *International Journal of Technology and Human Interaction*, 1(1), 1-18.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). The quality of government. *Journal of Law, Economics, and organization*, 15(1), 222-279.
- Lamb, R., & Kling, R. (2003). Reconceptualizing Users as Social Actors in Information Systems Research. *MIS Quaterly*, 27(2), 197-236.
- Latour, B. (1992). Where are the missing masses? The sociology of a few mundane artifacts. In *Shaping technology/building society*, eds. WE Bijker, and J. Law, 225-258: Cambridge, MA: MIT Press.
- Latour, B. (2005). Reassembling the social-an introduction to actor-network-theory. *Reassembling the Social-An Introduction to Actor-Network-Theory*, by Bruno Latour, pp. 316. Foreword by Bruno Latour. Oxford University Press, Sep 2005. ISBN-10: 0199256047. ISBN-13: 9780199256044, 1.
- Laudon, K. C., & Laudon, J. P. (2011). *Essentials of management information systems*: Pearson Upper Saddle River.
- Law, K. H., Lau, G., Kerrigan, S., & Ekstrom, J. A. (2014). REGNET: Regulatory information management, compliance and analysis. *Government Information Quarterly*.
- Lee, A. S. (1991). Integrating positivist and interpretive approaches to organizational research. *Organization Science*, 2(4), 342-365.

- Lee, A. S. & Baskerville, R. L. (2003). Generalizing generalizability in information systems research. *Information systems research*, 14(3), 221-243.
- Leonardi, P. M. (2009). Crossing the implementation line: The mutual constitution of technology and organizing across development and use activities. *Communication Theory*, 19(3), 278-310.
- Leonardi, P. M. (2013). Theoretical foundations for the study of sociomateriality. *Information and Organization*, 23(2), 59-76.
- Leonardi, P. M. & Barley. (2010). What's under construction here? Social action, materiality, and power in constructivist studies of technology and organizing. *The Academy of Management Annals*, 4(1), 1-51.
- Lewin, K. (1946). Force field analysis. *The 1973 Annual Handbook for Group Facilitators*, 111-113.
- Lewin, K. & Cartwright, D. (1952). *Field theory in social science: select theoretical papers*: Tavistock.
- Liguori, M., & Steccolini, I. (2011). Accounting change: explaining the outcomes, interpreting the process. *Accounting, Auditing & Accountability Journal*, 25(1), 27-70.
- Liu, H., Ke, W., Wei, K. K., Gu, J., & Chen, H. (2010). The role of institutional pressures and organizational culture in the firm's intention to adopt internet-enabled supply chain management systems. *Journal of Operations Management*, 28(5), 372-384.
- Martinsons, M. G., & Westwood, R. I. (1997). Management information systems in the Chinese business culture: An explanatory theory. *Information & Management*, 32(5), 215-228.
- Matavire, R., Chigona, W., Roode, D., Sewchurran, E., Davids, Z., Mukudu, A., & Boamah-Abu, C. (2010). Challenges of eGovernment project implementation in a South African context. *The Electronic Journal Information Systems Evaluation*, 13(2), 153-164.
- McAulay, L., Doherty, N., & Keval, N. (2002). The Stakeholder Dimension in Information Systems Evaluation. *Journal of Information Technology*, 17, 241-255.
- McGrath, K. (2005). Doing critical research in information systems: A case of theory and Practice not informing each other. *Information Systems Journal*, 85-101.
- McGrath, K., & Maiye, A. (2010). The role of institutions in ICT innovation: learning from interventions in a Nigerian e-government initiative. *Information technology for development*, 16(4), 260-278.
- Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 340-363.

- Miheso, S. C. (2013). *Adoption Of Integrated Financial Management Information System (ifmis) By The National Government In Kenya*. University of Nairobi.
- Minani, I. (2012). An Assessment of How Integrated Financial Management Information Systems Enhances Financial Decision Making at TANESCO and TTCL, Tanzania. *Information & Knowledge Management*, 2(3), 15-21.
- Mingers, J. (1992). *Technical, Practical and Critical Or- Past, Present and Future?*, Sage, London.
