



**Addis Ababa University**  
**College of Business & Economics**  
**Department of Accounting & Finance**  
**(GRADUATE PROGRAM)**

**“Investigating the Determinants of Effective Implementation of  
Integrated Financial Management Information System(IFMIS) in Gov't  
public Bodies of Ethiopia: A Case of Ministry of Finance”**

**By: -**

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**June, 2019**  
**ADDIS ABABA,**  
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## **DECLARATIONS**

I Welansa Kebede, registration number/I.D. number(GSE/5883/09), do hereby declare that this project is my original work and that it has not been submitted partially; or in full, by any other person for an award of degree in any other university/institution.

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## APPROVAL

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## List of Acronyms/Abbreviations

|       |  |
|-------|--|
| AP    | Accounts Payable                         |
| AR    | Accounts Receivable                      |
| BDA   | Budget and Disbursement Account          |
| BIS   | Budget Information System                |
| CM    | Cash Management                          |
| COA   | Chart of Accounts                        |
| COPCU | Channel One Programs Coordinate Unit     |
| CSCW  | Computer-Supported Cooperative Work      |
| DCI   | Development Cooperation Ireland          |
| DFID  | Department For International Development |
| DSA   | Decentralization Support Activity        |
| ERA   | Ethiopian Road Authority                 |
| ERCA  | Ethiopian Revenue and Customs Authority  |
| FA    | Fixed Asset                              |
| FDRE  | Federal Democratic Republic of Ethiopia  |
| FIS   | Financial Information System             |
| FMIS  | Financial Management Information System  |
| GDP   | Gross Domestic Product                   |
| GL    | General Ledger                           |
| GoE   | Government of Ethiopia                   |
| GOV   | Government                               |
| HIC   | High Income Country                      |
| HR    | Human Resource                           |
| IBEX  | Integrated Budgetary and Expenditure     |
| ICT   | Information Communication Technology     |

|       |   |
|-------|---|
| IFMIS | Integrated Financial Management Information System    |
| IMF   | International Monetary Fund                           |
| IS    | Information System                                    |
| IT    | Information Technology                                |
| LAN   | Local Area Network                                    |
| LIC   | Low-Income Country                                    |
| MA    | Masters of Art  |
| MGT   | Management  |
| MoE   | Ministry of Education                                 |
| MoF   | Ministry of Finance                                   |
| MoH   | Ministry of Health                                    |
| MPSHD | Ministry of Public Service and Human Development      |
| NPC   | National Planning Commission                          |
| OLS   | Ordered Least Square                                  |
| OTS   | Over The Shelf  |
| PFM   | Public Financial Management                           |
| PPPAA | Public Procurement and Property Administration Agency |
| PPPDS | Public Procurement and Property Disposal Service      |
| PSB   | Public Sector Budget                                  |
| SIDA  | Swedish International Development Cooperation Agency  |
| TCT   | Transact Computer Technology                          |
| UK    | United Kingdom  |
| USAID | United States Agency for International Development    |
| USD   | United States Dollar                                  |
| WAN   | Wide Area Network                                     |
| WBG   | World Bank Group                                      |

## ABSTRACT

*Integrated Financial Management Information System is the backbone of a country's economic development. Public Financial Management plays a great role on improving a financial systems, financial policies and budget management. In Ethiopia, it's more than 6 years that government of Ethiopia has been adopted and implemented the integrated financial management information system in selected government public bodies. At the time of this study is conducted, around 65 public bodies are finalized the implementation of integrated management information system and started go-live so far. Due to different challenges and problems on the effective implementation of integrated financial management information system, this research is conducted to achieve the general objective of investigating the determinants of effective implementation of integrated financial management information system in government's public bodies of Ethiopia: a case of Ministry of Finance. The specific objective of this study is: - To examine the information communication technology infrastructure, management, and end-user commitment, as well as to determine ongoing support activities and human capital development that affects effective implementation of integrated financial management information system. Thus, this research is used ordinary least squares regression econometric model to show the relation between outcome and explanatory variables. From 237 population, 148 were selected and the questionnaire is distributed to collect relevant survey data for this study. The result shows that all explanatory variables were statistically significant and all they are positive relation with the outcome variable. From the regression result, except management commitment all determinant factors show a good progress in supporting the implementation process, but the study observed that there is a weakness in management commitment. Consequently, the study recommended that the Ministry of Finance shall give a higher attention and need to evaluate the management commitment and shall improve other determinants such as information, communication infrastructure, human capital development, end-users' commitment, and on-going support activities as well.*

**Keywords:** *Financial Management System, Government of Ethiopia, IFMIS, IFMIS Implementation Challenges, IFMIS in Ethiopia, Implementation of IFMIS, Ministry of Finance, Public Financial Management.*

# 1 CHAPTER ONE: - INTRODUCTION

## 1.1 Background of The Study

Public financial management sector has a great role on contributing to achieve a countries strategic development goal. The government of federal democratic republic of Ethiopia has an intuitive to enhance the management service of the public finance. Hence MoF is the responsible organ to administer and manage the public finance management for the government of Ethiopia. In the past years, Ministry of Finance has implemented different tools of financial management in order to maintain the accuracy and consistent financial information in timely fashion.

From starting of Budget Information System (BIS) which is upgraded to Budget and Disbursement Account (BDA) which is replaced by Integrated Budgetary and Expenditure System (IBEX) then now Integrated Financial Management Information System (IFMIS).

Based on the practical guide book of IFMIS by USAID, A financial management information system, or *integrated* financial management information system (IFMIS), is an information system that tracks financial events and summarizes financial information. In its basic form, an IFMIS is little more than an accounting system configured to operate according to the needs and specifications of the environment in which it is installed.

As cited by (Abdu Muhammed, 2014) Every country's Government needs financial resources to carry out the responsibility assigned by its people. Specially, in public sectors, these financial resources can be raised by either through tax or non-tax instruments. Unless these financial resources are effectively and efficiently used for the intended purpose, generating of all these sources will have their own disincentive effect in the performance of the economy. To perform these, countries are advised to use Public expenditure management and control systems in appropriate manner. In support of this, the working paper by Alemayehu Geda and Dawit Birhanu (2011) confers that government expenditure in Ethiopia is increasing. However, public revenue as a percentage of GDP has also slowdown in recent years. Therefore, proper allocation of available financial resources, efficient management of these resources is inevitable to the economic growth of Ethiopia.

Public expenditure management and control is a powerful tool in Public financial management for allocating scarce resources to different programs of every country. As cited by (Jan Isaksen et. al., 2007), expenditure management and control are a process that consists of: the preparation

of the budget by Administrative body based on the priorities set; the approval of the budget by the legislature; execution of the budget during the year and the final Auditing by the auditor. Hence, expenditure management processes are not systems which is mechanically run by legal frameworks and rules once established. They are more likely organic processes comprises of different rules, regulations, approaches and methods over time.

The management and controlling of government financial resources is crucial because societies need and demands are unlimited whereas financial resources are limited in nature.

Now a days, the major attention of most of countries in the world is to develop a competitive economic growth. Public financial management sector has a great role on contributing to achieve a countries strategic development goal. The government of federal democratic republic of Ethiopia has an intuitive to enhance the management service of the public finance. Hence MoF is the responsible organ to administer and manage the public finance management for the government of Ethiopia. In the past years, Ministry of Finance has implemented different tools of financial management in order to maintain the accuracy and consistent financial information in timely fashion.

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According to (Hendriks, 2012) IFMIS is an information system that tracks financial events and summarizes financial information. It supports adequate management reporting, policy decisions, fiduciary responsibilities and the preparation of auditable financial statements. IFMIS also refers to the computerization of public financial management processes, from budget preparation and execution to accounting and reporting, with the help of an integrated system for the purpose of financial management, in the sphere of government operations (Wainaina, 2014).

## **1.2 Overview of The Study**

This is a research project is a study work which tries to identify major determinants of effective implementation of IFMIS. The study is held in Ministry of Finance and its descendant public bodies such that Public Property Procurement and Disposal Service, Public Property Procurement and Administration Agency, and National Planning Commission. The study undertaken by the researcher in order for the partial fulfilment of the masters of Accounting and Auditing. This study runs on zero budget and all activities which listed in the research schedule is done by the researcher of this paper.

## **1.3 Statement of The Problem**

The complexity of IFMIS system makes the system to implement with difficulty without losing the sustainability. More or less the system deployment needs to possess different stages and phases to make an organization self-contained user of the IFMIS system. Those stages in implementation process contains analysing the organizations performance status, collecting and organizing start-up data, converting and migrating data to IFMIS standard, train end users starting go-live and follow-up for user supports.

These stages are directly linked to the resource that is delighted to commit the deployment process which affects the effective implementation of integrated financial management system. Human capital development, infrastructure readiness, implementation management and post deployment support activities are major parts of the implementation issues that may affects the success or the failure of IFMIS implementation.

## **1.4 Severity of The Problem**

The absence of the implementation improvement of IFMIS leads pre-implementation, implementation, and post-implementation activities become more expensive regards with the growth in number of joining sites. Some of effects of poor implementation strategy are over scheduling of implementation plan, instability of service, high frequency of support enquiry from joined sites. These all issues lead MoF to pay high price to control and administer IFMIS properly.

## **1.5 Extent of The Problem**

The impact of ineffective implementation process of IFMIS shortening the overall lifetime of the system due to the sensitive functionality of all IFMIS modules. In other words, low priority problem in one module may lead to the high priority high severity issues in one or more of other modules. Not only this, the system users may stop using the system due to the repeated ineffectiveness of the IFMIS functionality.

## **1.6 Objective of The Study**

### **1.6.1 General Objective**

General objective of this study is to identify factors that affecting the effective implementation of integrated financial management information system in Ministry of Finance.

### **1.6.2 Specific Objective**

The specific objective of this study is listed as follows:

- To examine the ICT infrastructure affects effective implementation of IFMIS.
- To evaluate human capital development affects effective implementation of IFMIS.
- To examine management commitment affects effective implementation of IFMIS.
- To determine end-user's commitment affects effective implementation of IFMIS.
- To determine ongoing support activities affects the effective implementation of IFMIS.

## **1.7 Research Questions**

- To what extent the ICT infrastructure affects the effective implementation of IFMIS in MoF?
- How human capital development affects the effective implementation of IFMIS in MoF?
- How end-user's commitment affects the effective implementation of IFMIS in MoF?
- How management commitment affects the effective implementation of IFMIS in MoF?
- How ongoing support activities affect the effective implementation of IFMIS in MoF?

## **1.8 Scope of The Study**

Within the current situation, this study only assesses the listed factors that are affects the effective implementation of the IFMIS system. Due to the availability and limitation of budget and additional resources to study this research, the researcher focused within Ministry of Finance and its descendant public bodies which are Public Procurement and Property Administration Agency, Public Procurement and Property Disposal Service, and National Planning Commission. From these public bodies, the research is targeted the population of finance and procurement, inventory, and human resource departments staffs including all secretaries.

## **1.9 Significance of The Study**

One of the aims of this study is showing the government of Ethiopia the effective implementation issues that arises in IFMIS system. More or less this study is also helpful in finding a good guidance in the process of IFMIS deployment strategy. IFMIS top management is the most beneficiary from this study. The result of this research paper has its own effect for the decision support system in IFMIS project by providing information aboutthe extent of investigating the determinants IFMIS for the IFMIS management.

## **1.10 Limitation of The Study**

When this project took place different challenges for instance shortage of time to address related source materials and to determine sample sizes Ministry of Finance and descendant offices has no documented information about the exact figures of the IFMIS deployment strategy, schedule and performance evaluation documents so that this research doesn't includes those primary project documents, which means this project lacks of precise figures to describe some factors. Thus, this study is conducted based on the available documents and respondent's opinion using questionnaire. In addition to this this study is conducted on the selected public bodies only.

## **1.11 Organization of the Paper**

The study organized in five chapters. The first chapter introduces the background of the study that provides the introduction and contextualization of the research topic, statement of the problem, the objectives of the study, research questions, significance, scope and limitation of the study.

In Chapter two literature reviews and theoretical frameworks presents the literature review and the theoretical foundation of the study. The relevant literature to the project topic and theoretical model employed in the entire work will be presented and discusses in order to develop a conceptual framework to evaluate the research findings in the case of the study area of the effective implementation of IFMIS.

In chapter three research designs, description of the study area, sampling technique and sample size determination, data type and sources, data collection methods, data processing, analyzing and interpretation, model specification, dependent and independent variables included.

Chapter four focused on discussion on the findings of the collected data and the final chapter will deals with conclusion and recommendations which is the last chapter of the project that provides general conclusion and recommendations.

## **2 CHAPTER TWO: - LITERATURE REVIEW**

### **2.1 INTRODUCTION**

This chapter comprises of both theoretical literature review and empirical literature review along with the designing of conceptual framework, which determines a theoretical base for the study.

### **2.2 Theoretical Overview**

#### **2.2.1 IFMIS as a Tool for PFM Implementation:**

##### **2.2.1.1 Public Financial Management**

PFM underlies all government activity. It encompasses the mobilization of revenue; Many PFM topics are highly specialized and have their cadre of experts—on issues such as financial management information systems, payroll reform or procurement for public works, for example. But whether one is engaged in the gritty details of cash advance procedures or works on public policy at a broad level, it remains valuable to consider the PFM system as a whole. It is important to understand how various functions fit into a broader system of rules and regulations that govern the management of public resources, and what these functions are ultimately intended to achieve. (Cited by Rebecca Simson, Natasha Sharma & Imran Aziz 2011)

##### **2.2.1.2 The Objectives of Public Financial Management**

The traditional triad: Control, allocation, efficiency Public financial management (PFM) is instrumental in nature. As a central instrument of policy, it must pursue all three overall economic policy goals of economic stability, growth and equity. Stability calls, among other things, for fiscal discipline; economic growth and equity are pursued partly through allocating the moneys to the various sectors; and all three policy goals require efficient and effective use of public money. Hence, the three goals of overall policy translate into three key objectives of good public expenditure management: fiscal discipline (expenditure control); allocation of resources consistent with policy priorities (“strategic” allocation); and good operational management. (The two objectives of strategic resource allocation and good operational management are easily recognizable in the distinction traditionally made in economics between efficient allocation and use efficiency.) In turn, good operational management calls for both efficiency (minimizing cost per unit of output) and effectiveness (achieving the outcome for which the output is intended).

There are linkages between the three key objectives of expenditure management, their corresponding major functions, and the government level at which they are mostly operative.

Fiscal discipline requires control at the aggregate level; strategic resource allocation requires good programming, which entails appropriate cabinet-level and inter-ministerial arrangements. Operational management is largely an intra-ministerial affair. Fiscal discipline and operational management are more amenable to “technical” improvement than is the strategic allocation of resources. This is because the distribution of resources among sectors and ministries is the least technical and the most “political” of the three objectives: “The allocation of funds results from a series of forces that converge at different points of the decision-making process...according to an imperfect perception of present and future political realities. ... The decision-making positions are occupied by politicians who, theoretically, have developed a certain intuition about what people want. In any event, the effort made at this stage of the budget process to collect and analyse information is less than at any other stage” (Petrei 1998).

Owing to the essential link between revenue and expenditure, the triad of public expenditure management objectives can easily be expanded into a triad of fiscal objectives. Fiscal discipline results from good forecasts of revenue as well as expenditure control; strategic allocation has a counterpart in the tax incidence across different sectors; and tax administration, of course, is the revenue aspect of good operational management of expenditure. (cited by Dr. Salvatore Schiavo-Campo 2013)

### **2.2.2 PFM In Ethiopia**

The public finance management program in Ethiopia has a vast strategic plan to promote the country’s finance management systems. From those point of view, regulating and supporting the account and budget process for every public institution is the mandate of the Government of Ethiopia through the Ministry of Finance. The fast growth of the technological advancement which becomes the top business solution for every sector in the world, Ministry of Finance is intended to implement technological tools to support the public finance management program.

In early time of Ethiopia, the financial and budgetary tasks where held with manual system that has lots of demerits in terms of information accuracy, efficiency, cost, time and other performance measurement parameters. The lag on delivery of financial information report to the higher authority institution and certainty on disseminating more accurate data were big challenges for succession of country’s development. Distribution of allocated budget for all institutions were took more than a couple of months since the parliament approves the country’s budget in every Ethiopian fiscal year.

Since the initiation and implementation project of BDA and BIS by the donors' organization was the ground-breaking decision to implement financial management information system tool in government of Ethiopia.

From those tools Integrated Budgetary and Expenditure (IBEX) system is the most widely used almost in all federal, regional, zones, woredas, and sector offices including the city administrations. The main purpose of IBEX is to integrate the budget management system with the activities of account day to day transactions.

### **2.3 The Existed System as a Tool For PFM**

Before the customization and adoption of the Integrated financial management information system, the integrated budgetary and expenditure system was deployed to manage the government's public finance system. Thus, development of financial system for government of Ethiopia passes a lot of steps starting from BDA and BIS then now IBEX and IFMIS are the new emerged automated tools which serves government of Ethiopian to manage and control its institutions financial activities and budget utilization. In addition to these, those tools were developed based on the financial regulation, procedures and policy. The short come that were resides with BDA and BIS leads to the IBEX development project initiation by a Decentralization Support Activity (DSA) project which was implemented by Harvard University and funded by the Netherlands Minister for Development Cooperation, Development Cooperation Ireland (DCI), and United States Agency for International Development (USAID).

As the government of Ethiopia financial policy enrichment, it is recognizable that the public finance management system has a great impact towards to the support of the country's development strategy execution. Among those different tools, IBEX is one of the most distributed financial system that government of Ethiopia has implemented in almost all of its institutions. Such a core system that can support the operation of public finance management, it is well known that the tool has creates the finance activities are more qualified deliverable for the higher authoritarian institutions at government level.

From its architectural behaviour of IBEX application, the major objective of the development was to overcome the problem of making IBEX application online availability. DSA was develop IBEX and leads the support activities of IBEX rollout to implement in all federal, regional, and zonal institutions. The operational activities are also supported based on procedural concepts and skills. Now a day, MoF takes the leading part to provide top level IBEX support activities. Thus,

all regional level institutions hire IBEX support staff for their descendant organizations support activities without any limitation to measure the quality of the support that they provide. All regional IBEX support staffs may send enquiry for critical and advanced issues to MoF IBEX team if they face.

Now a day, IBEX application is implemented and operational on more than 183 federal level institutions and more than 1,700 regional institutions. Most of them uses the distributed structure while the rest are based on the standalone installation especially federal institutions.

### **2.3.1 Accounting Policies, Systems and Procedures**

According to(COPCU 2012 POM), Accounting for all Sub-programs will be governed by respective government accounting policies andprocedures. The Ethiopian government uses a double entry modified cash basis of accounting since 2002.

