Assessment of Management Information Systems Availability and Utilization: The Case in Commercial Bank of Ethiopia

Thesis Submitted to Addis Ababa University College of Business and Economics Department of Accounting and Finance in Partial Fulfillment of the Requirements for Masters Degree in Business Administration.

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DECLARATION

I, the undersigned, declare that this research paper entitled, "Assessment of Management Information Systems Availability and Utilization: The Case in Commercial Bank of Ethiopia" is the outcome of my own effort and study. All sources of the materials used for this study have been duly acknowledged. Further, this study is also not submitted for any degree in this university or any other university. It is offered for the partial fulfillment of degree in MBA.

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LETTER OF CERTIFICATION

This is to certify Mr. Dereje Hailemichael has carried out his research paper on the topic entitled "Assessment of Management Information Systems Availability and Utilization: The Case in Commercial Bank of Ethiopia" and submitted to Addis Ababa University College of Business and Economics Department of Accounting and Finance in Partial Fulfillment of the Requirements for Masters Degree in Business Administration with the Regulations of the University and Meets Accepted Standard with respect to Quality and Originality.

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ACRONYMS

RCIS - Risk Control Information Systems

AIS - Accounting Information Systems

FIS - Financial Information Systems

CMIS - Credit Management Information systems

BIS - Business Information Systems

MMIS- Marketing Management Information Systems

GIS - Geographic Information Systems

ICS - Internal control systems

HRMIS- Human Resource Management Information Systems

IIS - Investment Information Systems

I/ES - Internet and Extranet Systems

IS - Information Systems

EDP - Electronic Data Processing

MIS - Management Information Systems

DSS - Decision Supporting Systems

EIS - Executive Information Systems

IT - Information Technology

EIS - Expert Information Systems

NAAD- North Addis Ababa District

SAAD- South Addis Ababa District

EAAD- East Addis Ababa District

WAAD- West Addis Ababa Districts

ABSTRACT

Management Information Systems (MIS) play a key role in determining the degree of success for an organization globally. Currently most commercial banks in Ethiopia (CBE) are not fully utilized MIS to enhance managers, decision effective. This indicates that there are gaps between the current practice for MIS availability and utilization in the banking industry in Ethiopia. Hence, the major objective of this study was assessing the current practice of MIS availability and utilization in CBE.

This research was focused to study on decision makers in CBE. The selection was based on their relevancy for MIS and decision making process in the bank using simple random sampling and purposive sampling techniques. In order to meet the general and specific objectives of this study, a descriptive research method was employed. Documents were also analyzed to supplement the quantitative data and for triangulation purpose. Collected data were also analyzed using descriptive and inferential statistics. The major findings indicate that management information systems are currently available and utilized in some aspects significantly and in other aspects insignificant in CBE. The availability and utilization of MIS are moderately enhanced managers' decision making in CBE. Therefore, Commercial Bank of Ethiopia have to give special attentions on the gaps stated in the major findings and avail relevant MIS utilization to support managers' decision-making effective.

Keywords: MIS availability, MIS Utilization, Managers Decision Making, and Commercial Bank of Ethiopia.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Every aspects of management in the modern age rely heavily on information to thrive. Information is essential for the endurance of a financial organization in the global and competitive market. The nature of globalization and competitiveness in the market stress on the importance of developing an organization capability through better enhancing Management Information System (MIS). O'Brien and Maracas (2006) noted the computer systems can clearly aid organizations in the processing of data into accurate, well presented, up-to-date and cost effective information. Currently to succeed in business world; companies require information systems that can support the diverse information and decision-making needs of their managers and business professionals. In this regard the role of MIS is very important since its main objective is helping decision makers by providing accurate and time based information to make the right decisions in turbulent environment.

Management Information System is the series of processes and actions involved in capturing raw data, processing it in to usable information and disseminating it to users in the form needed (Chris, 1971). Klein (1998) enlightened that management information systems provide decision makers with the means of altering the degree of uncertainty in decision-making situations. He emphasized on the importance of information in decision making by suggesting that the key to a good decision is 90% information and 10% inspiration. If the relevant information required in a decision-making process or an organization planning is not available at the appropriate time, then there is a good change to be a poor organization planning, inappropriate decision-making, poor priority of needs, and defective programming or scheduling of activities (Adebayo, 2007).

Currently the intimidations or threats associated with banking business operation especially in developing countries like Ethiopia are enormous. Ait (2017) noted in his article review, banking business related threats have adversely affects the quality of bank managers' decision in the absence of a well structured management information system and it makes the function of the management to have little impact on entire organization. This has led to the inefficiency and uncertainty of the information and communication in organization even through such problems could be turned to business opportunities. This is the reason why managers monitor and evaluate trends in their business environment through internal and external channels of information available and accessible to them by using modern information technology. Therefore, this research was conducted to determine or assess the level of MIS availability and its utilization in commercial bank of Ethiopia

with the support of primary and secondary data collected through questionnaires and interviews and from related secondary data sources such as annual reports, books, reviewed journals and articles and various web sites.

The brief history of commercial bank of Ethiopia (CBE) was dated back to the establishment of the State Bank of Ethiopia in 1942. CBE was legally established as a share company in 1963 and in 1974 was merged with the privately owned Addis Ababa Bank. Since then, it has been playing a major role in the development of the country. Currently this bank has opened more than 1,280 branches stretched across the country. The bank has also more than 18.8 million account holders and 1.7 million numbers of Mobile and 36,768 Internet Banking users as of June 30, 2018. Active ATM card holders of the bank reached 4.4 million. The ATM and POS machines of the bank as of June 30, 2018 were 1,708 and 11,796 respectively. CBE has strong correspondent relationship with more than 50 renowned foreign banks and has a SWIFT bilateral arrangement with more than 700 other banks across the world. It combines a wide capital base with more than 33,000 talented and committed employees (CBE Company Profile June, 2018).

1.2 Statement of the Problem

To execute planning, organizing, staffing, directing and controlling, the chief has to lay down policy, communicate, motivate and take either long term or short term decision in different business transactions. This decision making is better and sound if the organization is small and everything is under control of the management (Sachem, 2010). However, in real life, situations are complex and uncertain as well as dynamic in nature. Thus manager has to depend more on scientific decision making rather than on his own judgment alone.

In a scientific decision making process; decision should be based on data concerning the past performance viewed in the present situation and projected for emerging future trends. This type of decision is arrived after collecting, processing, analyzing data and only then providing information. Hence, management information system (MIS) is the tool, which helps the management by providing the relevant information in the right form to the person and at the right time (Sachem, 2010). By bringing together information from a variety of sources in one database and provide the information in a logical way, MIS can also provide managers with everything they need to make informed decisions and very in-depth analysis of operational issues (Minwer, 2016). As a result, MIS can initiate managers to make best decisions by producing sufficient information timely and accurately to the concerned decision making managers.

According to Ajayi and Omirin (2007) explanations, the availability of MIS is directly or indirectly influences managers' decision in financial institutions. MIS availability and utilization is also expressed with the presence of modern MIS component criteria such as Risk Control Information System (RCIS), Financial Information System (FIS), Accounting Information System (AIS), Human Resource Information System (HRIS), Internal Control System (ICS), Investment Information System (IIS), Branch Information System (BIS), Marketing Information System (MKIS), Credit Management Information System (CMIS), Internet and Extranet System (I/ES), Geographic Information System (GIS) and Information Technology (IT). These components are also considered as modern MIS components that help management decision making process effective. Likewise in the existence of such modern MIS components, the availability and utilization of MIS in a financial institution can be effective to enhance managers' decision, the following variables have to be available sufficiently such as expertise and adequate manpower, modern equipments and devices, up to date network and software applications, feasible MIS procedure and fully utilizations of all these available variables.

Related to identifying the gap in the statement of the problem in this study, data have been collected from various secondary sources in commercial bank of Ethiopia (CBE) such as audited annual reports (2018), internally published Journals and article reviews (2017 & 2018). Such assessed documents are showed all the modern MIS component criteria noted by Ajayi and Omirin (2007) are exist in CBE and organized as department or unit level. This is also evidenced by the organizational structure of the bank which clearly indicates the existences of each of these modern MIS components are organized as department or unit in CBE. But in the assessment, it was difficult to find the fact that such given department and unit are organized functionally with expertise and adequate manpower, having modern equipments, devices, networking and application software, having working procedure and manuals etc., to produce information accurately and timely in order to enhance managers' decision making effective. Therefore, the aim of this research study was assessing the modern MIS components which are organized as department or unit level are currently well organized in producing and delivering accurate and timely MIS data to enhance effective managers decision. Further this assessment study tried to identify the major issues that support MIS availability and utilization such as the availability of expertise and adequate manpower, the availability of modern equipments, devices, network and software applications, the availability of feasible MIS procedure and its utilization are currently exist and practiced in each of this department or unit in CBE to enhance managers decisions effectively.

1.3 Objective of the Study

1.3.1 General Objective of the study

The general objective of this study was to assess the existence of effective Management Information systems availability and utilization in Commercial Bank of Ethiopia.

1.3.2 Specific Objectives of the study

This study was attempted to achieve the following specific objectives in commercial bank of Ethiopia.

1. To determine whether management information systems are Available currently in commercial bank of Ethiopia as per MIS theory.
2. To explore whether currently available management information systems are utilized effective in commercial bank of Ethiopia.
3. To examine whether the available management information systems and utilizations in commercial bank of Ethiopia are enhancing managers' decision effectively based on time, accuracy, completeness, relevancy, and reliability criteria.

1.4 Research Questions

The fact that management information system is crucial for the survival of every bank, this study was attempted to answer the following questions particularly in the Commercial Bank of Ethiopia.

1. What Management Information Systems are available currently in commercial bank of Ethiopia as compared with the MIS theory?
2. Which available Management Information Systems are effectively utilized in Commercial bank of Ethiopia?
3. What extent the existing Management Information Systems availability and utilization are enhanced managers' decisions making in commercial bank of Ethiopia?

1.5 Significance of the Study

The findings of this study will have valuable contribution for the management and stakeholders of the bank as indicated. First, this study clearly shows utilizing effective MIS at all management decision making processes of the bank will enhance managers' decision making quality for better achievement of organizational objectives. Secondly, this study also helps the management as an input to evaluate the bank's current MIS practice and identify the gap aligned with MIS theory for further improvements on MIS at its most business operational level. Hence, it supports to escalate

their managers' decision making ability by implementing either new modern MIS or improving the existing MIS whichever is effective.

1.6 Scope of the Study

Commercial Bank of Ethiopia (CBE) is a huge financial organization with a head quarter and having many Executives and Directors Office located scattered in Addis Ababa and outside Addis. It has also 15 districts with more than 1,280 branches across the country as per the bank's June 2018 report. Subsequent to the dispersed management offices of CBE across the country, the study is limited to decision-making positions within the geographical location of Addis Ababa city only. Therefore, the population size for this study was limited on decision-making positions found at the head office such as MIS department and core processes of the bank like Customers Account & Transactions, Accounts and Finance, Credit, International Business and Information Technology departments; the managerial positions found in North, South, East and West District offices; and grade three, four and special grade branch managers found in Addis Ababa under the four district offices. The major reasons for the scope was limited in this study to decision-making positions only found on the geographic location of Addis Ababa are because:

1. More complex transactions that demands managerial decision making are mostly occurred on branches and districts exist in Addis.
2. Higher grade branches exist more in Addis than outside.
3. No exceptional reports are demanded from the outlying districts or branches.
4. Including or excluding the outlying districts or branches is not affecting the outcomes of this study significantly.
5. All districts and branches under them are communicated the same information bank wise.
6. Cost effective information and scarcity of resources are also demanding the scope of this study to be limited in Addis.

1.7 Limitations of the Study

This study has a number of its own limitations. The first important limitation can be respondents' or decision makers' limited knowledge about MIS information as a whole bank wise or corporate level and having MIS information to their related positions most. As a result of this, they may respond questioners best if it relates to their position and their expectations if otherwise. Hence, this will

affect the outcomes of this research study by large. Second, this study is limited on concept of MIS availability and degree of utilization in decision making processes only.

1.8 Organization of the Study

This study is organized under five chapters. The first Chapter includes background of the study, statement of the problem, objectives of the study, research questions, significance of the study, scope of the study and limitation of the study. The Second chapter is taking in to account the related literature review which includes the theoretical, empirical, Gap analysis and the conceptual framework of the study. The third chapter examines the research methods to be used in undertaking the study. The fourth chapter presents in depth the analysis, presentation, and interpretation of data. The fifth chapter incorporates the major research findings summary, conclusions, recommendations and suggestions for further research parts of the study.

CHAPTER TWO
RELATED LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 Theoretical Definitions of MIS

The Management Information System (MIS) is a concept of the last decade or two. It has been understood and described in a number of ways. It is also known as the Information System, the Information and Decision System, the Computer-Based Information System (Davis & Geist, 2004). Despite the absence of consensus on a standard definition of MIS in information systems literature, Davis and Olsen have suggested a commonly cited definition, according to which MIS is "an integrated, user machine system providing the necessary information to support core functions of the firm such as operations, management, and decision making". These systems typically utilize computer software and hardware, manual procedures, models for analysis, planning control, decision making and a database (Panagiotis, 2013).

MIS is also defined by Barton & Parolin (2005) as a system which provides information support for decision making in the organization. Bendoly (2008) defined MIS as an integrated system of man and machine for providing the information to support the operations, the management and the decision making function in the organization. Bresfelean (2009) was also defined MIS as a system based on the database of the organization evolved for the purpose of providing information to the people in the organization. Management Information System is an information system that integrates data from all the departments it serves and provides operations and management with the information they require. MIS is developed to improve business system for managers, provide business information including budgetary, financial and program performance. Therefore, MIS is a multifaceted discipline, combining technologies, personnel, processes, and organizational mechanisms (Kumar, 2015).

2.1.2 MIS Conceptual Developments

The growth of the Internet, the globalization of trade, and the rise of information economies have raised the importance of information systems within organizations. It is imperative that researchers and practitioners recognize how information technologies shape the business world. The study of management information systems (MIS) appeared in the 1970s to concentrate on the use of computer-based information systems in business firms and government agencies (Stephen, 2018).

The information system has shown a lot of developments in the way of its' functioning. Earlier, information systems function was in the form of record keeping, accounting, transaction processing and electronic data processing. A new task was conceived in the form of management information systems (MIS). MIS focused on providing managerial end users with predefined management reports that would give managers the information they needed for decision-making purposes. Again it was evident that the pre-specified information products provided by such information reporting systems were not adequately meeting many of the decision-making needs of management. So the concept of Decision Support System (DSS) was born (Stephen, 2018).

The new task for information system was to provide managerial end users with ad-hoc and interactive support of their decision making processes. This support would be tailored to the unique decision making styles of managers as they confronted specific types of problems in the real world. The rapid development of microcomputer processing power, application software package, and telecommunication networks gave birth to the phenomenon of end user computing (Stephen, 2018). Now end users can use their own computing resources to support their job requirements instead of working for the indirect support of corporate information service departments. Again it became evident that most of the top corporate executives did not directly use either the reports of information reporting systems or the analytical modeling capabilities of decision support systems, so the concept of Executive Information System (EIS) was developed. These information system attempts to give top executives an easy way to get the critical information they need, when they want it, tailored to the formats they prefer (Stephen, 2018).

Another breakthrough, were made in the development and application of Artificial Intelligence (AI) techniques to organizational information system. Expert System (ES) and other knowledge-based systems forged a new task for information systems. Today, Expert Systems can serve as consultants to users by providing expert advice in limited subject areas. Finally, an important new role for information system developed in the form of Strategic Information System (SIS). In this concept, information systems are expected to play a direct role in achieving the strategic objectives of an organization. This places a new responsibility on the information systems department of an organization. All these changes have increased the important of information system for the success of an organization (Stephen, 2018).

