SCHOOL OF GRADUATE STUDIES

THE EFFECT OF MANAGEMENT INFORMATION SYSTEM ON OPERATIONAL PERFORMANCE: THE CASE OF COMMERCIAL BANK OF ETHIOPIA IN GURAGE ZONE, ETHIOPIA

MBA THESIS

SIYOUM KEDRU CHIKSA

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SIYOUM KEDRU CHIKSA

ADVISOR: ABAS MOHAMMED (PH.D)

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DECLARATION

I hereby declare that this MBA thesis is my original work and has not been presented for the award of any degree or examination at any other university and that all sources of materials used for this thesis have been duly acknowledged.

Name: Siyoum Kedru Chikesa Signature: _____ Date: _____

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This is to certify that the thesis entitled **"The Effect of Management Information System on Operational Performance: The Case of Commercial Bank of Ethiopia in Gurage Zone"**, Ethiopia, submitted in partial fulfillment of the requirements for the degree of Master's with specialization in Business Administration, the Graduate Program of the Department of Management, and has been carried out by **Siyoum Kedru ID. *No BEGW/070/14***: under my/our supervision. Therefore I recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

Abas Mohammed (Ph.D) _____ _____

Name of Advisor Signature Date

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We, the undersigned, members of the Board of Examiners of the final open defense by Siyoum Kedru have read and evaluated his/her thesis entitled **"The Effect of Management Information System on Operational Performance: The Case of Commercial Bank of Ethiopia in Gurage Zone",** and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree of Masters of studies with specialization in Business Administration.

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ABBREVIATIONS/ ACRONYMS/

MIS – Management information system

IS – information system

IT – Information Technology

CBE – Commercial Bank of Ethiopia

DBMS – database management system

E-Banking – Electronic Banking (Digital Banking)

ATM - Automated Teller Machine

OP – Operational Performance

DSS – decision support system

TPS – transaction process system

BIS – Business Intelligence systems

PMS - procurement management system

HRMS – Human resource management systems.

SPSS – Statistical Package for the Social Sciences

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Abstract

During the growth of a competitive global environment, there is considerable pressure in most organizations make their operational, tactical, and strategic processes more efficient and effective, the role of management information system (MIS) is vital now a day in an organization because it has evolved to become an integral part of its business operations. The main purpose of this thesis is to present the effect of MIS on operational performance in a case study of a commercial bank of Ethiopia in Gurage Zone, by identifying the key issues and components of MIS that integrate the business operation in the bank to successfully achieve high operational performance. Both descriptive and causal research design was employed. The study targeted 112 Respondents selected through simple random sampling and purposive sampling from employees at different operational positions of commercial bank of Ethiopia, in Gurage Zone. Both primary and secondary data were collected using a questionnaire, interview, and document analysis. The collected quantitative data was analyzed using descriptive statistics that include frequency, mean, standard, and inferential statistics including regression and correlation analysis. Documents analysis were also used to supplement the quantitative data and for triangulation purposes. Based on the analysis the study found that the MIS has a positive effect on the operational performance of the commercial bank of Ethiopia, in Gurage Zone and it supports the operational performance by providing better service for internal and external customers, collaborating with the core business operation one with another, increase bank profitability, and support overall managerial function and decision making. From the finding the study would like to recommend for further study even MIS has positively affected the operational performance of the bank, the application of MIS has so various challenges and has factors that affect the application of MIS therefore it is best to study on challenges and prospects of MIS application.

Key terms: *MIS, Operational Performance, commercial banks, profitability, collaboration, and Managerial functions.*

CHAPTER ONE

1.1. Introduction

This chapter begins with a background of the study on the Effect of MIS on operational performance; this is followed by a statement of the problem, the main objective, and the specific objective of the study. Research hypothesis, the significance of the study, objective of the study, the significance, and scope of the study. Finally, Organization of the paper.

1.2. Background of the study

The concept of management information system originated in the 1960s and become the byword of almost all attempts to relate computer technology and systems to data processing in the business, and it was developed to counteract such in the efficient and effective use of the computer with two vital concepts of the use in business: the first is to serve as systems framework for organizing business computer application viewed as interrelated and integrated computer-based information systems (Business operation), The second is to provide accurate information to support the planning and control function of the manager in an organization. When information systems are designed to provide the information needed for effective decision-making by managers, they are called management information systems (Ezoic, 2021).

Management Information systems (MIS) can bring better productivity to employees because when workers become more in turn with the organization's strategy, it would result in higher levels of employee satisfaction that would lead to higher productivity in an organization (Elibrary, 2021). The management information system technology plays a crucial role, especially in the communication and information sectors such as government establishments, banking sectors, and Enterprise organizations where they build their competitive advantage on credibility and information. Every aspect of management in the modern age relies heavily on information to thrive. Nothing moves without information and it is generally believed that information is power and that he who has it has power. It has even been described as a singular resource needed to develop other resources, including workers in an organization (Eproject Library, 2021).

The management information system (MIS) creating reports are one of the most valuable management information system features. Internal reports provide information in a way managers can

understand, by including all relevant data and compiling the data logically. Imposed information systems importance as a key resource relies on it organizations in the performance of its booklet money, individuals, and other basic resources that will help the organization to succeed, and is characterized by information resources of significant value to organizations were reliable in the study and evaluation of the current situation and the past of the organization to be the achievement of making the right decision at the time appropriate, especially in the competitive stage (Alene, 2018).

MIS satisfies diverse needs through a variety of systems such as query systems, analysis systems, modeling systems, and decision support systems. 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, and 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 (Karolina, 2016).

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 the organizational hierarchy, need for innovation, and flexibility in MIS planning approach (Muliri, 2015). Managers use management information systems to generate reports that provide them with a comprehensive overview of all the information they need to make decisions ranging from the daily details of the strategy at a high level (Kimani, 2015). Management information systems today are largely dependent on technology for data collection and presentation, but the concept is modern computing techniques. In addition, the importance of a management information system (MIS) is to make the process of decision-making managers more efficient and productive. By collecting information from a variety of sources in one database and providing the information in a logical way (Berisha- Shaqiri, July 2014). The MIS also can provide managers with everything they need to make informed decisions and a very in-depth analysis of operational issues (Laudon K, 2013). The management information system (MIS) can collect almost any kind of information that managers require. It can display financial data such as daily revenue and expenses at a glance and attribute them to specific departments or groups. Performance indicators such as the timing of projects and the quality of products coming off the

assembly line can help managers accurately identify areas of improvement needed. Staff can manage schedules for work shifts and deliver inbound and outbound shipments from anywhere linked to management information systems (Budon, 2013). A management information system is used to facilitate cooperation and communication as well. Employees can edit and share documents and communicate relevant information on developments and warnings that are expected across the organization (Budon, 2013).

Management Information System (MIS) is considered as a key growth area in this century, specifically, in a dynamic and highly competitive business environment which requires utilizing advanced MIS tools and systems to improve efficiency, cost-effectiveness, and deliver high-quality products and services to customers (Morton, 2004). MIS is also considered as a tool for marketing, contacting customers, and looking for possible customers, as well as presenting IT services as distinguished potential services for customers (Klein, 2005). Organizations are increasingly using information technology to develop solutions to business problems, improve both the efficiency and effectiveness of the decision-making process, enhance productivity and service quality, achieve dynamic stability, and compete for new markets (Attewel, 1993). Organizations have always sought and adopted technologies that enhance the efforts of their manpower in production and management. Indeed, he noted that although it has evolved over a considerable period, the Management information system has emerged as an important tool in the management of organizational operations (Laudon K, 2013).

Performance is a systematic process for improving organizational performance by developing the performance of individuals and teams. It is a means of getting better results by understanding and managing performance within an agreed framework of planned goals, standards and competency requirements. Performance is much more than appraising individuals. It contributes to the achievement of culture change and it is integrated with other key Human resources management is concerned with (Malkawi, 2013).

Information System is very important in an organization because no organization can survive without information. Hence, the importance of Management Information systems cannot be over-emphasized in the 21St Century the world over. According to (Caravana, 2012), Information enables an organization to make more accurate decisions. For this reason, the right amount of information at the right time is a key factor for every organization. Company managers take decisions, prepare plans and control their

company's activities using information (Yusuf, 2012).

In the previous, the aforementioned studies greatly centralized on the aftermath upon implementation or adoption of MIS platforms in different sectors. Furthermore, despite the great importance of integrating information systems in commercial banks there exists very limited literature on the same. This indicates a huge gap in theory and practices in the studding of MIS in commercial banks, and the studies were more focused on the process of information flows and systems based those studies are focused on examining and identifying the details of technological perspectives which has a role in organizational performance, and also the title has no locally studied in many universities until, and the little study that had done also not focus on commercial banks. The scope of this study was delimited in the area of the effect of management information systems on operational performance in the study of the Commercial bank of Ethiopia in Gurage Zone.Therefore, this study aimed to examine the effect of management information system on operational performance,and identify the way that MIS support management activity that led them to the organizational strategic objectives.

1.3. Statement of the problem

In this globalization era, organizations strive to improve their competitiveness by enhancing productivity, innovation, quality, and flexibility of services at the individual and organizational levels. Under this pressure, the organization's information processing capabilities are challenged by additional and diverse demands, such as speed and reliability (Cascio, 2016). Even though management information systems with their varied and interesting effects revolutionize management, provide answers to its problems and add a large innovation to the organization yet alot of banks are still ineffective in their operation. The management of information systems plays a crucial role, especially in service sectors such as banking, in which they build their competitive advantage on credibility and information. A vast amount of capital has been invested in information systems, with MIS making up a substantial portion of this expenditure (Cooper, 2017). Management information systems help to provide the necessary information to make decisions with effectiveness and efficiency, and as far as accuracy, comprehensiveness, and timeliness in providing information increase the efficiency of those decisions, which leads to improved performance (Mehdi, 2013).

The management information system provides accurate and timely information necessary to facilitate the decision-making process and enable the organization's planning, control, and operational functions

to be carried out effectively (Mishra, 2015). MIS is a renowned concept, having good decision choices guarantees viable decisions in the organization and anticipated changes in organizational performance involve a reduction in the duration taken in processing critical tasks and elimination of repetitive tasks resulting in higher productivity and efficiency as well as better and quality service delivery (Budon, 2013), Currently the effectiveness of the organization directly related to the appropriate management information system. MIS provides managers with reports and in some cases, online access to the organization's current performance and historical data records (Andy, 2021). Management information system (MIS) produces information products that support many of the day-to-day decision-making needs of managers and business professional reports, displays provide information products satisfy the information needs ofdecision making at the operational and tactical level of the organization who are faced with more structured types of decision situations (Kornkaew, 2012).

Now day's most of the organizations mainly depend upon MIS to process, record store, and manipulate accurate data and information for the innovation, competitiveness, efficiency, and effectiveness as well as profitability of the organization in processing data into accurate and well-defined data, however without applying MIS organization does not have values for profit-orientedas well as no profit firms (Munirat Y, 2014). MIS needs to be strategically managed soaps to bring about sound and profitable organization and thereby increase the organizational performance of surviving to increase competitive advantage, to avoid challenges (Alene, 2018, p. 91).

To cite some empirical studies done on the effect of MIS on operational performance; (Loveman, 2001) found that transactional MIS has a positive effect on the firm performance, but strategic MIS or Information MIS did not. (Pourmiza, 2006) Found that MIS labor produced substantial returns in organizational performance but IT- capital did not. (Gakuo, 2011) In his study, observed that MIS investments substantially increase the average organizational performance in achieving various milestones. According to (Katana, 2011) the firms that acquire extensive MIS resources can create a better competitive advantage. Whereas (Waragara, 2012) studied the topic of The Effect of Management Information System on Organizational Performance in a case study of Jordan telecommunication company, and concluded that MIS can improve the performance of the companyto large extent.