The double entry reform has been implemented at the federal level and in regions.The computerized Integrated Budget and Expenditure (IBEX) accounting system is operational at federal level and all of regions zones woreda and sector offices, IBEX accounting system is in place.

### **2.3.2 Application in Information Technology Field**

According to (Indeje Wanyama and Qin Zheng, 2011) Structuration theory is a general theory of the social sciences; in its original formulation, ST pays little attention to technology (Jones, M. 1997). However, given the pervasiveness of technology in organizations' everyday operations, and especially the role of information technology in the process of enactment and reality construction in contemporary organizations, some attempts have been made to extend (Giddens, A. 1979 and 1984), ideas by including an explicit IT dimension in social analysis (Walsham, G. 1993 and 2002) As a result of such attempts, structurationist analyses have helped to increase our understanding of important IT-based contemporary phenomena. Some recent examples are studies on electronic trading and work transformation in the London insurance market (Barrett, M. and Walsham, G. 1999); globalization issues and IT deployment in India and Britain (Nicholson, B. and Sahay, S. 2001; Walsham, G., and Sahay, S. 1999); the dynamics of groupware application (Ngwenyama, O. 1998); communication and collaboration using IT (Olesen, K. and Myers, M.D. 1999); global virtual team dynamics and effectiveness (Maznevski,

M. and Chudoba, K.M. 2000); and cross-cultural software production and use (Walsham, G. 2002).

Other significant efforts have been indicated of the application of this theory in the IS and Information Technology (IT) field as well; see for example, (Orlikowski, W. J. 1992) on analysing IT as a form of structuration, (Orlikowski, W.J. 2000) on studying technologies in organizations, (Lyytinen, K. and Ngwenyama, O. K. 1992) in analysing Computer-Supported Cooperative Work (CSCW) applications as structures, (Walsham, G. 1993) on interpreting information systems in organizations, and (Bratteteig, T. and Gregory, J. 1999) in their discussion of social theory for understanding the use of IT. The focus in this paper is on how Structuration Theory may offer a way of looking at the role and influence of organization culture in information systems development and implementation. The selection of Structuration Theory is based on the fact that Structuration Theory provides an understanding of human work as social interaction within a culture, mediated by artefacts such as tools, language, rules and procedures, and open to change. Thus, Structuration Theory offers a broad understanding of the organizational culture in which the IFMIS development and implementation process is taking place.

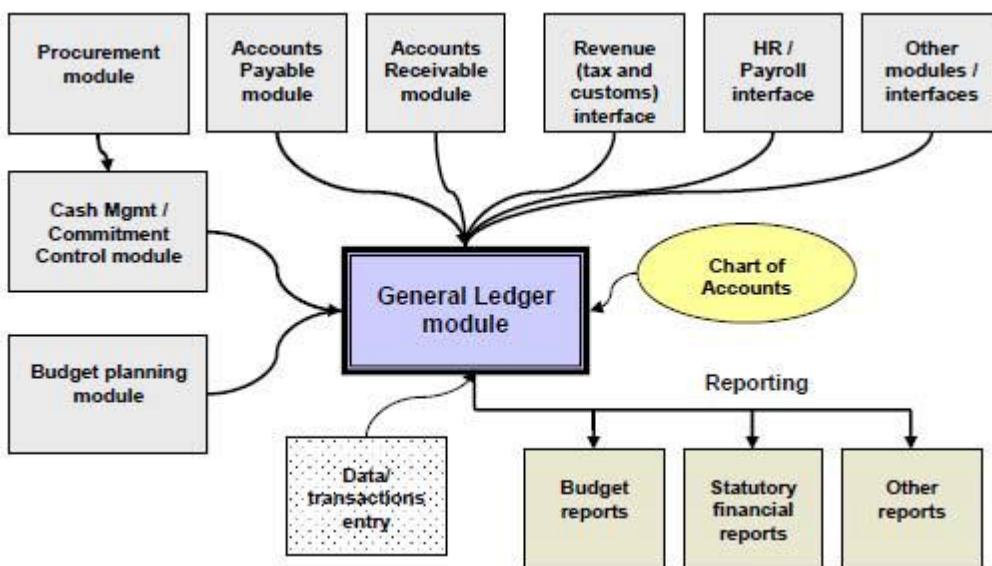
### **2.3.3 Financial Information Systems as Organizations**

We can view a financial information system as a combination of people, material resources (equipment, hardware and software, supplies), and procedures organized to provide financial information to financial managers for decision making purposes. At a minimum, an information system must have the following technical elements: input (data), processing, in which input data are transformed into outputs, and an output (information). It also includes a storage element, where data can be stored before and after processing (Ties, J. B. 1991) However, information systems cannot be understood independently of the people around them; their social relationships, their culture and the work practices that they are engaged in within everyday life. In order to gain a better understanding of information systems development, implementation and use, research and development regarding a particular information system must involve a better understanding of how people work and the social practices and organization culture in which they are engaged.

An information system includes the social system, which in turn, has its own subsystems of people, business processes, social structure, and culture. The problems of development,

implementation and use of information systems are well known and invariably they concern interactions between human, organizational and technical factors, which cannot be separated. Therefore, information systems should not be regarded as technical systems with behavioral implications but are better conceptualized as social systems in which technology is only one of the elements (Gallagher, M and Rozner. S 2008). The study reported here explores organizational factors and their impact in information systems development and implementation. An Integrated Financial Management Information System (IFMIS) will generally consist of several distinct components or modules that use information to perform different functions. Figure 1.1 presents a basic diagram of a typical government IFMIS, including several core components, as well as non-core components that will either be integrated into the system or connected to the system via an interface. Bear in mind that some systems are far simpler, while many are far more complex in scope and functionality.

Figure 1.1: Components of a typical IFMIS (adopted from [21]).



At the core of the system is the General Ledger. The General Ledger constitutes the central “books” of any IFMIS. Every transaction entered into the system posts to the General Ledger, starting with the allocation of budget funds through to the commitments to payment for goods and services. All transactions should simultaneously post to the General Ledger and to all appropriate sub-ledgers/modules following the rules imposed by a standardized chart of accounts. These records remain as a permanent track of the history of all financial transactions, and represent the source from which all reports and financial statements are derived.

### **2.3.4 Information Systems and Culture**

According to (Indeje Wanyama and Qin Zheng, 2011) Reeves and Baden define culture as comprising “the distinctive patterns of ideas, beliefs, and norms which characterize the way of life and relations of a society or group within a society” (Reeves, H. and Baden, S. 2000). Keesing argues that culture refers to “humans’ knowledge, not what they do and make. It is this knowledge, which provides standards for deciding: what is..., what can be..., how one feels about it..., what to do about it...” (Keesing, 1981: 68-69 cited by (Hardon, A., Boonmongkon, P., Streefland, P., Tan, M., Hongvivatana, T., Geest, S.V.D., Staa. A.V., Varkevisser, C., Chowdhury, M., Bhuiya, A., Sringeriyuang, L., Dongen, E.V. and Gerrits, T. 2001): 3). Generally, therefore, culture can be considered as a set of ideas, and rules; that is, culture comprises systems of shared ideas, systems of concepts and rules and meanings that are expressed in the ways that humans live.

### **2.3.5 Information Systems as Social Systems**

According to (Indeje Wanyama and Qin Zheng, 2011) The problems of information systems development, implementation and use are considered to be more severe in developing countries in terms of factors such as the current state of skills and knowledge, availability of suitable tools and infrastructure, lack of financial resources, shortage of technically competent personnel and constraints imposed by the social and political context (Ties, J. B. 1991). Financial information systems like other information systems are not only complex but are also social systems since they are deeply embedded in social working practices. For example (Lippeveld, T. 2001) while focusing on health information systems, argue that “the success of health information systems reform depends not only on technical improvements but also on in-depth understanding of political, socio-cultural, and administrative factors”. This is a common tenet across information.

The existing work practices and organization culture re-enforce existing social relationships between clerical officers at grassroots levels and their managers at higher levels. For example, clerical officers at grassroots levels view the data they are collecting as means for showing their managers what they do rather than seeing financial management information as a means for planning and allocation of resources and decision making for prudent financial management.

### **2.3.6 Organization Culture and Information Infrastructure**

According to (Indeje Wanyama and Qin Zheng, 2011) Introduction of a new information system fundamentally changes the way operations are carried out and therefore requires a carefully managed process. This process results in the creation of a new organizational culture that is, changing the way the organization operates. As (Lippeveld, T. 2001) puts it: Even if a perfectly relevant, well-organized, and technologically sound routine information system were readily available, it would not be possible to introduce it immediately. The main issue is that information systems are managed and used by people who have certain beliefs, attitudes, and practices, and changing them will take time (Lippeveld, T. 2001): 24).

As already highlighted above, an organization's culture refers to the shared beliefs, values and perceptions of organization members about a system's practices and procedures (Schneider, B. (1975). Organization culture governs the conduct of people and how the organization operates, for example, in terms of language of communication, work efficiency, meaning of authority, hierarchy and managerial power, strategic change, creation and utilisation of knowledge. Organizational culture has been found to play a significant role in information technology management processes such as technology-driven change (Cabrera, A., Cabrera, E. F. and Barajas, S. 2001) groupware development and deployment (King, W. R. (1996) and management of new systems development (Newman, M., and Sabherwal, R. 1996).

According to (Hanseth and Monteiro, 1997) organizational culture can be viewed as an information infrastructure. An information structure that has key characteristics that can be described as shared – a foundation underlying and supporting other activities in a community; evolving – its use areas growing, i.e., more components are added and more users are adapting to and changing the organization culture; open – without borders regarding the number of actors that may be included; standardized – having a minimum set of functionalities that allows different solutions to work at different levels; heterogeneous - including components of different kinds, i.e. technological and non-technological; and having an installed base – each new version of a component replacing an existing one has to fit with the infrastructure as it is at that moment For an organization to continue to innovate its activities there is a need to consider the already existing organization culture during the innovation process. In other words, we conceptualize organization culture as constitutive of the installed base of an information infrastructure.

### **2.3.7 What is an IFMIS?**

The introduction of Integrated Financial Management Systems (IFMIS) has become a core component of financial reforms to promote efficiency, security of data management and comprehensive financial reporting. IFMIS provide an integrated computerized financial package to enhance the effectiveness and transparency of public resource management by computerizing the budget management and accounting system for a government. It consists of several core sub-systems which plan, process and report on the use of public resources. The scope and functionality of IFMIS can vary across countries, but sub-systems normally include accounting, budgeting, cash management, debt management and related core treasury systems. In addition to these core subsystems, some countries have chosen to expand their IFMIS with non-core sub-systems such as tax administration, procurement management, asset management, human resource and pay roll systems, pension and social security systems and other possible areas seen as supporting the core modules.

The scale of IFMIS may also vary and be limited to specific country-level institutions such as the Ministry of Finance. However, IFMIS is generally meant to be used as a common system across government institutions, including in the more ambitious schemes for federal, state and local governments. The integration of IFMIS across the board ensures that all users adhere to common standards, rules and procedures, with the view to reducing risks of mismanagement of public resources. (Marie Chêne, 2009).

As cited by (Stephen B. Peterson, 2007), An IFMIS provides governments with a tool that can support financial control, management, and planning. By managing a core set of financial data and translating these data into information for management, these three financial functions are supported.

More narrowly defined, an IFMIS is a computer application that integrates key financial functions (for example, accounts or budgets) and promotes efficiency and security of data management and comprehensive financial reporting. An IFMIS is one way of addressing the problem of stovepiped financial systems that do not talk to each other and do not produce a timely and comprehensive picture of a country's financial position.

### **2.3.8 Financial Function of an IFMIS**

As cited by (Stephen B. Peterson, 2007), IFMISs are usually considered in terms of core and noncore financial functions. Although public financial management is a broad field with multiple systems, the commonly cited specification of the core functions of an IFMIS is strikingly limited. The conventional specification of the IFMIS core is accounting and reporting functions, while noncore functions include budgeting, commitment control, cash management, and disbursement functions. The common specification of the core functions does not include all of the components needed for effective financial control and, by definition, therefore will increase risk. The limited comprehensiveness of the conventional core functions of an IFMIS stems in large part from the private sector origins of IFMIS technology. In short, IFMISs do not get the basics right for public sector financial management. This failure raises the question of how they can constitute best practice.

At a minimum, in addition to accounting, a proper core of financial functions should include budget, commitments, cash management, and disbursement. Many IFMISs lack a core cash management function that ensures adequate cash to disburse against the commitment. The absence of a commitment module is a serious omission. Strong financial control requires a linked set of core modules, as follows:

A budget module that sets ceilings. Budgetary control requires that an adjusted budget be maintained at all times and that it be available at the end of the fiscal year for the prompt closure of accounts. (Although the inclusion of a budget module is ideal, the commonly accepted definition of a core IFMIS does not include a budget module for preparation and adjustments.)

A commitment control module that controls balances incurred but not disbursed. Commitment control is critical for avoiding arrears (again, not conventionally specified as a core module).

A cash management module that shows cash available to pay commitments (again, not specified as a core module).

A disbursement module that records disbursements.

An accounts module that records expenditures when goods and services are received.

Even if IFMISs do include the five listed financial components that are needed for effective control (budget, commitment, cash management, disbursements, accounts), that comprehensiveness would not prevent their disuse or misuse, nor would it make up for a lack of financial discipline. For example, weak commitment control is a problem in many anglophone African countries, resulting in the accumulation of arrears. Commitments could be controlled through manual procedures (warrant withdrawal), but this is “rarely done” and “reflects the generalized lack of financial discipline,” according to Lienert (2002: 22).

### **2.3.9 Integrated Function of an IFMIS**

As cited by (Stephen B. Peterson, 2007), IFMISs are designed to manage financial data efficiently so that, once entered, data are securely stored and shared with different financial functions (for example, budgets and accounts). The management of data from the user’s standpoint is standardized with common input screens and report formats. Integration is within the core modules but is also meant to include real-time (online) data sharing across administrative entities to promote financial control. One limitation is that the online requirements of a conventional IFMIS can be significantly constrained by the low bandwidth found in many developing countries.

IFMISs are integrated two ways: in terms of data management and in terms of modularity. Integration is both a virtue and weakness of IFMISs. When IFMISs are integrated in terms of data management but at the same time are not modular, this arrangement may impose a rigidity that limits customization. Modular systems by definition can be developed by adding independent modules as user requirements evolve, and modules can then be linked for sharing data.

Five virtues of modularity may be noted in particular:

1. Independent development of finance components as user requirements evolve
2. Flexible sequencing of a financial reform (budgets first; then accounts)
3. Appropriateness to the relatively unintegrated structure of public bureaucracies in developing countries
4. Operation of different scale systems at different levels of administration demanded by fiscal decentralization

5. Evolution of migration tools to consolidate data from different versions of the same financial subsystem (for example, old and new chart of accounts), thus managing a financial reform at different stages.

Modularity supports process change, which is uneven between financial components and administrative levels.

Understanding the concept of modularity in the context of the design and implementation of an IFMIS is important. A well-designed IFMIS will have discrete modules (for example, budget and accounts) that are integrated. One design issue is whether these modules are sufficiently independent to allow multiple versions. For example, can the system provide a single-entry and a double-entry version of accounts and consolidate both? Even for the same module (accounts), can different versions be developed for different administrative levels and then be consolidated? Furthermore, can the systems operate in different configurations: stand-alone configurations, local area network (LAN), and wide area network (WAN)? IFMISs have to be significantly customized to meet the varied demands of a financial reform, and some applications are simply unable to support certain configurations (stand-alone configurations) or different versions (single or double-entry versions).

The manual system also provides a platform from which the user and the application developer can rapidly and cost-effectively evolve the system. It provides the user with a familiar and accessible prototype of new procedures and ways to adapt them. This approach promotes government ownership and also provides technology developers with clear, workable, and user-accepted requirements. The failure of information systems to meet user requirements is arguably one of the principal sources of failure and underperformance of IFMISs. A strategy of developing IT systems from robust manual systems does not need to take a long time, because application development is rapid and considerably less costly and because user acceptance is continuous and assured. This approach promotes sustainability because the manual and computer application are developed incrementally and are embedded step by step. Because time is taken in the early stages of the financial reform, appropriate basics are established, user ownership is promoted, and costly and time-consuming application development is avoided.

It is not possible to automate everything. Manual systems that complement computerized systems will always exist, and both systems require discipline in their execution. The continued role of manual systems reinforces the case for a modular process change approach to reform,

because the manual systems will require improvements and these, in turn, will affect the automated systems, which also will have to be improved.

#### **2.3.9.1 Management Function of an IFMIS**

The management function of an IFMIS applies the information function to execute the three roles of a financial system: control, management, and planning.

#### **2.3.9.2 Information Function of an IFMIS**

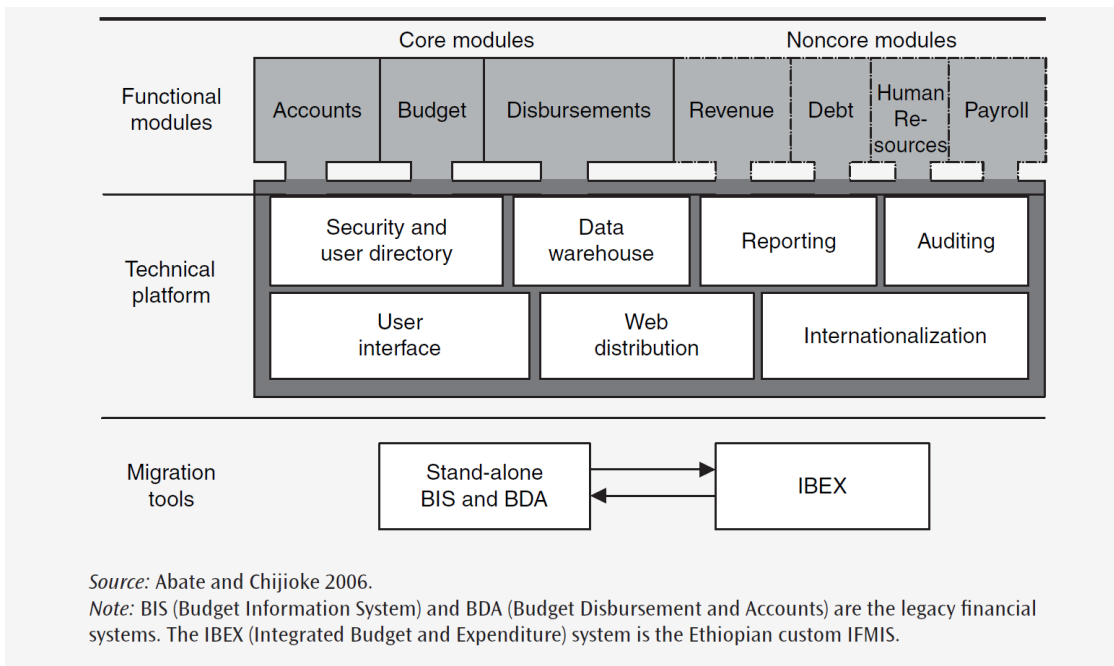
This function translates financial data into information. IFMISs provide a wide range of reports.