2.1.3 MIS Role in Financial Institutions

There is a significant need for determining the role of management information systems (MIS) in commercial banks. Information systems have become a vital component of successful business firms and other organizations. The knowledge of the real role of MIS in banks would help information system managers in managing information systems by judging the business needs of the information system projects, associated risks, importance and ranking of information system managers in organizational hierarchy, need for innovation and flexibility in MIS planning approach, etc (Kumar, 2015). MIS satisfies the diverse needs through variety of systems such as query system, analysis system, modeling system and decision support system. Management information system helps in strategic planning, management control, operational control and transaction processing. MIS helps the middle management in short term planning, target setting and controlling the business functions. It is supported by the use of the management tools of planning and control. MIS helps the top level management in goal setting, strategic planning and evolving the business plans and their implementation. MIS plays the role of information generation, communication, problem identification and helps in the process of decision-making. Therefore, MIS plays a vital role in the management, administration and operation of an organization (Kumar, 2015).

2.1.4 MIS Time Tested Concepts and Decision Making

Before discussing further on MIS, it is better to glimpse some time-tested concepts reviewed. Davis offers a commonly used concept in his distinction between data and information. Davis defines data as raw facts, figures, objects, etc. Information is used to make decisions. To transform data into information, processing is needed and it must be done while considering the context of a decision. We are often awash in data but lacking good information. However, the success achieved in supplying information to decision makers is highly variable. Barabba expands this concept by also adding inference, knowledge and wisdom in his modification of Haechel's hierarchy which places wisdom at the highest level and data at the lowest. As one move up the hierarchy, the value is increased and volume decreased. Thus, as one acquires knowledge and wisdom the decision making process is refined. Management information systems attempt to address all levels of Haechel's hierarchy as well as converting data into information for the decision maker. As both Barabba and Haechel argue, however, just supplying more data and information may actually be making the decision making process more difficult. Emphasis should be placed on increasing the value of information by moving up Haechel's hierarchy (Panagiotis, 2013).

Another important concept from Davis and Olsen is the value if information. They note that "in general, the value of information is the value of the change in decision behavior caused by the information, less the cost of the information." This statement implies that information is normally not a free good. Furthermore, if it does not change decisions to the better, it may have no value. Many assume that investing in a "better" management information system is a sound economic decision. Since it is possible that the better system may not change decisions or the cost of implementing the better system is high to the actual realized benefits, it could be a bad investment. Also, since before the investment is made, it is hard to predict the benefits and costs of the better system, the investment should be viewed as one with risk associated with it (Panagiotis, 2013).

MIS is a Computer based Information System. Conceptually, a management information system can exist without computers, but it is the power of the computer, which makes MIS feasible. The question is not whether computers should be used in management information systems, but the extent to which information use should be computerized. The concept of a user-machine system implies that some tasks are best performed by humans, while others are best done by machine. Management information systems typically provide the basis for integration of organizational information processing. The integration of diverse information system can be achieved through standards, guidelines and procedures set by MIS function. The trend in information system design is to establish a database by which data items are integrated across many sections/units of an organization and made consistently available to a variety of users. It is where the computer works superior than humans (John & Halldess, 2015).

MIS is an integrated, user-machine system for providing information to support operations, management and decision making functions in an organization. The system utilizes computer hardware and software, manual procedures, models for analysis, planning, control and decision making and a data base (PMU, 1987 and Jayashankar, 1991). Timely access to good information is necessary for well-informed management decisions. MIS provides managers with timely access to information on resources, activities and outcomes for planning, directing, controlling and decision making from different parts of the organization or system. MIS enhances the information processing of the organization in the following ways: Compact storage of data, Swift communication, High speed, reliable processing of raw scheme data into, information, reduced workloads and High quality information support for managerial decision making (John & Halldess, 2015).

MIS is a formal establishment of information systems accepting data as input for further processing and provides information as a final output that helps management decision making process in the organization. MIS is an information system used for supporting decision making in general on all levels in an organization (Larsson and Malmsjo, 1998). Management information systems is an idea which is associated with man, machine, marketing and methods for collecting information from the internal and external source and processing this information for the purpose of facilitating the process of decision-making of the business. Management information system is also an integrated set of component or entities that interact to achieve a particular function, objective or goal. Therefore, it is a computer based system that provides information for decisions making on planning, organizing and controlling the operation of the sub-system of the firm and provides a synergistic organization in the process (Kumar, 2015).

Kumar (2015) stated Management Information Services helps manager to access relevant, accurate, up-to-date information which is the more sure way of making accurate decisions. The management information services are capable of taking advantage of the computational ability of the company like processing, storage capacity among others. Based on this relevancy, management information system should be installed and upgraded in various organizations since today's managers need them to access information for managerial decision making and also management functions. The actual MIS process relates to: collection, organization, distribution, storage of wide information, managerial control and analysis of data. Hence MIS focuses on: organization-wide information, decision-making process, managerial control and analysis, computer-based system. Therefore, Management Information Systems is sets of inter-related procedures using information system infrastructure in a business enterprise to generate and disseminate the desired information. Such systems are designed to support decision-making by the people associated with the enterprise in the process of attainment of its objectives.

Uses of management information system can be functional or strategic. Functional uses of MIS enhance quality of operations and services as a result we achieve efficiency, transparency and speedy decision making. Strategic uses of MIS precise development of strategies, planning, forecasting and monitoring, problem solving, decision making, separate work from location (Sachin, 2010). Businesses are processing information in order to improve organizational performance and produce profits. From a business perspective, an information system is an important instrument for creating value for the organization. There are many ways in which

information systems can contribute to firm value, including increasing the firm's return on its investments, enhancing the company's strategic position, or increasing the market value of the firm's stock. Information processing activities support management decision making, enhance the execution of business processes and as a result increase business value.

Terry (1997) stressed that the need for MIS in decision making as it provides information that is needed for better decision making on the issues affecting the organization regarding human and material resources. More recently, Adebayo (2007) explained that the existence of MIS is needed to improve and enhance decision making on the issues affecting human and material resources. Therefore, nature of globalization and competitiveness in the market stress on the importance of developing an organization capability through better enhancing MIS. Management information systems give managers quick access to information (Rhodes, 2010). This can include interaction with other decision support systems, information inquiries, cross-referencing of external information and potential data mining techniques. These systems can also compare strategic goals with practical decisions, giving managers a sense of how their decisions fit organizational strategy. In summary, Rhodes simply believes that management information systems are a huge contributing factor in the getting of viable information from organizations.

2.1.5 MIS Role in Decision Making

Number of authors have been discussed the role of information system in decision making, out of which, Kostetsky was one of the first authors who wrote about the relationship between information systems, system analyst and decision making in 1966. MIS provides knowledge about the relative position of the organization and basic forces at work. It provides the right information needed in decision making process and help the organizations control, planning and operational functions to be carried out effectively (Leonard, 2008). Furthermore, Ajayi and Omirin (2007) noted the use of MIS in decision-making on long-term planning, short-term planning and budgeting in the South-West Nigerian Universities. A stratified random sampling technique was used to collect data and concluded that there was a significant difference in the use of MIS for decision making on budgeting between Federal and State universities in favor of the Federal universities. The authors recommend that the MIS units should be adequately financed and maintained to ensure a free flow of information and adequate use of MIS in decision-making on short-term and long-term planning as well as budgeting. Decision making process and its impact on top level management in a business organization was also explained with an emphasis on automated decision making. The

study found that the dynamic nature of MIS makes it difficult for some organizations to keep up with the principles, strategies, propositions or even ideas (Ghaffarzadeh, 2015)

Decision making is the process by which organizational members choose specific course of action in response to threats and opportunities (George & Jones, 1996). Good decision result in courses of actions that help an individual, group or organization to be effective, the opposite is its reverse. Every organization grows, prospers or fails as a result of decisions made by its decision makers. Simon (1984) classified decisions into two broad categories according to the extent that the process of decision-making can be pre-planned: Programmed Decision: these are decisions made using standard rules, procedures or quantitative methods. To make a programmed decision, the decision maker uses a performance program, a standard sequence of behavior that organizational members follow routinely whenever they encounter a particular type of problem or opportunity (George and Jones :429). Non-programmed Decisions: this type if decision deals with unusual or exceptional situations. They are decisions made in response to novel problems and opportunities. This type of decision is associated with high degree of uncertainty, cannot be delegated to low levels, may involve things, but always involves people. Examples: merger, acquisitions, launching of new product, personnel appointments, etcetera (Lucey, 2005).

Rhodes (2010) avers that MIS gives managers quick access to information. This can include interaction with other decision support systems, information inquiries, cross referencing of external information and potential data mining techniques. At other instances, MIS is said to have revolutionized decision-making process through automated systems, through such systems, managers no longer rely on 24hour service from workers, instead, machines are to be programmed to do things, such as routine decisions, in place of humans (Jarboe, 2005). In his thinking, Adebayo (2007) stressed that MIS provides information that is needed for better decision on issues affecting organizations regarding humans and material resources. Lucey (2005) argued MIS supplies information explores alternatives and provides support where the manager takes the decision or the MIS takes the decision itself, especially the routine operational decisions (Ghaffarzadeh, 2015).

Development of information and communication technologies as change structures of societies, it also affected task of manager's making decision. Many organizations prepare them self for effective and efficient use of new information and communications technologies. Information and communication technology has two benefits for organization. First, it enables organizations and managers to easily acquire data. This will cause further support the decision making process.

Second, the use of information and communication technology enables organizations to have better operate in a global competitive environment and make effective decision making. Information and communication technology improve the quality of decision making that is crucial factor for organization. The information and communication technology has become an essential component in the process of decision making in organization and managers at all levels increasingly get help from information and communication technologies (Feizi & Moghadassi, 2012). Information and communication technology enables collect, analyze and evaluate data and transferring them from one point to another and cause instant access to information, Reduce costs, Produce better, Carefully, Coordination, Leading time, improved control and will lead to better services. Decision making is an integral component of management. The management is so smart in determining organization's policies and developing objectives. Organization design, Choice, Assessment and management practices in all forms, Decision-making are one of the main fundamental pillars. In a simple definition, decision making is choose a way between different paths (Alvani, 2012).

2.1.6 Thought on Related Theories or Models

Models of Decision Making-The Rational Model: The rational manager view assumes a rational and completely informed decision-maker (economic man) as described by neoclassical microeconomic theory around the middle of the previous century. The process of rational decision-making comprises a number of steps, such as those given by Simon (1977):

Intelligence: finding occasions for making a decision;

Design: inventing, developing and analyzing possible courses of action;

Choice: selecting a particular course of action from those available; and

Review: assessing past choices.

In classical or perfect rationality, methods of decision analysis are used to attach numerical values or utilities to each of the alternatives during the choice phase. The alternative with the highest utility (or maximum subjective expected utility) is selected. When using the rational model in this fashion, it is assumed that managers know the consequences of implementing each alternative; have a well organized set of preferences for these consequences; and have the computational ability to compare consequences and to determine which is preferred (SM Turpin & MA Marais, 2004).

The Theory of Technology Acceptance Model (TAM): TAM was proposed by Fred Davis (1989) and widely developed in following years. This theory aims to evaluate how the acceptance of a technology influences the use of the technology itself. This theory find its foundation on the idea

that perceived ease of use and perceived usefulness finally determine the attitude towards the technology and its actual use. Davis (1989) defines Perceived Usefulness (PU) as the extend people believe an application will help them to perform their job better and the Perceived Ease of Use (PEOU) as the degree to which a person believes that using a particular system would be free of effort. According to Davis (1986, 1989), Perceived Usefulness and Perceived Ease of Use are determinants of Attitude towards Use, Behavioral Intention to Use, and Actual Use of an Information System (Alberto & Gianluca, 2018).

Task Technology Fit (TTF) Model: According to Goodhue and Thompson (1995) the Task Technology Fit (TTF) is the degree to which a technology assists an individual in performing his or her portfolio of tasks. More specifically, TTF is the correspondence between requirements, individual abilities, and the functionality of the technology. The Task Technology Fit (TTF) is one of the well-known models in IS used to study the relationship between a system, the task requirements and user needs. This model is based on the idea that when the characteristics of user tasks and characteristics of the information system integrate well together, both system use and user performance will be high. Relationships between factors associated with TTF such as compatibility information (Compatibility), understanding the information (Meaning) and the ease of information retrieval reflect the consistency between the needs of users, or what is called the task requirements and the technology used to perform these tasks. Thus, the consistency of the characteristics of the system with the user requirements leads to better performance. Empirically, the results show that TTF factors directly affect the performance. In other words, the capacity of the system can affect the perceived usefulness in improving user interaction with the system. In this sense the system's ease of use, perceived usefulness and perceived ease of use are linked together. For example, a high quality system provides faster response to users, leading to improvements in the perceived usefulness and performance (Bejjar & Boujelbene, 2013).

Information System Success Model (ISS): Information System Success Model (ISS) (DeLone and McLean, 1992) also called the D&M model. This model, in its final version, aims to measure the impact of some characteristics of technology (information, system, and service quality) on the variables user satisfaction, intension to use, use, and net benefits. The objective of the ISS model is to determine the final benefit deriving from the use of information system both in individual and organizational terms (Alberto & Gianluca, 2018).

The Competing Value Model (CVM) was adopted for the operationalization of MIS effectiveness, which defines four archetypes labeled as: open system (OS), human relations (HR), internal process (IP) and rational model (RM). The empirical findings from a survey of 186 employees in Greece revealed that a) the externally focused MIS effectiveness archetypes (OS, RM) reflecting innovation, creativity, goal setting and planning enhance task productivity b) the IP (Internal Process) model of MIS effectiveness influences negatively task productivity (Panagiotis, 2013).

2.2 Empirical Literature Review

Management Information Systems related studies were conducted by different researchers in different parts of the world especially on Jordan private and foreign banks, Saudi Arab banks, India Banks, South Africa and Nigeria banks. However, I have found only a single study related to MIS utilization in commercial banking in Ethiopia which was conducted by Samuel (2013) with a research topic called "Management Information Systems Availability and Utilization as Factors Influencing Managers in Decision-Making: The Case of Commercial Banks in Ethiopia". Actually a number of studies were available related to E-Banking services in Ethiopia. For example, Gardachew (2010) conducted research on the opportunities and challenges of E-Banking in Ethiopia and many others have been conducted their research topics related to internet banking, mobile banking and E-Banking. Therefore, in this paper it was tried to review studies conducted by various researchers on the adoptions of management information system utilizations on different Commercial Banks found in the Middle East (Arab Banks) and few in Ethiopia as empirical evidences.

2.2.1 Empirical Studies on External Banks

The study Al Meetany (2004) noted "The impact of the management information system to improve the efficiency and effectiveness of the Jordanian Commercial Banks: A Case Study of Arab Bank". This study aimed to identify the impact of management information system to improve the efficiency and effectiveness of Arab Bank from the perspective of both the staff and the Arab Bank management and dealing with customers. Among the most important findings of the study, users of management information systems have level technicians and highly skilled. Qualifications and experience enable them to perform their work to the fullest and an appropriate degree of information provided by the systems and used very high. Thus, on the effectiveness of decision making that are meant to take, Arab Bank has efficiently providing hardware and software required for operation of the system, as evidenced by the study on the existence of a positive relationship

between the linear size of investment in management information systems and the bank's profits greater the volume of investment in management information systems increased the bank's profits (Shehadeh & Nazem, 2013).