Management Information System plays an important role in the performance of the operation in the organization because it gives an environment where all the jobs to be done according to the plan and

reporting is based on a one-click environment. Management Information Systems provides a technology platform that enables organizations to integrate and coordinate their business processes. They provide a single system that is central to the organization and ensure that information can be shared across all functional levels and management hierarchies. For most businesses, there are a variety of requirements for information. Senior managers need the information to help with their business planning. Middle management needs more detailed information to help them monitor and control business activities. Employees with operational roles need the information to help them carry out their duties (Nawrooz, 2013).

(Azeez, 2019) Organizational performance relies on management information systems such as Executive support system Decision Support System (DSS), and Transaction Processing System (TPS) to remain afloat in the global market. Information is the life-wire of any organization; any organization without quality information is bound to fail in the competitive market. "Therefore, for any organization to perform very well to achieve set objectives, the organization must have adequate information systems to know what your competitors are doing", for you to plan ahead of them to outsmart them, to know your target market (customers) and how to satisfy them, when all these are achieved through the help of an information system, then the business organization can stand the test of time and performance will be achieved effectively and efficiently". (Delone, 1992).

Management information system aids the functioning and monitoring of an organization. It also describes the components and resources to ensure the proper functioning of an organization (Khresat, 2014).

Similar studies that were done locally to shed some light on the subject under study included; a study by (Alene, 2018), on the role of MIS on organization performance and effectiveness, in the case study of Debre Markos City Administration Revenue Authority found that MIS is data redundancy, delaying data processing inconsistency and other problems mostly which affect to run the system effectively is delaying in processing data due to bulky information processed and the existing system cannot accommodate because of that it did not increase organization performance. Whereas (Hailemechael, 2019) assessed the MIS availability and utilization in the commercial Bank of Ethiopia at specific places of Addis Ababa City and conclude that the availability of modern equipment's and Devices existed in supporting the MIS process in generating accurate, reliable, and relevant information and to deliver time for decision-makers. The study done by (Kastu, 2011) on the title management

information system audit in the case study of Dashen Bank in Addis Ababa city concludes that the role of the management information system unit has a great role towards the sustained achievement of the bank's goal. The study (Berhanu, 2013) found that, the importance of management information systems (MIS) is to make the process of decision- making managers more efficient and productive. By collecting information from a variety of sources in one database management system and logically providing the information.

Almost all of the studies conducted locally without exception had not quite given detailed insights and analysis of the issues that were addressed in this study, especially since there is no study on the effect of MIS on the banking sector that is studied locally in Gurage Zone. Therefore, having this gap this study aimed to examine the effect of MIS on operational performance in the case study of the commercial bank of Ethiopia in Gurage Zone. With this respect, the study found that the functional components of MIS such as Application system, E-Banking, DBMS (Database management system), Network and Infrastructure, and people and process (Expert and professionals of MIS) in the commercial banks and identifying the main operation of the organization that leads the organization to performance and it's strategically set objectives, then by studying the relationships in the way each component interrelates one to another and shows the effects of MIS on operational performance.

The study you are referring to seems to focus on the assessment of management information systems in a commercial bank in Addis Ababa, Ethiopia, specifically looking at modern MIS criteria for financial institutions. The study aims to determine the effect of MIS on operational performance, with a focus on profitability, service provision, work collaboration, and support for managerial functions.

One key aspect that sets your study apart from the previous research is the geographical focus on the Gurage Zone, which differs from the Addis Ababa district. Additionally, while the previous study focused on logistics, your study centers on operational performance in the context of MIS. The methodological approach also differs, as your study applies descriptive, explanatory, inferential statistical analysis tools, and linear regression to determine the R-square.

The time gap of six years between the previous study and yours is also significant, considering the rapid technological advancements in the field of MIS and banking products. This time gap may lead to different outcomes due to changes in technology and features of MIS systems. Overall, your study aims to fill a research gap by focusing on the effect of MIS on operational performance in a specific

geographical area and utilizing a different methodological approach. In particular, the following research question was addressed; what is the effect of the management information system on organizational performance in the case study of the commercial bank of Ethiopia in Gurage Zone.

1.4. Research question

- What is the level of Information System implementation in supporting the collaboration and better service provision in the bank?
- To what extent management information systems (MIS) help in increasing bank profitability in commercial bank of Ethiopia in Gurage Zone?
- To what effect of the management information system in supporting the managerial function and decision-making of the bank?

1.5. Objective

1.5.1. General objective

The main objective of this study was to investigate the effect of the Management information system on the operational performance in a case study of the Commercial Bank of Ethiopia in Gurage Zone.

1.5.2. Specific Objective

- To assess the level of Information System implementation in supporting the collaboration and better service provision in the bank.
- To extent management information systems (MIS) help in increasing bank profitability in commercial bank of Ethiopia in Gurage Zone.
- To examine the effect of the management information system in supporting the managerialfunction and decision-making of the bank.

1.6 Research Hypothesis

H1a: The network and infrastructure of MIS has statistically significant and positive insert this for other hypotheses too effect on operational performance in CBE.

H2a: The digital banking has statistically significant effect on operational performance in CBE

H3a: The Database Management System (DBMS) has statistically significant effect on Operational performance in CBE

H4a: People and clear process of MIS has statistically significant effect on operational performance at CBE.

H5a: The Application system of MIS has statistically significant effect on operational performance in CBE.

1.7 Significance the of Study

The significance of the study were lies in the effect of management information systems on the operational performance of the organization in the commercial bank of Ethiopia, and its role in providing the appropriate data and information both internally and externally to support operational performance, improve the performance of administrative level and organizational level at all in commercial bank of Ethiopia in Gurage Zone.

From the result of the study, the extent to which management information system techniques have been utilized in the commercial bank of Ethiopia and how far this has affected the overall performance of the bank was determined. It is expected that the result of the study enables the commercial bank of Ethiopia in Hosanna district particular Gurage Zone to achieve its desired objectives (customer satisfaction), and the bank's competitive advantage.

The finding of the study would enable the Commercial bank of Ethiopia in Hosanna district specific to Gurage Zone obtains the necessary feedback and takes corrective measures to ensure the successful planning and implementation of Management information system for the efficient manipulation of operational work and successful achievement of the main goal of the bank. The bank practice enabling of series technology.

The finding of the study also benefits the employee of the bank to support operational function, management function, giving advanced solutions for managers, and helping administrators to take the correct decision in a large margin, improve the administrative level and to perform their operational work efficiently by taking correction on the gap identified and also improve organizational level at all in commercial bank of Ethiopia in Gurage Zone.

This study is great benefit to bank customers to get fast and reliable services, and also benefits the bankers, investment analysts, government agencies, academics, and private and public sectors, as it will add to the body of literature in the relevant future study.

1.8 Scope of the study

The scope of this study was delimited in the area of the effect of management information systems on operational performance in the study of the Commercial bank of Ethiopia in Hosanna district specifically Gurage Zone.This study was focus only on the effect of management information systems on the operational performance in the commercial bank of Ethiopia in Gurage Zone. This study included clients (operational experts in banks, MIS- experts, and Managers at operational levels in Commercial bank of Ethiopia) by using questionnaires, document analysis, and Interviews.Data source was limited for Primary data only managers, key employees, clients and secondary data was collected from secondary and tertiary sources was gathered; tertiary sources included books, review articles, published reports, and websites.

There are 22 CBE branches in Gurage Zone, but the study is limited only to five towns (Butajira town, Wolkite town, Darega town, Agena town, and Buea town) and there are 12 branches of the Commercial Bank of Ethiopia in these five towns, but my research is only conducted in 8 branches those are Wolkite, Butajira, Yejoka, Gubrie, Erizaf ,Buee ,Agena and Darge. I chose these branches because they have been established for a long time, the number of employees they have is more than the others, and the number of customers they have as a starting point. With this respect, the study found that the functional components of MIS such as Application system, E-Banking, DBMS (Database management system), Network and Infrastructure, and people and process (Expert and professionals of MIS) in the commercial banks and identifying.

1.9 Limitation of the study

In order to finalize this study there were number of limitations. The first and most important one is lack of cooperation from selected employee of the bank respondents to complete the questionnaire and return back because of they are too busy with their regular operation and low understanding of the necessity of the study.

1.10 Organization of the Study

This study is organized into five chapters. The first Chapter includes a background of the study, statement of the problem, the objective of the study, research question, significance of the study, the scope of the study, and limitation of the study. The second chapter is taking into 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 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

Literature Review

2.1. Introduction

Management information systems are used to considerably improve decision-making and, as a result, financial performance. Likewise, firms that rate their management information system high will conceivably adapt it to a much bigger extent; with the ultimate goal of maintaining andimproving their overall financial performance (Antonio Pérez, 2015). Despite the limitations, some empirical studies attempt to relate financial performance to management IS or new management techniques. The majority of them analyze the individual effect of a particular management method, although with a degree of divergence in results. In many companies, such management information systems have been implemented as a support in decision-making and a tool to attain high corporate performance (Oluwansogo, 2015). Still investigating the Effect of the Management Information system on operational performance requires further examination.

2.2. Theoretical literature Review

2.2.1. Theoretical definition of MIS

The standard definition of MIS in information system literature, Davis and Olsen (Olsen D. a., 2019) 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, procedural process, a model for Analysis, planning control, decision making, and a database (Panagiotis, 2013).

MIS is also defined by Barton and Parolin (Barton, 2005) as a system that provides information support for decision-making in the organization. Bendoly (Bendoy, 2013) defined MIS as an integrated system of man and machine for providing the information to support the operations, management, and decision-making function in the organization. The management information system is the information system that integrates data from all the departments it serves and provides

operations and management with the information they require from the central. MIS is developed to improve the business system for managers and provide business information including budgetary, financial, and program performance. Therefore, MIS is a multifaceted discipline, combining technologies, personnel, process, and organizational mechanisms (Son, 2020).

Management Information System (MIS) is a system used by most modern banks, nowadays to provide information at high quality and precision needed to manage the bank operation effectively. Management Information System (MIS) provides the necessary reports and summarizes the bank's basic operations to the officers, and senior managers in the bank, and supports the decision-making process. Other advantages of MIS are transparency and efficiency of information provided for bank's clients. Investors need efficient information before they decide to invest in Islamic banks and they need quality information, which can only be provided using Management Information Systems (Ridhwan, 2013).

Management information systems are typically computer systems used for managing five primary components: hardware, software, database (information for decision making), procedures (design, development, and documentation), and people (individuals, groups, or organizations). Management information systems are distinct from other information systems, in that they are used to analyze and facilitate strategic and operational activities (Obara, 2013) Academically, the term is commonly used to refer to the study of how individuals, groups, and organizations evaluate, design, implement, manage, and utilize systems to generate information to improve efficiency and effectiveness of decision making, including systems termed decision support systems, expert systems, and executive information systems. Management information systems (MIS), produce fixed, regularly scheduled reports based on data extracted and summarized from the firm's underlying transaction processing systems to middle and operational level managers to identify and inform structured and semi-structured decision problems (Laudon J. , 2014).

2.2.2. Concept of MIS and Operational performance

Management information system (MIS) is to make the process of decision-making managers more efficient and productive. By collecting information from a variety of sources in one database and logically providing the information, the MIS provides managers with everything they need to make informed decisions and a very in-depth analysis of operational issues (Budon, 2013). The management information System (MIS) can collect almost any kind of information managers

require. It can display financial data such as daily revenue and expenses at a glance and attribute them to specific departments or groups. Performance indicators such as the timing of projects and the quality of products coming off the assembly line can help managers accurately identify areas of improvement needed. Staff can manage schedules for work shifts and deliver inbound and outbound shipments from anywhere linked to management information systems. A management information system is used to facilitate cooperation and communication as well. Employees can edit and share documents and communicate relevant information on developments and warnings that are expected across the organization (M.al-Adwan, 2016).

Management information systems were the original type of information system developed to support managerial decision-making. An MIS produces information products that support many of the day-to-day decision-making needs of managers and business professionals. Reports, displays, and responses produced by management information systems provide information that these decision-makers have specified in advance as adequately meeting their information needs. Such predefined information products satisfy the information needs of decision-makers at the operational and tactical levels of the organization who are faced with more structured types of decision situations (James, 1990). The meanings of the terms management information system (MIS) and information system (IS) are identical and interchangeable in an organizational context. They refer to the system providing technology-based information and communication services in an organization. They also refer to the organizational function that manages the system. The concept of a management information system enlarges the scope of information processing to encompass not only applications for transactions and operations, but also applications that support administrative and management functions, support organizational communications and coordination, and add value to products and services (B.Davis, 2003).