#### **2.3.9.3 System Function of an IFMIS**

Finally, an IFMIS is an information technology that embeds financial procedures in software applications, data stores, and communications infrastructure.

Figure 1.2 uses the example of the Ethiopian custom IFMIS (the Integrated Budget and Expenditure, or IBEX, system) to show how an IFMIS is constructed. The functional modules deliver the content of the application: in this case, budgeting, accounts, and disbursements. The technical platform is the capacity of the system, which includes the volume and speed of data processing, data security, connectivity (in this case to the Web), the front-end interfaces for the user, and the languages it presents the modules in. The third part of the application constitutes the migration tools, which allow data to be exchanged between the legacy financial systems—Budget Information System (BIS) and Budget Disbursement and Accounts (BDA)—and the new IBEX system. One limitation of an OTS IFMIS is the management of legacy systems and their data. Although in principle these data can be shared, building a custom migration capability is often necessary, thereby increasing costs. In other words, an OTS is not necessarily synonymous with a turnkey system. A virtue of custom systems is their inclusion of custom migration tools. (Stephen B. Peterson, 2002)

Figure: 1.2 An example of the platforms of an IFMIS: Ethiopia's IBEX System (Source, Abate and Chijioke 2006)



#### 2.3.9.4 Scope

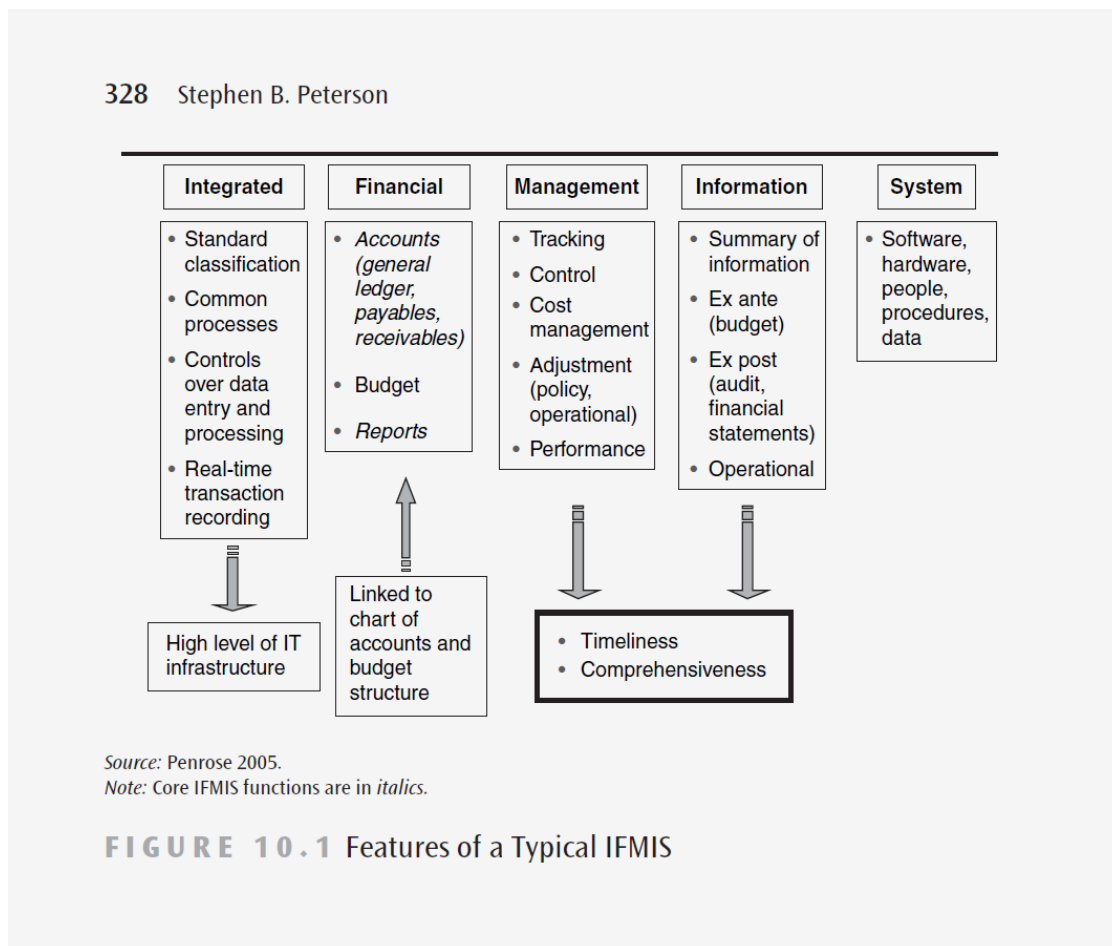
As cited by (Stephen B. Peterson, 2002) The scope of a financial information system should be determined by four factors: the content to be automated (which functions—budget, accounts, and so forth); the quality of existing financial procedures (whether they can be evolved or must be replaced); the capacity of public bureaucracies to absorb and sustain IT; and a conservative and healthy scepticism about the capability of contractors.

In regard to content, a coherent core set of financial functions needs to be automated and linked. As argued earlier, the commonly accepted core for IFMISs is not comprehensive, because a coherent core should cover budget (formulation and management, as well as adjustments and commitments); accounts (general ledger, payables, receivables, and reporting); and disbursements (and cash balances if possible). The user requirements of these systems need to be relatively stable.

The second factor that affects scope refers to the quality of the existing procedures for these functions and how effectively they are integrated. For example, do commitment data from the budget module control the disbursement module? Effective integration of modules requires not only the sharing of data but also the existence and execution of procedures for management and control.

The scope of a system affects whether the public bureaucracies are able to absorb and sustain these systems. Public bureaucracies are typically weak in developing countries in the context of the management requirements of complex projects and have limited capacity to manage sophisticated IT systems. The fourth factor of scope is the capability of contractors. A striking finding from the experience of African countries with IFMISs is the unreliability of contractors. Turnover is frequent, and several systems have suffered starts and stops caused by repetitive procurement of contractors. Several internationally known contractors have failed in their efforts to implement IFMISs.

Figure: 1.3 Features of a typical IFMIS (Stephen, 2005)



### **2.3.10 Expected Benefits of IFMIS**

There are a number of ways in which IFMIS can improve public finance management, but generally IFMIS seek to enhance confidence and credibility of the budget through greater comprehensiveness and transparency of information.

They seek to improve budget planning and execution by providing timely and accurate data for budget management and decision making. IFMIS allow a more standardized and realistic budget formulation across government, while promoting better control over budget execution through the full integration of budget execution data. They also allow for the decentralization of financial functions and processes under the overall control of the Ministry of Finance, force financial discipline, decrease operating costs by reducing administrative tasks and civil servants' workload.

In addition, IFMIS also seek to strengthen the efficiency of financial controls by making comprehensive, reliable and timely financial information available to the Auditor General, parliament, investigative and prosecutorial agencies, etc., as they improve accounting, recording and reporting practices through the provision of timely and accurate financial data, a standardized integrated financial management reporting system and an upgraded computerized accounting system. When they work well, they make bank reconciliation automatic and allow a closer monitoring of outstanding bills and cash in bank accounts. (Marie Chêne, 2009).

### **2.3.11 Impact on Corruption**

As cited by (Hendriks, C.J., 2012), One of the major benefits of an IFMIS is the impact that it can have on corruption, by increasing the risk of detection. According to Chêne (2009:2), a well-designed IFMIS can provide a number of features that may help detect excessive payments, fraud and theft. These include, for example, automated identification of exceptions to normal operations, patterns of suspicious activities, automated cross-referencing of personal identification numbers for fraud, cross-referencing of asset inventories with equipment purchase to detect theft, automated cash disbursement rules and identification of ghost workers.

At the launch of the Human Resource (HR) module of the IFMIS in South Africa, the Minister of Public Service and Administration stated (Baloyi 2011):

The implementation of the module is critical for supporting good governance. Corruption remains the biggest single threat to good governance in South Africa and in the public service

and fighting it remains a major challenge. Through implementing the HR module, government departments will be in a better position to eliminate ghost workers and the abuse of leave. The module will enable management to manage the disciplinary process in the Public Service better and will also automate the declaration of financial interests by senior managers. (p. 1)

### **2.3.12 Implementing IFMIS**

#### **2.3.12.1 Overview**

As cited by (Emilie Combaz, 2015) Since the 1980s, several major international aid agencies, such as the World Bank, have promoted integrated financial management information systems (IFMIS) as a core element in reforming public financial management (PFM) in low-income countries (LICs). The expectation is that IFMIS will make information on public finances comprehensive, efficient, secure and transparent.

Major factors for succession determining success and failure are diverse with some relating to programming IFMIS. IFMIS are complex, high-risk, and demanding in staff involvement and resources. They come with significant challenges, such as ensuring high-quality work from contractors. The top risks are the scope, schedule and budget of IFMIS. Coherence between the strategy of public financial reform, its breadth, and the IT solution is essential, but rarely ensured.

Institutional factors are also important, because IFMIS constitute an organizational reform. Some IFMIS have overreached and tried to drive radical PFM changes or implement too much at once, resulting in failure. Many programmes have lacked ownership and clear lines of authority. IFMIS may also create new opportunities for corruption.

The role of political factors is debated. Most authors argue that a firm political commitment and its underlying incentives are required. However, in Ethiopia, only mid-level management was committed, and that was enough to enable success, according to Peterson (2006). Change management is widely seen as essential to success.

Getting technical factors right to obtain a robust and flexible system is crucial. Yet many IFMIS have failed to specify the required functionalities from the outset, which is hard to correct later. IFMIS also require hardware and reliable power supply.

Ensuring the required staffing and staff capacities (both basic and advanced IT skills) throughout government is often a challenge in many LICs. Capacity building is often needed.

### **2.3.12.2 Factors Specific to IFMIS Programmes**

According to (Emilie Combaz, 2015), IFMIS are complex, high-risk endeavours, with the many risks go far beyond failures of technology and functionality – these observations are points of consensus in the literature. By the World Bank's own account, the implementation of IFMIS has proven very demanding, especially for low- and middle-income countries, and success has been patchy (Chêne, 2009: 4). The arrangements IFMIS require are wide-ranging, as implementing and maintaining IFMIS involve the Ministry of Finance and all line ministries (Chêne, 2009: 3). Large IT projects require substantial investments in equipment, training and infrastructure (Chêne, 2009: 8).

When implementing IFMIS, a central risk is the project, much more so than technical issues (Peterson, 2006: 41). In particular, contractors - even reputable or expensive ones - are a major risk in the implementation, as experience has shown in LICs such as Nigeria, middle-income countries such as Ghana, and high-income countries such as the US (Peterson, 2006: 41; see also Fyson, 2009). This is why an essential factor of success is for governments to ensure coherence between the broader strategy of financial reform, its breadth (e.g. budget, accounts, and commitments) and the IT solution. Yet this coherence is actually insufficient in many programmes (Peterson, 2006: 41).

Automation programmes come with three factors of risk: scope, schedule and budget (Peterson, 2006: 41-42). In many countries, the availability of concessionary aid means there are no hard budget constraints to IFMIS, and little discipline with schedule and scope. Financial and social analyses of costs and benefits have been virtually absent in these large investments, which has been a serious failing in the use of aid, Peterson (2006) concludes. Large IT programmes thus involve high risks of delays and failure, because there are various components are interdependent (Chêne, 2009: 8).

Challenges are numerous when implementing IFMIS programmes (Chêne, 2009: 11). Frequent factors identified in the failure of IFMIS include: ineffective project coordination; loose design and planning; inadequate technology; the lack of high-level commitment; institutional resistance to change; and a lack of capacities sufficient for IFMIS among the staff involved. Conversely, experiences with IFMIS programmes in high-, middle- and low-income countries point to factors typical of any good programming, such as a sound design, capabilities for programme management, and adequate allocation of resources and human capacities to the project (Chêne, 2009: 2). Implementing integrated financial management information systems.

### **2.3.12.3 Institutional Factors**

According to (Emilie Combaz, 2015), IFMIS are not just a technical change towards automation: they actually constitute an organizational reform, because they affect the work processes and institutional arrangements that govern the management of public finance (Chêne, 2009: 3; Semakula& Muwanga, 2012: 3).

One problem has been overreaching for institutional changes in PFM: attempts at using IFMIS to drive large-scale, radical changes in public financial processes have failed to deliver the expected changes in Ghana and Uganda (Chêne, 2009: 7). They also carry far higher risks of problems (Peterson, 2006). Similarly, implementing too many components of the IFMIS reform at once carries high risks (Chêne, 2009: 8).

Many projects have failed because they lacked clear ownership and clear authority to implement (Chêne, 2009: 4). Public expenditure management is segmented by institution. As a result, it is not always clear who should be in charge of IFMIS, from the Ministry of Finance or Accountant General Department (. Conversely, joint ownership can result in a loss of accountability and ownership (ibidem).

Accountability between consultants, government and donors is also typically unclear (Fyson, 2009). Looking at IFMIS in Ghana in the 1990s and 2000s, Fyson (2009) finds that consultants depended on donors, through contracting between themselves and the government. This led to opacity in procurement. In turn, donors depended on consultants to diffuse best practices in PFM, when such practices were often not adapted to the public sector. And the political environment meant that many civil servants and elected officials would or could not commit to accountability opened up by IFMIS.

IFMIS may create new opportunities for corruption (Dorotinsky, cited in Chêne, 2009: 3). IFMIS can lead to a monopolization of access to, and control of, information. Computerization provides greater power to those with the required skills in information technology (IT). Integration means that all information from sub-systems is managed in a single database. In practice, only a few specialists have control over data on accounting, on budgeting, and on the management of cash and debt - these systems often include payroll and procurement (ibidem).

#### **2.3.12.4 Political Factors**

According to (Emilie Combaz, 2015), Many authors argue that even the best designed projects will fail without a firm political commitment, Chêne notes (2009: 6-7). Relevant authorities' clear commitment to the objectives of financial reform is an important factor for successful implementation (ibidem).

IT reforms are complex and risky, make intensive use of resources, and require major procedural changes (Chêne, 2009: 4). As a result, high-level officials and individual agencies often have no incentive for IFMIS. There is typically wide-ranging resistance to change towards IFMIS, from those who benefit from existing practices to end users whose work might be radically transformed by new systems (ibidem).

Change management is often neglected, despite being critical (Chêne, 2009: 4). In many cases, IFMIS programmes have not sufficiently taken into account the role of individual incentives and political will (idem: 6-7). For example, the initial general World Bank appraisal of IFMIS assumed that their political risk was slow, because the Bank perceived such interventions to be technical (ibidem).

However, some authors argue that high-level commitment to reform is not necessary for success, Chêne (2009: 7) highlights. For example, the Ethiopian case shows that mid-level management matters the most, as changes must eventually be implemented at this level (Peterson, 2006:33-35). In that regard, Peterson observes that relative obscurity for IFMIS can help projects evade typical impediments to technical proceedings, such as high expectations, scrutiny and micro-management. In Ethiopia, senior 6 GSDRC Helpdesk Research Report management's contribution was limited to securing funding at critical phases, accepting the chief technical adviser's advice, and monitoring progress (ibidem).

#### **2.3.13 IFMIS in Ethiopia**

Since 2010, government of Ethiopia has decided to buy IFMIS from Oracle company and adopted the system with the financial regulation of Ethiopian public financial management system. The customization was done by Transact Computer Technology (TCT). The customization and user acceptance testing were held in the selected pilot sites (Ethiopian Road Authority, Ministry of Health, Ministry of Education, Ethiopian Revenue and Customs Authority, Ministry of Public Service and Human Development are pilot sites including MoF). These pilot sites were selected based on the characteristics and financial activity individuality,

and other issues like the complexity of the finance system in order to keep inclusion of all features of IFMIS for all federal public bodies of Ethiopia.

Now a day, the IFMIS system is implemented in 45 federal public bodies in which the deployment role out is being held by Techno Brain Company. MoF has a great role in administering, controlling and monitoring the deployment activities and the overall acceptance and assessment of implementation on every public bodies which admits to deploy IFMIS.

### **2.3.14 Objective of IFMIS**

The main objective of IFMIS is to improve the public financial management reformation. Institutionalizing the qualified financial system with a great accuracy, transparency, security, information confidentiality and integrity are the basis of IFMIS that forms the conceptual structure of IFMIS. As a modularized information system, IFMIS has different modules which are related to financial system which is called core modules and which are non-financial systems which are called non-core modules. Thus, all modules are integrated into one information repository to ensure the consistency of financial data is the major objective of IFMIS.

### **2.3.15 Modules of IFMIS**

As a multi modular system, IFMIS has lots of modules. From these modules, government of Ethiopia has bought only 9 modules. These modules have their own functionality in order to fulfil the subsystem features. cash management, payroll, accounts payable, accounts receivable, public sector budget, inventory, fixed asset, procurement, and general ledger are the 9 modules which government of Ethiopia has bought.

The modules currently in operation by oracle are:

- 1) **General ledger module:** This module is used to;enter and post journals, budget inquiries, opening of budget year, funds inquiries,others Issuance of a Grant of Credit by the Auditor General, Issuance of the MinistersWarrant by the Accountant General, Issuance of Cash limits by the BudgetDirectorate, Preparation of the Accounting Warrants by the Votes, Initiation andApproval of virements or re-allocations and generation of management reports.

- 2) **Accounts Receivables module:** This module is used to; Enter customers, enter and approve invoices and to enter receipts. It also used to enter bank charges and bank transfers and the generation of receivables reports.
- 3) **Procurement module:** This module is used to create suppliers on the system, prepare purchase requisitions, and approve purchase requisitions, enter and approve purchase orders and finally enter purchase receipts.
- 4) **Accounts Payables module:** This module is used to; create supplier invoices from supplier information, approve invoices, make payments, make prepayments (to employees or suppliers) and generate payables reports
- 5) **Cash management module:** This module is used to; create bank accounts, it also used to enter/ upload bank statements and to perform automatic bank account reconciliations
- 6) **fixed asset module:** This module is used to reconcile the acquisition/ creation of assets and distribution of asset to staff and to view asset status and profile information.
- 7) **Public Sector Budget:** This module is used to create budget from planning department, send for higher officials for approval hierarchy. Additionally, this module used to control the cost of budget transaction paid and unpaid budget over expenditure status.
- 8) **Payroll Module:** This module is used to create monthly payroll and incur for staff based on their salary and additional benefits.
- 9) **Inventory Module:** This module is used to manage and control all inventory transactions limited for the organization's inventory resources (UGANDA Study Report April 2015).