The study Al-Nadhari (1990) aimed to determine the efficiency of information systems in Jordanian commercial banks and to what extent these systems contribute to reaching more rational decisions; also to reveal the weakness points in the information systems used in Jordanian commercial banks and how to treat them then to be developed and enhanced. The researcher found the following results: There is a positive relationship between information systems and the effectiveness of decision-making in Jordanian commercial banks, but this relationship is not statistically significant. It is not necessarily that the banks using information systems are more efficient than others on the basis of higher profitability ratios, but the efficiency of the system reflects the quality and speed of service provided to the public. The results of interviews conducted by the researcher with stakeholders in information systems showed that the introduction of advanced information systems led to the diversification of banking activities and the creation of new jobs, granting of further delegation to the lower administrative levels and at the same time increasing the capacity of senior management to control the work of other levels, and to intervene as required (Ait Yassine, 2017).

Al-Mahasneh Study was also a study aimed at identifying the impact of the efficiency of information systems in the effectiveness of decision making in Customs Department, by identifying the trends of individuals of the sample towards the efficiency of information systems, the effectiveness of decision making and analyzing the impact of the efficiency of information systems in the effectiveness of decision. The researcher concluded that Management Information Systems in Customs Department has high quality and the efficiency of MIS also make the decision making process in this department highly effective. Moreover there is a signification correlation between the independent variable, the efficiency of information systems and the dependent variable, the effectiveness of decision making process (Ait Yassine, 2017).

Boonmak Study aimed to examine whether management information systems and IT has affected the assessment of firm performance and business strategy. Data from 170 executive managers, who work in various business firms, were collected. Questionnaires were used to assess firm performance and business strategy. Descriptive statistics, correlations, and multiple regression analysis were used to analyze and evaluate data. The study found that Management information

systems and IT increase firm performance and business strategy. The more volume of information (MIS) needed, the more advanced the IT that should be provided. Business strategy will be more successful if organizations have enough and more reliable advanced IT. The more use of advanced IT and information (MIS) provided, the more successful firm performance is. IT can change and improve the efficiency and effectiveness of firm performance, while both management information systems and IT also improve and change the culture of firm performance to be more efficient and effective (Ait Yassine, 2017).

Khalid Study: This study aimed at evaluating the performance of computer-based accounting systems and their suitability to meet management needs. A questionnaire was designed to survey the views of a sample of industrial companies in Jordan on the performance of these systems. The results of the study showed that the majority of Jordanian industrial companies rely on computer-based accounting information systems and the applicable systems meet the objectives of users of financial and administrative data significantly as well as the ease and speed of response to those systems in meeting the needs of the users of this data.

Al-Saudi Study: The study aimed to identify the effect of Computerized Information Systems in the performance of employees. The study reached the following results: The respondents' perceptions about the requirements of operation of information systems were high, and their perception towards job performance was moderate and the main requirements for managing the operation of computerized information system are: (physical, software, human and organizational) have an impact in job performance.

2.2.2 Empirical Evidence on Banks in Ethiopia

A study was conducted by Samuel (2013) on “Management Information Systems Availability and Utilization as Factors Influencing Managers in Decision-Making: a Case of Commercial Banks in Ethiopia” was also taken as empirical evidence in this research study. The intent of such study was to check an extent of MIS availability in order to modifying management decision making in government and Private commercial banks in Ethiopia. Also Samuel was intended to see the availability of MIS for managers’ decision-making and examined how utilization of management information systems’ influence decision making in commercial banks in Ethiopia.

To determine the availability and utilization of MIS in decision-making, the researcher was asked the respondents to evaluate each of the twelve specific MIS components in their own bank such as RCIS, FIS, AIS, HRIS, ICS, IIS, BIS, MKIS, CMIS, I/E S, GIS and IT based on the 1-5 point scale ordinal variables. The results of the study indicated that FIS, AIS, BIS, CMIS, ICS and I/ES were exist at 35(54.7%), 35(54.5%), 31(48.4%), 30(46.9%), 25(39.1%) and 24(37.5%) respectively and available for respondents decision-making on high level of percentage scores in government and private commercial banks in Ethiopia. The study was also indicate that 41(64.1%), 21 (32.8%), 19(30.7%), and 17(26.6%) were RCIS, MMIS, IIS, and HRMIS respectively and were available for respondents decision-making in low level of availability scores. Whereas, GIS was get never available score. Further, this study indicated that among the most MIS available for decision-making in commercial banks in Ethiopia were FIS, AIS, BIS, ICS, CMIS and I/ES.

As per this research study, percentage scores for computerized MIS availability used in decision making based on the sample study on the eight private and government banks selected randomly indicates as follows. Among the Items used in decision making of the respondents, only CMIS was fully automated and had 40.6% highest percentage score. RCIS, FIS and AIS were partially automated as percentage scores, 43.8%, 54.7%, and 54.7% respectively. The HRIS, ICS, and BIS were manual used and had highest percentage scores, 50%, 68.8% and 34.4% respectively. Fully automated MIS support management decision making processes were not available. The result of the analysis indicated that specific MIS utilized rated by each group of respondents scored as 39.8%, 29.5% and 11.9% were respectively manual, partial and fully automated. From this finding, manual report holds highest percentage (39.8%).

2.3 Research Gaps

This part of the study is attempted to present the gaps that initiated the demand for this study based on four perspectives such as geographical, variable, time and methodological. Based on the geographical perspective, the research gap that needs to be articulated in this study was because no adequately conducted studies were found locally with related topic on commercial bank of Ethiopia (CBE). As a result, I truly found only one study which was conducted by Samuel (2013) on “MIS Availability and Utilization as Factors Influencing Managers’ Decisions: a Case Study on eight selected government and private Banks in Ethiopia”. The scope for this study was broader and did not focus on a single bank unlike my study which the scope was narrowed and concentrated in

depth on a single bank called CBE. Based on the above research topic and company selection gaps, the researcher was initiated to study on this topic to fill the study gap in the area.

Based on the variable perspective, the research gap that needs to be articulated in this study was explained as follows. According to Ajayi and Omirin (2007), the following components were considered as modern MIS criteria for financial institutions in the MIS theory; such as RCIS, FIS, AIS, HRIS, ICS, IIS, BIS, MKIS, CMIS, I/E S, GIS and IT. These modern MIS component criteria were considered as confirmation for the existence of MIS availability and utilization for effective managers' decision making. Samuel (2013) was conducted his research study by considered all these modern component criteria stated in the theory above as influencing factors to determine effective Managers' Decisions in eight selected government and private commercial banks in Ethiopia. However, in this study the researcher would prefer to use the same dependent variable "Managerial Decision Making" but completely different independent variables such as Availability of Manpower, Availability of Equipments and Devices, Availability of Network & Software Applications, Availability of MIS procedure and Utilization of the available MIS determinant factors. Therefore, the difference between the independent variables gap considered in this and the previous study was the second research gap that initiated the researcher to conduct the study on the given research topic.

Based on time perspective, as previously stated above there was no exactly the same research topic were conducted on commercial bank of Ethiopia. But the research study conducted by Samuel (2013) on "MIS availability and utilizations as factors influencing Managers' Decision: a case study on eight selected government and private banks" was a research study that relates to my study. So the time gap between these two research studies were conducted is almost seven years. Therefore, seven years time gap between my study and the previous study may bring significant outcomes difference as a result of nothing is static (motionless) and everything is in motion as time goes up. So by considering this time difference as a research time gap, conducting this study was logical.

Based on Methodological perspective, to assess the existing MIS availability and utilization influence on managers' decision in commercial bank of Ethiopia, this study was applied descriptive and inferential statistical analysis tools as well as to some extent linear regression to determine the R-square and the reliability of the study using cronbach's alpha or alpha coefficient. Therefore, we can conclude that there exist methodological research gap between these two studies.

2.4 Conceptual Framework of the Study

According to Ajayi and Omirin (2007), the availability of Management Information System (MIS) is directly or indirectly influencing the managers' decision making process in financial institutions. Based on this thought, MIS availability and utilization is expressed by the presence of modern MIS component criteria such as RCIS, FIS, AIS, HRIS, ICS, IIS, BIS, MKIS, CMIS, I/E S, GIS and IT. We can also consider these modern MIS components as criteria for the existence of effective managerial decision making in Commercial bank of Ethiopia (CBE).

The frame work for this study was developed by identifying the existence of all the modern MIS components currently which organized as department or unit level in CBE. The availability of RCIS, FIS, IIS, AIS, ICS, HRIS MKIS, CMIS, GIS, BIS, I/E S & IT are checked in the organizational structure of the bank as Risk and Compliance department, Accounts and Finance department, Treasury and Investment Management department, Customers Account &Transaction department, Internal Control department, Human Resource Management department, Marketing Research and Development department, Credit Management department, Logistics, Branches, and Information Technology departments respectively. All these departments are generating their own reports periodically and forward to the management for supporting managers' decision making.

This research framework was designed to show the availability and utilization of MIS as independent variables and Decision making as dependent variable. The availability and utilization of MIS supports to enhance managers' decision making effective. Effectiveness of managers' decision making is measured based on timely, accurate, reliable, relevant and completeness of the decisions made. Effective availability and utilization of MIS depends on the availability of the twelve modern MIS components first and on these components the existence or the availability of Expertise and Adequate Manpower, the availability of Modern Equipments and Devices, the availability of up to date Network & software Applications, the availability of Feasible MIS procedure and full Utilizations of these available MIS determinants or variable in CBE. Therefore, the above five independent variables were used as independent variables. The independent variables considered in this study are more explaining the availability and effective utilizations for MIS to have effective managers' decisions in CBE. Hence, the conceptual framework of this study was derived base on the above assumptions and theories form the literature review. Finally, all the independent variables stated in the frame work influenced straight forward the dependent variable

managers' decision making and also all the variables such as timely, accurate, relevant, complete and reliable MIS information influence the dependent variable managers' decision making.

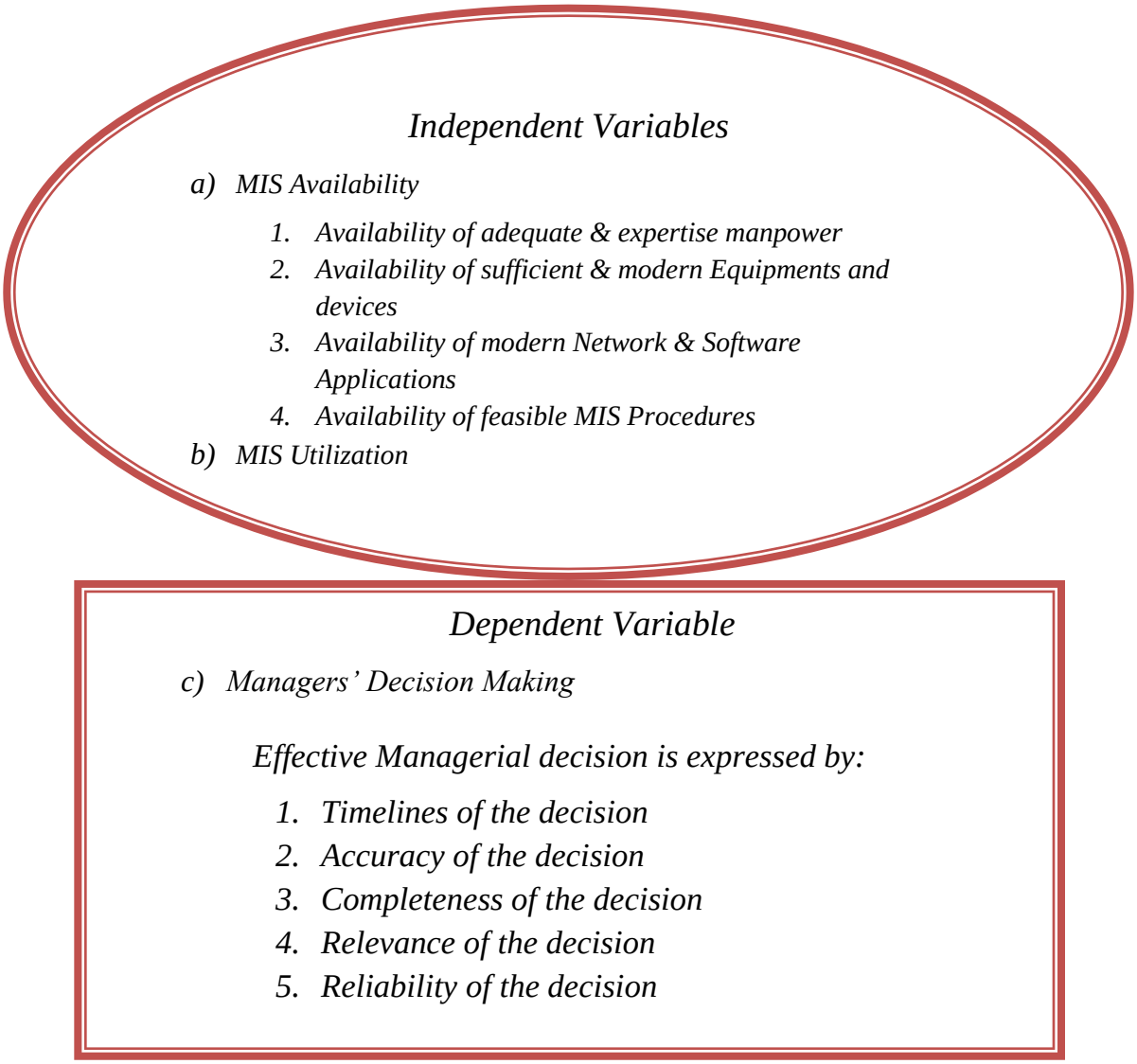

Figure - 2.1: Conceptual Framework Model

Source: A framework derived from the MIS theory & concepts in the literature review.

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the research design and methodological framework applied to solve the research problem and to answer the research questions. It starts with introduction part and goes through research design, sample design, data sources, instruments for data collections and document analysis and end with data analysis and interpretation part.

3.2 Research Design

A research design is refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem (Kothari, 2004). Descriptive research is a type of research that is mainly concerned with describing the nature or condition and the degree in detail of the present situation (Creswell, 2003). Koul (2008) was also affirmed that descriptive survey design becomes useful particularly where one needs to understand some particular information. Hence, this study focuses on describing the current situation of the problem and answers the research questions; a descriptive survey method is used to show how the management information systems availability and utilization enhanced managers' decision making process in commercial bank of Ethiopia. Further, a descriptive research method is preferred for this study on the assumption that it is helpful to gather enough information from many people on the issues under study.

3.3 Sample Design

3.3.1 Sampling Technique

Leedy and Ormrod (2005) state that in simple random sampling technique each member of the population has an equal chance of being selected. Whereas, in a purposive sampling technique, selection is based on characteristics of a population and the objective of the study. This type of sampling can be very useful in situations when you need to reach a targeted sample quickly, and where sampling for proportionality is not the main concern. Therefore, this study applies both simple random sampling technique to determine the sample size for questionnaires and purposive sample technique for the interview part.

3.3.2 Population and Sample

To determine the population and sample size for this study, the researcher has searched more data from the given bank as indicated. Bade on CBE June, 2018 annual report, the number of active branches was reached to 1,280 across the country. The bank has also categorized these branches into five grades such as Grade I, II, III, IV and Special Grade for the facilitations of administrations. The total number (1280) of CBE branches were also categorized as 680 Grade-I, 366 Grade-II, 140 Grade-III, 86 Grade- IV and 8 Special Grade Branches. Out of these, only 426 active branches with 139 Grade-I, 172 Grade-II, 58 Grade-III, 52 Grade- IV and 5 Special Grade were exist under the North, South, East and West Addis Ababa District offices. Moreover, the number of managerial positions existed under the head office and the four Addis Ababa District offices were 218 and 72 respectively. There are also 115 managers with Grade III, IV and Special Grade branches existed under Addis Ababa District Offices as per the data obtained from the bank's HRIS team leader Ato Melkirst Gizaw dated February 01, 2019. However, this study focused on managerial positions found on Core Processes of the bank such as Customers Accounts & Transactions (CATs), Finance, Credit and International Banking departments and MIS department exists under head office. The managerial positions found in North, South, East and West District offices and Branch Managers with grade three, four and special grade branches under these District offices were also the other studying focuses. The major reasons for limiting the scope are clearly stated under the scope of the study part in chapter one.