A management information system (MIS) is a subset of the overall internal control of a business covering the application of people, documents, technologies, and procedures by management accountants to solve business problems such as costing a product, service, or a business-wide strategy. Management information systems are distinct from regular information systems in that they are used to analyze other information systems applied in operational activities in the organization (Munirat, 2014).

2.2.3. Effect of MIS on operational Performance

(Yusuf, 2012) Information System is very important in an organization because no organization can survive without information. Hence, the importance of Management Information systems cannot be over-emphasized in the 21St Century the world over. According to (Caravana, 2012), Information enables an organization to make more accurate decisions. For this reason, the right amount of information at the right time is a key factor for every organization. Company managers take decisions, prepare plans and control their company's activities using information.

An MIS plays a very important role in the organization; it creates an impact on the organization's functions, performance, and productivity. The impact of MIS on the functions is in its management. With good support, the management of marketing, finance, production, and personnel becomes more efficient. Since the IS works on the basic systems such as transaction processing and databases, the drudgery of the clerical work is transferred to the computerized system, relieving the human mind for better work and It creates an information-based work culture in the organization (Rs, 2014).

2.2.4. Effect of MIS on Manager

The impact of MIS on the functions is in its management with a good MIS supports the management of marketing, finance, production, and personnel to become more efficient. The tracking and monitoring of the functional targets become easy (Sakthivel, ROLE IMPACT AND IMPORTANCE OF MIS, 2014). The functional managers are informed about the progress, achievements, and shortfalls in the activity and the targets. The manager is kept alert by providing certain information indicating probable trends in the various aspects of the business. This helps in forecasting and long-term perspective planning. The manager's attention is bought to a situation that is expected in nature, inducing him to take any action or a decision in the matter. A disciplined information reporting system creates a structured database and a knowledge base for all the people in the organization. The information is available in such a form that it can be used straight away by blending and analyzing, saving the manager valuable time (Sakthivel, Role Impact and Importance of MIS, 2014).

Performance is a systematic process for improving organizational performance by developing the performance of individuals and teams. It is a means of getting better results by understanding and

managing performance within an agreed framework of planned goals, standards and competency requirements. Performance is much more than appraising individuals. It contributes to the achievement of culture change and it is integrated with other key Human resources management is concerned with (Malkawi, 2013).

- ❖ Aligning individual objectives to organizational objectives and encouraging the individual to uphold corporate core values.
- ❖ Enabling expectations to be defined and agreed upon in terms of role responsibilities and accountabilities, skills, and behaviors.
- ❖ Motivating people by providing them with recognition and the opportunity to use and develop their skills and abilities.

2.2.5. Effect of MIS on Employee

Management Information systems (MIS) can bring better productivity to employees because when workers become more in turn with the organization's strategy, it would result in higher levels of employee satisfaction that would lead to higher productivity in an organization (Elibrary, 2021). The management information system technology plays a crucial role, especially in the communication and information sectors such as government establishments, banking sectors, and Enterprise organizations where they build their competitive advantage on credibility and information. Every aspect of management in the modern age relies heavily on information to thrive. Nothing moves without information and it is generally believed that information is power and that he who has it has power. It has even been described as a singular resource needed to develop other resources, including workers in an organization (Eproject Library, 2021).

2.2.6. Effect of MIS in commercial banking

Management Information Systems MIS is very significant and fundamental for efficient banking service. In many modern banks, there is a great role of the Management Information system in providing accurate information related to customer requirements and data gathering and processing. MIS helps in many ways the bank the better result and customer satisfaction (Ridhwan, 2013). 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 the organizational hierarchy, need for innovation, and flexibility in MIS planning approach (Muliri, 2015). MIS satisfies diverse needs through a variety of systems such as query systems, analysis systems, modeling systems, and decision support systems. 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, and 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 (Karolina, 2016).

2.2.7. Components of Management Information System

An MIS is a group of components that interacts to achieve some purpose of the organization, and an information system (IS) is a group of components that interacts to produce information. A model of the components of a management information system: Network and infrastructure, DBMS, Digital Banking (E-Banking), system Application, and procedures and people (Kroenke, 2011). These five components are present in every information system, and for every organizational operation, and most organizations are structured functionally, and systems are classified as Accounting management information systems, financial management information systems, manufacturing management information systems, Marketing management information systems, Human resources management information systems. When it comes to accounting Management Information systems, all accounting reports are distributed by all accounting managerial levels.

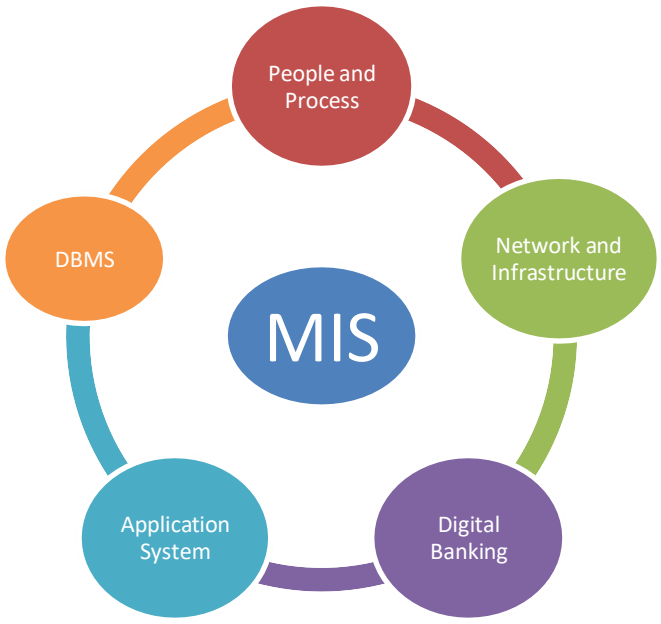


Figure 2.1:- Components of MIS

Source: - Review of Article from Kroenke, 2011 and contextualization to the study area

2.2.8. Operational Performance

Operational performance is the performance task performed in the internal organization by completing each task in terms of providing service, collaborating teamwork, increasing organizational profit, and effective managerial function (iEduNote, 2021).

Operational performance as defined by (Coulter, 2018) is the process of getting activities completed efficiently and effectively with and through other people. The process represents the functions or primary activities engaged in by employees, operational managers, and managers. These functions of managers are typically labeled planning, organizing, leading, and controlling. Each organization has certain objectives and the main objective of every organization is to earn profits by increasing performance. (Khas, 2003) Discussed that organizations are now composed of five major components: IT/IS, organizational structure & corporate culture, management & business processes, organization's strategy, individuals, and roles. These components are in stable condition, called equilibrium, as long as no significant changes occur in the environment or any of the components. However, as soon as a significant change occurs, the systems become unstable and it is necessary to adjust some or all of the internal components since all are interrelated.

Unstable organizations may be unable to excel or even survive; therefore, organizations need to

respond by what is called critical response activities, which deal not only with long-term strategies but also with the basic daily business activities. (Alex,2015). Now IT/IS has become a major facilitator of business activities in the world today to make organizations responsive and remain stable.

2.3. Empirical Review

The study Al Meetany (Meetany, 2004) noted "the impact of the management information systemto improve the efficiency and effectiveness of the Jordanian commercial banks: A case study of Arab Bank". The most important findings of the study, users of the 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 Arab bank has efficiently providing operation of the systems, as evidenced by the study on the existence of positive impact management information system on efficiency and effectiveness of the bank.

Al Yassiry and Nawras (Yassiry, 2007) investigated the role played by the information systems on the measuring the impact of strategic information systems on the outstanding performance of the Iraqi private banking sector. The study found that banks are aware of the importance of strategic information systems and their kindness to develop their performance to achieve a competitive advantage provides them with a sustainable competitive path through the provision of effective strategic systems. The study recommended that banks should recognize outstanding performance to ensure that competitive companies for sustainable development are promoted.

The study (Joseph, 2009) Title is "Management Information system to help managers for providing decision making in the organization", this study investigates provides management information system (MIS) information on the administrative activities of the organization. The main purpose of this research is, that MIS provides accurate and timely information necessary to facilitate decision-making and enable organizations to plan and control the executive and the tasks to be carried out effectively process. Management Information System (MIS) is mainly concerned with the processing of data into information and then is transferred to different departments in the organization to take the appropriate decision. MIS is a subset of the overall planning and

Monitoring, this covers the application of human beings, techniques, and procedures of the organization's activities. (Zahra, 2014).

A study of Abdelqader (Abdelqader, 2010) entitled “the role of strategic information systems in enhancing competitive advantage: the case of Algerian institutions.” The study aimed at linking the role of information system with the competitive advantage in the Algerian administrative environment. It also linked the role these systems play as strategic tool to achieve this advantage. The study found a positive correlation between statistical requirements of information systems and the competitive advantage of Algerian industrial establishments. The study recommended the need for Algerian industrial institutions to increase their capabilities by adopting a kind of partnership in them, such as mergers or strategic alliances to provide the necessary capital to invest in information technology, support research and development function and the need to deal with information as a major and important resource for the company.

The study of (Navaz, 2013) Title is "Concepts and Applications of Management Information Systems", this study investigates that in management Information System (MIS) is an integrated system to provides information to support the planning, organization, control functions this covers the functions of the middle management of the administrative and special reports. The study of (Karim, 2011) Title is "The Significance of Management Information Systems for Enhancing Strategic And Tactical Planning", this study investigates in management information systems MIS is a key factor facilitating the achievement of the efficiency of decision-making in the organization. The research examined whether the selected financial institutions in Bahrain vary regarding the use of the leadership of management information systems to make strategic and tactical planning decisions. Conditioning research and quantitative research are designed to examine two hypotheses. It was distributed to a total of 190 questionnaires equally to those who work at the various administrative levels in the selected organizations. Search Results showed that the MIS was used primarily to enhance the strategic planning in the financial institutions. Regression analysis revealed that the tactical planning and found to not affect the decision-making, while the strategic planning have a clear impact on the effectiveness of decision making in both organizations and the study showed no differences in terms of gender and experience variable.

The study of (Kolhapur, 2011), on the titled “Role of Management Information System (MIS) in Human Resources” shows that in today's organizations is human resources as one of the key resources for business organizations. Transaction processing layer management information systems in the human resources function to deal with routine activities such as recording attendance and salary accounts. It also includes operational level activities maintaining personnel records, which are

used as a basis for strategic layers. With the increasing importance of human resources management and increase in the size of the organizations, maintenance of personnel data, and generating the appropriate reports, therefore MIS are critical aspects in any organization.

Similar studies that were done locally to shed some light on the subject under study included; (Alene, 2018) study on the Role of MIS on organization performance and effectiveness, in a case study of Debre Markos City Administration Revenue Authority, which observed that MIS are data redundancy, delaying data processing inconsistency and other problems mostly which affect to run the system effectively is delaying in processing data due to bulky information processed and the existing system cannot accommodate because of that it did not increase organization performance. (Hailemechael, 2019) Assess the MIS availability and utilization in commercial Bank of Ethiopia at specific places of Addis Ababa City and conclude that the availability of modern equipment's and Devices existed in supporting the MIS process in generating accurate, reliable, and relevant information and delivering timely for decision-makers. (Kastu, 2011) Study the Management information system auditing in a case study of Dashen bank and conclude that the need for effective and efficient use of resources is evident. The Management Information System unit predominantly focuses on the security features of the IS of the Bank.

2.4. Specific Research Gap

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 articulate in this study was because no adequately conducted studies were found locally with the related topic of commercial bank of Ethiopia (CBE), Gurage Zone. As a result, I truly found only one study which was conducted by (Bekele, 2020) at Jimma University, in the case study of East Gojjam zone, Ethiopia.