### **2.3.16 Integration and Components of IFMIS Modules**

The major advantage of the IFMIS is its integration with every module. Thus, inconsistency of information is eliminated and the integration of information is improved. To simplify the elaboration of component integration, showed as in figure 1.1.

### **2.3.17 Implementation of IFMIS**

#### **What Are the Implementation Challenges Involved?**

As cited by (Marie Chêne, 2009) Implementing and maintaining IFMIS is a complex task that involves the Ministry of Finance and all line ministries. There are many risks involved that go far beyond mere technological risks of failure and deficient functionality. A 2005 IMF working

paper on introducing Financial Management Information Systems more specifically highlights a number of challenges that explain why IFMIS projects tend to stall in developing countries.

#### **2.3.17.1 Institutional Challenges**

The introduction of IFMIS involves more than the “simple” automation of public finance tasks and processes. IFMIS imply both efficiency reforms and reforms that change existing procedures. They should therefore be seen as an organizational reform which deeply affects work processes and institutional arrangements governing the management of public finance. Failure to undertake parallel reforms required by IFMIS is one of the reasons that often impede successful implementation. A USAID practical guide on IFMIS implementation published in 2008 identifies a series of issues that commonly accompany IFMIS reforms:

- **Legal framework** – IFMIS must be underpinned by a coherent legal framework governing the overall public finance system.
- **Business processes** – IFMIS generally imply fundamental changes in operating procedures and should be preceded by a detailed functional analysis of processes, procedures, user profiles and requirement that the system will support.
- **Budget and account structure** – Implementing IFMIS requires that many government structures start working with common tools. For the information to be coherent, all administrative units at national, regional and local level need to adopt a common language in the form of unified budget classifications and charts of account. This can be a very lengthy and cumbersome process, which for example took more than five years in Vietnam.
- **Centralized treasury operations** – IFMIS reform is often accompanied by the consolidation of all government financial resources in a single treasury account or a set of linked accounts. (Marie Chêne, 2009).

#### **2.3.17.2 Political Challenges**

IT reforms are perceived as complex, risky, resource intensive and requiring major procedural changes, often involving high-level officials lacking incentives for reform. Decision makers must be sold the idea that benefits exceed risks, while the incentive structure that may undermine political will for reform has to be adequately assessed from the early stage of the project. Similarly, at the agency level, it is of crucial importance for successful implementation that agencies recognize the need for a new system. Change management is therefore a critical and often neglected aspect of IFMIS reform for overcoming resistance to change from those, who

benefited from the “old” way of doing business, all the way to end users, whose work might be profoundly altered by the new system. It is important to “sell” the reform through communication, education and training, using various channels such as the media, workshops, seminars, conferences, etc.

Many IFMIS projects have also failed due to the lack of clarity in ownership of the system and unclear authority to implement. Due to the institutional segmentation of public expenditure management, it is not always immediately clear who, from the Ministry of Finance or Accountant General Department, should be in charge of an IFMIS project. Joint ownership may result in a loss of accountability and real ownership of the project. (Marie Chêne, 2009).

#### **2.3.17.3 Technical Challenges**

Many IFMIS projects have also failed because the basic system functionality had not been clearly specified from the onset of the intervention. IFMIS must be carefully designed to meet agency’s needs and functional requirements, including the accounting and financial management tasks the system should perform. In some cases, interfaces with existing IT systems have to be created to fit the country’s specific circumstances. As documents on the functional requirements – which will often serve as a blueprint for later phases of the system – are difficult to rectify at a later stage, it is of crucial importance to spend enough time on the design phase of the project.

As IFMIS core systems need to be adapted to the local context and environment, a key issue to consider is whether to use Off-The-Shelf (OTS) systems and customize them to fit the local conditions or whether to invest in an own “custom-build” system, with major costs and resource implications.

IFMIS implementation also involves major hardware requirements. In Malawi for example, IFMIS requires 50 servers, one central server and a local IFMIS sever in each line ministry. Power shortage and interruptions mean that in some countries, generators and power supply units are needed as well. (Marie Chêne, 2009).

#### **2.3.17.4 Human Resources Requirement and Capacity**

IFMIS implementation involves considerable human resources requirements and capacity building needs throughout the entire government. The low level of computer literacy in developing countries must first be adequately addressed before such projects can be truly viable.

The lack of staff with required IT-knowledge cannot be easily remedied by training and hiring. The current salary structure and terms of employment in the public sector are usually not

attractive enough to compete with private sector employment conditions and to incentivize candidates with required IT-skills. There is also a risk that trained staff leaves for better job opportunities. (Marie Chêne, 2009).

## **2.4 Empirical Overview**

### **2.4.1 Implementation of IFMIS in Different Countries.**

As cited by (Stephen B. Peterson, 2007), In recent years, integrated financial management information systems (IFMISs) have become core components of financial reforms in developing countries. Because IFMISs require a relatively complex information technology (IT) platform. The subject is important because of the apparent general consensus that IFMISs have not met the high expectations that seem to have been attached to them.

Moreover, a second dimension needs to be addressed: IT systems not only should provide a technology platform to manage transactions and the budgetary process, but also should go further and drive budgetary reform. In the process, the demands of IFMISs (especially OTS) force governments to adapt their systems to meet those demands. Governments in this situation, therefore, make reforms that they would not otherwise make (Diamond and Khemani 2006). Such situations are an important reason for IFMIS failure.

Two themes underlie this discussion about IT in public financial systems. First, IT should support, not drive, public financial management reform. Second, the introduction of IT systems comes with considerable risk, and the single most important factor in deciding on a strategy of automation is the management of the associated risks, both of failure and of wrong functionality.

Financial reform in developing countries should be driven by the design of financial procedures. After the financial system design is formulated, the automation strategy needs to be determined. That strategy must focus on what components should be automated, what components should be integrated, and what components should be both manual and automated.

In his review of financial systems in anglophone and francophone African countries, Ian Lienert concludes, Lienert's conclusion—that the basic designs of public finance systems in Africa (with exceptions) are reasonably sound while their execution is not—may not be universally accepted, and clearly scope for improvement always exists. Nevertheless, his conclusion supports the contention of the concept that in most African countries there is a reasonably strong base, existing or potential, from which to evolve financial systems—a process change approach. A major reason for the success of the budget and accounts reforms in Ethiopia was that the existing system was evolved through a process of learning by doing—process change.

In summary, the current approaches to IFMIS development as set out in most of the existing literature (the same literature that testifies to widespread failure) often propose excessively

sophisticated solutions to an ill-defined problem (the need for better information for management, control, and reporting) in an unsupportive and risky environment. Automation strategies thus should be driven by procedural improvements (process change) and should manage risk.

#### **2.4.2 List of African Countries Currently Implement IFMIS.**

The IFMIS system has been deployed and utilized in different countries in the world. From our neighbours, Kenya, Uganda, Tanzania, South Africa and Malawi are some of countries who adopted and implemented IFMIS system. Most of them are facing different challenges in order to ensure the sustainability of the system. Majorly they are facing challenges related with resource facility, capacity of project implementation team, inefficient project implementation plan etc.

In spite of their complexity and implementation challenges, IFMIS have become a core component and driver of public finance reform in many developing countries. As of 2005, the World Bank had funded IFMIS projects in 27 countries at a cost of USD 1,1 billion. However, the implementation of IFMIS has proven very demanding, especially for developing countries and according to the Bank's own account, has not always been successful.

Yet, in spite of challenges involved and many failed implementations attempts across the world, there are a number of countries where IFMIS implementation is viewed as having been a relatively smooth and successful process:

##### **2.4.2.1 Tanzania**

According to 2005 IMF working paper on introducing Financial Management Information Systems, the IFMIS in Tanzania appears to be the most successfully implemented system in an anglophone African country. Within the framework of an ambitious public finance management reform initiated in 1994, Tanzania decided to introduce IFMIS in 10 ministries, departments and agencies in 1998. The IT-solution selected was a medium-sized management and accounting package, significantly less complex than the ones used in other countries like Ghana. The roll-out plan was based on an incremental approach and focused initially on the Accountant General's Department and 10 pilot ministries. After a consolidation phase, the system was rolled out to all 43 ministries and departments in the capital, then progressively to the entire central government and progressively introduced at the local level. The implementation was distinguished by:

- An initial review of the public expenditure management processes affecting budget execution and the introduction of an improved expenditure control framework and chart of accounts;
  - Embedding the reform process in the Ministry of Finance with an emphasis on capacity building;
  - Revising and developing an enabling legislation, accounting principles, systems and necessary organizational arrangements;
  - Selecting a midrange commercial software package supported by a high-quality local consultancy company;
  - Availability of adequate donor resources;
  - A solid political backing which trickled down to the management level.
- 
- Both the authorities and the international community perceive the IFMIS as a critical tool for achieving public sector accountability. (Marie Chêne, 2009).

#### **2.4.2.2 Uganda**

According to (Emilie Combaz, 2015), In Uganda, attempts to set up government-wide IFMIS with World Bank financing have been longstanding (Chêne, 2009: 10). By the early 2000s, the second attempt at designing and developing IFMIS had gotten considerably delayed. In 2003, a company won the contract for the provision of a turnkey solution (Bwoch& Muwanga, 2009; Chêne, 2009: 10; Rodin-Brown 2008: 20-21).

The pilot brought out many problems with functionality and treasury procedures (Chêne, 2009: 10). The costs of rebuilding the system were considerable. The system was put into operation with the defects, and with and parallel systems still in place (Chêne, 2009: 10; Semakula& Muwanga, 2012: 5). Manual processes also posed a big challenge, as did evolving with PFM reforms, new processes for budget analysis, and changes in technology (Semakula& Muwanga, 2012: 5-6).

Chêne (2009: 11) and Kasumba (2009) argue the Ugandan IFMIS was performing below potential in 2009, with piecemeal, ad hoc solutions, all of which decreased efficiency. In contrast, Bwoch and Muwanga (2009: 350-351) and Semakula and Muwanga (2012) argue that results were encouraging, with better speed, accuracy, reliability, reporting, comparability, oversight, control and transparency.

Useful conditions to put into place before implementation would include a comprehensive chart of accounts, and laws and regulations on public finances for electronic systems (Semakula& Muwanga, 2012: 3).

Problems that Uganda encountered are common to most IFMIS (Bwoch& Muwanga, 2009: 350-351; Chêne, 2009: 11; Kasumba, 2009). Planning was inadequate, and the design of IT inappropriate and unsustainable. Communication between implementers, donors and governments was poor. There were power struggles over IFMIS, and some government users resisted changes. Some of the design was changed without the agreement of all involved. There was a shortage of capacities and resources for management, trainings were poorly implemented, and sustainability was uncertain. Maintaining the IFMIS has also proven challenging, due to high staff turnover, and recurrent costs such as licenses, technical support and equipment maintenance (Semakula& Muwanga, 2012: 6).

Lessons include (Bwoch& Muwanga, 2009: 351-352, 354; Semakula& Muwanga, 2012: 4-6):

- A preliminary study identified user requirements and provided a roadmap which the Ministry of Finance used for planning. The roadmap included the scope of functionalities; timelines; and the needs in resources, staffing, skills development, and management arrangements. IFMIS was sequenced to yield quick wins, i.e. early visible outputs and benefits for staff.
- Leadership and use of power and resources from the top helped drive and sustain the process.
- Stakeholders' involvement, at all stages and across government, generated ownership, though with some limitations as the government did not approve special requirements for some units.
- A team dedicated to change management and communication championed IFMIS implementation, anticipated risks and designed mitigation measures.
- Having a critical mass of motivated staff – i.e. better conditions than the late 1990s - was crucial. Incentives also encouraged employees to use the system (e.g. one-off payments). A small number of external Ugandan experts and graduate staff were recruited and trained to support the IFMIS in accounting and IT.
- Having a single supplier deliver all components under a single contract helped the government limited risk, rather than tying components to separate contracts. Payments were on delivery.

#### **2.4.2.3 Kenya**

As cited by (Emilie Combaz, 2015), In Kenya, an IFMIS piloted in 2002 had stalled by 2005, due to technological deficiencies (Diamond & Khemani, 2005: 19). Pilot implementation had raised a number of issues. The engagement of audit staff was inadequate, resulting in limited quality control assurance. The programme management lacked strategic direction, leadership and communication (idem: 19).

#### **2.4.2.4 Rwanda**

As cited by (Emilie Combaz, 2015), An IFMIS developed for Rwanda in 2003 by foreign consultants and local engineers failed to meet its objectives (Hove & Wynne, 2010: 20-21). The consultant teams had little coordination of their work, so neither the chart of accounts nor its manuals were compatible with the electronic tools. The IFMIS turned out to be a single-entry system with no detailed information on transactions. As such, it was useful only for compiling periodic reports on budget execution, but not for the preparation of the government's annual financial statements (idem: 21). The IFMIS also failed to contribute significantly to capacity building. In fact, turnover particularly affected the local engineers, possibly undermining the success and functionality of the IFMIS (idem: 21).

Based on their fieldwork investigation of the IFMIS in Rwanda, Hove and Wynne (2010: 22) suggest that the government should have concentrated on getting the tried-and-tested basics of PFM right (such as budget control and external audits), instead of aiming for an expensive and risky IFMIS. They note that the World Bank, IMF and DFID were heavily involved in pushing the government to invest in IFMIS, when such reforms had not proven themselves even in the UK or France (idem: 22).

As IFMIS was implemented in Rwanda for wider reforms aimed at enhancing and harmonizing budget preparation, execution, and financial management and reporting across government agencies. Smart FMS is an Integrated Financial Management Information System (IFMIS) used throughout government for budget execution. During budget preparation, budget data is entered into the system, and during execution, spending commitments are recorded in Smart FMS to track execution (MINECOFIN, 2011). It focuses on alleviating challenges from an operational perspective. It is not and cannot be a solution for every problem associated with budget formulation or execution. This study sought to investigate the relationship existing between the IFMIS and performance of Public Institutions in Rwanda. While a lot of researches have been carried out in establishing the effect of IFMIS and perception of end users in local Government,

but none of studies has effectively synthesized IFMIS specifically with performance of public institution in Rwanda. Hence, this research intends to bridge this gap by trying to study and analyse the relation between IFMIS and performance of public institutions in Rwanda (Harelimana 2017).

The conclusions of the study also are drawn from the most significant factors presented in the preceding sections. The study thus concludes that there has been a moderate level of implementation of IFMIS in Government institutions. Training/capacity building, employee commitment, human resources available, top management support, technological infrastructure, governance system, reporting accountability, incentives structure and legal framework in place affect the implementation of IFMIS in Rwanda. IFMIS forms part of the financial management reform practices of developing countries globally. It holds benefits such as effective control over public finances, contributes to the enhancement of transparency and accountability and serves as a deterrent to corruption and fraud.

### **2.4.3 The Failed Implementation Processes in Some African Countries**

#### **2.4.3.1 Malawi**

According to (Emilie Combaz, 2015), In 1995, the government of Malawi decided to computerize government accounting and finances (Diamond & Khemani, 2005: 18). The government embarked on a project to computerize government accounting and financial processes. The IFMIS conceptual framework (including technical specification) was completed in time, and the governance structure of the project (including a steering committee and a management team) was adequately set. The design and procurement process were completed in 2000 and the pilot run of the customized software started in 2001. The system was implemented in five pilot ministries and thereafter supposed to be rolled out to all ministries and departments.

The lack of political will was a major issue, with the main players neglecting the IFMIS (Diamond & Khemani, 2005: 18). Some observers argued that the political commitment to reform was weak, because individual incentives in some ministries undermined sound financial management (SIDA report, cited in Chêne, 2009: 10). In addition, the implementation team was poorly resourced and was dismantled. Change management and communication were insufficient. Outstanding issues were not resolved. By 2005, the government had decided to adopt an IFMIS similar to the Tanzanian one (Chêne, 2009: 10).

The project encountered numerous difficulties and the implementation phase did not progress according to plans. The implementation team was not well resourced and was dismantled before implementation was completed. Change management and communication activities did not receive adequate attention. Other factors were overall limited stakeholder involvement and some neglect of the system by the main players, including the Ministry of Finance, the Auditor General and pilot ministries. A peer review conducted in 2004 identified 21 issues that needed to be resolved if the system was to function properly, however, which were never resolved. Following a study tour to Tanzania in March 2005, the government decided to adopt and implement an IFMIS similar to the Tanzanian solution. Beyond technical and implementation challenges, some observers argue that there was weak political commitment to the objectives of budgetary reform, because in certain line ministries distorted individual incentives undermined the efforts to promote sound financial management. (Marie Chêne, 2009).

#### **2.4.3.2 Uganda**

Uganda chose to implement a comprehensive financial management reform programme to improve budget and expenditure processes both at the central and decentralized levels. The design and development phase of the IFMIS got considerably delayed and only in 2003 was a company awarded the contract for the provision of a turnkey solution including hardware, software, a Wide Area Network (WAN) and supporting training/change management. This constituted the second attempt to set up a government-wide IFMIS with World Bank financing.

The project encountered key design problems and the pilot – run in six-line ministries and four local governments – brought out a number of issues in the system’s functionality as well as treasury procedures.

The main design problem was associated with the chart of accounts that the government has approved, and the costs involved to rebuild the system were considerable. The system was put into operation with the defects unaltered. As a result, the Uganda IFMIS is performing under its potential with piecemeal, ad-hoc solutions that decrease the efficiency of the system.

Further problems encountered are common to the implementation of most IFMIS projects, including:

- Inadequate planning;
- Poor communication between implementers, donors and government;
- Shortage of management capacity and resources;

- Changes in system design without full agreement of all;
- Poorly implemented trainings.

These examples illustrate the numerous challenges involved in implementing IFMIS. Lack of high-level commitment, ineffective project coordination, loose project design and planning, institutional resistance to change, inadequate technology and lack of human resource capacity are some of the factors often cited for the failure of such schemes. (Marie Chêne, 2009).

## **2.5 Knowledge Gaps**

Researches in the reference list of this paper that are written to improve the implementation of integrated financial management system, skimming these researches, most of them are limited with only 5 modules of IFMIS, but this study tries to incorporate all 9 modules which are listed in the modules of IFMIS part. In addition to this, this study tries to identify factors that are affects the effective implementation of IFMIS.

The research paper entitled with “Integrated Financial Management Information Systems: Guidelines for effective implementation by the public sector of South Africa” objectifies that was conducted in order to identify the challenges and risks that are involved in the implementation of the IFMIS in South Africa. After identification of the challenges and risks, solutions or guidelines were developed that may make the implementation more successful.