- Mingers, J. (2001). Combining IS research methods : Towards a pluralist methodology. *Information systems research*, 12(3), 240-259.
- Mir, M. Z., & Rahaman, A. S. (2005). The adoption of international accounting standards in Bangladesh: An exploration of rationale and process. *Accounting, Auditing & Accountability Journal*, 18(6), 816-841.
- Misuraca, G. (2007). *E-governance in Africa, from theory to action: A handbook on ICTs for local governance*: Idrc.
- Mizruchi, M. S., & Fein, L. C. (1999). The social construction of organizational knowledge: A study of the uses of coercive, mimetic, and normative isomorphism. *Administrative science quarterly*, 44(4), 653-683.
- Mobegi, H. N. (2009). *A Survey Of The Extent Of Implementation Of Integrated Financial Management Information System (Ifmis) As A Tool For Sustainable Financial Management In Government*. of University of Nairobi.
- Moon, M. J., & Welch, E. W. (2005). Same bed, different dreams? A comparative analysis of citizen and bureaucrat perspectives on e-government. *Review of Public Personnel Administration*, 25(3), 243-264.
- Morgan, G. (1980). Paradigms, metaphors, and puzzle solving in organization theory. *Administrative Science Quarterly*, 25(4), 605-622.
- Mugambi, C. K. (2011). *Factors influencing implementation of Integrated Financial Management Information System software: a case study of Kenya Institute of Education*. University of Nairobi, Kenya.
- Mundy, D., & Musa, B. (2010). Towards a framework for e-government development in nigeria. *Electronic Journal of e-Government*, 8(2), 148-161.
- Murugesan, S. (2007). *Going green with IT: your responsibility toward environmental sustainability*: Cutter Consortium.
- Myers, M. D. (1995). Dialectical hermeneutics: a theoretical framework for the implementation of information systems. *Information Systems Journal*, 5(1), 51-70.
- Myers, M. D. (1997a). *Qualitative research in information systems*. London: Sage Publications Ltd.

- Myers, M. D. (1997b). Qualitative research in information systems. *MIS Quarterly*, 241-242.
- Myers, M. D. (2009). Qualitative Research in business and management. London: Sage Publications.
- Myers, M. D. & Avison, D. (1997). Qualitative research in information systems. *Management Information Systems Quarterly*, 21, 241-242.
- Myers, M. D., & Klein, H. K. (2011). A Set of Principles for Conducting Critical Research in Information Systems. *MIS Quarterly*, 35(1), 17-36.
- Nam, T. (2014). Determining the type of e-government use. *Government Information Quarterly*, 31(2), 211-220.
- Ndou, V. (2004). E-government for developing countries: opportunities and challenges. *The Electronic Journal of Information Systems in Developing Countries*, 18.
- Newcomer, K. E., & Caudle, S. L. (1991). Evaluating public sector information systems: More than meets the eye. *Public Administration Review*, 377-384.
- Nkohkwo, Q., & Islam, M. S. (2013). Challenges to the Successful Implementation of e-Government Initiatives in Sub-Saharan Africa: A Literature Review. *Electronic Journal of e-Government*, 11(2).
- Nkwe, N. (2012). E-government: challenges and opportunities in Botswana. *International Journal of Humanities and Social Science*, 2(17), 39-48.
- Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the Internet worldwide*: Cambridge University Press.
- Ogembo, J. G., Ngugi, B. K., & Pelowski, M. (2012). Computerizing Primary Schools in Rural Kenya: Outstanding Challenges and Possible Solutions. *The Electronic Journal of Information Systems in Developing Countries*, 52.
- O'Reilly, C. A., & Chatman, J. A. (1996). Culture as social control: Corporations, cults, and commitment. *RESEARCH IN ORGANIZATIONAL BEHAVIOR*, VOL 18, 1996, 18, 157-200.
- Orlikowski, W. J. (2007). Sociomaterial practices: Exploring technology at work. *Organization Studies*, 28(9), 1435-1448.