The geographical area of the study was not in Gurage Zone and the area of the study was not focused on bank organization. On the other hand, unlike my study was focused on operational performance, it focuses on logistics. The study was done by (Hailemechael, 2019) on the topic of Assessment of management information systems, in a case study of a commercial bank of Ethiopia, Addis Ababa district. The scope of this study was a broader focus on the assessment of management information systems and did not focus on the effect of MIS. Based on the above research topic and company selection gaps, the researcher was initiated to study 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. Accordingly, to (Omirin, 2007), the following components were considered as modern MIS criteria for financial institutions in the MIS theory; such as Network and infrastructure, Digital banking, Database management system (DBMS), Application system, and people and process. These modern MIS component criteria were considered as confirmation of the existence of the effect of MIS on operational performance. (Samuel, 2013) was conducted his research study by considering all these modern component criteria stated in theory above as influencing factors to determine effective manager's decision making in selected government organizations in Addis Ababa city. However, in this study, the researcher use the same independent variable but completely different dependent variables such as profitability and better service providing, work collaboration, and support managerial functions are the determinant factors. Therefore, the difference between the dependent variables gap initiated the researcher to conduct the study on the given research topic. Based on a time perspective, as previously stated above there was not the same research topic was conducted on the commercial bank of Ethiopia. But the research conducted by (Hailemechael, 2019) on "Assessment of MIS Availability and utilization in a case study of CBE in Addis Ababa district" was a research study that relates to my study. So the time gap between these two research studies was conducted is almost six years. Therefore, six years' time gap between my study and previous study may bring significant outcomes difference as a result of technology not being static even in a day difference showing a significant change and banking product MIS also added different features. So by considering this time difference as a research time gap, conducting this study was logical.

Based on a methodological perspective, to assess the effect of MIS on operational performance in commercial bank of Ethiopia, in a case study of Gurage Zone, this study was applied descriptive and explanatory, and inferential statistical analysis tools as well as to some extent linear regression to determine the R-square. Therefore, the researcher concludes that there exists a methodological research gap between these two studies.

2.5. Conceptual Framework of the study

The conceptual framework is used to make conceptual distinctions and organize ideas. It can be defined as the way ideas are organized to achieve a research study purpose. Based on the review of literature this study identified five essential factors.

The effect of MIS on operational performance depends on certain factors as set out in two categories as dependent and independent variables. Independent variables include network and infrastructure, digital banking, database management system (DBMS), people and process, and Application system. The dependent variable operational performance was described concerning bank profitability, providing better services, and supporting overall managerial function and decision making. The relationship of the variables is displayed in figure 2.2 below:

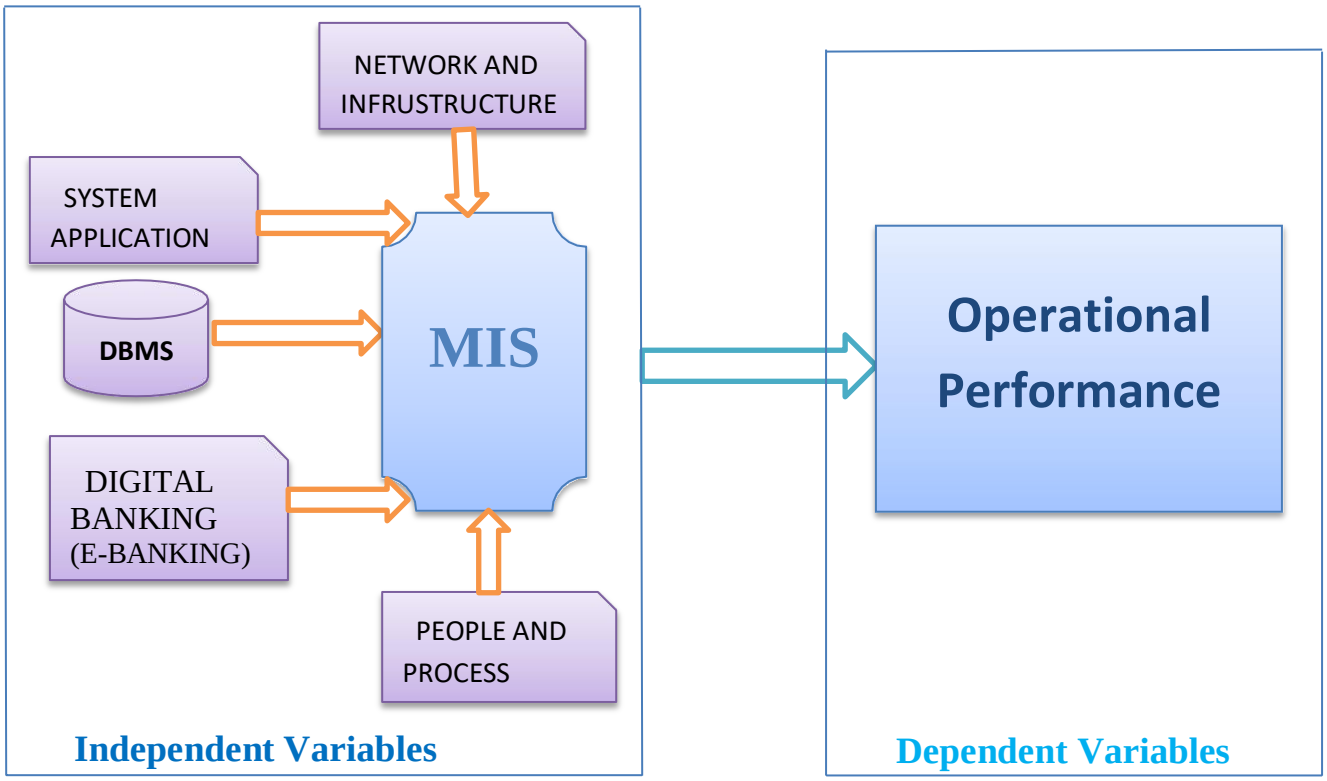


Figure 2.2:- conceptual framework of the study

Source: Developed by the researcher based on the literature review

CHAPTER THREE

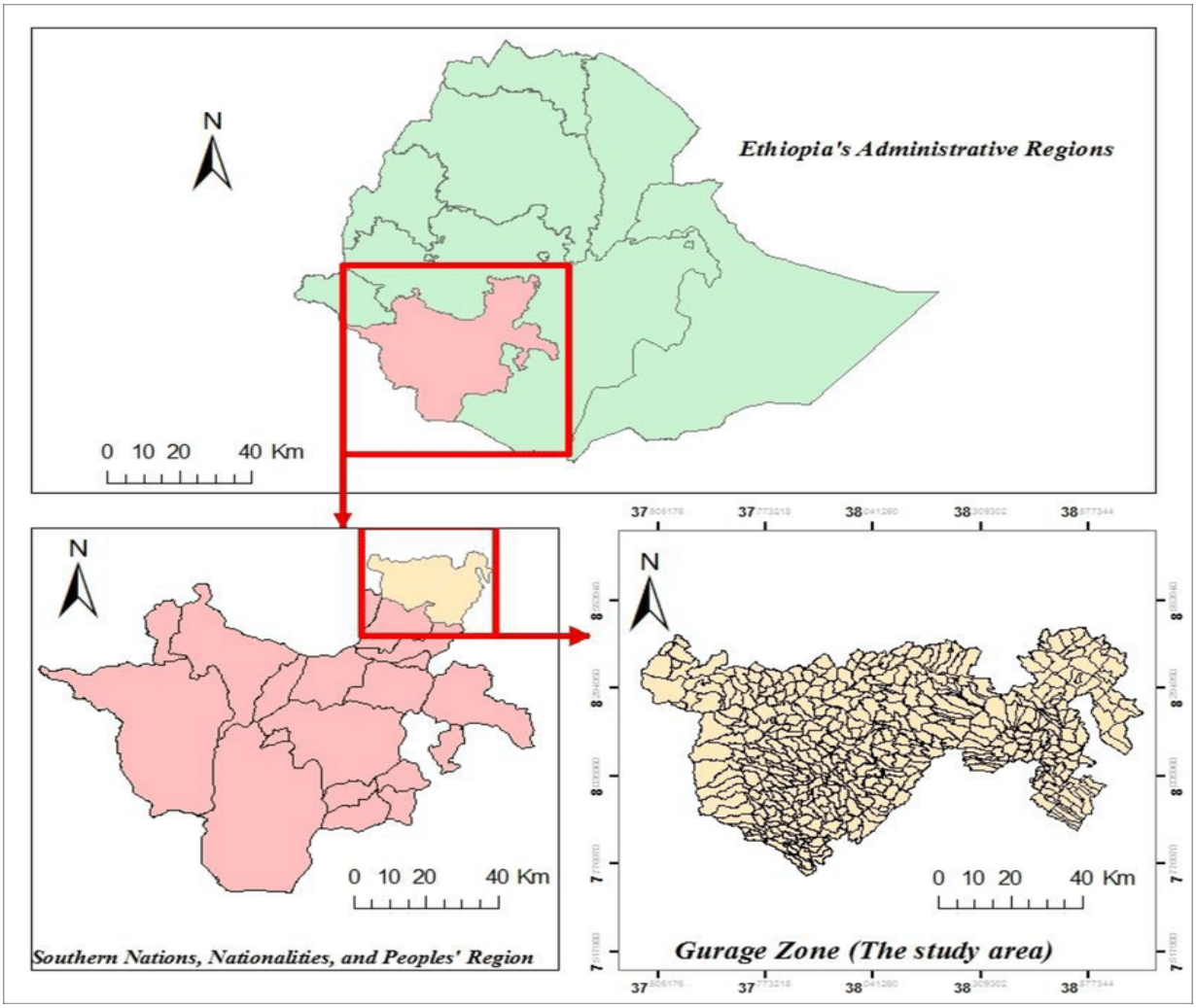
Research Design and Methodology

3.1 Site selection and description

Gurage Zone administration found in Central Ethiopia Regional. The total surface area of Gurage Zone is 5893 square kilometers; it includes 8 towns, and 14 Wereda administrations. The administrative center of Gurage Zone is wolkite and Butajira. Gurage Zone is bounded on the south-east by Hadya and Yem Zone, on the west, north and east by Oromiya region, and on the south-east by Silta zone. Wolkita town located in center of Gurage zone between the 8017‟ latitude North and 370 47‟ longitudes east an elevation between 1000 m and 3,500 m above sea level. Gurage Zone experiences a modified type of tropical climate. Most of the time summer months in Gurage Zone are July through September; the average rainfall is 1100mm (Lowest 800mm and highest 1400mm). Winter months (November through January) are a little warmer and registered an average temperature of 18ºC.

Based on the 1999 E.C/2007 G.C National Population and Housing Census, the current projected population of Gurage Zone is 1,883,301 populations, of whom 914,157 are males and the rest 969,144 females. Gurage Zone has been one of the growing areas in the Central Ethiopia. A result of this rapid growth has been due to the high level of migration. Based on the population size and area of Gurage Zone the density of population is 319 Persons per sq. km.

Currently this zone has 14 woredas and 8 town administrations namely: Abeshge, Cheha, Endegane, Enore, Enore Enar, Ezha, Gyeta, Gummer, Gedebano Gutazer Welene, East Meskan, Meskan, Muher Na Aklil, Sodo, South Sodo, Butajira town, Welkite town, Emdeber town, Gunchrea town, Arekite town, Agena town, Eniseno town and Buea town.



Source: Kornima, (2022)

3.2 Research Design

To accomplish the objectives of the study both qualitative and quantitative research strategies were used. Such research strategies are good way of approaching issues as it enabled to respond and triangulate evidences. The researcher used cross sectional design because the collected at one time to show the effect of MIS on decision maker by assessing the MIS availability and usability in case study of CBE at Addis Ababa City (Hailemechael, 2019).

Based on the purpose, the study was descriptive and explanatory in nature because, this type of study was conducted to provide detailed description about the existing phenomena, to justify current condition with the intent of employing data, to explain cause – effect relationship and whenever possible to draw conclusion from fact (Kothari, 2014).