This paper is limited with the list of modules such as scoped with from a basic general ledger accounting application to a comprehensive system covering budgeting, accounts receivable or payable, cash management, commitment control, debt, assets and liability management, procurement and purchasing, revenue management, human resource management and payroll. Thus, due to limitation of these modules this study is necessary to include additional modules such as inventory management, public sector budget etc.

The other study called “Impact of Integrated Financial Management Information System on Performance of Public Institutions in Rwanda” shows that different Smart FMS modules and functionalities including Chart of Account, Accounts Payable, Budget Preparation, Cash Flow Functionality, Bank reconciliation functionality, General Ledger module as well as Revenue Management functionality are the sign of the limitation of the paper.

## 2.6 Conceptual Framework of IFMIS

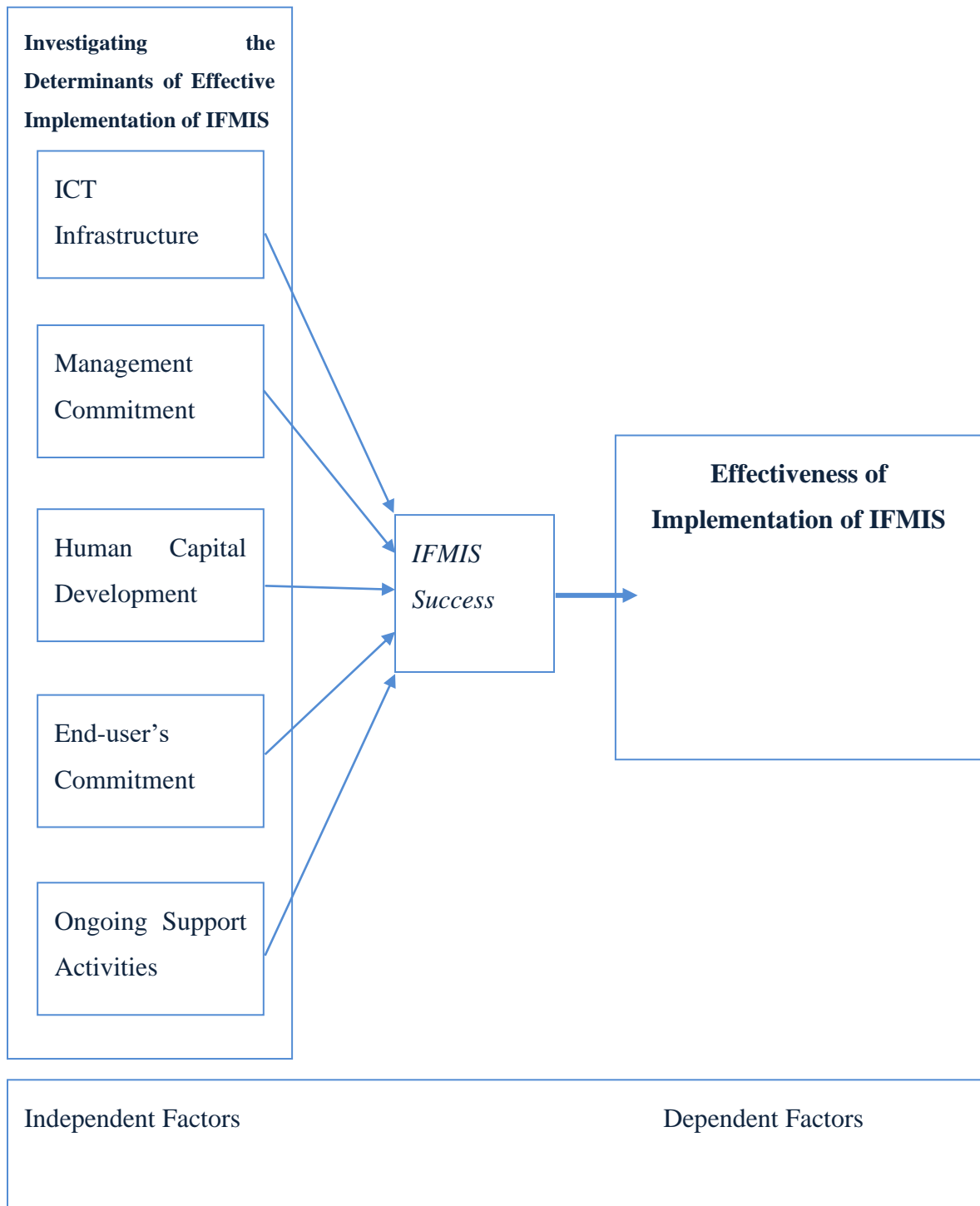


Figure 2.1: Conceptual Framework

Source: Own Definition.

### 2.6.1 Variable Choice and Definitions

The investigation of those determinants in this research is tries to identify those variables which are the major factors in the effective implementation of IFMIS in Ethiopia. The following table describes lists of variables and their descriptions:

| Variable Name | Dependency  | Type         | Definition                               | Measurement (Mean Value of)  |
|---------------|-------------|--------------|--|--|
| EII           | Dependent   | Continuous   | Effectiveness of Implementation of IFMIS | 1 if Strongly Disagree, 2 if Disagree, 3 if Neutral, 4 if Agree, 5 if Strongly Agree |
| IINF          | Independent | Continuous   | ICT Infrastructure                       | 1 if Strongly Disagree, 2 if Disagree, 3 if Neutral, 4 if Agree, 5 if Strongly Agree |
| EUC           | Independent | Continuous   | End-User Commitment                      | 1 if Strongly Disagree, 2 if Disagree, 3 if Neutral, 4 if Agree, 5 if Strongly Agree |
| HCD           | Independent | Continuous   | Human Capital Development                | 1 if Strongly Disagree, 2 if Disagree, 3 if Neutral, 4 if Agree, 5 if Strongly Agree |
| MGTC          | Independent | Continuous   | Management Commitment                    | 1 if Strongly Disagree, 2 if Disagree, 3 if Neutral, 4 if Agree, 5 if Strongly Agree |
| OSA           | Independent | Likert Scale | On-Going Support Activity                | 1 if Strongly Disagree, 2 if Disagree, 3 if Neutral, 4 if Agree, 5 if Strongly Agree |

Table: 2.2 Type, Definition and Measurement of Variables

Source: Own Definition

### 2.6.1.1 **Dependent Variable**

Effective Implementation of IFMIS (EII): It is the dependent variable which is used in this research to show the effect of those determinants are whether affects the implementation of IFMIS or not. It takes Likert scale values to measure the effectiveness. The value started with 1 (which is strongly disagree) and ends with 5 (which is strongly agree). All questions for this dependent variable is distributed into the relative independent variable questions to reduce the redundancy of question category.

### 2.6.1.2 **Covariate (Explanatory) Variables**

**ICT Infrastructure (IINF):** It is a variable with Likert scale value. ICT infrastructure is the backbone of the IFMIS system to make it available 24/7. ICT infrastructure holds and manages all technological resources including hardware, software, networking and communication devices, services, electric power and relate technological materials. All these resources are assumed as a major sub component of the IFMIS system. Thus, the examination of ICT infrastructure affects the effective implementation of IFMIS positively or negatively.

**End-User Commitment (EUC):** It is a variable with Likert scale value. One of the process of implementation of IFMIS is delivering the system interface to end-users who are the main pillar of the IFMIS system. End-users are active system users who are working to enter data into the system, process the data as per the regulation of the system and generates the outputs to the relevant organs in timely fashion. The determination of end-user's commitment to incur the assigned task is able to affect the IFMIS system positively or negatively.

**Human Capital Development (HCD):** It is a variable with Likert scale value. Human capital is the most essential resource in any kind of system or organizations. In the context of IFMIS, employees needed to be well developed to use the system because of the nature of the IFMIS; i.e; the system needs intensive training and exercise as a modern technological system and needs responsible and right person in place to make the system live. The evaluation of human capital development also affects the effective implementation of IFMIS positively and also negatively.

**Management Commitment (MGTC):** It is a variable with Likert scale value. The management is the steering wheel of the project. The commitment of those managers can fasten the implementation or slowing it in other side. IFMIS needs strong commitment from managers to be implemented effectively. Thus, the examination of management commitment is also one of the major pillar which can affect the effective implementation of IFMIS whether positively or negatively.

**On-Going Support Activity (OSA):** It is a variable with Likert scale value. IFMIS by its nature needs strong support after its deployment in order to stand with its 2 legs. Without on-going support of this newly existed technological tool, it is impossible that the system long lasts. Thus, the determination of on-going support activity is another pillar of the effective implementation of the IFMIS system which supports all end users on their day to day activities and challenges of using the IFMIS system. On-going support activities is also affecting the effective implementation of IFMIS positively or negatively.

### **2.6.2 IFMIS, A Case in Ethiopia**

As cited by (Marie Chêne, 2009) A 2006 paper by the Kennedy School of Government presents a case study of Ethiopia as an illustration of a successful and to some extent unconventional approach to automating public financial systems. This case study is especially interesting as it challenges the traditional wisdom usually associated with such schemes.

In Ethiopia, the automation process faced major challenges of resource, capacity, infrastructure, changes in government and dependency on foreign aid policies. Therefore, the reform strategy prioritized a pragmatic sequential approach based on the logic to ensure that the “basics” are in place before moving to more complex systems. A strategic choice was made to drive the automation process from the procedural requirements which were defined by the users, through an incremental and iterative approach, with government staff extensively being involved. The reform process first focused on bringing existing system up to date through simplification, elimination of backlogs and sequential procedural change before introducing new systems. Constant consideration was given to limit the burden imposed on scarce staff throughout the whole process. This strategy was justified by low level of skills, evolving fiscal decentralization and the general degradation of the financial system that had taken place over the previous years.

The information systems were developed in a phased approach based on user demand and resource availability. This approach necessitated an iterative customized approach to automation instead of a more comprehensive and standardized “off-the-shelf” approach that would have exceeded the local capacity to absorb it. This prudent and pragmatic approach to automation ensured that information systems were successfully and promptly delivered at relatively low cost, then gradually upgraded to evolve into technically robust and sophisticated systems meeting international standards.

### **2.6.2.1 The Ethiopian Case Demonstrates:**

- The role of automation as a support but not a driver of public financial reform. Ethiopia prioritized a process change approach driven by procedural reform and supported by information technology instead of viewing IT requirements as a driver of procedural reforms.
- The fact that OTS solutions are not necessarily always the most appropriate and cost-effective solution to automation.
- The value of an incremental strategy of frequent operational upgrade of information systems;
- That the lack of high level political will does not necessarily hamper successful implementation.

According to (Emilie Combaz, 2015), Ethiopia was a success that challenged conventional wisdom on implementing IFMIS, shows a 2006 paper published by Harvard University (Peterson, 2006). The country had limited resource, capacity, infrastructure, as well as changes in government and dependency on foreign donors (Peterson, 2006). Yet, a prudent and pragmatic approach ensured that IFMIS were promptly delivered at a relatively low cost, and then gradually updated into technically robust, sophisticated systems meeting international standards (Peterson, 2006). Automation was delivered on budget, ahead of schedule, and beyond specification (Peterson, 2006).

The IFMIS in Ethiopia has been part of a larger transformation of its PFM to international standards, because the change aligned with the four known drivers of public sector reform: context, ownership, purpose, and strategy (Peterson, 2011). Peterson (2011) argues that PFM reform in Ethiopia succeeded because it built a stable and sustainable ‘plateau’ that is appropriate to local context, instead of aiming for a risky and irrelevant ‘summit’ of international best practice. To support of rapid government decentralization, the reform successfully adopted a strategy of ‘recognize, improve, sustain’.

The reform adopted a sequential approach, ensuring that basics were in place before moving on to complex systems (Peterson, 2006). To begin, existing systems were brought up-to-date: they were simplified, backlogs were eliminated, and sequential procedural change was introduced. Only after this were new systems introduced (idem: 24-25).

The strategy was to let users’ definition of the procedural requirements drive automation (Peterson, 2006). This was done through an incremental and iterative approach which extensively involved government staff (Peterson, 2006: 23-32). User demand and resource availability drove

the phased development of information systems. This customized approach focused on selectivity and completeness rather than integration, and was preferred over a more comprehensive and standardized off-the-shelf one that would have overwhelmed local capacities (ibidem).

The programme consistently limited the burden imposed on scarce staff (Peterson, 2006: 26). Such constant consideration mattered because staff had a low level of skills, fiscal decentralization was evolving, and the financial system had suffered a general degradation over the previous years (ibidem).

The Ethiopian case demonstrates several lessons, according to Peterson (2006). Automation supports, but does not drive, public financial reform. Ethiopia used procedural reform, not IT, as the driver of change in processes. A lack of high-level political will does not necessarily hamper success. An incremental strategy of frequent operational upgrades is fruitful. Lastly, off-the-shelf solutions are not necessarily the most appropriate and cost-effective.

## **3 CHAPTER THREE: - RESEARCH METHODOLOGY**

### **3.1 Introduction**

The main objective of this chapter is to show the choice of the research methodology framework and the interpretation of appropriate methodology. Thus, it summarizes parts of study area. Additionally, it identifies what kind of research design is used to study this research and lists all data collection methods, samples tools, sampling techniques data sources, presentation and limitations.

### **3.2 Research Approach**

The purpose of this research is to investigate the determinants of effective implementation of integrated financial management information system in government public bodies of Ethiopia, a case of ministry of finance. The research is used the ordinary least square research design on selected descendant offices to identify those factors which affects the implementation of IFMIS project.

### **3.3 Research Design**

As mentioned in specific objective, the IFMIS system is implemented with the responsibility of Ministry of Finance has different issues specially related with the implementation activities. As mentioned in specific objective, this study majorly pays attention for those major implementation concepts, i.e.; ICT infrastructure, human capital development, management commitment, end-users' commitment and ongoing support activities are assumed as an independent variables, whereas High availability of the system, Sustainability, Low frequency of support, On-time report, and Quality of the report are assumed to be dependent variables which are the main concept of this research paper.

The research design that the researcher intended to use is a descriptive method which collects information from employee of Ministry of Finance and its descendant offices who works on the IFMIS. In such condition the process of collection of information will not affect the activities of the respondents.

### 3.3.1 Population of The Study

The study area which this research is focused on Ministry of Finance and its descendent public bodies which is located around the second compound of the office. Generally, MoF has more than 1000 staff working for the organization including all descendent offices. From those staff's finance and procurement, budget, inventory, all secretaries, payroll, and other related staffs are working on the IFMIS. These IFMIS users are limited on their numbers as per every office, such that:

- Ministry of Finance: -191 users
- National Planning Commission: -9 users
- Public Procurement and Property Administration Agency: -16 users
- Public Procurement and Property Disposal Service: -21 users

Generally, from those public bodies, there are around 237 IFMIS users. Thus, the sampling will be calculated from this number of users.

### 3.3.2 Sampling Techniques and Sample Size

This study implies probability sampling technique in order to select the sample size from the total population. In ministry of finance, there are around 237 employee who works on the integrated financial management system directly. Thus, using the stratified random sampling method (Yamane, 1967).

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{237}{1 + 237(0.05)^2}$$

$$n = 148$$

Where:

n=Number of sample size in which this research is used (148)

N=Total number of populations in which staffs who works on IFMIS system in MoF and its descendant offices (237)

e=error term (5%)

### **3.3.3 Source of Data and Collection Techniques**

The primary data will be collected from employees of Ministry of Finance and its descendent public bodies (i.e.; National Planning Commission, Public Property and Procurement Administration Agency, and Public Property and Disposal Service) who works in integrated financial management information system. Collection technique utilizes questionnaires which is designed to hold different information such as demographic information about the respondent, general information about functional works and other specific information for the situation which holds the evaluation of given objectives. The questionnaire is organized with different major parts and sub parts. The questionnaire format is provided at the appendix part of this paper.

The data collected from those employees will be highly accurate in terms of current condition and situations of the IFMIS. Data collection mechanism will use a questionnaire that will be filled by those employees.

#### **3.3.3.1 Primary Data Sources**

The primary data was collected from the questionnaire that is distributed for the respondents in 4 organizations. Thus, the result is evaluated and analyzed on the next chapter.

#### **3.3.3.2 Secondary Data Sources**

The secondary data were collected from different reports, articles, research papers, and other web resources. In addition to these the researcher tried to review different types of project documentation such as; project plans, reports, manuals, website and soon.

#### **3.3.3.3 Data Analysis and Interpretation**

The collected data is encoded into Microsoft Excel firstly then processed with STATA after the raw data is well organized with appropriate format. The descriptive statistics analysis and interpretation is also used to review the collected data. To investigate the determinants of this research, orderedlist square regression is used. Using a table, the data will be analyzed based on descriptive statistics using STATA software.

#### **3.3.3.4 Specification of Econometric Model**

This study searches for the determinants that affects the effective implementation of IFMIS in government public bodies of Ethiopia in a case of Ministry of Finance. The survey data was collected randomly from MoF and its descendant organizations. The research uses OLS model specification to identify those determinants and their level of effect using 5-Point Likert scale data.

The econometric model such as OLS techniques was applied. The primary data for the model was collected by using of five-point Likert scale questionnaires for each variable and analyze using quantitative techniques such as descriptive statistics (mean, standard deviation, min max). The model specification is given as follows:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \mu$$

Where:

Y= Effectiveness of implementation of IFMIS (Outcome variable)

$\beta_0$  = Constant term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ , and  $\beta_5$  are coefficients of the independent variable in the model;

$x_1$ = ICT infrastructure (iinf),

$x_2$ = human capital development (hcd),

$x_3$ = end-user's commitment (euc),

$x_4$ = management commitment (mgtc),

$x_5$ = ongoing support activities (osa) and

$\mu$  = the error term in the model (represents all other factors affecting the dependent variable other than the independent variables in the study).

## **4 CHAPTER FOUR: RESULT AND DISCUSSION**

### **4.1 Introduction**

In this chapter, all results and findings are discussed in order of respective issues. Starting from descriptive statistical analysis of the demographic characteristics of those sample populations of IFMIS users from the selected public bodies. The researcher is used primary data which is collected using structured questionnaires by five-point Likert scale questions and also secondary data collected from various sources such as IFMIS performance and annually reports, project documents, training manuals, and other relevant documents.

The analysis of collected data from selected respondents who are users of IFMIS in Ministry of Finance, Public Procurement and Property Disposal Service, Public Procurement and Property Administration Agency, and from National Planning Commission is organized using Microsoft Excel application of version 16 and later by STATA version 14.2 to analyze and interpret the data.