Managerial or decision makers positions selection under the head office, district offices and branches to get the population size was done via purposive sampling techniques based on their relevancy and decision making frequency either mostly or sometimes or not at all. The population size N includes relevant managerial or decision making positions found in CATs, Finance, Credit and International Banking departments and MIS department in commercial bank of Ethiopia. From MIS department, 1 Director and 4 managers/team leaders under this position were selected. From CATs, Finance, Credit and International Banking departments, 2 directors and 4 managers/ team leaders from each department with a total of 8 directors and 16 managers/team leaders were selected by considering the aligned managerial positions in the organizational structure of the bank. Therefore, from the Head office 9 directors and 20 managers/team leaders with a total of 29 decision makers were selected. From North, South, East and West Addis Ababa district offices, 1 Director, 1 Operation Manager & 1 Human Resource manager from each district office with a total

of 4 directors, 4 operational managers and 4 Human Resource managers were selected. Therefore, from the four Addis Ababa district offices, a total of 12 managerial positions or decision makers were selected. Branch managers under the four Addis Ababa district offices were selected as follows. From the total number (1280) of branches in CBE, only 426 branches with 139 Grade-I, 172 Grade-II, 58 Grade-III, 52 Grade-IV and 5 Special grade branches were exist under North, South, East and West Addis Ababa district offices. As it was previously stated above, Grade I, Grade II and any branch which existed outside Addis Ababa were excluded from the population sample size determination. As a result, 58 Grade III, 52 Grade IV and 5 Special Grade branches with a total of 115 branches were only included in the population sample size determination of the study. Therefore, 13 directors, 28 operational/HR managers or team leaders from the head office and district offices, 5 Special grade branch managers and 110 grade III and IV branch managers with a total of 156 managerial positions or decision makers were selected as a member of the population sample, i.e., N=156. Based on the above population sample size N, we determine the sample size for the study as follows: A Simplified formula to calculate the sample size n which was determined by Taro Yamane (1967:886), cited in Israel (1992) and lastly revised on June, 2012 is:

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

This formula was used to calculate the sample sizes in this study in the assumption that a 95% confidence level, and e = ±5%. Where n is the sample size, N is the population size, and e is the level of precision (or the acceptable sampling error). Based on this simplified formula, the sample size n is determined as follows: Population size = N = 156, Sampling error = e = ±5% = ± 0.05, hence the sample size n is determined as:

$$\text{Sample size} = n = \frac{N}{1 + N * (e)^2} = \frac{156}{1 + 156\,(0.05)^2} = \frac{154}{1.39} = 112$$

The researcher was used simple random sampling technique to distribute a total of 105 questionnaires to managers or decision makers in the population and interviews were conducted with 4 MIS and 3 IT department managers for the purpose of finding further information through purposive sampling technique. Therefore, 112 total samples were selected from 156 number of population using both simple random sampling and purposive sampling methods.

3.4 Data Sources

In this study, primary and secondary data sources were used to collect adequate information. The primary data sources were collected through questioners and interviews using simple random and purposive sampling techniques from managers working in commercial bank of Ethiopia under the head office, Addis Ababa district offices and Grade-III, IV and Special Grade Branches located in Addis. Secondary data sources such as management information system related books and review articles conducted internationally, journals, annual reports of the bank and different internet web sites were used by large as references to avoid the inadequacies of information.

3.5 Instruments for Data Collections

Questionnaires, interview, and document analysis were used as most important data gathering tools to acquire adequate data. Therefore, employing multiple data collection instruments helps the researcher to combine, strengthen and amend some of the inadequacies of the data and for triangulating it (Cress well, 2003).

3.5.1 Questionnaires

In this study, questionnaires were used to collect relevant and first-hand information from selected respondents or decision making managers in commercial bank of Ethiopia to identify the level and degree of availability and utilizations of MIS, because questionnaires are easier and simple to handle and answer for the respondents within a short period of time (Koul, 2008). Further, close-ended questions were preferred better in the questionnaires. They were also designed by focusing MIS theories and concepts in the literature review.

3.5.2 Interview

Structured interviews were designed by focusing the theories in the literature review to collect data from IT and MIS managers of the bank. This was because of the need to collect adequate data and for triangulation purpose. The interviews were also conducted along with the data collected through questionnaires. Applying structured or standardized interview approach in this study ensured each interview was to come with exactly the same questions in the same order; hence answers could be reliably aggregated.

3.6 Document Analysis

Document analysis was used to gather necessary information about MIS availability, utilization and the degree of managers' decision making was enhanced with the existed MIS utilization in CBE. Reviewed journals and articles, MIS related books, annual reports of the bank and various web sites were used as secondary source documents in the document analysis part. It was done to strengthen the data obtained through questionnaires, interviews and for triangulation purpose.

3.7 Data Analysis and Interpretations

Statistical Package for Social Sciences (SPSS) was used to analyze the data obtained through questionnaire and interview. Descriptive and inferential statistical analysis techniques such as Frequency, Percentage, Mean and standard deviation, minimum and maximum values were used to describe variables in the study. The reliability or acceptability of the study was checked using cronbach's alpha or alpha coefficient using SPSS software application. The analysis for data collected through questionnaires was considered at 5% level of significance. To check the relationships between the dependent and independent variables, coefficient of correlation was applied to some extent.

CHAPTER FOUR:
DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter deals with the description of the sample population, presentation, analysis and interpretation of the data based on the information obtained from the questionnaires, interviews and documents. Most relevant data for the study were obtained through questionnaires distributed to selected decision making managers of the management groups and interviews conducted with few MIS and IT department managers in commercial bank of Ethiopia.

The researcher distributed a total of 105 questionnaires and out of which 85 questionnaires were returned with a return rate of 81%. Because of various reasons, the rest 20 questionnaires (19%) were not returned. Structured interviews were also conducted with 4 MIS managers and 3 IT managers with a total of 7 decision making managers in Commercial Bank of Ethiopia. The data presentation and analysis was primarily based on responses obtained from the management groups through questionnaires and structured interviews. After the presentation of the demographic characteristics of the respondents, the study deals with presentation, analysis and interpretation of data collected from the questionnaires and interviews.

Collected data through questionnaires were analyzed with the Statistical Package for Social Science (SPSS). The responses of managers on all given variables other than the demographic variables were measured based on the five point Likert scale with: 1= Strongly Disagree, 2 = Disagree, 3 = Neutral, 4= Agree and 5= Strongly Agree. The demographic variables such as gender/sex, age, field of specialization, educational background, organizational position and years of experience were measured based on the following techniques using SPSS software. In the case of gender, values were provided as Male=1 and Female =2. For the age groups, values were provided as age ranges <33 =1, age ranges (34-38) =2, age ranges (39-43) =3, age ranges (44-48) =4 and age ranges >48 =5. For field of specialization, values were provided as Accounting & Finance =1, Banking & Finance =2, Business Administration =3, Management = 4, Marketing = 5, Economics= 6 and other than these fields =7. For Educational Background, values were provided as Doctorate Degree =1, Masters Degree =2, First university Degree =3, and Diploma =4. For organizational positions, values were provided above Directors=1, Director =2, District Operational/HR manager =3, Branch Manager = 4, Team leader = 5 and other than these organizational positions = 6. For years of

experience, values were provided as >25 =1, between (21-25) = 2, between (16-20) =3, between (11-15) =4 and < 10 = 5.

Finally, the responded data collected through interview both from the MIS and IT departments were not sufficient to present and some of them were almost similarly obtained from data collected through questionnaires. This was because; even if it is alleged that these managers or directors have sufficiently the related information, it was not able to get them in order to collect additional information that supports the sufficiency of data obtained from questioners and document analysis and for triangulation purpose. However, after checking the difficulty to get these busy managers or directors of both departments, the interviews were conducted with MIS and IT officers, but the collated data were not sufficient and mostly similar. Hence, the data analysis from the interviewing part was not presented because it creates information repetitions rather than adding value for the study.

4.2 Demographic Characteristics of the Respondents

In view of the fact that the study focused on managers' decision making, all respondents were managers or decision makers as per their discretionary level in commercial bank of Ethiopia. The demographic characteristics of the respondents or the demographic variables were analyzed and presented in this paper based on frequency and descriptive statistic tools as indicated below. For the sake of simplicity the demographic characteristics of the respondents or the demographic variables are Age, Sex (Gender), Educational Background, Field of Specialization, Organizational Position, and Years of Experience.

4.2.1 Demographic Variables Analysis

To describe the demographic variables of the study frequency, Percent, Mean, Standard deviation, Minimum and Maximum values were used as indicated in the tables 4.1 and 4.2.

a) Age group Analysis

The demographic variables frequency statistic table 4.1 expresses the age distributions for the respondents (decision makers) in commercial bank of Ethiopia was as follows. From the given table we understood that a substantial numbers of the respondents were found in the age groups between 39-43 (40%) and 34-38 (36.5%). In our country Ethiopia, such age group managers range from 34-43 is not considered as too young or too old; rather in the middle of young and old extremes. Also from experience most of us well understood that either too young or too old aged decision makers

may have disadvantages. Such disadvantages may be lack of managerial expertise (lack of skill, knowledge and experience for the younger once) or lack of motivations for the older once. In this regard, most of the decision makers (76.5%) in commercial bank of Ethiopia were aged in between 34-43 years old. Hence, most of the respondents or decision makers in CBE were in the age group with sufficient managerial experiences and motivated in their work. The rest 18.8% and 4.7% of the respondents' age were in between 44-48 and above 48 years old respectively. Most studies indicated that as age goes up motivations goes down, hence 23.5% of the respondents were older with enough experiences but lacks motivations in their work.

Table 4.1: Frequency and percent table for demographic variables

Demographic Variables	Descriptions	Frequency	Percent
Gender(Sex) of the Respondents	Male	50	58.8
	Female	35	41.2
	Total	85	100
Age of the Respondents	34 - 38	31	36.5
	39 - 43	34	40
	44 - 48	16	18.8
	>48	4	4.7
	Total	85	100
Respondents Field of Specialization	Accounting & Finance	21	24.7
	Banking & Finance	10	11.8
	Business Administration	20	23.5
	Management	13	15.3
	Marketing	13	15.3
	Economics	8	9.4
	Total	85	100
Respondents Educational Background	Masters Degree	45	52.9
	First University Degree	40	47.1
	Total	85	100
Respondents Organizational Position	Directors	10	11.8
	District Operation/HR manager	6	7.1
	Branch Manger	51	60
	Manager/Team leader at HO	18	21.2
	Total	85	100
Respondents Years of Experience	>25	4	4.7
	21 - 25	16	18.8
	16 - 20	34	40
	11 - 15	31	36.5
	Total	85	100

b) Gender (sex) group Analysis:

Gender or sex was also used in this study as a demographic variable to explain the demographic characteristic of the respondents or decision makers in CBE. When we look at the frequency percentage table 4.1, 58.8% (50) of the decision makers were Males and 41.2% (35) of them were Females. This shows that CBE have the experience to participate or involve female managers in the decision making processes as nearly comparable with males. Hence, commercial bank of Ethiopia has also benefited from the decisions made by the female managers as being they have natural gifted decision making ability than males as we understood from the ancient Ethiopian history for monarch.

c) Educational Back Ground, Field of Specialization, Organizational Position and Working Experience Analysis

The other demographic variables used in this study to express the demographical characteristic of the respondents were educational back ground, field of specialization, organizational position and years of experience. When we examine the educational back ground for the selected decision makers in CBE, 52.9% (45) and 47.1% (40) of the respondents were holding academic qualifications of Masters Degree and First University Degree with different business related fields of specialization respectively. Hence, the higher level educational backgrounds acquired by the decision makers in commercial bank of Ethiopia were significantly enhanced the decision making process and the bank has also benefited a lot from these decisions made. Further as we observe from table 4.1, all decision makers in CBE were also acquired banking business related field of specializations. In addition to this, 11.8%, 7.1%, 60%, and 21.2% of selected decision making managers were possess director, operational/HR manager, branch manager and team leading position in the organization respectively. Work experiences of the decision makers are also indicates as a minimum 11 years and maximum 25 years and above stayed in the banking industry. From this lesson we conclude that all selected managers or decision makers were working at least 11 years in the bank with business related field of specializations in the organizational positions that required more decisions on a daily base as per their discretionary level in commercial bank of Ethiopia. Such given circumstances were maintaining the bank to have skilled, knowledgeable and experienced managers or decision makers. From this, the researcher can have a reliable data collected from the given managers that exactly represents the existing management information systems availability and utilization in commercial bank of Ethiopia

Table 4.2: Mean, Std. Deviation and Variance table for demographic variables

Demographic Variables	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Male or Female	85	1	2	1.41	0.495	0.245
Your Age	85	2	5	2.92	0.862	0.743
Field of Specialization	85	1	6	3.13	1.653	2.733
Education Background	85	2	3	2.47	0.502	0.252
Organization position	85	2	5	3.91	0.868	0.753
years of experience	85	1	4	3.08	0.862	0.743
Valid N (list wise)	85					

In our previous data presentations, values were provided for the demographic variable "age" as age ranges < 33 =1, age ranges from 34-38 =2, age ranges from 39-43 =3, age ranges from 44-48=4 and age ranges >48 =5. Consequently table 4.2 shows the ages for the respondents or decision makers in commercial bank of Ethiopia (CBE) with minimum value 2 which ranges from 34-38 years old and maximum value 5 which range >48 years old at an average Mean =2.92, Std. deviation= 0.862 and Variance =0.743. The Mean value for the age groups approximate 3, which indicates that most decision makers in CBE were aged in between 39-43 years old with minimum or less than 1 deviation and variation from the Mean.

For the variable "Educational Background" values were provided as Doctorate Degree=1, Masters Degree=2, First university Degree=3, and Diploma=4.Accordingly the educational background for the respondents or decision makers in CBE were ranges with minimum value 2 (First University Degree) and maximum value 3 (Masters Degree) with an average Mean=2.47, Std. deviation=0.502 and Variance =0.252. The Mean value for the educational back ground was fall in between First degree and Masters Degree approximately at proportional percentage with minimum or less than 1 std. deviation or variation from the Mean. Hence all the decision makers in CBE were acquired a minimum First degree and a maximum Masters Degree at almost proportional percentage.

For the demographic variable "work experience" of the respondents or selected decision makers in CBE, values were also provided as >25years =1, between 21-25 years =2, between 16-20 years =3, between 11-15 years =4 and < 10 years = 5. Based on the values provided the work experiences of the decision makers were range from minimum value 1 (>25years) up to maximum value 4 (between 11-15 years) with average Mean=3.08, Std. deviation= 0.862 and Variance =0.743. The

Mean value 3.08 indicated the work experiences for the majorities of decision makers in CBE were fall in between 16-20 years with less than 1 std. deviation and variation with the Mean value. Therefore, as date indicated above, the majorities of decision makers in CBE were aged on average between 34-43 years, acquired enough educational back ground at a minimum First university Degree and Masters Degree with a minimum of 11 years work experiences in the banking industry. So CBE has highly benefited from the capability of these managers, if it manipulated effectively the existing potential based on allocating the right qualifications and individuals ability at the right positions.

4.3 Reliability Test for Non Demographic Variables

Cronbach's alpha (alpha coefficient) is the most common measures of internal consistency or reliability of data set. Higher percentage of the Cronbach's alpha indicates a high level of internal consistency or reliability for the scale within a given specific sample. Many sources say above 0.70 Cronbach's alpha is acceptable or respectable and 0.80 or greater is preferred. However, greater than 0 .90 percentage of alpha coefficient indicates shortening the scale or too much inter-relations i.e. data redundancy and not acceptable (Cortina, 1993).