- Orlikowski, W. J. & Barley, S. (2001). Technology and institutions: What can research on information technology and research on organizations learn from each other? *MIS Quarterly*, 25(2), 145-165.
- Orlikowski, W. J. & Baroudi, I. (1991). Studying information technology in organizations: research approaches and assumptions. *Information systems research*, 2(1), 1-28.

- Parker, R., & Bradley, L. (2000). Organisational culture in the public sector: evidence from six organisations. *International Journal of Public Sector Management*, 13(2), 125-141.
- Percy, J. P. (2007). Fifteen years of reformation—what next? *Managerial Auditing Journal*, 22(2), 226-235.
- Pérez, C. C., Bolívar, M. P. R., & Hernández, A. M. L. (2008). e-Government process and incentives for online public financial information. *Online Information Review*, 32(3), 379-400.
- Pettigrew, A. M. (1985). Contextualist research and the study of organizational change processes. *Research methods in information systems*, 53-78.
- Pettigrew, A. M. (1998). *Success and failure in corporate transformation initiatives*. Paper presented at the Information technology and organizational transformation.
- Pina, V., Torres, L., & Yetano, A. (2009). Accrual accounting in EU local governments: one method, several approaches. *European Accounting Review*, 18(4), 765-807.
- Pollitt, C. (1993). Managerialism and the public services: Cuts or cultural change in the 1990s?
- Powell, W. W., & DiMaggio, P. J. (2012). *The new institutionalism in organizational analysis*: University of Chicago Press.
- Richardson, H., & Robinson, B. (2007). The mysterious case of the missing paradigm: a review of critical information systems research 1991–2001. *Information Systems Journal*, 17(3), 251-270.
- Roberts, P. W., & Dowling, G. R. (2002). Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, 23(12), 1077-1093.
- Rodin-Brown, E. (2008). *Integrated financial management information systems: A practical guide*: USAID.
- Rogers, E. M. (2010). *Diffusion of innovations*: Simon and Schuster.
- Scholz Roland, W. & Olaf, T. (2002). *Embedded case study methods: Integrating quantitative and qualitative knowledge*: Sage.
- Rose-Ackerman, S. (1997). The political economy of corruption. *Corruption and the global economy*, 31.
- Rowlinson, S. (2001). Matrix organizational structure, culture and commitment: a Hong Kong public sector case study of change. *Construction Management & Economics*, 19(7), 669-673.
- Sang, S., Lee, J.-D., & Lee, J. (2010). E-government adoption in Cambodia: a partial least squares approach. *Transforming Government: People, Process and Policy*, 4(2), 138-157.

- Sarikas, O. D., & Weerakkody, V. (2007). Realising integrated e-government services" a UK local government perspective. *Transforming Government: People, Process and Policy*, 1(2), 153-173.
- Sarker, S., Sarker, S., & Sidorova, A. (2006). Understanding business process change failure: An actor-network perspective. *Journal of Management Information Systems*, 23(1), 51-86.
- Sarker, S., Xiao, X., & Beaulieu, T. (2013). Guest editorial: Qualitative studies in information systems: A critical review and some guiding principles. *MIS Quarterly*, 37(4), iii-xviii.
- Schauer, F. F. (1991). *Playing by the Rules: A Philosophical Examination of Rule-based Decision-making in Law and in Life*.
- Scholl, H. J. J. (2008). Discipline or interdisciplinary study domain? Challenges and Promises in Electronic Government Research *Digital Government* (pp. 21-41): Springer.
- Scott, W. R. (1987). The adolescence of institutional theory. *Administrative Science Quarterly*, 32, 493-511.
- Scott, W. R. (1995). *Institutions and Organizations*. CA: Sage: Thousand Oaks.
- Scott, W. R. (2005). Institutional theory: Contributing to a theoretical research program. *Great minds in management: The process of theory development*, 460-484.
- Scott, W. R. (2008). *Institutions and Organizations*. CA: Sage: Thousand Oaks.
- Scott, W. R. (2013). *Institutions and organizations: Ideas, interests, and identities*: Sage Publications.