The study adopted descriptive and explanatory research design in examining the effect of management information system on operational performance. The descriptive and explanatory questionnaires design adapted from (Hailemechael, 2019) methods were appropriated and useful in exploring the effect of management information system on operational performance in a case study of commercial bank of Ethiopia in Gurage Zone. This research has determines, evaluates and interprets the effect of Management Information System in commercial bank of Ethiopia.

Descriptive is needed to describe, clarify and explain the MIS and operational performance with their properties. The explanatory is focus on cause-effect relationships, because of this it is needed to explain the effect of MIS on operational performance. Therefore the descriptive and explanatory research design, were used to describe and explain the effect of MIS on operational performance, and then interprets the data collected for the study.

3.3 Research approach

A research approach is the procedure selected by the researcher to collect, analyze, and interpret data. There are three approaches to research: quantitative, qualitative, and mixed methods. Golden Research Thoughts (Vijay Kumar Grover, 2015)

Quantitative research involves collecting and analyzing numerical data, while qualitative research focuses on understanding the underlying reasons and motivations behind behaviors. Mixed methods research combines elements of both quantitative and qualitative approaches. Each approach has its own strengths and weaknesses, and the choice of approach depends on the research question and the goals of the study.

3.4 Type and Sources of Data

The study employed both qualitative and quantitative data. The qualitative data includes those data that are primarily collected through interview whereas quantitative data includes objective items through the questionnaires. Regarding the data source, the study was used primary source of data were collected through closed ended questionnaires and structured and semi-structured interviews with purposively selected respondents. Secondary and tertiary source of data had collected; secondary data is applied in the form of writing examination of different published as well as unpublished organization documents, tertiary sources such as books, review articles, published reports and web site.

3.5 Data collection instrument

Methods of data collection relatively dependence on standard questionnaires prepared by (Hailemechael, 2019) which was prepared in the form of Likert five scales. However, to assess the Management information system availability and usability, on performance of Decision making in relation to the study for that matter the researcher test reliability and validity. For the purpose of data collection, the researcher was used closed – ended questionnaires and both structured and semi structured interviews. Closed-ended questionnaires were prepared on the basis management information system management and performance. The questionnaire was divided into three sections. The first section contained the demographic characteristics of the respondents were requested to provide information about their gender, age, educational level, marital status, year of experience, and work position. The second section of the questionnaire was designed to enable the researcher to gather information about the independent variable, the effect of management information system and the third section of the questionnaire was designed to enable the researcher to gather information about the dependent variable, operational performance of the commercial bank of Ethiopia, in Gurage Zone. For all questionnaire included in the section two and section three, the respondents were requested to indicate their feeling on a five Likert scale type to measure weighted as follows: 1 = strongly disagree, i.e.; very much dissatisfied with the case described, 2 = disagree, i.e.; not satisfied with the case described, 3 = neutral, i.e.; uncertain with the case, 4 = agree, i.e.; feeling alright with the case described, and 5 = strongly agree, i.e.; very much supportingthe case described.

3.6 Sampling Design Technique

A sampling design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure that the researcher would adopt in selecting items for the sample (Kothari, 2014). Sampling design is determined before any data are collected and it includes the target population, sample size and sampling technique.

The researcher is interested to explore the effect of management information on operational performance in commercial bank of Ethiopia in case study of Gurage Zone. However, eventually the researcher finds out the difficulty of conducting on the government enterprise or public organization base in Gurage zone and as towns' level, while they have no full application of management

information system. Hence, the researcher purposively selected commercial bank of Ethiopia found in Gurage Zone. Therefore, from the bank branches, for interview and questionnaire with employees are assumed to be selected to conduct the research.

3.5.1. Target Population

According (Kothari, 2014) target population referred as the intended population covered by a study in a specific geographical area such as country, region and town in terms of age group and gender. Accordingly, the target populations of this research paper were selected purposively from commercial bank of Ethiopia in Gurage Zone, including the banks manager, operational manager, MIS experts and operational experts as respondents for the study.

The target populations of the study were depends and based on the area they are working on and while they are performing their operational work on MIS application both from district and branches found in Gurage Zone, the group included in the study are the managers, operational managers and operational officers are randomly selected, excluding secretaries, guards, and other supportive staffs and also those not using MIS for their operational work whom they are insignificant for the study. In the determination of sample size the three criteria were important to gather the required data from sample respondents. These included the level of precision, the level of confidence or risk and the Degree of variability in the attributes being measured that enable the researcher to determine appropriate sample size (Michener, 2011).

Therefore, the total number of employees in commercial bank of Ethiopia from district and branches found in Gurage Zone are 156 employees are working in different position. The researcher was used the simple random sampling and purposive selection (Non probability) method for the interviews based on three basic criteria. The first criteria focus on the objective of the study which isthe effect of MIS or performing their operational work with the application of MIS. The second criterion is based on operational work providing service internally and externally through application of MIS, using MIS for managerial function and those working on digital banking. The third criterion is based understanding MIS and providing technical service for the MIS application in the bank. Based on simple random sampling and based on the above three purposive criterion 9 for an interview and 112 employees were selected for the study.

3.7 Sample size and Sampling Technique

3.6.1. Sample size

As to the sample size determination concerns, among different methods of sampling, the one which developed by (Carvalho, 1984), and revised by (Naresh, 2007) employed for size determination are using in this study.

To determine the population and sample size for this study, the researcher is selecting from the southern district of commercial bank of Ethiopia. The directorate of Research and Human Resource Management focus person collaborates and provides the necessary information for the study. The number of active branches in Gurage Zone reached to 23 across the Town. Among those 22 branches of provides non interest free banking service and Interest free banking windows, and the 2 other braches provide full interest free banking services. 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 (22) of CBE branches in Gurage Zone are also categorized as 1 Grade-I, 4 Grade –II, and 6 Grade – III, and 5 Grade – IV. The numbers of employees working at operational level from branches are 156 among those employees the directly related to the study and purposively selecting population are 156, moreover, the number of operational positions related to the study area existing in Gurage Zone 22 branches.

The population size N includes relevant operational positions found in CATs, Finance, Credit and International Banking departments and MIS department in commercial bank of Ethiopia. From IT/MIS department, Human Resource and Finance, Credit and international banking and digital banking are selecting by considering the aligned MIS application with operational positions in the organizational structure of the bank. Therefore, from the Gurage Zone branches with a total of 156 are selecting as a member of the population sample, i.e., N = 156. Based on the above population sample size for the study as follows:

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

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 = ±0.05, hence the sample size n is determined as:

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

The study employed both qualitative and quantitative data. The qualitative data includes those data that are primarily collected through interview whereas quantitative data includes objective items through the questionnaires. Regarding the data source, the study was used primary source of data were collected through closed ended questionnaires and structured and semi-structured interviews with purposively selected respondents. Secondary and tertiary source of data had collected; secondary data is applied in the form of writing examination of different published as well as unpublished organization documents, tertiary sources such as books, review articles, published reports and web site.

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To determine the population and sample size for this study, the researcher has searched more data from the south west district of commercial bank of Ethiopia. The directorates of Research and Human Resource Management focal person collaborate and provide the necessary information for the study. The number of active branches in Gurage zone was reached to 22 across the Town. Among those 20 branches of provides non interest free banking service and Interest free banking windows, and the 2 other braches provide full interest free banking services. 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 (22) of CBE branches in Gurage zone were also categorized as 1 Grade-I, 4 Grade –II, and 6 Grade – III, and 5 Grade – IV. The number of employee working at operational level both from district and branches are 380 among those employee the directly related to the study and purposively selected population are 156, moreover, the number of operational positions related to

the study area existed under the district office and 22 branches, were 38 and 118 respectively. As per the data obtained from HRMD (Human Resource management and Research directorate), and, MIS and IT Support Directorate. However, this study focused on personal works done through MIS application integrate and individually found on core processes of the bank such as customers' accounts and transactions (CATs), Finance, Credit and International Banking department, MIS and IT Support, Digital banking, and Human Resource management department exists under district office. The different Operational positions found at the branches levels with different grade were also the other focuses area of the study.

The population size N includes relevant operational positions found in CATs, Finance, Credit and International Banking departments and MIS department in commercial bank of Ethiopia. From IT/MIS department, Human Resource and Research directorate, Finance, Credit and international banking and digital banking were selected by considering the aligned MIS application with operational positions in the organizational structure of the bank. Therefore, from the district office 38 and 118 from branches with a total of 156 were selected as a member of the population sample, i.e., N = 156. Based on the above population sample size for the study as follows: A simplified formula to calculate the sample size n which by (Yamane, 2003), cited in (Israel, 2009) and lastly revised on May, 2016 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 = ±0.05, hence the sample size n is determined as:-

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

The researcher was used simple random sampling technique to distribute a total of 112 questionnaires to the operational workers in the population and 9 interviews were conducted with the core business operational workers for the purpose of finding further information through purposive sampling technique. Therefore, 112 total samples and 9 interviews were selected from 156 number of population using both simple random sampling and purposive sampling methods.

Table 3. 1: Table for population size description

Institution	Sample size		
	Manager, operational manager, and operational expert	**Population**	**%**
District	District office of commercial bank of Ethiopia, hosanna district	28	25%
Branch	22 branches of CBE, in Gurage zone	84	75%
Total		112	100%

Source: from researcher survey

3.7. Data Source

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 operational worker and those working on the environment of MIS Application in commercial bank of Ethiopia under Hosanna district office and CBE branches located in Gurage zone. Secondary data sources such as Management information system related books and review articles conducted internationally and nationally, journals, annual reports of the bank and different web sites were used by large as references to avoid the inadequacies of information.

3.7.1. Instruments for data collections

Questionnaires, interview and document analysis were used as most important data gathering toolsto 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, 2013).

3.7.2. Questionnaires

In this study, questionnaires were used to collect relevant and first-hand information from selected respondents in CBE to identify the level and degree of the effect of MIS, because of questionnaires are easier and simple to handle and answer for the respondents within a short period of time (Walston, 2017). Further, close ended questions were preferred better in the questionnaires. They were also designed by focusing MIS theories and concepts in the literature review.

3.7.3. Interview

The interview guide contained semi-structured questions focusing on the effect of management information system on operational performance. Interview was selected because it helps to get some facts related to the issue under the study from operational manager, business and operational manager, of the banks those has a role in the implementation of operational work using MIS of the banks and it also help for triangulation. The interview is use based on the assumption that the participants' perspectives are meaningful, and they have the knowledge in the area, and able to make precise points, and their perspective affect the success of the research. An interview is generally a qualitative research technique was involved in asking open-ended questions to converse with respondents and collect elicit data about the effect of management information system on operational performance. In this study the Interviews were conducted with a sample from a population and the key characteristic they exhibit is their conversational tone about the effect of MIS on operational performance.

3.7.4. Document Analysis

Document analysis was used to gather necessary information about the effect of MIS on the operational performance done in Commercial bank of Ethiopia. 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.

3.8. Methods of data collection

3.8.1. Reliability and Validity of the study

Reliability refers to the stability, consistency or dependability of an instrument. An instrument which is reliable measures accurately and reflects the time score of the attributes under investigation. Validity refers to the degree to which an instrument measures what it is supposed to measure, and therefore an unreliable instrument cannot be valid (Burns, 2001).

The reliability of the Likert scale questionnaire items were checked by the Cronbach-Alpha test by using SPSS software. The items on the questionnaires included the Effect of MIS in collaborating of work for business operation, assessment of MIS application in providing better service, uses of MIS in management function and decision making process, and how MIS increase bank profitability. Reliability test was conducted for each of these elements. Reliability test were conducted for each of

these elements and the Cronbach.

Alpha test score at 0.841, 0.715, 0.764, 0.835 and 0.792 respectively for each. Thus, the score supports the presences of the study items, which is the effect of MIS on operational performance and promise the reliability and acceptability of the study. To ensure the validity, the researchermade use of different literature for both questionnaire and the interview questions (Hailemechael, 2019). The instruments were customized after the researcher studied the literature on the study area.