Cronbach's alpha was used in this study to test or measure the reliability or internal consistency of data set which helped to consider the suitability of the data set for statistical analysis. Based on the above cronbach's alpha concepts, the reliability or internal consistency of all the variables other than demographic variables were checked and analyzed using SPSS statistical software. Table 4.3 shows the Cronbach Alpha for this study is found to be 0.706 as indicated below. Therefore, the Cronbach Alpha 0.706 of this study points out, the internal consistency or reliability of data set for variables in the study was acceptable or respectable.

Table 4.3: Reliability Test Analysis

Case processing summary			Reliability Statistics	
Case	N	%	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Valid	85	100%		
Excluded	0	0		
Total	**85**	**100%**	**0.706**	**0.725**

4.4 Analysis for the Dependent Variable

a) Dependent Variable Analysis Based on Frequency and Percent

Based on the frame work designed from MIS theories and concepts in the literature review, managers' decision making is considered as the dependent variable for this study. Accordingly table 4.4 expressed the dependent variable managers' decision making based on time, accuracy, reliability, relevance and completeness of decisions made in commercial bank of Ethiopia using frequency and percentage as indicated below.

Q.No.1: "There are timely decisions of managers in CBE"

From a total of 85 managers who replied for the existence of timely decisions of managers in CBE, 28(32.9%), 54(63.5%) and 3(3.5%) of the responses were Neutral, Agree and Strongly Agree respectively. Hence 67% of the managers or decision makers were accepting the existence of timely decisions of managers in CBE by responding as agree and strongly agree. The analyzed data confirms that timely managers' decision currently in CBE is significant at 67%. The fact that the existence of timely managers' decisions at 67% which is significant in CBE may be as a result of either there was timely information flows from MIS to decision makers or the existing issues were demanding immediate decisions with or without adequate available information. In addition to this, 32.9% (28) of the managers or decision makers were replying Neutral (which is in between disagree and agree) to proof the existence of timely managers' decisions in CBE. This might be as a result of such respondents or managers were either do not have enough knowledge about the decisions made in CBE or involving less in the decision making processes of the bank. Sometimes this situation has happened because the respondents' current organizational status may demand less/no at all MIS information to making decisions or such managerial positions may be formed to accomplish other than decision making in the bank.

Q.No.2: "There are accurate decisions of managers in CBE"

To conform the existence of accurate decisions of managers currently in CBE, a total of 85 respondents or managers were took as a sample. Out of which 31.8% (27) and 68.2% (58) of the respondents were replied as Neutral and Agree respectively. Accordingly the analyzed data in the given table shows visibly the current managerial decisions accuracy level in CBE is significant at 68.2%. However, 31.8% (27) of the respondents or manager were replying Neutral which means that these respondents are not exactly accepted the existence of accurate managerial decisions

currently in CBE since they are in between agree and disagree. The response for being Neutral at 31.8% may be the consequence of this much percent of the managers selected in the sample study were involved with no/less in the decision making process of the bank.

Q.No.3: "The Manager's Decisions in CBE are Relevant"

To test the relevance of managers' decisions in commercial bank of Ethiopia through the statistic tool called frequency analysis, a total of 85 respondents or managers were selected from the sample size. Out of which 58(68.2%) and 27(31.8) of the respondents were responded as Agree and Strongly Agree respectively. As a result, all the respondents or decision making managers in CBE were accepting significantly at 100%(Agree) the existence of relevant managers' decisions. Therefore, managers' decisions in CBE are relevant currently at a higher rate of percentage or significant.

Q.No.4: "The Manager's Decisions in CBE are Complete"

To attest the existence of complete managerial decisions currently in commercial bank of Ethiopia, a total of 85 respondents or managers were took as a sample. From the given sample, 57 (67.1%) and 28 (32.9%) of the respondents were replied as Neutral and Agree respectively. So complete managerial decisions are currently exist in CBE at a lower rate of percentage or are significant at 32.9% only. This implies that currently managers' decisions in commercial bank of Ethiopia are complete insignificantly. This might happened as a result of perception about the concept completeness. If there is no common measurement trained for completeness, reliability or relevance at bank level, individuals may get difficulty to respond related questions as per the required.

Q.No.5: "The Manager's Decisions in CBE are Reliable"

From a total of 85 respondents, almost all (85) or 100% of the respondents or managers were replied as managers' decisions in CBE are reliable. Therefore, the existence of reliable managers' decision in commercial bank of Ethiopia is significant. Finally, based on the evidence collected from the respondents, the frequency statistic analysis of the dependent variable focused on the five descriptive criteria for effective managerial decision such as timely, accuracy, relevancy, reliability and completeness indicates in the table 4.4, all except completeness are exist currently in CBE significantly at a rate of 67%(Agree), 68%(Agree), 100%(Agree) and 100%(Agree) respectively. However, the existing managerial decisions in CBE are complete only at 32.9% with low rate of completeness or exist insignificantly.

Table 4.4: Frequency and percent table for the dependent variable

Descriptions	N	Scale	Frequency	Percent
1. There are timely decisions of managers in CBE.	85	Neutral	28	32.9
		Agree	54	63.5
		Strongly Agree	3	3.5
		Total	85	100
2. There are accurate decisions of managers in CBE.	85	Neutral	27	31.8
		Agree	58	68.2
		Total	85	100
3. The manager's decisions in CBE are relevant.	85	Agree	58	68.2
		Strongly Agree	27	31.8
		Total	85	100
4. There is completeness in decisions of managers in CBE.	85	Neutral	57	67.1
		Agree	28	32.9
		Total	85	100
5. The managers' decisions in CBE are reliable.	85	Agree	85	100

b) Dependent Variable Analysis Based on Mean, Std. Deviation, Variance and Minimum and Maximum Values

The dependent variable "managerial decision making" is also analyzed and presented via Minimum and Maximum values, Mean, Std. Deviation and Variance as indicated in table 4.5 below. Variance measures the variability or volatility from an average or mean. It measures how far a set of random numbers are spread out from their average value. The variance of a data set cannot be negative or is always positive because it is the sum of the squared deviation divided by a positive value. When the distributions of data with a coefficient of variation higher than 1 are considered as a high variance whereas those with a coefficient of variation lower than 1 are considered as a low-variance. When the variance of a random variable is zero, then that random variable must be a constant. Zero variance means all observations are equal. Standard deviation is a number used to tell how measurements for a group are spread out from the average mean, or expected value. A low standard deviation means that most of the numbers are very close to the average. A standard deviation close to zero indicates that the data points tend to be very close to the mean (expected value) of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values. Standard deviation cannot be negative because it is square rooted variance.

Mean is equal to the sum of all the values in the data set divided by the number of values in the data set (Ronald, 2002).

The success of any organization in different aspects is critically linked with the effectiveness of managers' decision making. For the managers decisions to be valuable, organization have to be developing MIS (a system that generates accurate, relevant, complete and reliable information and delivers timely) that really supports the management decision. Hence, decision has to be made effective when it is timely, accurately, reliably, completely and relevantly presented for the decision maker. Using the above five components as criteria that expresses effective managerial decisions, the following five questions were developed and forwarded to the respondents selected from the sample size based on the five point Likert scale model with 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. Table 4.5 illustrates each of the five questions based on Minimum and Maximum values, Mean, Std. deviation and Variance existed between variables as indicated below.

Table 4.5: Mean, Std. deviation and Variance table for the dependent variable

Descriptions	N	Minimum	Maximum	Mean	Std. Deviation	Variance
1. There are timely decisions of managers in CBE.	85	3	5	3.71	0.531	0.282
2. There are accurate decisions of managers in CBE.	85	3	4	3.68	0.468	0.219
3. The manager's decisions in CBE are relevant.	85	4	5	4.32	0.468	0.219
4. There is completeness in decisions of managers in CBE	85	3	4	3.33	0.473	0.224
5. The managers' decisions in CBE are reliable.	85	4	4	4	0.00	0.00
Valid N	85					

Q.No.1: "There are timely decisions of managers in CBE"

Related to the existence of timely managers' decisions currently in CBE, respondents were replaying with minimum 3(Neutral) and maximum 5(strongly Agree). The Mean value (3.71) is fall in between Neutral (3) and Strongly Agree (5). This indicates that, the Mean value (3.71) is most probably approaches to the Agree (4) option, because it is far from the Neutral (3) with 71% and from Agree (4) only 29%. Further, both the standard deviation (0.531) and variance (0.282) for this question are below 1 with a low standard deviation and variance. This indicates that the majorities

of the respondents were replied very close to the Average Mean (3.71), which is approximately Agree (4). Therefore, timely managers' decisions currently in commercial bank of Ethiopia exist significantly at 71% (Agree) or timely managers' decisions are fairly

Q.No.2: "There are accurate decisions of managers in CBE"

Aligned with the existence of accurate managers decisions currently in commercial bank of Ethiopia, respondents were replaying with minimum 3(Neutral) and maximum 4(Agree). The Mean value (3.68) is fall in between Neutral (3) and Agree (4). This implies that, the Mean value (3.68) is most probably approaches to the Agree (4) option, because it is far from the Neutral (3) with 68% and from Agree (4) with 32%. Further, both the standard deviation (0.468) and variance (0.219) for this question are below 1 with a low standard deviation and variance. This indicates that the majorities of the respondents were replied very close to the Average Mean (3.68), which is approximately Agree (4). Therefore, accurate managers' decisions currently in commercial bank of Ethiopia exist significantly at 68% (Agree) or accurate managers' decisions are fairly exist.

Q.No.3: "There are relevant decisions of managers in CBE"

In the processes of proving the current relevance of managers' decisions in commercial bank of Ethiopia, respondents were replayed with minimum 4(Agree) and maximum 5(strongly Agree). The Mean value (4.32) is fall in between Agree (4) and Strongly Agree (5). This replies that the Mean value (4.32) is exactly above the Agree (4) option. Further, both the standard deviation (0.468) and variance (0.219) for this question are below 1 with a low standard deviation and variance. The analyzed data in the table demonstrates that all of the respondents were agreed and accepted that there exist currently relevant managers' decisions in CBE. Therefore, relevant managers' decisions currently in commercial bank of Ethiopia exist significantly at 100% (Agree) or relevant managers' decisions are fairly exist.

Q.No.4: "There are complete decisions of managers in CBE"

Related to verifying the completeness of managers decisions in commercial bank of Ethiopia, respondents were replaying with minimum 3(Neutral) and maximum 4(Agree). The Mean value (3.33) is fall in between Neutral (3) and Agree (4). This implies that the Mean value (3.33) is most probably approaches to the Neutral (3) option, because it is far from the Agree (4) option with 67% and from the Neutral (3) only 33%. In addition to this, both the standard deviation (0.473) and

variance (0.224) for this question are below 1 with a low standard deviation and variance. Furthermore, the majorities of the respondents were replied very close to the Average Mean (3.33) which is approximates the Neutral (3). Therefore, complete managers' decisions currently in commercial bank of Ethiopia exist significantly at 33% (Agree) and the rest 67% was fall to Disagree or complete managers' decisions are exist not fairly or insignificantly.

Q.No.5: "There are reliable decisions of managers in CBE"

While passing to prove the reliability of managers' decisions currently in commercial bank of Ethiopia, respondents were replaying that with minimum 4(Agree) and maximum 4(Agree). The Mean value (4) is fall exactly on the Agree (4) option. Further, both the standard deviation and variance for this question are 0 which indicates that all respondents' were replied constant and similar. Therefore, reliable managers' decisions currently in commercial bank of Ethiopia exist significantly at 100% (Agree) or reliable managers' decisions are fairly exist.

4.5 Analysis for the Independent Variables

a) Independent Variables Analysis Based on Frequency and Percent

The assumptions stated in the frame work of this study articulates that effective managers' decisions in commercial bank of Ethiopia is measured through the existence of five independent variables such as Availability of Expertise and Adequate manpower, Availability of Modern Equipments and Devices, Availability of up to date Network and software applications, Availability of Feasible MIS procedure and Utilization of all available MIS determinants stated above. Table 4.6 up to 4.10 demonstrates the frequency statistics (frequency and percent) for the independent variables based on the five point Likert scale model with 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree as indicated below.

V.No.1: The Availability of Expertise and Adequate Manpower.

Availability of expertise and adequate manpower is represented with six individual questions. Hence, the presentation of data via frequency statistic analysis is as indicated below in table 4.6. Associated with the availability of skilled manpower in CBE, from 85 collected responses 28(32.9%) were Neutral, 54(63.5%) were Agree and 3(3.5%) were Strongly Agree. From this data we learned that 67% of the respondents were accept the availability of skillful manpower in CBE

MIS department. Therefore, currently skilled manpower exists in CBE MIS department significantly at 67% (Agree) or currently skilled manpower exists fairly.

Related to the availability of knowledgeably manpower in CBE, from 85 collected responses 27(31.8%) were Neutral, 31(36.5%) were Agree and 27(31.8%) were Strongly Agree. From this data we learned that 68.3% of the respondents were accept the availability of knowledgeably manpower in CBE MIS department. Therefore, currently knowledgeably manpower exists in CBE MIS department significantly at 68.3% (Agree) or currently skilled manpower exists fairly.

Table 4.6: Frequency table for the Availability of Expertise and Adequate Manpower

V.No.1: The Availability of Expertise and Adequate Manpower.

Descriptions	N	Scale	Frequency	Percent
a. MIS department manpower is skillful in CBE.	85	Neutral	28	32.9
		Agree	54	63.5
		Strongly Agree	3	3.5
		Total	85	100
b. MIS department manpower is knowledgeable in CBE.	85	Neutral	27	31.8
		Agree	31	36.5
		Strongly Agree	27	31.8
		Total	85	100
c. MIS department manpower is experienced in CBE.	85	Agree	35	41.2
		Strongly Agree	50	58.8
		Total	85	100
d. MIS department manpower is motivated in CBE.	85	Neutral	54	63.5
		Agree	31	36.5
		Total	85	100
e. MIS department manpower is committed in CBE.	85	Neutral	55	64.7
		Agree	30	35.3
		Total	85	100
f. MIS department has adequate manpower in CBE.	85	Agree	100	100

Aligned with the availability of experienced manpower in CBE, from 85 collected responses 35(41.2%) were Agree and 50(58.8%) were Strongly Agree. From this data we learned that 100% of the respondents were accept the availability of experienced manpower in CBE MIS department. Therefore, currently experienced manpower exists in CBE MIS department significantly at 100% (Agree) or currently skilled manpower exists fairly.

In the process of checking the availability of motivated manpower in CBE, from 85 collected responses 54(63.5%) were Neutral and 31(36.5%) were Agree. From this data we learned that 63.5% of the respondents were not accepting for the availability of motivated manpower in CBE MIS department. Therefore, currently only 36.5% of the available manpower in CBE MIS department is motivated. This implies that the current available manpower in CBE MIS department is motivated insignificantly or not fairly. Further, motivation comes from various aspects such as promotions, recognitions, rewards, age, salary increments etc. Hence, the cause for majorities de motivations in CBE staffs has to be identified to enhance their motivation back.

In related to identifying the availability of committed manpower in CBE, from 85 collected responses 55(64.7%) were Neutral and 30(35.3%) were Agree. From this data we learned that 64.3% of the respondents were not accepting for the availability of committed manpower in CBE MIS department or only 35.3% of the available manpower in CBE MIS was committed in their work. Therefore, currently 64.3% of the available manpower in CBE MIS department is not committed or current commitments in CBE MIS are insignificant or not faire.

Aligned with the availability of adequate manpower in CBE MIS department, 85(100%) of the responses collected indicates that the number of manpower exists at acceptable level of adequacy or accepted at 100% Agree. Therefore, currently the number of manpower available in CBE MIS is significant or fairly exists.