As part of the research methodology, a total of 138 questionnaires were distributed and collected from those respondents who works in different positions like top management, middle level workers, supervisors and operative workers. This discussion of result contains econometric model which this study implemented is OLS to show the effective implementation of IFMIS is depends on those factors or determinants (which are listed in the previous chapter i: e; ICT Infrastructure, End-User Commitment, Human Capital Development, Management Commitment, and On-Going Support Activity). Testing the data is also part of this chapter which insures whether the model is fitted with this specific study or not. Thus, all quantitative result is presented within this chapter.

### **4.2 Demographic Characteristics**

The descriptive data which is the part of survey result is provided with the statistical information which used to show what the demographic information does has the respondent. That information is provided in pivot table structure like table which is organized using Microsoft Office Excel application. Generally, the descriptive analysis is displayed to show that the IFMIS user's sample profile in which it means it shows that the Ministry of Finance's organizational asset is utilized in the production of the system.

### 4.2.1 Questionnaire Response Rate

Generally, the response rate of the questionnaire from those public bodies is 96.5% (138) and the total number of respondents on those 4 institutions was 143 out of 148 respondents. Table 4.1 shows that the detail response rate as per each institution. From Ministry of Finance, 77.6% (111) of questionnaire was collected from 119 respondents. From these responses, 4 questionnaires were dropped due to incompleteness of the response. Totally 111 responses were properly encoded into the next step. The response rate of Ministry of Finance shows that most of respondents and majority of IFMIS users are from the ministry office.

From Public Procurement and Property Disposal Service, generally there were 8.4% (12) of respondents. 13 questionnaires were distributed and all were collected but 1 questionnaire were dropped due to its incompleteness of response.

From Public Procurement and Property Administration Agency, 10 questionnaires are distributed and 9 were collected. It shows that the institution has 6.3% (9) response rate from the total response.

National Planning Commission's IFMIS users were returned all distributed questionnaire without any problem. NPC has 4.2% (6) response rate from the overall collected response.

Table 4.1: Questionnaire Distribution

| INSTITUTION   | QUESTIONNAIRE DISTRIBUTED | QUESTIONNAIRE COLLECTED | INCOMPLETE QUESTIONNAIRE | RESPONSE RATE |
|---|---------------------------|-------------------------|--------------------------|---------------|
| Ministry of Finance                                 | 119                       | 115                     | 4                        | 77.6%         |
| Public Procurement & Property Disposal Service      | 13                        | 13                      | 1                        | 8.4%          |
| Public Procurement & Property Administration Agency | 10                        | 9                       | 0                        | 6.3%          |
| National Planning Commission                        | 6                         | 6                       | 0                        | 4.2%          |
| <b>TOTAL</b>  | <b>148</b>                | <b>143</b>              | <b>5</b>                 | <b>96.5%</b>  |

Source: Own Survey Data, 2019

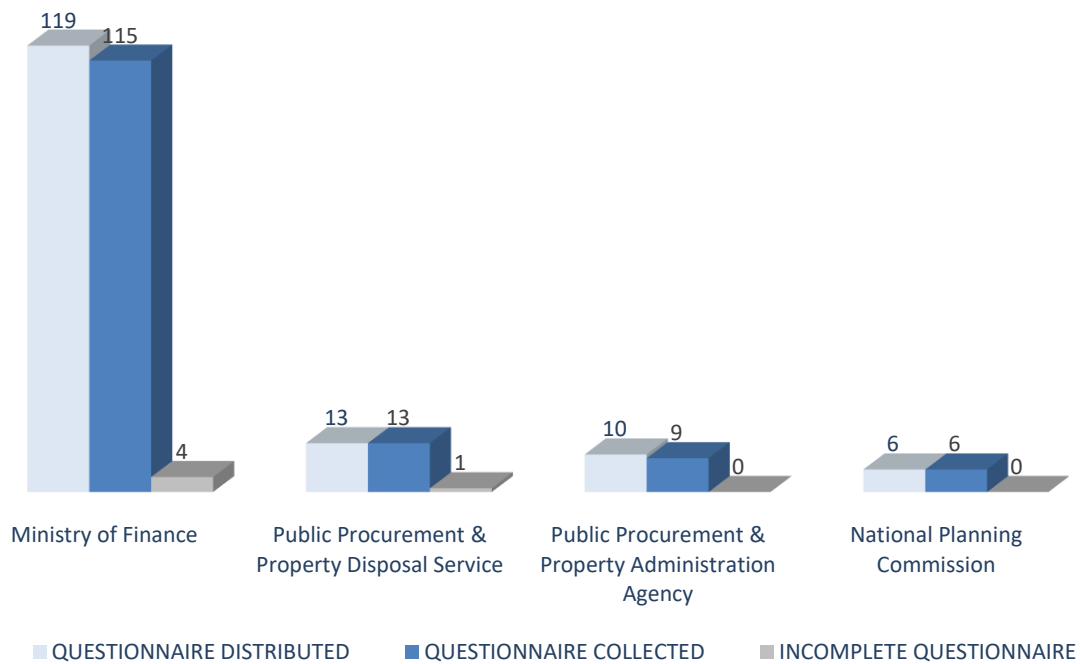


Figure 4.1: Questionnaire Distribution

#### 4.2.2 Gender Distribution Rate

The gender distribution is one of the descriptive data that shows what ratio has each gender. As described in the table 4.2 From 138 responses from all 4 institutions, 48.6% (67) of respondents were male and the rest 51.4% (71) of respondents were female. This figure shows that the gender distribution has no such a big gap between those 2 genders. It shows that IFMIS workers have equal gender mainstream in the project office.

Table 4.2: Gender Distribution

| GENDER       | FREQUENCY  | PERCENT       |
|--------------|------------|---------------|
| MALE         | 67         | 48.6%         |
| FEMALE       | 71         | 51.4%         |
| <b>TOTAL</b> | <b>138</b> | <b>100.0%</b> |

Source: Own Survey Data, 2019

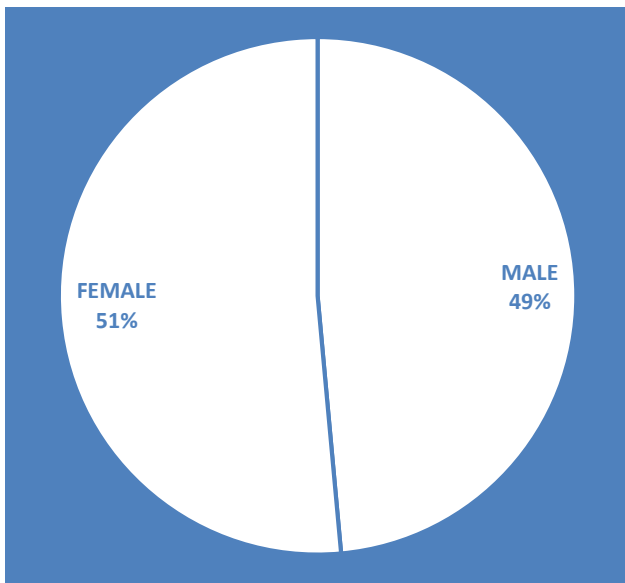


Figure 4.2: Gender Distribution

### Respondents Age Category

Table 4.3: shows that the respondents age category. Thus, the survey were categorized into 4 age category as shown in the table. Majority of the respondents are in the age of between 26 and 45. It means that the respondents whose age are between 26 and 35 are 36.2% (50) and whose age are between 36 and 45 are 31.9% (44). The rest of respondents (which means the respondent’s age below 25 and above 46) are covers 14.5% (20) and 17.4% (24) from overall response respectively. Overall it shows that around 67% of IFMIS users are in the level of maturity and it is good for the project office in improving its work performance.

Table 4.3 Age Category

| AGE               | FREQUENCY  | PERCENT       |
|-------------------|------------|---------------|
| Less than 25      | 20         | 14.5%         |
| Between 26 and 35 | 50         | 36.2%         |
| Between 36 and 45 | 44         | 31.9%         |
| Above 46          | 24         | 17.4%         |
| <b>TOTAL</b>      | <b>138</b> | <b>100.0%</b> |

Source: Own Survey Data, 2019

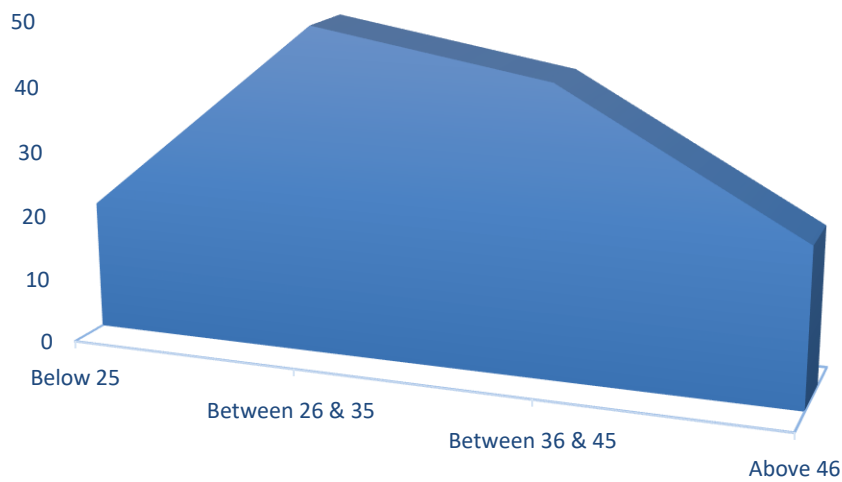


Figure 4.4: Age Category

### 4.2.3 Education

The respondent's educational status is described in Table 4.4 It shows that from 138 respondents, 66.7% (92) are bachelor's degree holders. 26.8% (37) of respondents are holders of masters of degree and above. The rest 6.5% (9) respondents are diploma and below diploma educational level. Generally, around 93% of respondents are holders of degree and above educational status thus, it shows the IFMIS project office users have adequate educational background to work with the project office.

Table 4.4 Educational Background

| EDUCATION                                  | FREQUENCY  | PERCENT       |
|--|------------|---------------|
| Diploma or Below                           | 9          | 6.5%          |
| Undergraduate Degree (Bachelor's Degree)   | 92         | 66.7%         |
| Graduate Degree (Master's Degree) or Above | 37         | 26.8%         |
| <b>TOTAL</b>                               | <b>138</b> | <b>100.0%</b> |

Source: Own Survey Data, 2019

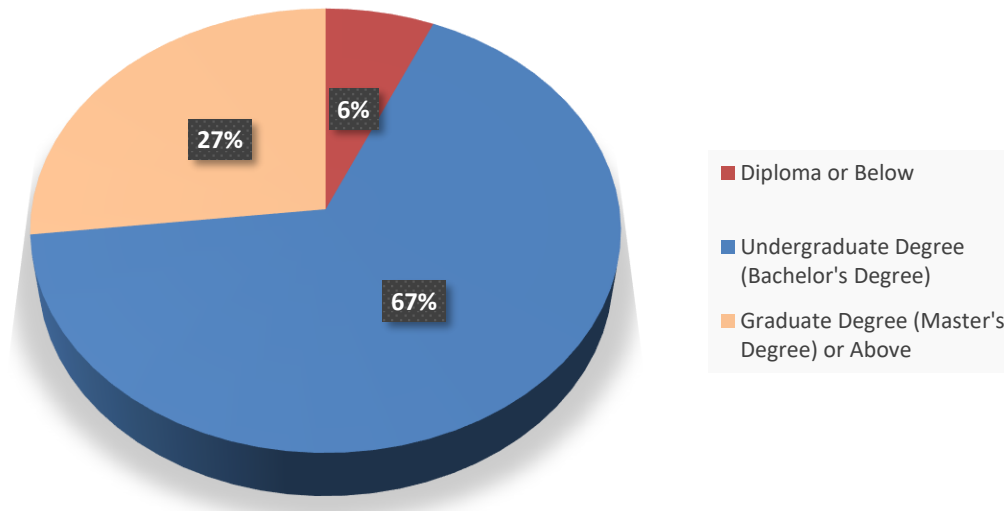


Figure 4.5: Educational Background

#### 4.2.4 Occupational Position

The occupational job level shows the distribution of the respondents from high level (top management) the lower (operative) level. This shows that the randomly distributed questionnaire is reached to all level of respondent’s position. Table 4.6 shows that the occupational distribution of all 4 institution in overall way. 54.3% (75) of respondents were operative level users which shows that most respondents were from operational or expert level workers. Supervisors who participated on this response has 13.8% (19) coverage and middle level workers are 26.1% (36) coverage. The rest 5.8% (8) of the respondents are top management staffs.

Table 4.5 Occupational Position

| JOB LEVEL      | FREQUENCY  | PERCENT       |
|----------------|------------|---------------|
| Top Management | 8          | 5.8%          |
| Middle Level   | 36         | 26.1%         |
| Supervisor     | 19         | 13.8%         |
| Operative      | 75         | 54.3%         |
| <b>TOTAL</b>   | <b>138</b> | <b>100.0%</b> |

Source: Own Survey Data, 2019

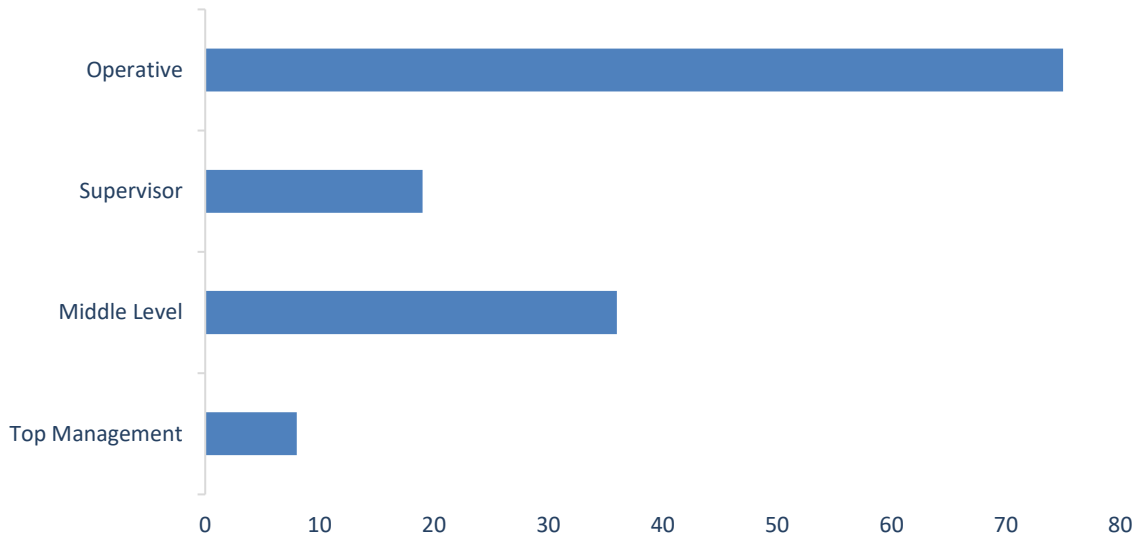


Figure 4.6: Occupational Position

#### 4.2.5 Work Experience of The Respondents

Based on the characteristics of IFMIS experience, work experience of respondents is classified in to two groups, As shown table 4.6 the first group is general work experience which is used to show that the respondents total year of work experience in the government public bodies (this is due to that the government public finance management and private organs financial management system has distinct framework, policy and structure) though such experience of respondents shows that the capability and knowledge of public finance. The second group of work experience is shown in table----- and which is specifically shows the experience on IFMIS system. Not all public servants are IFMIS workers. Thus, this demographic information shows that how much is a respondent is experienced on the IFMIS. Setting 8 years in this category shows that the customization of the IFMIS were started 8 years ago (as of this research is written). Respondent may have more than 8 years of experience if he/she is participated on the researching time to adopt the system whether to decide that IFMIS is relevant and efficient to government of Ethiopia or not, or he/she might be worked on a country other than Ethiopia who starts implementation/customization of IFMIS before government of Ethiopia.

Based on the general work experience, most of respondents (31.9 %) (44) have less than 5 years of work experience on government public bodies. Equivalently to them, 31.9% (44) of respondents have work experience of between 5 and 10 years. Between 11 and 15 years of work experience holders of respondents covers 16.7% (23) of the total respondents and the rest who have more than 15 years of work experience in government public bodies are 19.6% (27).

Additionally, Table 4.7 shows that 32.6% (45) have less than 2 years of IFMIS experience. Respondent who have between 2 and 4 years of IFMIS experience covers 34.8% (48) of from the total number of respondents. 24.6 (34) of respondent from the total number have work experience between 5 and 8 years in the IFMIS. The rest 8% (11) have above 8 years of work experience on IFMIS. These respondents have starts working on IFMIS before and on the starting of adoption of IFMIS to the government of Ethiopia.

Table 4.6: General Work Experience

| YEARS OF SERVICE  | FREQUENCY  | PERCENT       |
|-------------------|------------|---------------|
| Less than 5       | 44         | 31.9%         |
| Between 5 and 10  | 44         | 31.9%         |
| Between 11 and 15 | 23         | 16.7%         |
| Above 15          | 27         | 19.6%         |
| <b>TOTAL</b>      | <b>138</b> | <b>100.0%</b> |

Source: Own Survey Data, 2019

Table 4.7 IFMIS Work Experience

| YEARS OF SERVICE | FREQUENCY  | PERCENT       |
|------------------|------------|---------------|
| Less than 2      | 45         | 32.6%         |
| Between 2 and 4  | 48         | 34.8%         |
| Between 5 and 8  | 34         | 24.6%         |
| Above 8          | 11         | 8.0%          |
| <b>TOTAL</b>     | <b>138</b> | <b>100.0%</b> |

Source: Own Survey Data, 2019

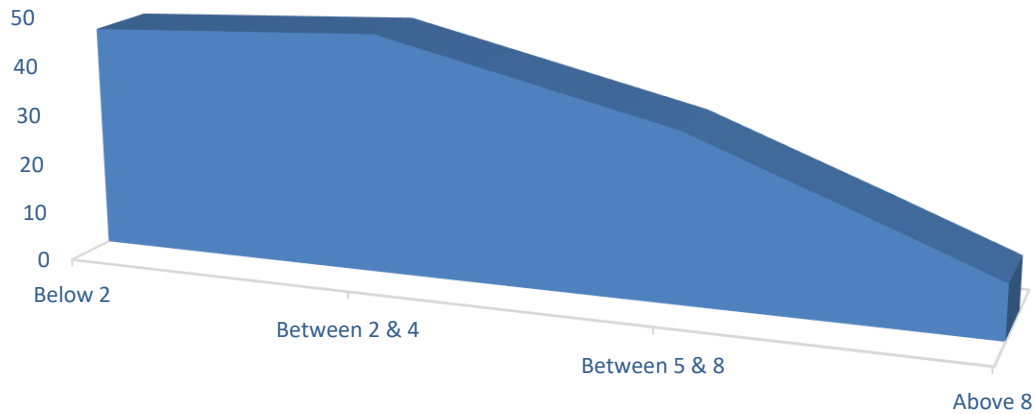


Figure 4.7: IFMIS work status

#### 4.2.6 Regularity of Using IFMIS

The regularity of using IFMIS describes that the intensity of IFMIS users working on the system day to day. Thus table 4.7 describes that the respondent's day to day interaction with IFMIS system. Respondents who uses IFMIS sometimes are 22.5% (31) from the total number of respondents. Most of Respondents (i.e. 44.2% (61)) are uses IFMIS usually on their day to day work activities. It shows that most of respondents are direct and active interaction with IFMIS on their day to day works and activities. In frequently manner, there are 24.6% (34) respondents and the rest are works on IFMIS in often manner and they cover 8.7% (12) in number. IFMIS users who works on IFMIS in often manner are workers whose job is totally depend on the IFMIS and they are dedicated to use the system in their full work time. The respondent's status of how frequently works on IFMIS is used to know how much they are familiarized with the system. Thus, this status shows that the response result information contains more appropriate respond to evaluate the system.