Table 3. 2: Alpha Value for Tested variables

Alpha values of tested instrument

Variables	**Number of items in the scale**	**Scale reliability Coefficient**	**Decision**
Network and infrastructure	5	0.841	Reliable
Digital Banking	5	0.715	Reliable
DBMS	3	0.764	Reliable
People and process	4	0.835	Reliable
Application System	5	0.792	Reliable

Source: (Hailemechael, 2019).

3.8.2. Reliability Test

Cronbach's alpha (Alpha Coefficient) is the most common measure of internal consistency or reliability of the data set. The higher percentage of Cronbach's alpha indicates a high level of internal consistency or reliability for the scale within a given specific sample. Many sources say above 0.7 Cronbach's alpha is acceptable or respectable and 0.8 or greater is preferred. However, greater than 0.9 percentage of the alpha coefficient indicates shortening the scale or too many inter-relations i.e. data redundancy, and not acceptable (Cortina, 2017). Cronbach's alpha was used in this study to test or measure the reliability or internal consistency of the 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 3.3 shows the Cronbach's alpha for this study is found to be 0.85 as indicated below. Therefore, the Cronbach's alpha of this study points out, the internal consistency or reliability of the data set for variables in the study was acceptable or respectable.

Table 3. 3: Reliability Test Analysis

Reliability Statistics

Table 4.2: Reliability Test Analysis		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.794	0.854	6

Source: SPSS result.

3.9. Method of Data Analysis

Data Analysis is the systematic organization and synthesis of the research data; it also involves categorizing, ordering, manipulating and summarizing the data and describing them in meaningful terms (Brink, 1996).

Upon completion of the field study, data analysis process was next course of action. The data and information obtained through the questionnaire was checked for the completeness. All the questionnaires were found correctly filled and fit for analysis, thus the researcher coded them and made entries into statistical package for social science (SPSS, version 20) and analyzed using quantitative technique. The research findings were subjected to mathematical or statistical manipulation to produce a broad representative of data to the total population and forecast of future events under different conditions. Regression analysis of all variables was carried out and it assisted in evaluating the relationship between the dependent and independent variables. Inferential statistics including; correlations and standard deviation were also presented using graphs to give conclusion on the relationship between the independent and dependent variables.

3.9.1. Data Analysis and Interpretations

Statistical package for social sciences (SPSS) version 20.0 was used to analyses the data obtained through questionnaire and interview. Descriptive and inferential statistical analysis techniques such as frequency, percentage, mean and standard deviation 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.

3.9.2. Descriptive Statistics

The study used descriptive statistics like mean; standard deviation, frequency, and percentage were used to describe demographic data.

3.9.3. Inferential Statistics

Inferential statistics were used to identify the degree of correlation between the variables using Pearson's Correlation. Further regression analysis was done to determine the degree of relationship between dependent and independent variables.

3.10. Model specification and description of study variables

In this study multiple linear regression models was were used to achieve research objectives. The basic objective of using multiple linear regression analysis in this study is to make the research more effective in analyzing impacts dependent and independent variables. According to (Gujarati, 2005) defines a regression function as follows:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \ldots + \beta n\, Xn + ui$$

Where Y = is the dependent variable = operational performance.

Operational performance described by (Support managerial function, collaboration of work, profitability and better service).

Operational performance is the dependent variable of the study that to show, the bank operational work which is described by the following variables.

A. Support Managerial function is the variable that describes the operational work of management in the bank uses the MIS to support the activities that is done by management.

B. Collaboration of the work the MIS support the operational work by collaborating the co-operational work.

C. Profitability and Better service how MIS can increase the bank profitability and better serviceby using the application of MIS in the bank.

Bn is the coefficient of independent variables

Xn is independent variables (MIS (System Application, E-Banking, Network and infrastructure, People and process and DBMS))

Management information system is the independent variable in the study and is the technological application that most of the organization specially business organization implement for operational of the organization and in this study the MIS components under the independent variable are discussed as follows

Ui is error term. Ui can be described as;

Ui = Y-β 0- β 1X1+ β 2X2+…+ β n Xn

β1 is the intercept term- it gives the mean or average effect on Y of all the variables excluded from the equation, although its mechanical interpretation is the average value of Y when the stated independent variables are set equal to zero. Multiple linear regression model assumptions were conducted based on a (Gujarati, 2005). Checking goodness-of-fit carry significant benefits for the research; because once the model is fitted, it is effective in describing the outcome of variables.

3.11. Ethical Consideration

Before proceeding to collect data, an introductory letter from the Wolkita University was obtained to enable the researcher, get a permit from the Manager of the district commercial banks represented in the Gurage zone. There were actions to be taken to assure safety and rights of participants are not violating what so ever. These standards include the principles or standards that protect the rights of participant's, voluntary participation, informed permission, and confidentiality of information, ambiguity to research participants and approval from relevant authorities.

In the study, participants was voluntarily allow participating and prospective research participants was fully inform on procedures, benefits and risks involved in the research after which they were voluntarily asked to fill inform consent forms to participate. They was had guarantee of confidentiality of the information, participants were not to be asked to give their names or indicate anything about the research instruments that can be used to identify or link them to the study documents or reports. In addition, undertaking interviews the full consent of the persons was were selected for an interview first obtained. The objective of the study was expressed in a brief for the respondents who had asked questions. Every participant was informed that the aim of the study is not to blame anybody, but rather to collect relevant information about pertinent issues under investigation.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter deals with the description of the sample population, representation, analysis, and interpretation of the data based on the information obtained from the questionnaires, interviews, and documents.

The researcher distributed a total of 112 questionnaires out of which 97 were returned, 4 of the returned questionnaires were not properly filled, and the appropriately filled questionnaires are 93 with a return rate of 83%. Because of various reasons, the rest 15 questionnaires (17%) were not returned. The researcher, as much as possible, made the questionnaire easy to read and answer without difficulties. This response rate was considered sufficient, and representative. The study of Mugenda and (Mugenda, 2016) conforms to a stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good, and a response rate of 70% and above is excellent. An 81% response rate is fairly satisfactory, given the exploratory nature of the study within a short time. Hence, a conclusion drawn from such a large response rate can fairly be taken as representative. The returned questionnaires are enough for analysis because the study was adapted from the past study undertaken by (Kastu, 2011) which uses 70% of returned responses from total distributed questionnaires of 90. Therefore the returned questionnaires are enough for analysis. The Structured interviews were conducted with 1 MIS and IT managers, 3 MIS and IT department officers, 1 Human Resource management and research directorate director, 1 customer account and transaction control department manager, 1 Finance department manager, Credit and international banking department head, 1 digital banking department head and 1 digital banking officers. With a total of 9 respondents for the interviews in commercial bank of Ethiopia at district and branch level in Gurage zone.

The data presentation and analysis were primarily based on responses obtained from the purposively selected groups through questionnaires and structured interviews.

The collected data through questionnaires were analyzed with the statistical package for social science (SPSS). The responses of the questionnaire on all given variables other than the

demographic variables and survey question are based on the 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, educational background, marital status, year of work experience, and work position in the organization 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 (20-30) = 1, age ranges (31-40) = 2, age ranges (41-50) = 3, age ranges (above 50) = 4. For Educational background, value provided as Diploma = 1, Bachelor Degree = 2, master's degree= 3, and P.H.D = 4. For marital status values provided as married = 1, Single = 2, widowed = 3, and divorced = 4. For work experience values provided as less than 1 year =1, 1 -3 years = 2, 4-6 years = 3, 7 – 10 years = 4, above 10 years =5. For work position values provided as manager = 1, Business manager = 2, MIS/IT officer = 3, and senior operational officer = 4.

Finally, the responses to data collected through the interview from managers, Business managers, MIS/IT managers and officers, and digital banking managers and officers were sufficient to present and some of them were almost similarly obtained from data collected through questionnaires and survey questions. This was because even if it is alleged these purposively selected groups have sufficiently the related information, it was not able to get all of them to collect additional information that supports the sufficiency of data obtained from questioners. However, after checking the difficulty to get all of these busy groups, the interviews were conducted with those free at that time from the selected group including the Managers, Business Managers, Digital banking, and MIS/IT departments, and the collected data were presented differently in the qualitative part of the analysis.

4.2. Demographic Characteristics of the Respondents

Table 4.1:- Description of demographic variables of respondents

Table 4.1 description of demographic variables of respondents				
Type of profile		**Descriptions**	Frequency	Percentage
Gender of respondents		Male	64	68.8%
		Female	29	31.2%
	Total		93	100%
Age of respondents		20 – 30 years	34	36.6
		31 – 40 years	50	53.8%
		41 – 50 years	9	9.6%
	Total		93	100%
Educational level of the respondents		Bachelor degree	43	46.3
		Master's degree	47	50.5
		P.H.D	3	3.2
	Total		93	100%
Year of work experience of respondents		1 – 3 years	19	20.4%
		4 – 6 years	22	23.7%
		7- 10 years	25	26.9%
		Above 50 years	27	29.0%
	Total		93	100%
Work position of respondents		Manager	12	12.9%
		Business Manager	22	23.7%
		MIS/IT officer	13	14.0%
		Senior operational Officer	46	49.4%
	Total		93	100%

Source: primary Data

4.2.1. Gender Analysis

Gender or sex was also used in this study as a demographic variable to explain the demographic characteristic of the respondents in CBE. As can be seen from the following table, demographic information results show that the respondents comprised of male 64 (68.8%) and female 29 (31.2%). This clearly shows that most of the operational work in a commercial bank of Ethiopia is carried out by men carry 68.8% of the respondent and the other 31.2 % is which carry out by women, but we understand that the bank is inclusively work in gender this initiate that employees for their operational work.

The genders Analysis result shows that most of the employees using MIS application for their operational work in CBE are were performed by males and the gender analysis result for males 68.8% and females 31.2% this shows that since most of the males are in nature additive for technology and interested in the working environment of technology. The analysis describes that most of the CBE employees are male so it has a positive impact to use MIS as one product of technology (MIS), and one determinant of operational success for business organization and operational effectiveness is gender diversity, as the gender mix of a team or one organization may offer an assortment of knowledge and skills that enables them to increase operational performances (Hoogendroom, 2017).

4.2.2. Age Group Analysis

The above table (Table 4.1) shows a total of 93 respondents 34 respondents are between the age of (20 - 30) (36.6%), 50 respondents are between the age of (31 - 40) (53.8%), and 9 respondents are between the age of (41- 50) (9.6%) these imply that more than half of the respondents of Ethiopian commercial bank in Gurage Zone are between the age group of (31 – 40) years.

Most adults have near to learn in working in the environments of technology but the most elder one the one who rejects the working environment of technology this has an advantage for working on MIS product of the bank that leads to an increase in the operational performance of the bank. (Crepon, 2004) when Demonstrated that the age structure in terms of performance less extreme results, as they found that productivity when workers are around 45 years old and above, remains at low-level performance and leave work for the rest of a worker's. On the other hand, if productivity is measured by the working environment of technology the young workers tend to have a peak level of performance and are more likely to adopt the technological working environment and those found

above the age of 50 years old are less adapted for technological working environment.

Therefore, we understand from the analysis of this study most of the population for the study was between the age group of (20 - 30) and (31 - 40) these show that most of them are young, they are extreme in productive and performance, and fatly adapt MIS product working environment, that has a positive effect on operational performance at CBE.

4.2.3. Education Level characteristics Analysis

The above table (table 4.1) shows from the total respondents 43(46.3%) respondents are where a bachelor's degree has, 47(50.5%) respondents are where a master's degree has and 3(3.2%) respondents are where has (Ph.D.). This implies that more than half of the respondents are holds master's degree this shows that most of the operational work using MIS are carried out by respondents of the educational level master's, and also we understand that most of the employees of the bank have bachelor degree next to master's degree and the bank has 3 respondent's those in managerial position are Ph.D. holder's.

The educated employee is more productive and has the skill of understanding the dynamic environment of the technology and the technology product for the operational work of each task. In the study (Thomas, 2009), organizations if highly educated workers contribute marginally more to organizational effectiveness than less-educated workers done.