V.No.2: The Availability of Modern Equipments and Devices

The availability of modern equipments and devices is represented by three questions. Hence, the presentation of data via frequency statistic analysis is as indicated below in table 4.7.

Related with identifying the availability of appropriate (modern, high storage capacity and speed) Equipments and Devices in CBE, from 85 collected responses 14(16.5%) were Neutral, 29(34.1%) were Agree and 42(49.4%) were Strongly Agree. From this data we learned that 83.5% of the respondents were accepted the availability of appropriate (modern, high storage capacity and speed) Equipments and Devices in CBE. Therefore, currently 83.5% of the available Equipments and Devices in CBE exist significantly or fairly.

Table 4.7: Frequency table for the Availability of Modern Equipments and Devices

V.No.2: The Availability of Modern Equipments and Devices

Descriptions	N	Scale	Frequency	Percent
a. MIS department is used appropriate (modern, high storage capacity & speed) Equipments and Devices in CBE	85	Neutral	14	16.5
		Agree	29	34.1
		Strongly Agree	42	49.4
		Total	85	100
b. MIS department is used adequate number of Equipments & Devices to produce information in CBE.	85	Neutral	41	48.2
		Agree	44	58.8
c. MIS department has enough spare parts & maintenance for Equipments & Devices in CBE.	85	Neutral	28	32.9
		Agree	42	49.4
		Strongly Agree	15	17.6
		Total	85	100

Aligned with the identification of adequate number of Equipments & Devices exist in CBE MIS department, from 85 collected responses 41(48.2%) were Neutral and 44(58.8%) were Agree. From this data we learned that 58.8% of the respondents were accepted the availability of adequate number of Equipments & Devices in CBE MIS department. Whereas, the remaining 48.2 % were replied in between disagree and agree. Therefore, currently 58.8% of the available Equipments and Devices in CBE MIS department exist moderately.

While the availability of enough spare parts & maintenance for Equipments & Devices in CBE are explore, from 85 collected responses 28 (32.9%) were Neutral and 42 (49.4%) were Agree and 15(17.6%) were Strongly Agree. From this data we learned that 67% of the respondents were accepted the availability of enough spare parts and maintenance for Equipments and Devices in CBE. Therefore, currently 67% of the available Equipments and Devices in CBE have enough spare parts and maintenance exists significantly or fairly.

V.No.3: The Availability of up to date Network & Software Applications

The availability of updated networks and software applications in CBE are represented by six questions. Hence, the presentation of data via frequency statistic analysis is as indicated below in table 4.8. In relation with checking the availability of adequate networking installations in CBE, from 85 collected responses 58 (68.2%) were Agree and 27 (31.8%) were Strongly Agree. From this data we learned that 100% of the respondents were accepted the availability of adequate

network installation in CBE. Therefore, currently 100% (Agree) of the available networks in CBE were adequately installed or exists significantly or fairly.

Related with the availability of uninterrupted telecommunication networking service currently in CBE, from 85 collected responses 79 (92.9%) were Neutral and 6(7.1%) were Agree. From this data we learned that 92.9% of the respondents were rejected or not fully agree for the availability of uninterrupted telecommunication network supply from the corporation. Therefore, currently 6(7.1%) of the existing available telecommunication network services in CBE are uninterrupted whereas the interrupted networking services availability currently in CBE are reached 92.9%, which indicates there are significant interruptions of network supply exists in CBE.

Table 4.8: Frequency table for the Availability of up to date Network & software

V.N3: Availability of up to date Network & software

Descriptions	N	Scale	Frequency	Percent
a. There are adequate networking installations in CBE.	85	Agree	58	68.2
		Strongly Agree	27	31.8
		Total	85	100
b. There is uninterrupted telecommunication networking service in CBE.	85	Neutral	79	92.9
		Agree	6	7.1
		Total	85	100
c. There is advanced & user friendly networking & software system in CBE.	85	Agree	58	68.2
		Strongly Agree	27	31.8
		Total	85	100
d. There is satisfactory network & software repair & maintenance in CBE.	85	Agree	58	68.2
		Strongly Agree	27	31.8
		Total	85	100
e. There is easy customization of software in CBE.	85	Neutral	27	31.8
		Agree	31	36.5
		Strongly Agree	27	31.8
		Total	85	100
f. There are standards for software applications to detect errors in CBE.	85	Neutral	29	34.1
		Agree	56	65.9
		Total	85	100

Aligned with the availability of advanced and user friendly networking & software system in CBE, from 85 collected responses 58 (68.2%) were Agree and 27 (31.8%) were Strongly Agree. From this data we learned that 100% of the respondents were accepted the availability of advanced and

user friendly networking and software system in CBE. Therefore, currently100% (agree) of the existing available network and software system in CBE are advanced and user friendly with a significant rate or we can say that currently advanced network and software applications are exist fairly in CBE.

In order to prove the availability of satisfactory network and software repair and maintenance in CBE, from 85 collected responses 58 (68.2%) were Agree and 27 (31.8%) were Strongly Agree. From this data we learned that 100% of the respondents were accept the availability of satisfactory network and software repair and maintenance in CBE. Therefore, currently 100% (agree) of the existing available network and software repair and maintenance in CBE were satisfactory at a significant rate or the existing network and software maintenances are fair.

Related with verifying the availability of easy customization of soft ware in CBE, from 85 collected responses 27 (31.8%) were Neutral, 31(36.5%) were Agree and 27(31.8%) were strongly Agreed. From this data we learned that 68.3% of the respondents were accepting the availability of easy customization of soft ware in CBE. Therefore, currently 68.3% of the existing available soft ware applications in CBE are easy customized with a significant rate or existing software applications are fairly customized in CBE.

While assessing the availability of standards for software applications to detect errors in CBE, from 85 collected responses 29 (34.1%) were Neutral and 56 (65.9%) were Agree. From this data we learned that 65.9% of the respondents were accepting the availability of standards for software applications to detect errors in CBE, whereas the remaining 34.1% are rejecting or not fully accepting the existence of standards for software applications to detect errors. Therefore, currently only 65.9% of the existing available soft ware applications in CBE have standards applied to detect errors which is fairly exist but not as such significant.

V.No.4: The Availability of Feasible MIS Procedure

The availability of feasible MIS procedure in CBE MIS department is represented with four questions in this study. Therefore, the presentation of data via frequency statistic analysis is indicated below in the table 4.9. While proving the availability of flexible MIS procedure to perform the daily transactions in CBE MIS department, from 85 collected responses 1 (1.2%) was Disagree, 55 (64.7%) were Neutral and 29 (34.1%) were Agree. From this data we learned that

34.1% of the respondents were accepted for the availability of flexible MIS procedure to perform daily transactions in CBE MIS department, whereas 68.9% of the respondents were disagree or not accepting fully for the existence of flexible MIS procedure available in CBE. Therefore, currently 34.1% of the existing MIS procedure available in CBE is flexible at insignificant level where as the inflexibility aspects of the MIS procedure in CBE exists significant.

Table 4.9: Frequency table for the Availability of Feasible MIS procedure

V.N4: Availability of Feasible MIS procedure

Descriptions	N	Scale	Frequency	Percent
a. There is flexible for doing works MIS procedure exist in CBE.	85	Disagree	1	1.2
		Neutral	55	64.7
		Agree	29	34.1
		Total	85	100
b. In CBE MIS procedure is timely revised.	85	Agree	29	34.1
		Strongly Agree	56	65.9
		Total	85	100
c. There is easy to understand MIS procedure in CBE.	85	Agree	29	34.1
		Strongly Agree	56	65.9
		Total	85	100
d. CBE MIS procedure shows clearly the work flows of the department.	85	Agree	29	34.1
		Strongly Agree	56	65.9
		Total	85	100

Related with checking the availability of timely revisions for MIS procedure in CBE, from 85 collected responses 29 (34.1%) were Agree and 56 (65.9%) were Strongly Agree. From this data we learned that 100% of the respondents were accepted agree for the availability of timely MIS procedure revision exist in CBE. Therefore, currently 100% (Agree) of the existing available MIS procedure in CBE is timely revised with a significant rate or timely revisions of MIS procedure fairly exist in CBE.

Related with analyzing the availability of easy to understand MIS procedure in CBE, from 85 collected responses 29 (34.1%) were Agree and 56 (65.9%) were Strongly Agree. From this data we learned that 100% of the respondents were accepting the availability of easy to understand MIS procedure in CBE. Therefore, currently 100% (Agree) of the existing available MIS procedure in CBE is significantly understandable or currently MIS procedure in CBE is fairly understandable.

Aligned with the availability of MIS procedure clearly shows the work flow of the department exist in CBE, from 85 collected responses 29 (34.1%) were Agree and 56 (65.9%) were Strongly Agree. From this data we learned that 100% of the respondents were accepting the availability of MIS procedure clearly shows the work flow of the department in CBE. Therefore, currently 100% (Agree) of the existing available MIS procedure in CBE shows significantly the work flow of the department or current MIS procedure in CBE indicates fairly the work flow of the department.

V.No.5: Utilization of all the Available MIS Components.

The last independent variable called utilization of all the Available MIS Components is represented with nine questions in this study and expressed based on the frequency statistic analysis as indicated below in table 4.10. While understanding effective utilization of the available employee skills and knowledge in CBE MIS department, from 85 collected responses 29 (34.1%) were Neutral, 30 (35.3%) were Agree and 26(30.6) were Strongly Agree. From this data we learned that 65.9% of the respondents were accepting the available employee skills and knowledge are utilized effectively in CBE, whereas the remaining 34.1% of the respondents were replying that as they did not observe effective utilization of employee skills and knowledge in CBE MIS as required. Therefore, currently only 65.9% of the existing available employee skills and knowledge in CBE are utilized significantly or fairly.

Related with identifying effective utilization of available Equipments and Devices in CBE, from 85 collected responses 33(38.8%) were Agree and 52 (61.2%) were Strongly Agree. From this data we learned that 100% of the respondents were accepting for effective utilization of the available Equipments and Devices in CBE. Therefore, currently 100% (agree) of the existing available Equipments and Devices in CBE are utilized significantly.

Table 4.10: Frequency table for the Utilizations of all Available MIS Components				
V.N5: Utilizations of All Available Components				
Descriptions	N	Scale	Frequency	Percent
a. CBE MIS department utilized its employee's capacity effective.	85	Neutral	29	34.1
		Agree	30	35.3
		Strongly Agree	26	30.6
		Total	85	100
b. CBE MIS department utilized its Equipments & Devices effectively.	85	Agree	33	38.8
		Strongly Agree	52	61.2
		Total	85	100
c. CBE MIS department utilized its network & software applications effectively.	85	Neutral	1	1.2
		Agree	28	32.9
		Strongly Agree	56	65.9
		Total	85	100
d. CBE MIS department utilized its procedure effectively.	85	Neutral	1	1.2
		Agree	57	67.1
		Strongly Agree	27	31.8
		Total	85	100
e. CBE MIS department produced information & deliver timely to decision makers for utilizations.	85	Neutral	27	31.8
		Agree	54	63.5
		Strongly Agree	4	4.7
		Total	85	100
f. MIS information produced in CBE for utilization are accurate (free from errors but not absolutely).	85	Neutral	27	31.8
		Agree	58	68.2
		Total	85	100
g. MIS information produced for utilizations are reliable in CBE.	85	Neutral	1	1.2
		Agree	56	65.9
		Strongly Agree	28	32.9
		Total	85	100
h. MIS information produced for utilizations are complete in CBE	85	Neutral	29	34.1
		Agree	56	65.9
		Total	85	100
i. MIS information produced for utilizations are relevant in CBE	85	Neutral	1	1.2
		Agree	61	71.8
		Strongly Agree	23	27.1
		Total	85	100

In response to identifying effective utilization of the available network and software Applications in CBE, from 85 collected responses 1(1.2%) was Neutral, 28 (32.9%) were Agree and 56(65.9%) were Strongly Agree. From this data we learned that 98.8% of the respondents were accepting for effective utilization of the available network and software applications in CBE. Therefore, currently 98.8% of the existing available network and software applications in CBE are utilized significantly or fairly.

Related with the assessment of effective utilization of the available MIS procedure in CBE MIS department, from 85 collected responses 1(1.2%) was Neutral, 57(67.1%) were Agree and 27(31.8%) were Strongly Agree. From this data we learned that 98.8% of the respondents were accepting for effective utilization of the available MIS procedure in CBE. Therefore, currently 98.8% of the existing available MIS procedure in CBE MIS is utilized significantly or fairly.

While checking the time to produce and deliver information in CBE to utilize in decision making, from 85 collected responses 27 (31.8%) were Neutral, 54 (63.5%) were Agree and 4 (4.7%) were Strongly Agree. From this data we learned that 68.2% of the respondents were accepting for timely Producing and delivering of information for utilization in decision making in CBE; whereas the rest 31.8% of the respondents were not agree for the existence of timely producing and delivering practices of information utilization in CBE. Therefore, currently in CBE 68.2% of the existing Produced information is timely delivered for utilization in decision significantly or fairly.

Related with identifying accurate information utilization for decision making in CBE, from 85 collected responses 27(31.8%) was Neutral and 58 (68.2%) were Agree. From this data we learned that 68.2% of the respondents were accepting for the availability of accurate information utilization for decision making in CBE, whereas the remaining 31.8% of the respondents were not agreed. Therefore, currently 68.2% of the existing accurate information produced in CBE is utilized in decision significantly or fairly.

Aligned with the identifications of reliable information utilization in decision in CBE, from 85 collected responses 1(1.2%) was Neutral, 56 (65.9%) were Agree and 28(32.9) were Strongly Agree. From this data we learned that 98.8% of the respondents were accepting for the availability of reliable information utilization in decision in CBE. Therefore, currently 98.8% of the existing reliable information produced in CBE is utilization in decision significantly or fairly.

While identifying the completeness of information utilized in decision in CBE, from 85 collected responses 29(34.1%) was Neutral and 56(65.9%) were Agree. From this data we learned that 65.9% of the respondents were accepting the availability of complete information utilization in decision in CBE. Therefore, currently in CBE only 65.9% of the existing complete information is utilized in decision at a moderate rate of percentage.

Related with assessing the relevancy of information utilization in decision making in CBE, from 85 collected responses 1(1.2%) was Neutral, 61(71.8%) were Agree and 23(27.1) were Strongly Agree. From this data we learned that 98.8% of the respondents were accepting for the availability of relevant information utilization in decision in CBE. Therefore, currently in CBE 98.8% of the existing relevant information is utilized in decision making significantly or fairly.

b) Dependent & Independent Variables Analysis Based on Mean, Std, Deviation, Variance and Minimum & Maximum Values

The intent for this sub section is to assess the degree of influence that independent variables "MIS availability and utilization" have on the dependent variable "managers' decisions making" in this study. From the frame work designed in the study, we can also clearly realize that the dependent variable is "effective managers' decision making" and the influencing or enhancing factors are independent variables such as the Availability of MIS (which includes Availability of expertise and adequate manpower, Availability of modern Equipments and Device, Availability of updated Network & Software Applications and Availability of feasible MIS Procedure) and the Utilization of these Availability components. To assess this in detailed, questionnaires were developed and forwarded to the respondents or managers in commercial bank of Ethiopia that are selected from the given population sample size based on the five point Likert scale model ranges from strongly disagree up to strongly agree. Using a descriptive statistic tool analysis method with minimum value, maximum value Mean and Std. deviations the dependent and independent variables are analyzed and presented as indicated in table 4.11.

Table 4.11: Mean, Std, Deviation, Minimum & Maximum Values Analysis for All variables

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
V,N.1- Managers Decision Making	85	3	4	3.81	0.333	0.111
V.N.2- MIS Utilizations	85	4	5	4.13	0.275	0.076
V.N.3- MIS Availability	85	4	5	4.03	0.143	0.020
Valid N	85					

N.B the minimum value for MIS Availability 3.75 is approximately rounded to 4 (Agree option) because there is no Likert Scale for fractions between 3(Neutral) and 4(Agree).