- Shyu, S. H.-P., & Huang, J.-H. (2011). Elucidating usage of e-government learning: A perspective of the extended technology acceptance model. *Government Information Quarterly*, 28(4), 491-502.
- Sia, S. K., & Soh, C. (2007). An assessment of package–organisation misalignment: institutional and ontological structures. *European Journal of Information Systems*, 16(5), 568-583.
- Silva, L. & Hirschheim, R. (2007). Fighting against windmills: Strategic information systems and organizational deep structures. *MIS Quarterly*, 327-354.
- Silva, L. & Westrup, C. (2009). Development and the promise of technological change. *Information technology for development*, 15(2), 59-65.
- Smith, M. L. (2010). Building institutional trust through e-government trustworthiness cues. *Information Technology & People*, 23(3), 222-246.
- Sørensen, J. B. (2002). The strength of corporate culture and the reliability of firm performance. *Administrative science quarterly*, 47(1), 70-91.

- Srivastava, S. C. (2011). Is e-government providing the promised returns?: A value framework for assessing e-government impact. *Transforming Government: People, Process and Policy*, 5(2), 107-113.
- Standforth, C. (2006). Using Actor- Network Theory to Analyze E-government Implementation in Developing countries. *Information Technologies and International Development*, 3(3), 35-60.
- Stanforth, C. (2007). Using Actor- Network Theory to Analyze E-Government Implementation in Developing Countries. *Information Technologies and International Development*, 3(3), 35-60.
- Stantial, J. (2007). ROI on XBRL: Interactive data cuts reporting costs today. *Journal of Accountancy*, 32, 34-35.
- Taylor, W. A., & Wright, G. H. (2004). Organizational readiness for successful knowledge sharing: Challenges for public sector managers. *Information Resources Management Journal (IRMJ)*, 17(2), 22-37.
- Terpsiadou, M. H., & Economides, A. A. (2009). The use of information systems in the Greek public financial services: the case of TAXIS. *Government Information Quarterly*, 26(3), 468-476.
- Thatcher, S., & Zhu, L. (2006). Institutional Environments for B2B E-commerce Adoption: A Quantitative Study of Electronics and Textiles Firms in Greater China and the US. *AMCIS 2006 Proceedings*, 424.
- Thomas, J. (1985). Force field analysis: a new way to evaluate your strategy. *Long Range Planning*, 18(6), 54-59.
- Thorbjørnsen, H., Supphellen, M., Nysveen, H., & Egil, P. (2002). Building brand relationships online: a comparison of two interactive applications. *Journal of interactive marketing*, 16(3), 17-34.
- Titah, R., & Barki, H. (2006). E-government adoption and acceptance: A literature review. *International Journal of Electronic Government Research (IJEGR)*, 2(3), 23-57.
- Tsamenyi, M., Cullen, J., & González, J. M. G. (2006). Changes in accounting and financial information system in a Spanish electricity company: a new institutional theory analysis. *Management Accounting Research*, 17(4), 409-432.
- Uddin, S., Gumb, B., & Kasumba, S. (2011). Trying to operationalise typologies of the spectacle: a literature review and a case study. *Accounting, Auditing & Accountability Journal*, 24(3), 288-314.
- Varey, J. R., Wood- Harper, T., & Wood, B. (2002). A Theoretical Review of Management and information Systems Using a Critical Communications Theory. *Journal of Information Technology*, 17(1), 229-239.

- Vidgen, R. (1997). Stakeholders, soft systems and technology: separation and mediation in the analysis of information system requirements. *Information Systems Journal*, 7(1), 21-46.
- Von Haldenwang, C. (2004). Electronic government (e-government) and development. *The European Journal of Development Research*, 16(2), 417-432.
- Walsham, G. (1993). *Interpreting information systems in organizations*: John Wiley & Sons, Inc.
- Walsham, G. (1995). Interpretive case studies in IS research: Nature and method. *European Journal of Information Systems*, 4(2), 74-81.
- Walsham, G. (2000). Globalization and IT: Agenda for research *Organizational and social perspectives on information technology* (pp. 195-210): Springer.
- Walsham, G. (2006). Doing interpretive research. *European Journal of Information Systems*, 15, 320-330.