Table 4.7 frequency of using IFMIS

| REGULARITY | FREQUENCY | PERCENT |
|------------|-----------|---------|
| Sometimes  | 31        | 22.5%   |

|              |            |               |
|--------------|------------|---------------|
| Usually      | 61         | 44.2%         |
| Frequently   | 34         | 24.6%         |
| Often        | 12         | 8.7%          |
| <b>TOTAL</b> | <b>138</b> | <b>100.0%</b> |

Source: Own Survey Data, 2019

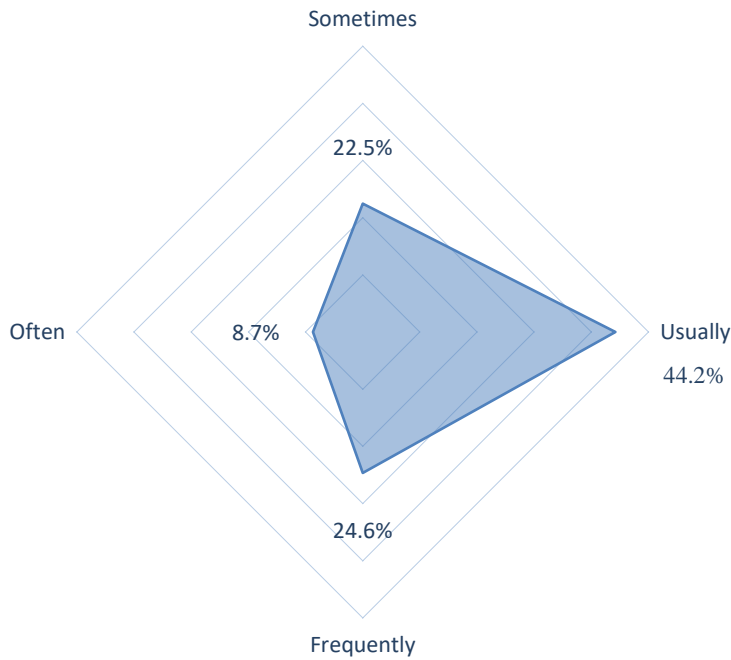


Figure 4.8: Frequency of using IFMIS

#### 4.2.7 Reliability and validity test

To determine the reliability and validity of the data collection instrument the Cronbach’s alpha has been used. The Alpha measures integral consistency by establishing whether certain items measure the intended variable. One of the common methods to test the reliability and validity of data collected through questionnaire is the use of Cronbach’s alpha coefficient. Lee Cronbach (1951) defines reliability as an attribute of an instrument used to measure consistency.

Table 4.8: Reliability test

Test scale = mean(unstandardized items)

Average interitem covariance: .3707525  
 Number of items in the scale: 5  
 Scale reliability coefficient: 0.8927

Source: Own Survey Data (2019)

The Cronbach’s alpha shown in the above table for the data collected for the five explanatory variables in ICT infrastructure, management commitment, end-user commitment, human capital development, and on-going support activities are 89.3%, Nunnally (1978) recommends that instruments used in research should have reliability of result 0.70 and above, hence, the survey result indicates 0.89 the Cronbach’s Alpha coefficient is acceptable range to measure the effectiveness of implementation of IFMIS.

### 4.3 Descriptive statistics Result

This part describes those investigated determinants of their contribution and level of effect on the effective implementation of IFMIS. These determinants are classified as a variable which are independent in our case, is presented with their relative tables of detail data presentation.

The main purpose of using this statistical parameter is to interpret the average response rate of respondents for each statement. According to Renjit Kumar (2011) any score can be assigned as long as the strength of the response pattern is reflected in the score and the highest score is assigned to the response with the highest intensity, therefore the study used judgment to classify the range of scores obtained of the five point Likert scale as follows: A variable with a mean score of 3.4 to 5.0 have taken as ‘strongly agree/agree’ on the five point Likert scale, a score of 3.3 to 3.4 as ‘neutral’ on the five point Likert scale and a score of 0.0 to 3.3 either ‘strongly disagree’ or ‘disagree’ on the Likert scale.

Table 4.8: **Effectiveness of implementation OF IFMIS**

| SN. No | STATEMENT   | OBS | MEAN | STD.DEV | MODE | MIN  | MAX  |
|--------|---|-----|------|---------|------|------|------|
| 1      | IFMIS is available all working time.              | 138 | 3.44 | 1.03    | 4.00 | 1.00 | 5.00 |
| 2      | Management has commitment to implement the IFMIS. | 138 | 3.65 | 0.92    | 4.00 | 1.00 | 5.00 |

|                        |   |            |             |             |             |             |             |
|------------------------|---|------------|-------------|-------------|-------------|-------------|-------------|
| 3                      | The training is held in the proper order and level of trainees understanding. | 138        | 3.43        | 0.93        | 4.00        | 1.00        | 5.00        |
| 4                      | End-users have active participation of the implementation of IFMIS.           | 138        | 3.39        | 1.05        | 4.00        | 1.00        | 5.00        |
| 5                      | End-users have commitment to accept implementation of the IFMIS.              | 138        | 3.60        | 0.90        | 4.00        | 1.00        | 5.00        |
| 6                      | Same issues with high frequency of support request are solved permanently.    | 138        | 3.46        | 0.99        | 4.00        | 1.00        | 5.00        |
| <b>OVERALL AVERAGE</b> |   | <b>138</b> | <b>3.50</b> | <b>0.97</b> | <b>4.00</b> | <b>1.00</b> | <b>5.00</b> |

Source: Own Survey Data, 2019

### 4.3.1 Effectiveness of Implementation of IFMIS

The outcome result of the Effectiveness of implementation of IFMIS is the dependent variable which is this study tries to relate with other explanatory variables. Table 4.8 shows that management commitment is the most critical determinant factor on the implementation of IFMIS. With the mean value of 3.65, management commitment is more than everything which needs to implement the IFMIS effectively. In the least place, respondents are described that end-users have not active participation of the implementation of IFMIS. With a mean value of 3.39 score, the active participation of the implementation process of IFMIS needs end-users, not only the top or middle management staffs. Thus, excluding of the end-users to participate on the implementation of IFMIS may affect and the implementation process may become worse than ever.

Table 4.9 ICT infrastructure

| SN. No | STATEMENT  | OBS | MEAN | STD.DEV | MODE | MIN  | MAX  |
|--------|--|-----|------|---------|------|------|------|
| 1      | There is capable personal computer to work on IFMIS for all IFMIS staff. | 138 | 3.78 | 0.94    | 4.00 | 1.00 | 5.00 |
| 2      | There is good network connection to work on IFMIS.                       | 138 | 3.30 | 1.03    | 4.00 | 1.00 | 5.00 |
| 3      | There is active technical support from ICT department.                   | 138 | 3.57 | 1.04    | 4.00 | 1.00 | 5.00 |

|                        |   |            |             |             |             |             |             |
|------------------------|---|------------|-------------|-------------|-------------|-------------|-------------|
| 4                      | The performance of IFMIS is good for concurrent access request.                                 | 138        | 3.59        | 0.95        | 4.00        | 1.00        | 5.00        |
| 5                      | The technical support staff are capable of solving every issue related with technical problems. | 138        | 3.59        | 0.90        | 4.00        | 1.00        | 5.00        |
| <b>OVERALL AVERAGE</b> |   | <b>138</b> | <b>3.57</b> | <b>0.97</b> | <b>4.00</b> | <b>1.00</b> | <b>5.00</b> |

Source: Own Survey Data, 2019

### 4.3.2 ICT Infrastructure of IFMIS

Based on calculated means and standard deviations, the summary of ICT infrastructure of IFMIS as a determinant factor (which is described in table 4.9) shows that the capability of personal computers which is provided for the IFMIS activity has a mean score of 3.78 and this shows that PC for IFMIS staff is the most critical factor which preferred by majority of respondents. Thus, this question indicates that it has an effect on the effective implementation of IFMIS. Secondly, the evaluation of performance of IFMIS for concurrent access request and the capability of technical support staff in resolving technical problems are placed on the second place which can affect the effective implementation of IFMIS.

Table 4.10 Management commitment

| SN. No | STATEMENT   | OBS | MEAN | STD.DEV | MODE | MIN  | MAX  |
|--------|---|-----|------|---------|------|------|------|
| 1      | Top management has active awareness of IFMIS.                                 | 138 | 3.33 | 1.02    | 4.00 | 1.00 | 5.00 |
| 2      | Change management is greatly worked on to reduce change resistance.           | 138 | 3.38 | 0.96    | 4.00 | 1.00 | 5.00 |
| 3      | Management has active follow-up of the implementation of IFMIS.               | 138 | 3.30 | 1.05    | 3.00 | 1.00 | 5.00 |
| 4      | Management has a commitment to fix related issues immediately.                | 138 | 3.17 | 1.04    | 3.00 | 1.00 | 5.00 |
| 5      | Management has active follow-up of the implementation plan.                   | 138 | 3.22 | 1.05    | 4.00 | 1.00 | 5.00 |
| 6      | Management has active communication with implementation staffs and end-users. | 138 | 3.19 | 1.04    | 4.00 | 1.00 | 5.00 |

|                        |  |            |             |             |             |             |             |
|------------------------|--|------------|-------------|-------------|-------------|-------------|-------------|
| 7                      | There is active staff replacement at the time of staff turnover. | 138        | 2.87        | 1.17        | 4.00        | 1.00        | 5.00        |
| <b>OVERALL AVERAGE</b> |  | <b>138</b> | <b>3.21</b> | <b>1.05</b> | <b>3.71</b> | <b>1.00</b> | <b>5.00</b> |

Source: Own Survey Data, 2019

### 4.3.3 Management Commitment Due to the Implementation of IFMIS

As seen in the table 4.10 above, the contribution of change management to reduce the change resistance for the implementation of IFMIS is the major factor selected by most respondents with the mean value of 3.38. It shows that the working on change resistance is the main factor which can affect the effective implementation of the IFMIS. Following this, the active awareness of top management to the IFMIS which has the mean value of 3.33 is the second major factor in affecting the effective implementation of IFMIS.

Table 4.11 Human capital development

| SN. No | STATEMENT   | OBS | MEAN | STD.DEV | MODE | MIN  | MAX  |
|--------|---|-----|------|---------|------|------|------|
| 1      | Training that is given for IFMIS users is relevant with the actual works of IFMIS.                            | 138 | 4.04 | 0.86    | 4.00 | 1.00 | 5.00 |
| 2      | Trainers of IFMIS have good technical knowledge about IFMIS.  | 138 | 3.67 | 1.05    | 4.00 | 1.00 | 5.00 |
| 3      | Trainers of IFMIS have good functional knowledge about IFMIS.   | 138 | 3.87 | 0.89    | 4.00 | 1.00 | 5.00 |
| 4      | Trainers of IFMIS have good non-functional knowledge about IFMIS.   | 138 | 3.44 | 1.03    | 4.00 | 1.00 | 5.00 |
| 5      | Trainers of IFMIS have good government financial procedure knowledge about IFMIS.                             | 138 | 3.67 | 0.85    | 4.00 | 1.00 | 5.00 |
| 6      | Training coordinators collect the comment and take measurement on the overall training process from trainees. | 138 | 3.40 | 0.99    | 4.00 | 1.00 | 5.00 |
| 7      | There is good training encouragement from trainers/coordinators.  | 138 | 3.51 | 0.96    | 4.00 | 1.00 | 5.00 |

|                        |   |            |             |             |             |             |             |
|------------------------|---|------------|-------------|-------------|-------------|-------------|-------------|
| 8                      | Stationery for the training is properly provided.   | 138        | 3.86        | 0.94        | 4.00        | 1.00        | 5.00        |
| 9                      | There is a good catering service for trainees.  | 138        | 3.26        | 1.12        | 4.00        | 1.00        | 5.00        |
| 10                     | The training room layout is appropriate for training.   | 138        | 3.50        | 1.08        | 4.00        | 1.00        | 5.00        |
| 11                     | Training devices (projector, white board, computers, networks) are working properly.              | 138        | 3.60        | 1.03        | 4.00        | 1.00        | 5.00        |
| 12                     | Training manuals, exercise books and documents are properly prepared and distributed.             | 138        | 3.73        | 0.89        | 4.00        | 1.00        | 5.00        |
| 13                     | Number of trainees with a single training room is appropriately fitted regards with the training. | 138        | 3.60        | 1.00        | 4.00        | 1.00        | 5.00        |
| 14                     | Training room and materials are provided properly.  | 138        | 3.59        | 1.01        | 4.00        | 1.00        | 5.00        |
| 15                     | There is sufficient training incentive for trainees.  | 138        | 3.09        | 1.19        | 3.00        | 1.00        | 5.00        |
| <b>OVERALL AVERAGE</b> |   | <b>138</b> | <b>3.59</b> | <b>0.99</b> | <b>3.93</b> | <b>1.00</b> | <b>5.00</b> |

Source: Own Survey Data, 2019

#### 4.3.4 The Effect of Human Capital Development due to the implementation of IFMIS

The above table; table 4.11 shows that the relevancy of the training that is given for IFMIS users has the major factor on human capital development of IFMIS implementation with the mean value of 4.04. Mainly this condition is also the great effect on the effective implementation of IFMIS. The functional knowledge of the IFMIS trainers is also the second major factor with the mean value of 3.87. This result shows that most respondents are tried to show that the functional knowledge is a very necessary next to the relevancy of the training for the IFMIS users. Training stationary materials are also the third major factor for the success of the implementation of the project. Respondents shows that their attention on this factor with the mean value of 3.86. In the least place the training incentive for trainees is scored with 3.09 mean value and which shows that the respondents are believe that the incentive is not sufficient in order to motivate trainees.

Table 4.12 End-user commitment

| SN. No | STATEMENT | OBS | MEAN | STD.DEV | MODE | MIN | MAX |
|--------|-----------|-----|------|---------|------|-----|-----|
|--------|-----------|-----|------|---------|------|-----|-----|

|                        |  |            |             |             |             |             |             |
|------------------------|--|------------|-------------|-------------|-------------|-------------|-------------|
| 1                      | End-users have active awareness of IFMIS.  | 138        | 3.44        | 1.00        | 4.00        | 1.00        | 5.00        |
| 2                      | End-users is greatly worked on to reduce change resistance.  | 138        | 3.46        | 0.97        | 4.00        | 1.00        | 5.00        |
| 3                      | End-users have a commitment to identify and report issues immediately.                                   | 138        | 3.51        | 1.02        | 4.00        | 1.00        | 5.00        |
| 4                      | End-users have active communication with implementation staffs.  | 138        | 3.54        | 0.98        | 4.00        | 1.00        | 5.00        |
| 5                      | End-users of IFMIS are computer literacy or they are familiarized with computer before the IFMIS system. | 138        | 3.49        | 1.03        | 4.00        | 1.00        | 5.00        |
| <b>OVERALL AVERAGE</b> |  | <b>138</b> | <b>3.49</b> | <b>1.00</b> | <b>4.00</b> | <b>1.00</b> | <b>5.00</b> |

Source: Own Survey Data, 2019

#### 4.3.5 End-users Commitment Due to the Implementation of IFMIS

The descriptive result of end-user’s commitment reveals that the end-user’s active communication with the implementation staff is the most significant factor in affecting the commitment of end-users with the mean value of 3.54. Thus, this factor is also having major effect on effective implementation of IFMIS. In addition to this identifying and reporting issues immediately is another second factor which scores the mean value of 3.51 and can affect the implementation of IFMIS. In the least position, respondents are shows that end-users have no active awareness of IFMIS in terms of customization, adoption, implementation exit strategy and soon. Active awareness of IFMIS end-users factor has a mean value of 3.44 which is the least value from the end-user’s commitment factor.

Table 4.13 On-going support activity

| SN. No | STATEMENT   | OBS | MEAN | STD.DEV | MODE | MIN  | MAX  |
|--------|---|-----|------|---------|------|------|------|
| 1      | IFMIS support staffs are committed to fix functional issues within reasonable time.     | 138 | 3.71 | 0.90    | 4.00 | 1.00 | 5.00 |
| 2      | IFMIS support staffs are aware of to inform users about issues and the given solutions. | 138 | 3.58 | 0.97    | 4.00 | 1.00 | 5.00 |

|                        |  |            |             |             |             |             |             |
|------------------------|--|------------|-------------|-------------|-------------|-------------|-------------|
| 3                      | Issue logging and communication system with IFMIS support staffs is automated. | 138        | 3.43        | 0.97        | 4.00        | 1.00        | 5.00        |
| 4                      | There is adequate number of IFMIS support staff to cover all support issues.   | 138        | 3.13        | 1.13        | 4.00        | 1.00        | 5.00        |
| 5                      | IFMIS support staffs are available at any work time.                           | 138        | 3.33        | 1.00        | 4.00        | 1.00        | 5.00        |
| <b>OVERALL AVERAGE</b> |  | <b>138</b> | <b>3.44</b> | <b>0.99</b> | <b>4.00</b> | <b>1.00</b> | <b>5.00</b> |

Source: Own Survey Data, 2019

#### 4.3.6 On-going support activity and the Implementation of IFMIS

On-going support activity is the major factor on describing the sustainability of the IFMIS system. Table 4.13 shows that the IFMIS support staffs are committed to fix functional issues within reasonable time has 3.71 mean value. It means that fixing functional issues within the reasonable time is the major determinant of the effective implementation of IFMIS. Delaying on fixing functional issues may stack activities on IFMIS, in terms that one activity may attached with another in a prerequisite link order. In the least place respondents of this questionnaire shows that the number of IFMIS support staff to cover all support issues is not sufficient/adequate. Thus the adequacy of number of IFMIS support staff is affecting the implementation of IFMIS negatively. Respondent’s mean value of 3.13 shows that this determinant is the critical factor on the implementation of IFMIS.