V.No.1: Effective Managers' Decision Making in CBE.

Table 4.11 points out the analysis for the availability of effective managers' decision making in commercial bank of Ethiopia via descriptive statistic tool with minimum value replied 3(Neutral) and maximum value replied 4(Agree). The Mean and Standard deviations were 3.81 and 0.333 respectively. From these given figures we realize that, the Mean value (3.81) exists in between 3(Neutral) and 4(Agree), but with 19% very closer to 4(Agree) and with 81% far from 3(Neutral). Additionally, the standard deviation (0.333 < 0.5) shows that the variation between the values for maximum and minimum responses with the Mean value (3.81) is very low or insignificant. This means that most of the responses are closer to 4(Agree) significantly. Therefore, majorities of the respondents were fairly accepting the existence of effective managerial decision making currently in CBE at agreeable stage or fairly.

V.No.2: Availabilities of MIS in CBE.

The Availability of MIS represents the availabilities of four components such as Availability of expertise and adequate Manpower, Availability of modern Equipments and Devices, Availability of up to date Network and Software applications and Availability of feasible MIS Procedure that assures the presence of MIS in CBE MIS department. Hence, table 4.11 points out the analysis for the availability of MIS in CBE through descriptive statistic tool with minimum value replied 4(Agree) and maximum value replied 5(Strongly Agree). The Mean and Standard deviations were 4.03 and 0.143 respectively. From the given figures we realized that, Mean value (4.03) exists in between 4 (Agree) and 5(Strongly Agree), but with 3% very closer to 4(Agree) and with 97% far from 5(Strongly Agree). Additionally, the standard deviation (0.143<0.5) shows that the variation between the values for maximum and minimum responses with the Mean value (4.03) is very low or insignificant. This means that most of the responses were almost closer to 4(Agree) significantly. Therefore, majorities of the respondents were fairly accepting the availability of MIS currently in CBE at agreeable stage.

V.No.3: Utilizations of MIS in CBE

In this scenario, utilization of MIS is expressed based on utilizations of all the available MIS components such as Availability of expertise and adequate Manpower, Availability of modern Equipments and Devices, Availability of up to date Network and Software applications and Availability of feasible MIS Procedure. Based on this understanding, table 4.11 displays the

analysis for the utilizations of MIS in CBE through descriptive statistic tool with minimum value replied 4(Agree) and maximum value replied 5(Strongly Agree). The Mean and Standard deviation were 4.13 and 0.275 respectively. From the given figures we realized that, Mean value (4.13) exists in between 4 (Agree) and 5(Strongly Agree), but with 13% very closer to 4(Agree) and with 87% far from 5(Strongly Agree). Additionally, the standard deviation (0.275<0.5) shows that the variation between the values for maximum and minimum responses with the Mean value (4.13) is very low or insignificant. This means that most of the responses were almost closer to 4(Agree) significantly. Therefore, considering in mind the above descriptive based analysis, majorities of the respondents were fairly accepting the utilization of MIS components currently in CBE at agreeable stage.

4.6 Correlation Between Dependent and Independent Variables

Correlation is a term that refers to the strength of a relationship between two variables. It is also a statistical device that measures the strength or degree of a supposed linear association between two or more variables. The strongest linear relationship is indicated by a correlation coefficient of -1 or 1. The weakest linear relationship is indicated by a correlation coefficient equal to 0. A positive correlation means that if one variable gets bigger, the other variable tends to get bigger. A negative correlation means that if one variable gets bigger, the other variable tends to get smaller. In statistics, a perfect positive correlation is represented by 1, while 0 indicates no correlation and negative 1 indicates a perfect negative correlation. Pearson correlation and Sig. (2-tailed) are commonly used measures of correlation that estimate relationship between two interval variables (https://www.google.com/search.,Accessed April 21, 2019). Further, the coefficient of correlation relationship become Strong when value of r ranges from -1 to -0.5 or 0.5 to 1, become Moderate when value of r ranges from -0.4 to -0.3 or 0.3 to 0.4, become Weak when value of r ranges from -0.2 to -0.1 or 0.1 to 0.2 and become None or Very weak when value of r ranges between < 0.1 to > -0.1 (https://www.google.com/search, Accessed April 21, 2019).

a) Correlation Between MIS Availability and Managers' Decision Making

As we observe from table 4.12, the Pearson correlation (0.659) is positive or correlated positively between MIS availability and Managerial Decision Making. This positive correlation between Managerial Decision Making and MIS availability indicates, if MIS availability gets maximized, managers' decision making is also tends to get maximized or enhanced or if MIS availability gets

smaller, managers' decision making is also tends to get minimized or less enhanced in CBE. Additionally, the Pearson correlation between Managers Decision Making and MIS Availability (0.659) displayed in the above correlation table is fall in between 1- 0.5, which means that the Pearson correlation relationships between Managers Decision Making and MIS Availability is strong and positive. Therefore, standing from the above analyzed data we can conclude that, currently the existing Available MIS in commercial bank of Ethiopia is enhancing managers' decision making strongly and positively.

Table 4.12: Correlations Between MIS Availability, MIS Utilization and Managers Decision Making

		Managers Decision	MIS Utilizations	MIS Availability
Managers Decision Making	Pearson Correlation	1	0.076	**0.659
	Sig. (2-tailed)		0.487	0.000
MIS Utilizations	Pearson Correlation	0.076	1	**0.490
	Sig. (2-tailed)	0.487		0.000
MIS Availability	Pearson Correlation	**0.659	**0.490	1
	Sig. (2-tailed)	0.000	0.000	

***. Correlation is significant at the 0.01 level (2-tailed) , where N=85*

b) Correlation Between MIS Utilization and Managers' Decision Making

The Pearson correlation between MIS Utilization and Managers Decision Making is positive and approximately equals 0.1 as indicated in the table 4.13. This figure is fall in the range between 0.1-0.2. This tells us there is positive but weak correlation relationships exist between MIS Utilization and Managers Decision Making currently in commercial bank of Ethiopia.

The correlation Sig. (2-tailed) indicates that correlation is significant at the 0.01 level as per the correlation table 4.12 above. These correlation tables are also demonstrate that the Sig.(2-tailed) correlation between Managers Decision Making and MIS Utilization and Managers Decision Making and MIS Availability as 0.487 and 0.00 respectively. These indicate that the Sig. (2-tailed) correlation between Managers Decision Making and MIS Utilization is higher than the significant level 0.01 and the Sig. (2-tailed) correlation between Managers Decision Making and MIS Availability and MIS Availability and MIS utilization. Therefore, the Sig. (2-tailed) correlation

between Managers Decision Making and MIS Availability and MIS Availability and MIS utilization are more significant or strong and the Sig. (2-tailed) correlation between Managers Decision Making and MIS utilization is moderate or less significant.

Lastly, table 4.13 as indicated below demonstrates that the R-Squared value of 0.966 which indicates the Managerial Decision Making is explained with the presence of Available Expertise and Adequate Manpower, Available Feasible MIS Procedure, Available Modern Equipments and Devices, Available up to date Network and Software Applications and MIS utilization variables which accounted in total 96.6% and the remaining 3.4% of the variation is explained by other than these factors. Therefore, the existing independent variables are explained the dependent variable significantly.

Table 4.13: R-Squared Model Summary for Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.983[a]	0.966	0.964	0.063	0.966	448.986	5	79	0.000

CHAPTER FIVE:

SUMMARY OF RESEARCH FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Chapter five is enclosed summary of the research findings, conclusions and recommendations for the whole study and suggestion for further study. The summary of the research finding and the conclusion parts of this study are presented in section 5.1 and 5.2 respectively. Whereas the possible recommendations and suggestion for further research are also presented in section 5.3 and 5.4, respectively.

5.1 SUMMARY OF MAJOR RESEARCH FINDINGS

The purpose of this study was to assess the Management Information Systems availability and utilization in the case of commercial bank of Ethiopia (CBE). This assessment study of MIS availability and MIS utilization in CBE was limited to managerial positions or decision makers within the geographical location of Addis Ababa city only. Further, department wise this study was focused on managerial positions found on MIS department and core processes of the bank like Customers Accounts and Transactions, Finance, Credit and International banking departments and managerial positions in North, South, East and West District offices and selected grade three, four and special grade branch managers under these district offices found in Addis Ababa. The selections have been made based on purposive and simple random sampling techniques.

Managers' Decision Making was taken as the dependent variable and variables such as Availability of Manpower, Availability of Equipments and Devices, Availability of Network and Software Applications, Availability of MIS Procedure and Utilizations of the Available variables were considered as the independent variables in this study. The basic questions of this study were focused on 1) The availability of expertise and adequate number of manpower in CBE MIS department, 2) The availability of modern and adequate Equipments and Devices with sufficient repair and maintenances in CBE, 3) The availability of updated network and software Applications with sufficient maintenance and less interruptions of telecom network services in CBE 4) The availability of feasible MIS procedure presented in easily understandable way and timely revised in CBE 5) Utilizations of all the availabilities presented above. Hence from the data analysis and interpretation parts made in chapter four of this study, the following summaries of the major research findings were presented as indicated below.

The age distributions of the respondents made through the descriptive and frequency statistic data analysis techniques confirm that a substantial number of decision making managers are found in the age group between34-43. Accordingly majority of the decision making managers in commercial bank of Ethiopia existed in the middle age which are not too young or old. Hence, most decision making managers in CBE are in the age group that they can have reasonable managerial competency and expertise (i.e., know-how, skill, knowledge, experience, proficiency or capability). Using the same data analysis on the demographic characteristics, CBE has the experience in participating adequate number of female managers in decision making process. Finally, all decision makers have minimum academic qualifications of First University Degree and Masters Degree with business related fields of specializations and experienced at least 11 years in the bank and above.

When the availability and utilization of MIS in CBE is reviewed how it was enhancing managers' decision making in CBE based on time, accuracy, relevancy, reliability and completeness, statistical data analysis determines that currently accurate, reliable and relevant decisions have been taken place timely by the decision makers in CBE. However, the completeness of the decisions made was insignificant or decisions are drawn currently in CBE timely, accurate, reliable and relevant at reasonable rate but not complete.

The analyzed data were indicating that existing available manpower in MIS department have the skill and knowledge for MIS in CBE at 67% and 68.3% of significance respectively. They have also experience, commitment and exist adequately in number at a significant rate of percentage, i.e., 100%, 64.3% and 100% respectively. However, only 36.5% of the existing manpower was motivated in CBE, which indicates that majorities of the manpower in MIS department are less motivated or motivated insignificantly.

The availability of modern Equipments and Devices existed in supporting the MIS process in generating accurate, reliable and relevant information and to deliver timely for decision makers was assessed and is significant at 83.5%. The spare parts or maintenance and the presence of adequate number of Equipments and Devices were also assessed and exist at 67% and 58.8% respectively with reasonable rate of percentage.

The availability of modern network installations and software applications in CBE were also assessed in this study. The analyzed data based on descriptive statistic technique indicates that existing available network and software applications in CBE were installed and deployed

adequately at a significant rate of percentage. The available network and software applications are also advanced and user friendly. The Network and software Application repair and maintenance in CBE exist fairly. Systems can also customized easy and have standards to detect errors at reasonable rate of percentages. Whereas the analyzed data indicates, network supply for banking service from Ethiopian Telecommunication Corporation is highly interrupted at 92.9% significance rate. Hence, the network interruptions exist in CBE at a significant rate which negatively affects the delivering time and the accuracy of information in MIS and other organs of the bank to support decision makers.

Currently the existing MIS procedure in CBE is timely revised, fairly understandable, shows clearly the work flows of the department reasonably. Whereas, the existing available MIS procedure in CBE was flexible only 34.1% or the inflexibility aspects of the existing MIS procedure in CBE was significant.

Currently the existing variables that affects the production of information effectively and efficiently for managers decision making such as the available employees' skill and knowledge, the available Equipments and Devices, the available network and software applications and the available MIS procedure are fairly or reasonably utilized to produce MIS data or reports in CBE. Subsequently, fairly accurate, reliably and relevantly information is delivered timely to decision makers in CBE and utilized in decision making process at reasonable rate of percentage. But it cannot be concluded that reasonably complete MIS information or reports are produced and utilized for decision making process in CBE, because some of the information are reasonably produced and utilized whereas others such as RCIS, GIS, ICS, MIS, I/EIS etc are completely exist at early stage or more of manually worked out in excel sheet while they are very essential inputs for effective managers decision and for the well being of the bank as a whole.

The analyzed data indicates the availability of effective managers' decision making exist in CBE with minimum value 3(Neutral) and maximum value 4(Agree) as replied by the respondent. The Mean and Std. deviations are also 3.81 and 0.333 respectively. The Mean value 3.81is very closer to 4(Agree).The standard deviation 0.333< 0.5 shows that the variation between the values for maximum and minimum responses with Mean equals 3.81 is very low or insignificant. Accordingly, most of the responses were closer to 4(Agree) significantly. Therefore, majorities of the respondents

were fairly accepting the existence of effective managerial decision making currently in CBE at agreeable rate of percentage.

The Availability of MIS represents in this study as the Availability of Expertise and Adequate Manpower, the Availability of Modern Equipments and Devices, the Availability of up to date Network Installation and Software applications deployment and the Availability of Feasible MIS Procedure by assuming that all the modern MIS components stated in the literature by Ajayi and Omirin (2007) and are existed and organized at department or unit level in CBE. By considering this, the availability of MIS in CBE was analyzed through descriptive statistic technique as minimum value replied 4(Agree) and maximum value replied 5(Strongly Agree). The Mean and Standard deviations are 4.03 and 0.143 respectively. The Mean value 4.03 is very closer to 4(Agree) and the standard deviation 0.143 < 0.5 shows the variation between the maximum and minimum responses with the Mean 4.03 is very low or insignificant. Subsequently, almost all of the responses were closer to 4(Agree) and above significantly. Therefore, all the respondents were fairly accepted that currently the available MIS in CBE exists at agreeable or reasonable percentage.

The utilization of MIS was also analyzed in this study based on fairly utilizations of the Available Employees' Expertise, the Available Equipments and Devices, the Available Network and Software applications, the Available MIS Procedure and the utilization of timely, accurate, reliable, relevant and complete information produced for decision making at bank level. Accordingly, the utilization of MIS was analyzed through descriptive statistic technique and presented as minimum value replied 4(Agree) and maximum value replied 5(Strongly Agree). The Mean and Standard deviation were 4.13 and 0.275 respectively. The Mean value 4.13 is very closer to 4(Agree). The standard deviation 0.275< 0.5 shows that the variation between the values for maximum and minimum responses with Mean value 4.13 is very low or insignificant. Accordingly, almost all responses were closer to 4(Agree) and above significantly. Therefore, all of the respondents were fairly accepted the utilization of MIS components currently in CBE exist at agreeable stage or reasonable.

To measure the internal consistency or reliability for all variables in this study Cronbach alpha or alpha coefficient was used on the statistical application software SPSS. Thus, the Cronbach's alpha for this study was found to be 0.706. This indicates that internal consistency or reliability for variables in this study is found at acceptable or respectable rate.

The Pearson correlation between MIS availability and Managerial Decision Making equals 0.659; which is positive or shows correlated positively between such variables. Accordingly when MIS availability gets maximized, Managers' Decision Making is also tends to get maximized or enhanced. Otherwise as MIS availability gets smaller; Managers' Decision Making is also tends to get minimized or less enhanced. Additionally, the Pearson correlation between these variables amount 0.659 and is fall in between 1- 0.5, which means that the Pearson correlation relationships between Managers Decision Making and MIS Availability is strong and positive. Therefore, currently the existing Available MIS in CBE is enhancing Managers' Decision Making strongly and positively.