- Wang, F. (2014). Explaining the low utilization of government websites: Using a grounded theory approach. *Government Information Quarterly*.
- Wanyama, I., & Zheng, Q. (2010). *Organizational culture and information systems implementation: A Structuration Theory perspective*. Paper presented at the Information and Financial Engineering (ICIFE), 2010 2nd IEEE International Conference on.
- Wastell, D. G. (2006). Information systems and evidence-based policy in multi-agency networks: the micro-politics of situated innovation. *The Journal of Strategic Information Systems*, 15(3), 197-217.
- Weber, R. (2004a). Editor's comments: the rhetoric of positivism versus interpretivism: a personal view. *MIS Quarterly*, 28(1), iii-xii.
- Weber, R. (2004b). The Rhetoric of Positivism Versus Interpretivism. *MIS Quarterly*, 28(1), iii-xii.
- Weber, R. (2004c). The Rhetoric of positivism versus interpretivism: A personal view. *MIS Quarterly*, 28(1), 3-12.
- Welch, E. W., & Feeney, M. K. (2014). Technology in government: How organizational culture mediates information and communication technology outcomes. *Government Information Quarterly*, 31(4), 506-512.
- Williams, R., & Edge, D. (1996). The social shaping of technology. *Research policy*, 25(6), 865-899.
- Wilson, S. C. (2014). e-Government legislation: Implementation issues for programs for low-income people. *Government Information Quarterly*, 31(1), 42-49.

- Wilson, M. & Howcraft, D. (2002). Re- Conceptualising Failure: Social Shaping Meets IS Research. *European Journal of Information Systems*, 11(4), 236-250.
- Wimbrow, J. H. (1971). A large-scale interactive administrative system. *IBM Systems Journal*, 10(4), 260-282.
- Worldbank(Producer).(2014,October23).<http://web.worldbank.org/wbsite/external/topics/extinformationandcommunicationandtechnologies/extegovernment/0,,contentmdk:20507153~menuupk:702592~pagepk:148956~pipk.www.worldbank.org.retrievedfromhttp://web.worldbank.org/wbsite/external/topics/extinformationandcommunicationandtechnologies/extegovernment/0,,contentmdk:20507153~menuupk:702592~pagepk:148956~pipk:216618~thesitepk:702586,00.html>
- Yang, C. L. & Modell, S. (2012). Power and performance: Institutional embeddedness and performance management in a Chinese local government organization. *Accounting, Auditing & Accountability Journal*, 26(1), 101-132.
- Yang, T. M., Pardo, T., & Wu, Y.-J. (2014). How is information shared across the boundaries of government agencies? An e-Government case study. *Government Information Quarterly*.
- Yeloglu, H. O., & Sagsan, M. (2009). The diffusion of e-government innovations in Turkey: A conceptual framework. *Journal of US-China Public Administration*, 6(7), 17-22.
- Yildiz, M. (2007). E-government research: Reviewing the literature, limitations, and ways forward. *Government Information Quarterly*, 24(3), 646-665.
- Yıldız, M., & Saylam, A. (2013). E-government discourses: An inductive analysis. *Government Information Quarterly*, 30(2), 141-153.
- Yin, R. K. (2003). Applications of case study research (applied social research methods). *Series, 4th. Thousand Oaks: Sage Publications*.
- Yin, R. K. (2014). *Case study research: Design and methods*: Sage publications.
- Zheng, L. (2013). Social Media in Chinese Government: Drivers, Challenges and Capabilities. *Government Information Quarterly*, 30, 360-376.
- Zheng, D. Chen, J., Huang, L., & Cheng, Z. (2013). E-government adoption in public administration organizations: Integrating institutional theory perspective and resource based view. *European Journal of Information Systems*, 22, 221-234.
- Zheng, Y. Schachter, H. L., & Holzer, M. (2014). The impact of government form on e-participation: A study of New Jersey municipalities. *Government Information Quarterly*, 31(4), 653-659.
- Zucker, L. G. (1987). Institutional theories of organization. *Annual review of sociology*, 443-464.