Therefore, from the analysis of this study, most of the population in this study has a master's educational level which is 50.5% of the population, and 46.3% of the population has a bachelor's degree these data imply that most of the population are who highly educated, and has a positive impact on the operational performance of the bank.

4.2.4. Work experience characteristics Analysis

The table above (Table 4.1) shows that of the total respondents 19(20.7%) respondents have experience years between (1 – 3 years), 22(23.4%) respondents have experience years between (4 – 6 years), 25(26.9%) of respondents has experience years between (7 – 10 years), and 27(29.0%) of respondents has experience years (above 10 years). These implies most of the respondents has experience of above ten years and the second most experience year is between the group (7- 10 years) which indicate that most of the employees that working operational works with MIS in

commercial bank of Ethiopia has are experienced. Work experience in business has been seen as the critical success factors for business firms (al, 2011). According to (Fatimah et, 2013), current business of banks with prior working experience tend to be more successful compared to business of banks without experience.

Similarly, (Saleem, 2012) and (Naqvi, 2011) agree and support that past experience of the business organization has significant positive relationship with the success of organization and the business. According to (Vohra, 2011), understanding the prior work experience is very important because it has effect on the organization performance. The study found out task- relevant knowledge and skill mediates the relationship between prior related experience and job performance and acts as suppressing mediator of a negative direct relationship between prior related experience and current job performance.

Therefore, from the analysis result of the study it describes that all of the population of the study has experience and that most of the population has an experience of (4 – 6 years), (7 – 10 years) and above 10 years respectively, and it implies that the experienced population increases operational performance of the bank that leads to the success and to accomplish its objective.

4.2.5. Work position characteristics Analysis

From the table (table 4.1) it shows that from total respondents 12(12.9%) of respondents are on the position of manager, and 22(23.7%) of respondents are on the position of Business manager, 13(14.0%) of respondents are on the position of MIS/IT officer, and 46(49.4%) of respondents are where on the position of business operational officer.

Management information systems in organization classified based on operational level, business functions, and business process they support. Management information system consists of various system applications that are span entire firm, integrating information from multiple function and business process to enhance the operational performance and the performance of the organization as a whole (Kenneth, 2021). Therefore, from the work position analysis of this study, the population had categorized as four work position having access for MIS application and working their operational work on the application and the IT/MIS officer providing the service and enabling operational working of MIS application including those work position helps to show the effect of MIS application and to see the improved operational performance of the bank.

4.3. Descriptive statics Analysis

The term descriptive statics refers to the analysis, summary, and presentation of findings related to data set derived from a sample or entire population. Descriptive statistics comprises three main categories frequency distribution, Measure of Central Tendency, and measure of variability. Although descriptive statistics may provide information regarding a data set, they do not allow for conclusions to be made based on the data analysis but rather describe the data being analyzed. The summary of descriptive statistics of all variables that are evaluated is based on a 5-point Likert scale ("1" being "strongly disagreed" to "5" being "strongly agreed"). Descriptive statistics allow for the ease of data visualization. It allows for data to be presented in a meaningful and understandable way, which, in turn, allows for a simplified interpretation of the data set in question. Raw data would be difficult to analyze, and trend and pattern determination may be challenging to perform. In addition, raw data makes it challenging to visualize what the data is showing. A five point Likert scale with 1 = Strongly Disagree; 2 = Disagree; 3= Neutral; 4 = Agree; 5 = Strongly Agree (Lady, 2016).

4.3.1. Analysis for Independent Variables

A) Independent variables Analysis based on Mean and Standard deviation

The assumptions stated in the frame work of this study articulates that the effect of MIS on operational performance in commercial bank of Ethiopia in Gurage zone is measured through the existence of five independent variables such as availability of Network and infrastructure, availability of Digital banking, availability of Application system, availability of database management system (DBMS), and people and feasible MIS procedure of all available MIS determinants stated above. Table 4.4 up to table 4.8 demonstrates the frequency statistics (frequency and percent) for the independent variables based on the five 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 Network and infrastructures.

This factor concerns the availability of Network and infrastructures of the effect of MIS; network and infrastructure is any network either local global that the bank uses for its operational work and the different device that the bank uses to operate different MIS application and do various

operational task on it. The availability of network and infrastructure does indeed interdepend on relation with MIS (Alex, 2015). As (Budon, 2013) point out, a sustainability of MIS approach requires taking into consideration of the network and infrastructure and valuing its possible contributions.

Accordingly, the network and infrastructure taking part in proper implementation of MIS and major objectives of operational performance of the commercial bank of Ethiopia, through providing fast and efficient network with continues availability with up to date infrastructure for bringing the stable MIS implementation that support the operational performances of the bank. As the following table shows, even questions were used in order to evaluate the availability of network and infrastructure is represented with five individual questions. Hence, the presentation of data via mean and standard deviation statistical analysis is indicated below associated with the availability of fast telecommunication network service in CBE, from N = 93, collected responses (Mean = 3.98 and SD = 0.96). From these data we learned that the mean value (3.98) exists between 3 (neutral) and 4(agree), but with 2% closer to 4 (agree) and with 98% far from 3 (neutral). Therefore, currently fast telecommunication network service exists in CBE Gurage zone at agreeable, or currently there is adequate network installation exist fairly in CBE Gurage zone.

Related to availability of adequate network installation in CBE, form N = 93, collected responses Related to availability of adequate network installation in CBE, form 93 collected responses (Mean = 4.6 and SD = 0.62) from these data we learned that the mean value (3.98) exists between 4(agree) and 5(strongly agree), but with 40% closer to 5(strongly agree) and with 60% far from 4(agree). Therefore, currently adequate network installation exists in CBE Gurage zone at agreeable, or currently there is adequate network installation exist fairly in CBE Gurage zone.

In the checking availability of network are interconnected for co-operational work in CBE Gurage zone, form 93 collected responses (Mean = 4.8 and SD = 0.456) From these data we learned that the mean value (3.98) exists between 4(agree) and 5(strongly agree), but with 20% closer to 5(strongly agree) and with 80% far from 4(agree).The availability of network which is interconnected for co-operational work in CBE. Therefore, currently the network interconnections for co-operational works exist in CBE in Gurage zone at agreeable or currently the networks interconnected for co-operational work fairly exist.

In related to identifying availability of enough computer and network device for operational work in CBE Gurage zone, from 93 collected responses (Mean = 4.77 and SD = 0.628) the mean value (4.77) exists between 4(agree) and 5(strongly agree), but with 33% closer to 5(strongly agree) and with 77% far from 4(agree). The respondents are accepted the availability of enough computer and network device in CBE. Therefore, currently enough computer and network device for operational work exist at agreeable or currently enough computer and network device fairly exist in CBE Gurage zone.

In the checking the computer are interconnected locally and centrally for operational work in CBE Gurage zone, from 93 collected responses (Mean = 3.9 and SD = 0.967) the mean value (3.9) exists between 3(neutral) and 4(agree), but with 10% closer to 4(agree) and with 90% far from 3(neutral). The respondents are accepted the availability of computers that are interconnected locally and centrally in CBE. Therefore, currently computers are interconnected locally and centrally for operational work are exist at agreeable or currently computer is interconnected locally and centrally for operational work are fairly exist in CBE Gurage zone.

Table 4.2: Frequency table for the availability of Network and infrastructures

Availability of Network and Infrastructure			
Description	N	Mean	Standard deviation
There is fast telecommunication networking service in CBE	93	3.98	0.967
There is adequate network installation in CBE.	93	4.60	0.628
The network in Bank is interconnected for co-operational work	93	4.80	0.456
The bank have enough computers for the operational Works	93	4.77	0.628
The computer in Bank arelocally and Centrally Interconnected	93	3.90	0.967
Total	93		

V.No.2: The availability of Digital banking.

The availability of digital banking is represented by four questions. Hence, the representation of data via frequency statics analysis is indicated below in table 4.4. Related with identifying E-banking provides better service for customer in CBE. From 93 collected responses (Mean = 3.7 and SD = 0.734) the mean value (3.7) exists between 3(neutral) and 4(agree), but with 30% closer to 4(agree) and with 70% far from 3(neutral). The respondents are accepted the E – banking provides better service for customer currently in CBE. Therefore, Currently E-banking provide better service for customer is exists in CBE Gurage zone at agreeable, or currently there is digital banking providing better service customer is exist fairly in CBE Gurage zone.

Related with identifying the ATM is actively working 24/7 in CBE. From 93 collected responses (Mean = 4.16 and SD = 0.947) the mean value (4.16) exists between 4(agree) and 5(strongly agree), but with 16% closer to 4(agree) and with 84% far from 5(strongly agree). From these data we learned that the respondents are accept the availability of ATM actively working 24/7 in CBE, Gurage zone. Therefore, Currently E-banking provide better service for customer is exists in CBE Gurage zone at agreeable, or currently there is ATM actively working 24/7 is exist fairly in CBE Gurage zone.

Concerning with how the E- bank service is simple to use for the customer of CBE at Gurage zone. From 93 collected responses (Mean = 3.8 and SD = 1.2) the mean value (3.8) exists between 3(neutral) and 4(agree), but with 20% closer to 4(agree) and with 80% far from 3(neutral). From these data we learned that the respondents are accept the simplicity of digital banking for use in CBE, Gurage zone. Therefore, Currently E-banking simple to use for customer is exists in CBE Gurage zone at agreeable, or currently there is digital banking that is simple to use is exist fairly in CBE Gurage zone.

Aligning with the operational load of work for employee of the bank, the E-banking reduce operational work load for employee in CBE Gurage zone. From 93 collected responses (Mean = 3.82 and SD = 0.465) the mean value (3.82) exists between 3(neutral) and 4(agree), but with 18% closer to 4(agree) and with 82% far from 3(neutral). From these data we learned that the respondents are accepted the digital bank reduces operational work for employee in CBE, Gurage zone. Therefore, currently the digital bank is reduce operational for employee in CBE Gurage zone

at agreeable, or currently there is a digital banking that helps in reducing operational work is exist fairly in CBE Gurage zone.

The digital banking service increases profitability of the bank in CBE. From 93 collected responses (Mean = 3.84 and SD = 0.734) the mean value (3.84) exists between 3(neutral) and 4(agree), but with 16% closer to 4(agree) and with 84% far from 3(neutral). From these data we learned that the respondents are accepted the digital bank increase profitability of the bank in CBE Gurage zone. Therefore, currently the digital bank is increasing profitability of the bank in CBE Gurage zone at agreeable, or currently the digital bank is increasing profitability of the bank is exist fairly in CBE Gurage zone.

Table 4.3:- frequency table for the availability of Digital banking

Availability of Digital banking (E - banking)			
Description	**N**	**Mean**	**Standard deviation**
The E-banking provide better service for customer	93	3.70	.734
The ATM service work 24/7 actively work	93	4.16	.947
The E- Banking service are simple to use	93	3.8	1.205
The E-banking reduce operational work load for employee.	93	3.82	.465
The digital bank increase bank profitability.	93	3.84	.734
Total	93		

V.No.3: The availability of database management system (DBMS).

The availability of database management system (DBMS) represented by three questions. Hence, the presentation of data via frequency statistics analysis is as indicated below in table 4.5. In relation with checking the availability of DBMS stores data for future uses in CBE, Gurage zone. From 93 collected responses (Mean = 4.67 and SD = 0.558) the mean value (4.67) exists between 4(agree) and 5(strongly agree), but with 33% closer to 5(strongly agree) and with 67% far from 4(agree). From these data the analysis shows that the respondents are accepted the database management system (DBMS) stores data for future uses in CBE, Gurage zone. Therefore, currently the DBMS

stores data for a future uses in CBE Gurage zone at agreeable, or currently the DBMS stores data for future uses is exist fairly in CBE Gurage zone.

The responses of data base management system (DBMS) for the required data in CBE, Gurage zone. From 93 collected responses (Mean = 4.58 and SD = 0.648) the mean value (4.58) exists between 4(agree) and 5(strongly agree), but with 42% closer to 5(strongly agree) and with 58% far from 4(agree). From these data the analysis shows that the respondents are accepted that the DBMS is responsive for the required data in CBE, Gurage zone. Therefore, currently the DBMS is responsive for the required data in CBE Gurage zone at agreeable, or currently the DBMS responsiveness for therequired data is exists fairly in CBE Gurage zone.