The Pearson correlation between MIS Utilization and Managers Decision Making is positive and approximately equals 0.1. Such figure is fall in the range between 0.1- 0.2, which is positive but weak correlation relationship exist between Managers Decision Making and MIS Utilization currently in CBE

The R-Squared value equals to 0.966 indicated Managerial Decision Making is explained with the presence of five variables such as Available Expertise and Adequate Manpower, Available Feasible MIS Procedure, Available modern Equipments and Devices, Available up to date Network and Software Applications and MIS utilizations which are accounted 96.6% and the remaining 3.4% of the variation is explained by other than these factors or variables. Hence the dependent variable is explained in this study by the existing independent variable significantly.

5.2 CONCLUSIONS

After the critical reviews of the researcher on the major findings of this study, the following conclusions are forwarded:

Currently Managers Decision Making process in CBE is made timely and accurately and it is also reliable and relevant reasonably. Whereas the completeness of managers decision is insignificant because timely produced and delivered MIS information to decision makers are not complete. As a result no complete decisions are made by managers. Therefore, CBE has to deal strong to enhance the completeness of MIS information by organizing adequately and sufficiently all the modern MIS components or organs in the bank and make them to perform their duties computerized with the available equipments, network and application software and expertise manpower.

The availability of modern Equipments and Devices in CBE are appropriate, having enough spare parts and maintenance room and exists adequate in number reasonably. In the same way the availability of up to date network installations and software applications are exist fairly. Network and Software applications deployed by the bank to support the MIS are also advanced, applications are user friendly and there exist adequate repairs and maintenance. The bank avails easy customized soft ware applications and has the standards to detect errors reasonably. CBE has also invested huge money on technology infrastructures to facilitate the information flows and for effective customer servicing in the bank. However, the MIS department has not as such organized to produce all the necessary information for managers' decisions in the bank. Mostly the MIS department produced financial data by consolidating various department transactions in to corporate level financial reports and some other exceptions report. On the other hand, the existing available telecom networking service which is provided from Ethio Telecom is highly interrupted (network service become on and off frequently), which is negatively affects the quality of information or accuracy and delivery time from MIS and other organs of the bank to the decision makers. Thus, decisions may not be made timely and effectively as a result of the information flow delayed. Even it affects highly the banking service deliver time or service quality and resulted high customers complain on the bank's service.

Utilizations of the available expertise and adequate Manpower, Modern Equipment and Device, Network and Software Applications, MIS Procedure, timely and accurately producing of reliable and relevant information in the decision making process in CBE are all practiced currently in CBE moderately or fairly. Hence, existing available MIS components are utilizing currently at a minimum moderate but not at its maximum percentage as compared to the high investment costs spend on especially on the information technology infrastructures deployed by the bank. So it can be generalized that the bank is not efficiently and effectively utilized the available information technology infrastructures in the MIS to enhance managers' decisions maximum and as a result to benefit the bank and the stakeholders' maximum.

The Pearson correlation between Managerial Decision with MIS utilization and Managerial Decision with MIS availability are correlated positive. Consequently, the Pearson correlation between Managers Decision and MIS Availability was strong and positive. In the same way the Pearson correlation between Managers Decision and MIS Utilization was weak but positive. From

these points of view, we can conclude that the availability of MIS was significantly enhanced managers' decision, but the utilization of MIS was less significantly enhanced managers' decision in CBE.

5.3 RECOMMENDATIONS

In order to improve the organizational capability and its level of competition in the market, financial organizations should understand the dimensions of the information management and clearly define and develop the resources in case of human, technological and internal operations among others and manage them well across the organizational boundaries. However, establishing the link between MIS and decision making is, at its best, complicated. Hence, on the basis of the major research findings and the conclusions drawn, the following recommendations are forwarded.

The majorities of decision making managers exist in CBE currently are found in the age group ranges between 34-43.The expertise or competency level of such managers in the banking industry is also found to be reasonable. CBE is also involving adequate number of female managers in the decision making process. The majorities of the decisions making managers were holding academic qualifications of Masters or University Degree with bank related fields of specialization. They are also working at least 11 years in commercial bank of Ethiopia. These all are the opportunities that CBE has on hand from its managers. Therefore, effective and efficient utilizations of the available decision making managers' capability by placing the right manager at the right managerial position will maximize the benefits of the bank and wealth for the stakeholders by enhancing the efficiency and effectiveness of managers' decision made in the bank.

The available manpower in the MIS department has the skill and knowledge for MIS, has the working experience and commitment and is existed adequately in number at a significant level. Whereas the motivational level of these staffs is insignificant. Hence, enhancing the motivation rate of these working groups through various incentive mechanisms will help the bank to maximize the accuracy, reliability, relevance and completeness of the information (data) produced on time in the MIS and as a result effective information have been delivered to decision makers.

Currently in CBE the available network installations and software applications are exist fairly, adequate and up to date. Advanced and user friendly software applications are deployed at bank level. The repairs and maintenance for the network and software applications are also reasonably available. The bank also avails easy customized soft ware applications which have standards to

detect errors comparatively. Although the bank has spend high costs on deploying modern Equipments and Devices and Network and Software Applications, the available network supply from the vender is interrupted or not sufficient and efficient to generate quality MIS information. This is because, the frequent network interruptions have interrupted the accuracy and delivery time of the information flows between various departments and units of the bank. Interrupted network services are also affected negatively the service quality of the bank as a whole. Therefore, the bank has recommended to deal strongly with the concerned organs to minimize the network interruptions at significant level through either investing on high speed fiber and broad band lines and arranging especial agreements with Ethio Telecome to have a 24/7 hours uninterrupted network service supply with full maintenance agreement or by arranging other sources for network supply in addition to the service obtained from the existing company.

The existing MIS procedure in CBE is timely revised, easily understandable and shows the work flows for MIS reasonably. Whereas, this procedure lack flexibility or compatibility to give directions or actions for issues outside the work flows sated in the procedure when arise. Hence, the bank has to make the procedure more compatible or well suited during revision to give directions or actions for issues as demanded any time by taking in to consider critically the risks and damages as a result.

The available MIS components or variables in the study are currently utilized in CBE to enhance managers' decisions making fairly or reasonably. This means that, not all the available MIS components are utilized in CBE to enhance managers' decision making effective. There are MIS components currently available in CBE but not utilized well enough. Hence the bank has to assess periodically which available MIS components of the bank are not utilized enough to enhance more effectively managers' decision making process and invest on it to maximizing the benefits of the bank and stakeholders as a whole.

The existing information technology used in CBE MIS practices indicates more for transaction processing system. Thus, the bank should have to work with its information system to extend further utilization of the existing modern information technology deployed at bank level with high investment costs to support the management decisions and gets full advantages or benefits of the current technology on hand.

Finally, because effective decision making process cannot fully be realized without MIS developments and improvements through time, research study has to be undertaken and the bank has to promote the importance of quality MIS information at management level for decisions to be made effective.

5.4 SUGGESTION FOR FURTHER RESEARCH

This study assessed only MIS availability and utilization in commercial bank of Ethiopia (CBE). As a result, the main focus of this study was not more than reviewing the existing available MIS and its utilization for effective managers' decisions. Therefore, the researcher would like to recommend further study on the effects of MIS availability and utilization on managers decision and organizational profitability, because the effect of effective managers' decision is to maximize the benefit for the organization and the stakeholders of the bank.

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Appendices

Appendix-A:					
	N	Minimum	Maximum	Mean	Std. Deviation
MIS department manpower is skillful in CBE	85	4	5	4.32	.468
MIS department manpower is knowledgeable in CBE	85	3	5	4.00	.802
MIS department manpower is experienced in CBE	85	4	5	4.59	.495
MIS department manpower is motivated in CBE	85	3	4	3.36	.484
MIS department manpower is Committed in CBE	85	3	4	3.35	.481
MIS department has adequate number of manpower	85	4	4	4.00	.000
MIS department used appropriate (up to date or modern, high storage & speed) equipments and devices in CBE.	85	3	5	4.33	.746
MIS department used adequate number of equipment and devices for producing MIS information in CBE.	85	3	4	3.52	.503
MIS department has enough spare parts and maintenance for Equipment & Devices in CBE.	85	3	5	3.85	.699
There is adequate net work installation in CBE	85	4	5	4.32	.468
There is uninterrupted telecommunication networking service in CBE.	85	3	4	3.07	.258
There is advanced and user friendly networking & software system in CBE.	85	4	5	4.32	.468
There is satisfactory network and software repair & maintenance in CBE.	85	4	5	4.32	.468
There is easy customization of software in CBE	85	3	5	4.00	.802
There are standards for software in CBE to detect errors	85	3	4	3.66	.477
There is flexible for doing work MIS procedure exist in CBE	85	2	4	3.33	.497
In CBE MIS procedure is timely revised.	85	4	5	4.66	.477
There is easy to understand MIS procedure in CBE	85	4	5	4.66	.477
CBE MIS procedure shows clearly and fully the work flows of the department.	85	4	5	4.66	.477
MIS department utilizes its employee capacity effectively	85	3	5	3.96	.808
MIS department utilizes its equipments & devices effectively	85	4	5	4.61	.490
MIS department utilizes its network and software effectively	85	3	5	4.65	.505
MIS department utilizes its Procedure effectively	85	3	5	4.31	.489
MIS department produces its information/reports timely and delivered timely to the concerned decision makers for utilization	85	3	5	3.73	.543
MIS reports/ information produced for utilization are accurate (error free but not absolutely).	85	3	4	3.68	.468
MIS reports/ information produced for utilization are reliable.	85	3	5	4.32	.493
MIS reports/ information produced for utilization are complete.	85	3	4	3.66	.477
MIS reports/ information produced for utilization are relevant.	85	3	5	4.26	.467
Valid N (list wise)	85				

Appendix-B				
MIS Availability Indicating Variables	N	Minimum	Maximum	Mean
Available of Expertise & Adequate Manpower	85	4	5	3.94
Available of Up to date Equipment and Device	85	3	5	3.90
Availability of Modern Network and Software	85	4	5	3.95
Availability of Feasible MIS Procedure	85	4	5	4.33
MIS Availability in CBE	85	3.75	5	4.03

Appendix -C

Addis Ababa University
College of Business and Economics
Department of Accounting and Finance
Master of Business Administration in Finance

Questionnaire designed for managers involving decision making under his/her discretion level.

Dear Manager!

The purpose of this questionnaire is to collect primary date to conduct a study on the research topic called: The Assessment of MIS Availability and Utilization as Factors Enhancing Managers Decision: The case of Commercial Bank of Ethiopia as a Partial fulfillment for the requirement of Master in Business Administration (MBA) Program at Addis Ababa University. In this regard, I kindly request you to provide me reliable information that is to the best of your knowledge so that the findings from the study would meet the intended purpose. I strongly assure you that the information pertaining to your answers in this questionnaire will be completely confidential and I would also like to extend my deep-heart thanks to you in advance for being a volunteer to devote your valuable time to answer this questionnaire.

Directions:

- ✓ No need to write your name.
- ✓ Answer by putting a tick mark "√ " in the boxes.
- ✓ In case you have ambiguities on any of the questions, please do not hesitate to contact me (Mobile No: 251-923796863, E-Mail: deraau31@gmail.com).
- ✓ MIS refers Management Information Systems.

PART- I. Demographic Variables

1. Sex: Male ☐ Female ☐

2. Age: Below 33 ☐ 34-38 ☐ 39-43 ☐ 44-48 ☐ Above 48 ☐

3. Field of specialization:

Accounting & Finance	☐	Banking and Finance	☐
Business Administration	☐	Management	☐
Marketing	☐	Economics	☐
Others	☐		

1. Education Background:

Doctorate degree	☐	Master degree	☐
First University degree	☐	Diploma	☐

5. Organizational Position:

Above Director Level	☐	Director	☐
District Operation/HR Managerial	☐	Branch Manager	☐
Manager/Team leader at HO	☐	Other	☐

6. Years of Experience:

Above 25 years	☐	21 to 25 years	☐
16 to 20 years	☐	11 to 15 years	☐
Less than 10 Years	☐		

PART-II. Managers' Decision Making, MIS Availability & MIS Utilization

	1. Managers' Decision Making	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A	There is timely decision of managers in CBE.					
B	There is accurate decision of managers in CBE.					
C	The managers' decisions in CBE are relevant.					
D	There is completeness in decisions of managers in CBE.					
E	The managers' decisions in CBE are reliable.					
	2. MIS Availability					
	2.1 Availability of Manpower	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A	MIS department manpower is skillful in CBE.					
B	MIS department manpower is knowledgeable in CBE.					
C	MIS department manpower is experienced in CBE.					
D	MIS department manpower is motivated in CBE.					
E	MIS department manpower is Committed in CBE.					
F	MIS department has adequate number of manpower.					
	2.2 Availability of Equipments and Devices	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A	MIS department used appropriate (up to date or modern, high storage & speed) equipments and devices in CBE.					
B	MIS department used adequate number of					

	equipment and devices for producing MIS information in CBE.					
C	MIS department has enough spare parts and maintenance for Equipment & Devices in CBE.					
	2.3 Availability of Network & Software	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A	There is adequate net work installation in CBE.					
B	There is uninterrupted telecommunication networking service in CBE					
C	There is advanced and user friendly networking & software system in CBE.					
D	There is satisfactory network and software repair & maintenance in CBE.					
E	There is easy customization of software in CBE.					
F	There are standards used for detecting errors in the network & software applications in CBE.					
	2.4 Availability of MIS procedures	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A	Flexible MIS procedure exists in CBE to do works as required.					
B	Timely revised MIS procedure exists in CBE					
C	Easily understandable MIS procedure exists in CBE.					
D	MIS procedure indicates clearly and fully the work flows of the department in CBE.					
	3. MIS Utilization	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A	MIS department utilizes its employee capacity successfully.					
B	MIS department utilizes its equipments & devices effectively.					
C	MIS department utilizes its network and software effectively.					
D	MIS department utilizes its Procedure effectively.					
E	MIS department produces its information/reports timely and delivered timely to the concerned decision makers for utilization.					
F	MIS reports/ information produced for utilization are accurate (error free not absolutely).					
G	MIS reports/ information produced for utilization are reliable.					
H	MIS reports/ information produced for utilization are complete.					
I	MIS reports/ information produced for utilization are relevant.					

End! Thank you!!!

Appendix -D

Addis Ababa University
College of Business and Economics
Department of Accounting and Finance
Master of Business Administration in Finance

Dear Sir/Madam,

Interview guide questions for MIS/IT department staffs.

This interview guide is designed to provide feedback on your bank's The Assessment of Management Information Systems Availability and Utilization as Factors Enhancing Management Decision Making: the case of Commercial Bank of Ethiopia as Partial fulfillment of the requirement of Master of Business Administration (MBA) Program in Addis Ababa University. You are assured that any information given will be handled confidentially. Thank you for your co-operation.

I. For MIS Department only:

1. Which types of MIS information is produced at your department and how do you fast to deliver information produced for managers' decisions in CBE?
2. Which types of the information you produced currently are utilized by the managers and which are not? Why?
3. Would you believe that you department have feasible procedure to accomplish the day to day work flow activities?
4. How do you evaluate generally the efforts of your department to produce timely, accurate, complete, relevant and reliable information and the existing equipments, devices, network and applications used to produce information in CBE?

II. For IT Department only:

5. How do you evaluate the level that the networking installations and software application used by CBE including its up to datedness, speed and telecom network interruption intervals by comparing with competitors?
6. How do you examine the internet and extranet services to facilitate information flows inside the company between departments and inside to outside or vice versa in CBE?

7. Would you tell me please the existing information technology infrastructure used especially in MIS department in CBE? How do you evaluate the on time repairing and maintaining services for Equipments and Devices as well as the Network and Applications process in CBE?

End! Thank You!!