#### 4.4 Correlations between the variables

According to Gujarati (2009), correlation between two variables measures the degree of linear association between them. To find the association of the independent variables with the effectiveness of implementation of IFMIS, correlation coefficient was used. The values of the correlation coefficient are always ranged between +1.0 and -1.0. A correlation coefficient of positive one indicates a perfect positive association between the two variables; while a correlation coefficient of negative one indicates a perfect negative association between the two variables. A correlation coefficient of zero indicates that there is no linear relationship between the two variables or does not necessarily have. Thus, as part of the analysis the correlations among the variables in the regression model will be discussed as follows:

(obs=138)

|      | eii    | iinf   | mgtc   | hcd    | euc    | osa    |
|------|--------|--------|--------|--------|--------|--------|
| eii  | 1.0000 |        |        |        |        |        |
| iinf | 0.7586 | 1.0000 |        |        |        |        |
| mgtc | 0.7535 | 0.6472 | 1.0000 |        |        |        |
| hcd  | 0.7641 | 0.6689 | 0.6211 | 1.0000 |        |        |
| euc  | 0.8086 | 0.6760 | 0.6773 | 0.6266 | 1.0000 |        |
| osa  | 0.6976 | 0.6063 | 0.5229 | 0.6756 | 0.5711 | 1.0000 |

Table: 4.14: Correlation statistics

Source: Own Analysis Data (2019)

When we look at the correlations with eii, we can see that almost all explanatory variables have strong correlations with the effectiveness of the implementation of IFMIS. Amongst them euc,hcd, iinf, and mgtc are the strongest correlations with eii. The correlations has positive sign means that the value of one variable goes up, the value of the other variable tends to go up. Thus we can conclude that these variables are strongly associated with eii, and we can predict that they would be statistically significant predict or variables in the regression model.

#### 4.4.1 Regression Analysis result

The regression result is presented in the following table, table-----. Before presenting the result, the overall goodness of the model result explained by a combination of both F-statistics and R-squared value (Gujarati, 2009). R-squared value measures how well the regression model explains the actual variations in the dependent variable.

To describe the goodness-of-fit of the regression, the R-Squared of 0.8216 means that approximately 82% of the variance of effectiveness of implementation of IFMIS(eii) is accounted for by the model, which is ICT infrastructure (iinf), management commitment(mgtc), human capital development(hcd), end-users commitment(euc), and on-going support activity (osa). The

t-test for each explanatory variables are different from 0, meaning that the regression coefficient for every variables is significantly different from zero. The remaining 8% in the model is extraneous uncontrollable variables (error terms in the model). There is a rule of thumb which can be used to determine the R<sup>2</sup>-value as follows:

0.1 ---- Poor Fit

0.11 to 0.30 --- Modest Fit

0.31 to 0.50 --- Moderately Fit and

Greater than 0.50 Strong Fit (Muijs, 2004, p.166)

Therefore, in this study R<sup>2</sup>accounts for 0.822, which is greater than 0.50 and then the model is strongly fit for predicting the dependent variable effectiveness of implementation of IFMIS.

| Source   | SS         | df  | MS         | Number of obs | = | 138    |
|----------|------------|-----|------------|---------------|---|--------|
|          |            |     |            | F(5, 132)     | = | 121.58 |
| Model    | 54.0920908 | 5   | 10.8184182 | Prob > F      | = | 0.0000 |
| Residual | 11.7455583 | 132 | .088981502 | R-squared     | = | 0.8216 |
|          |            |     |            | Adj R-squared | = | 0.8148 |
| Total    | 65.8376491 | 137 | .480566782 | Root MSE      | = | .2983  |

| eii   | Coef.    | Std. Err. | t    | P> t  | [95% Conf. Interval] |
|-------|----------|-----------|------|-------|----------------------|
| iinf  | .1503874 | .0545987  | 2.75 | 0.007 | .0423857 .2583891    |
| mgtc  | .1762876 | .0462346  | 3.81 | 0.000 | .084831 .2677441     |
| hcd   | .2094982 | .0581827  | 3.60 | 0.000 | .0944071 .3245894    |
| euc   | .2828082 | .0475526  | 5.95 | 0.000 | .1887444 .3768719    |
| osa   | .1423116 | .0477401  | 2.98 | 0.003 | .0478769 .2367463    |
| _cons | .1649493 | .1445051  | 1.14 | 0.256 | -.1208961 .4507947   |

Table 4.15: Regression result

#### 4.5 Interpretation of Variables Coefficients Based on Empirical

Using OLS analysis, here eii, iinf, mgtc, hcd, euc, and osa are variables that is used in this study. These variables are determinants of the effective implementation of IFMIS (eii),

ICT infrastructure (iinf), management commitment (mgtc), human capital development (hcd), end-user commitment (euc), and on-going support activity (osa).

The ICT infrastructure (iinf,  $b=.15$ ) is statistically significant at the 0.05 level ( $p=0.007$ ). The coefficient .15 indicates that increasing the effectiveness of implementation of IFMIS is directly related with the increase of ICT infrastructure relatively. The management commitment (mgtc,  $b=.18$ ) is statistically significant at the 0.05 level ( $p=0.000$ ). The coefficient .18 shows that the one unit increase of management commitment will also cause an 18% increase in the effectiveness of implementation of IFMIS. The human capital development (hcd,  $b=.21$ ) is statistically significant at the 0.05 level ( $p=0.000$ ). Its coefficient shows that the one unit increase in the human capital development will increase the 21% of the effectiveness of implementation of IFMIS. The end-user commitment (euc,  $b=.28$ ) is statistically significant at the 0.05 level ( $p=0.000$ ). The coefficient of euc which is 28% shows that end-user commitment can affect the effectiveness of the implementation of IFMIS by 28%. On-going support activity ( $osa=.14$ ) is also statistically significant at the 0.05 level ( $p=0.003$ ). Its coefficient shows that the one unit increase in the on-going support activity will increase the effectiveness of implementation of IFMIS by 14%.

## **5 CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter contains the conclusion and recommendation for the implementation of IFMIS based on the perspective of respondents towards the investigating the determinants of effective implementation of integrated financial management information system in government of Ethiopia public bodies, a case of Ministry of finance.

The collected data from ministry of finance, public property procurement agency, public property disposal service, and national planning commission is analyzed with the mean score to search which factor or determinant is the most important and also critical; as well as the least critical issues. The OLS model is used to identify the relation between the outcome and explanatory variables to show the level of variables effect on the implementation of IFMIS.

### **5.2 Conclusion**

The analysis of the collected data is concluded in the following topic.

The analysis shows that the management commitment, human capital development, on-going support activity, end-users' commitment, and ICT infrastructure are the main areas of the determinants which are able to affect the effective implementation of IFMIS.

The ICT infrastructure as a backbone for the IFMIS implementation is one of the determinants which affects IFMIS with different types of factors. Those factors are considerable factors and a basis for the formulation of a typical ICT infrastructure. 5 factors were developed to identify which part of the ICT infrastructure can affect the overall implementation if IFMIS system.

The management commitment is one of the influential determinants of the effective implementation of IFMIS. Issues were categorized with 7 factors to show role of the management commitment in the IFMIS implementation. The indicators rate also describes the commitment and change resistance needs attention to support the implementation of IFMIS. In addition to this communication between management and lower level staff is weak and needs some attention overall.

Human capital development is also another part in the implementation of IFMIS. The respondents answer was categorized into 15 indicators and from those indicators functional part and resource for the training is facilitated in a good manner but in somehow, non-functional

knowledge, catering services and related issues were losing attention to make the training and human capital development process full-fledged.

End-users commitment is also the major determinant because of without end-user, the IFMIS system is not functional properly. Though, 5 indicators were identified and evaluated based on the respondent's response. In this part, computer literacy and awareness are a big issue to make the implementation process successful.

On-going support activity is the major determinant which can determine the sustainability of the IFMIS in which determines the effectiveness of the implementation of IFMIS system. Thus 5 indicators were identified and respondent gives the response to show that how much on-going support activity can affect the implementation of IFMIS. The result shows that adequacy and availability of IFMIS support staff is questionable. So that the implementation process is affected by these conditions.

The effectiveness of implementation of IFMIS is also the outcome determinant variable which has 6 indicators of implementation status. Respondents are determined that the project needs to give more attention to the end-users rather than giving attention to the commitment of implementation.

### **5.3 Recommendation**

Based on the analysis of this study the following of major recommendation points are generated and it is assumed that the recommendation of this research is advisable for the effective implementation of IFMIS in government of Ethiopia.

- ❖ As a result of the study, the management has a lack of fixing issues immediately without affecting the end-user's activity. Thus, it is recommended that issues are needed to be identified and fixed before the end-users are stopped on working on the system. The communication between top management and expert level workers (i.e.; experts) is too weak and the management needs to be thought of it to narrow the communication gap by proposing and implementing the communication plan professionally. The follow-up of the implementation plan is also weak and management needs to give awareness to monitor and evaluate the implementation plan.
- ❖ The management of IFMIS project should participate end-users in decision making process towards the successfulness of the implementation of IFMIS in pre-

implementation, implementation and post-implementation phases in order to fill the gap that is generated on the IFMIS implementation plan and related roles. Somewhat the availability of IFMIS on every work time is a critical issue which needs a permanent solution. Additionally, issues which has high frequency of support request needs permanent solutions to improve the sustainability of the system.

- ❖ The connection line from the central system to the end-user's desktop is also needs a greet awareness to save the time that the users spend to wait the system is back due to connection problems. In related with it, technical ICT support staffs also aren't providing active support to fix the technical issues immediately. Thus, the management needs to think of preparing dedicated technical staff in professional way to make IFMIS available 24/7.
- ❖ The lack of the non-functional knowledge from trainers and low incentive for the trainees discourages the trainer to participate actively in the class session. The lack of proper providing of training material and related services is also affects the human capital development process and trainees may not capable of working on IFMIS system confidently. Generally, trainee's motivation is one option to make smooth the knowledge transfer and management efficiently.
- ❖ The change resistance issues is one of the headache of effective implementation of IFMIS as per the respondents response, change resistance is a big challenge that the management team needs to work to reduce the resistance to accept new system and structure. In relative with it, awareness creation opportunities must be prepared to make all users to be ready to accept and work with the new system cooperatively.
- ❖ The inadequacy number of support staff is also the major factor and the project office need to increase the support staffs because of the proportion of support staff with end-users will be decreased when there is new user joined the system. The availability of all support staff is also one challenge that the respondents try to describe. Thus, onsite support and central support structure must be redesigned to satisfy the end-users support demand.
- ❖ Finally, this study is not meant that it is full-fledged, but in the future, there might be additional research conducted to show more precise determinant factors and their level of intensity due to the IFMIS implementation.



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## 7 APPENDIX A: QUESTIONNAIRE

### Questionnaire

Dear Respondent,

This questionnaire is designed to gather information about “*Investigating the Determinants of Effective Implementation of Integrated Financial Management Information System(IFMIS) in Gov't public Bodies of Ethiopia: A Case of Ministry of Finance.*” The information provided will be used for academic purposes. My supervisor and I assure you that the information you give will be treated with strict confident. All responses will be used to conduct a study for the partial fulfilment of requirements for the Masters of Art (MA) Specialization in Accounting and Auditing. Any enquiries concerning this research can be directed using below address. Thank you in advance for your understanding and cooperation!

**With Best Regards;**

Welansa Kebede

0910064120

welansak@gmail.com

**[PLEASE PUT A “√” MARK TO ALL YOUR RESPONSES IN THE APPROPRIATE PLACE.]**

### PART I: GENERAL INFORMATION

#### SECTION A: PERSONAL INFORMATION

- Institution:**  Ministry of Finance  
 Public Procurement & Property Disposal Service  
 Public Procurement & Property Administration Agency  
 National Planning Commission

**Gender:**  Male  Female

**Age Group (In Years):**

25 or below  26-35  36-45  46 or above

**Educational Background:**

Diploma or below  Undergraduate degree (Bachelor’s degree)

Graduate degree (Master’s degree) or above

**What is your job level?**

Top Management  Middle level  Supervisor  Operative

**Years of service/working period in the Ministry or related government office (In Years):**

Below 5 years  5-10 years  11-15 years  Over 16 years

**Years of service/working period on the IFMIS system (In Years):**

Below 2 years  2 - 4 years  4 - 8 years  Over 8 years

**How frequently use IFMIS as part of your work?**

Sometimes  Usually  Frequently  Often

**PART II: FUNCTIONAL INFORMATION**

**SECTION A: ICT INFRASTRUCTURE.**

| Nº | ICT Infrastructure   | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|----|--|----------------|-------|---------|----------|-------------------|
| 1  | There is capable personal computer to work on IFMIS for all IFMIS staff. |                |       |         |          |                   |
| 2  | There is good network connection to work on IFMIS.                       |                |       |         |          |                   |

|   |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| 3 | There is active technical support from ICT department.   |  |  |  |  |  |
| 4 | The performance of IFMIS is good for concurrent access request.                                  |  |  |  |  |  |
| 5 | The technical support staffs are capable of solving every issue related with technical problems. |  |  |  |  |  |

### SECTION B: MANAGEMENT COMMITMENT

| N <sup>o</sup> | Management Commitment   | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|----------------|---|----------------|-------|---------|----------|-------------------|
| 1              | Top management has active awareness of IFMIS.                                 |                |       |         |          |                   |
| 2              | Change management is greatly worked on to reduce change resistance.           |                |       |         |          |                   |
| 3              | Management has active follow-up of the implementation of IFMIS.               |                |       |         |          |                   |
| 4              | Management has a commitment to fix related issues immediately.                |                |       |         |          |                   |
| 5              | Management has active follow-up of the implementation plan.                   |                |       |         |          |                   |
| 6              | Management has active communication with implementation staffs and end-users. |                |       |         |          |                   |
| 7              | There is active staff replacement at the time of staff turnover.              |                |       |         |          |                   |

### SECTION C: TRAINERS AND THEIR CAPACITY CHALLENGES FOR IFMIS IMPLEMENTATION

| N <sup>o</sup> | Human Capital Development | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|----------------|---------------------------|----------------|-------|---------|----------|-------------------|
|                |                           |                |       |         |          |                   |

|   |   |  |  |  |  |  |
|---|---|--|--|--|--|--|
| 1 | Training that is given for IFMIS users is relevant with the actual works of IFMIS.                            |  |  |  |  |  |
| 2 | Trainers of IFMIS have good technical knowledge about IFMIS.  |  |  |  |  |  |
| 3 | Trainers of IFMIS have good functional knowledge about IFMIS.   |  |  |  |  |  |
| 4 | Trainers of IFMIS have good non-functional knowledge about IFMIS.   |  |  |  |  |  |
| 5 | Trainers of IFMIS have good government financial procedure knowledge about IFMIS.                             |  |  |  |  |  |
| 6 | Training coordinators collect the comment and take measurement on the overall training process from trainees. |  |  |  |  |  |
| 7 | There is good training encouragement from trainers/coordinators.  |  |  |  |  |  |

#### SECTION D: TRAINING ROOM AND FACILITY PREPARATION FOR IFMIS IMPLEMENTATION

| N <sup>o</sup> | Human Capital Development  | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|----------------|--|----------------|-------|---------|----------|-------------------|
| 1              | Stationery for the training is properly provided.  |                |       |         |          |                   |
| 2              | There is a good catering service for trainees.   |                |       |         |          |                   |
| 3              | The training room layout is appropriate for training.                                    |                |       |         |          |                   |
| 4              | Training devices (projector, white board, computers, and networks) are working properly. |                |       |         |          |                   |
| 5              | Training manuals, exercise books and documents are properly prepared and distributed.    |                |       |         |          |                   |

|   |   |  |  |  |  |  |
|---|---|--|--|--|--|--|
| 6 | Number of trainees with a single training room is appropriately fitted regards with the training. |  |  |  |  |  |
| 7 | Training room and materials are provided properly.  |  |  |  |  |  |
| 8 | There is sufficient training incentive for trainees.  |  |  |  |  |  |

### SECTION E: END-USER COMMITMENT FOR IFMIS IMPLEMENTATION

| N <sup>o</sup> | End-User Commitment  | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|----------------|--|----------------|-------|---------|----------|-------------------|
| 1              | End-users have active awareness of IFMIS.  |                |       |         |          |                   |
| 2              | End-users are greatly worked on to reduce change resistance.   |                |       |         |          |                   |
| 3              | End-users have a commitment to identify and report issues immediately.                                   |                |       |         |          |                   |
| 4              | End-users have active communication with implementation staffs.  |                |       |         |          |                   |
| 5              | End-users of IFMIS are computer literacy or they are familiarized with computer before the IFMIS system. |                |       |         |          |                   |

### SECTION F: ON-GOING SUPPORT ACTIVITIES FOR IFMIS IMPLEMENTATION.

| N <sup>o</sup> | On-going Support Activities   | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|----------------|---|----------------|-------|---------|----------|-------------------|
| 1              | IFMIS support staffs are committed to fix functional issues within reasonable time.     |                |       |         |          |                   |
| 2              | IFMIS support staffs are aware of to inform users about issues and the given solutions. |                |       |         |          |                   |
| 3              | Issue logging and communication system with IFMIS support staffs is automated.          |                |       |         |          |                   |

|   |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| 4 | There is adequate number of IFMIS support staff to cover all support issues. |  |  |  |  |  |
| 5 | IFMIS support staffs are available at any work time.                         |  |  |  |  |  |

**SECTION G: EFFECTIVENESS OF IMPLEMENTATION OF IFMIS.**

| N <sup>o</sup> | Effectiveness of Implementation of IFMIS.                                     | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|----------------|---|----------------|-------|---------|----------|-------------------|
| 1              | IFMIS is available all working time.  |                |       |         |          |                   |
| 2              | Management has commitment to implement the IFMIS.                             |                |       |         |          |                   |
| 3              | The training is held in the proper order and level of trainees understanding. |                |       |         |          |                   |
| 4              | End-users have active participation of the implementation of IFMIS.           |                |       |         |          |                   |
| 5              | End-users have commitment to accept implementation of the IFMIS.              |                |       |         |          |                   |
| 6              | Same issues with high frequency of support request are solved permanently.    |                |       |         |          |                   |

**PART III: RESPONDENT PERSPECTIVE**

**SECTION A: OVERALL FEEDBACK FOR IFMIS IMPLEMENTATION.**

*(Please select and respondent least TWO questions):*

1. What is your overall opinion due to the implementation of IFMIS?

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2. What is your overall opinion due to the sustainability of IFMIS?

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3. Do you think that IFMIS is helpful financial tool for Ethiopia? Please discuss your justification:

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***Thank You Very Much for Your Precious Time and Kindness.***