Concerned with the response time of DBMS in the bank is goon in CBE, Gurage zone. From 93 collected responses (Mean = 4.51 and SD = 0.761) the mean value (4.51) exists between 4(agree) and 5(strongly agree), but with 49% closer to 5(strongly agree) and with 51% far from 4(agree). From these data the analysis shows that the respondents are accepted that the response time of the DBMS in the bank is good in CBE, Gurage zone. Therefore, currently the response time of DBMS inthe bank is good in CBE Gurage zone at agreeable or currently a good response time of the DBMS inthe bank is fairly exist in CBE Gurage zone.

Table 4.4:- frequency table for the availability of database management system

Availability of database management system (DBMS)

Description	**N**	**Mean**	**Standard deviation**
The MIS – DBMS stores data for the future uses like forecast business	93	4.67	.558
The MIS – DBMS are responsive to your required data/information	93	4.58	.648
The response time of MIS in the bank is good	93	4.51	.761
Total	93		

V.No.5: The availability of people and feasible MIS procedure.

The availability for people and feasible MIS procedure represented by four questions. Hence, the presentation of data via frequency statistics analysis is as indicated below in table 4.6. In relation with checking the bank has trained professionals and experts working on MIS in CBE, Gurage zone. From 93 collected responses (Mean = 4.65 and SD = 0.602) the mean value (4.65) exists between 4(agree) and 5 (strongly agree), but with 35% closer to 5(strongly agree) and with 65% far from 4(agree). From these data the analysis shows that the respondents are accepted the bank has trained professionals and experts working on MIS in CBE, Gurage zone. Therefore, currently the bank has trained professionals and experts working on MIS in CBE Gurage zone at agreeable, or currently the trained professionals and experts working on MIS exist fairly in CBE, Gurage zone.

Related with the availability of adequate man power in CBE from 93 collected responses (Mean = 3.94 and SD = 0.699) the mean value (3.94) exists between 3(neutral) and 4(agree), but with 6% closer to 4(agree) and with 94% far from 3(neutral). From these data, the analysis shows that the respondents are accepted the MIS/IT department has adequate manpower in CBE, Gurage zone. Therefore, currently the MIS or IT department has adequate manpower in CBE Gurage zone at agreeable, or currently the MIS or IT department has fairly adequate manpower in CBE, Gurage zone.

Related to the availability of flexible MIS procedure exist in CBE to do work as required in CBE, Gurage zone. From 93 collected responses (Mean = 4.47 and SD = 0.653) the mean value (4.47) exists between 4(agree) and 5(strongly agree), but with 47% closer to 4(agree) and with 53% far from 5(strongly agree). From these data, the analysis shows that the respondents are accepted Flexible MIS procedures exist in CBE to do work as required in CBE, Gurage zone. Therefore, currently Flexible MIS procedures exist in CBE to do work as required in CBE Gurage zone at agreeable, or currently Flexible MIS procedures exist to work as required is exist fairly in CBE, Gurage zone.

In the process of identifying easily understandable MIS procedure exist in CBE, Gurage zone. From93 collected responses (Mean = 4.53 and SD = 0.582) the mean value (4.53) exists between 4(agree) and 5(strongly agree), but with 47% far from to 4(agree) and with 53% closer to 5(strongly agree). From these data, the analysis shows that the respondents are accepted that there is easily understandable MIS procedure exists in CBE, Gurage zone. Therefore, currently accepted easily understandable MIS procedure exists in CBE Gurage zone at agreeable, or currently accepted easily understandable MIS procedure is exist fairly in CBE, Gurage zone.

Table 4.5:- Frequency table for the availability of people and feasible MIS procedure

Availability of people and process			
Description	**N**	**Mean**	**Standard deviation**
The bank has trained professionals working on MIS and Experts to fix any problem happen.	93	4.65	.602
The MIS/ IT department has adequate number of Manpower.	93	3.94	.699
Flexible MIS procedure exists in CBE to do works as Required.	93	4.47	.653
Easily understandable MIS procedure exists in CBE.	93	4.53	.582
Total	93		

V.No.5: The availability of Application system.

The availability of Application system represented by five questions. Hence, the presentation of data via frequency statistics analysis is as indicated below in table 4.7.In relation with checking the availability of Application system support overall works in CBE Gurage zone. From 93 collected responses (Mean = 4.75 and SD = 0.564) the mean value (4.75) exists between 4(agree) and 5(strongly agree), but with 75% far from to 4(agree) and with 25% closer to 5(strongly agree). From these data, the analysis shows that the respondents are accepted that the application systems support overall work in CBE, Gurage zone. Therefore, currently the application systems support overall works in CBE Gurage zone at agreeable, or currently the application systems support overall works is exist fairly in CBE Gurage zone.

Related to analyzing the application system increase customer service in CBE, Gurage Zone. From 93 collected (Mean = 4.66 and SD = 0.599) the mean value (4.66) exists between 4(agree) and 5(strongly agree), but with 66% far from to 4(agree) and with 34% closer to 5(strongly agree). From these data, the analysis shows that the respondents are accepted that the application system increase speed of customer service is existing in CBE, Gurage zone. Therefore, currently application system increase speed of customer service in CBE Gurage zone at agreeable, or currently application system increase speed of customer service is exist fairly in CBE, Gurage Zone.

Related to the availability of the application system uses in better knowledge management in CBE. Gurage Zone. From 93 collected responses (Mean = 4.68 and SD = 0.593) the mean value (4.68) exists between 4(agree) and 5(strongly agree), but with 68% far from to 4(agree) and with 32% closer to 5(strongly agree). From these data, the analysis shows that the respondents are accepted that the application system uses in better knowledge management is exist in CBE, Gurage Zone. Therefore, currently the application system uses in better knowledge management is exist in CBE Gurage Zone at agreeable, or currently the application system uses in better knowledge management is exist fairly in CBE, Gurage Zone.

The availability of the application system helps in generating different report in CBE, Gurage Zone. From 93 collected responses (Mean = 4.69 and SD = 0.642) the mean value (4.69) exists between 4(agree) and 5(strongly agree), but with 69% far from to 4(agree) and with 31% closer to 5(strongly agree). From these data, the analysis shows that the respondents are accepted that the application system helps in generating different report is exist in CBE, Gurage Zone. Therefore, currently the application system helps in generating different report is exist in CBE Gurage Zone at agreeable, or currently the application system helps in generating different report is exist fairly in CBE, Gurage Zone.

Concerning with the availability of the application system helps day to day operation in CBE, Gurage Zone. From 93 collected responses (Mean = 4.76 and SD = 0.579) the mean value (4.76) exists between 4(agree) and 5(strongly agree), but with 76% far from to 4(agree) and with 24% closer to 5(strongly agree). From these data, the analysis shows that the respondents are accepted that the application system helps in day to day operation is exist in CBE, Gurage Zone. Therefore, currently the application system helps day to day operation is exist in CBE Gurage Zone at agreeable, or currently the application system helps day to day operation is exist fairly in CBE, Gurage Zone.

Table 4.6:- frequency table for the availability of application system

Availability of Application system			
Description	N	Mean	Standard deviation
The application systems you are using for your works Support your overall works.	93	4.75	.564
The systems you are using increase the speed of customer service	93	4.66	.599
The system uses in facilitating better knowledge Management for the banks.	93	4.68	.593
The system helps you in generating different types of Report	93	4.69	.642
The system played a significant role in day to day Operation	93	4.76	.579
Total	93		

4.3.2 Analysis for Dependent Variable

B) Dependent variable Analysis based on Mean and Standard deviation

Table 4.7:- Descriptive statics for operational performance based on mean and standard deviation

Operational performance	**N**	**Mean**	**Standard deviation**
The digital banking(E- banking) support in increasing bank Profitability	93	3.63	0.481
The network and infrastructure of the MIS support in Collaborating (integrating) and co- operational work with your staff.	93	3.67	0.554
MIS – Application systems supports in providing better Service for both internal and external customers.	93	3.62	0.488

The database management system (DBMS) helps in providing accurate information for Decision making in the Bank.	93	3.60	0.501
The skill full MIS-Expert and a clear process of MIS is support operational performance of each individual tasks in the bank	93	3.64	0.588
The application system of MIS is helpful in supporting Overall managerial functions in the banks.	93	3.68	0.386
Total	93	3.62	0.401

Based on the frame work designed from concepts in MIS literature review and customized to the area of the study, operational performance is considered as the dependent variable for this study, accordingly the frame work picture 3.2 expressed the dependent variable operational performance based on three basic variables and the variable that has related to these three main variables also included. The basic to express operational performance in this study are based on better service, profitability and overall managerial function at commercial bank of Ethiopia in Gurage zone using Mean and Standard deviation as indicated below.

Q1. N1. "The digital banking (E- banking) support in increasing bank profitability at CBE"

From total of 93 respondents for the digital banking increase bank profitability in commercial bank of Ethiopia (CBE), from N = 93, collected responses related to the effect of digital banking in in increasing bank profitability (Mean = 3.63 and SD = 0.481) the mean value (3.63) exists between 3(neutral) and 4(agree), but with 63% far from 3(neutral) and with 37% closer to 4(agree). Hence, the respondents are responded to neutral and agree respectively. Further, the standard deviation (0.481) for this question is less than 1 (SD < 1) with a low standard deviation. The analyzed data were confirmed that the digital banking helps in increasing bank profitability by providing better service and reducing operational work by replacing the manual and human interaction with digitalization at CBE is significant at agreeable, or currently there is digital banking service contributing for bank profitability are exist fairly in CBE, Gurage zone.

Q N2 “Network and Infrastructure support in collaboration of the operational work”

In the identifying the effect of network and infrastructure support the collaboration of the operational work in the commercial bank of Ethiopia in Gurage zone. From to total of N = 93 respondents, the collected responses related to the network and infrastructure supporting the collaboration of the operational work profitability (Mean = 3.67 and SD = 0.554) the mean value (3.67) exists between 3(neutral) and 4(agree), but with 67% far from 3(neutral) and with 33% closer to 4(agree). Hence, the respondents are responded to neutral and agree respectively. Further, the standard deviation (0.554) for this question is less than 1 (SD < 1) with a low standard deviation. The analyzed data in the table demonstrates that all of the respondent were agreed and accepted that there exist network and infrastructure in CBE that supports in collaborating operational work. The analyzed data were confirmed that the network and infrastructure has effect, in collaborating of the operational works in CBE. Therefore, the network and infrastructure helps in collaborating operational work in CBE are exists significantly at agreeable, or currently there is network and infrastructure that helps in collaborating operational work in CBE are fairly exist.

QN3. “MIS – Application systems supports in providing better service for both internal and externalcustomers”

In the process of verifying the application system support in providing better service for both internal and external customer at commercial bank of Ethiopia in Gurage zone. From total of N = 93 respondents, the collected responses related to the application systems support in providing better service for both internal and external customer (Mean = 4.62 and SD = 0.488) the mean value (3.62) exists between 3(neutral) and 4(agree), but with 62% far from 3(neutral) and with 38% closer to 4(agree). Hence, the respondents are responded to neutral and agree respectively. Further, the standard deviation (0.488) for this question is less than 1 (SD < 1) with a low standard deviation. The analyzed data in the table demonstrates that all of the respondent were agreed and accepted that there exist Application system in CBE that supports in providing better service for both internal and external customers. Therefore, The analyzed data confirm that the application system support in providing of better service for customer CBE, in Gurage zone are exist significantly at agreeable or application system are fairly exist providing better service for customer of the bank.

QN4. The database management system (DBMS) helps in providing accurate information for Decision making in the bank. Related to verifying the availability of accurate information for manager's decisions at commercial bank of Ethiopia. From total of N = 93 respondents, the collected responses related to the database management system (DBMS) helps in provides accurate information for decision making (Mean = 3.60 and SD = 0.501) the mean value (3.60) exists between 3(neutral) and 4(agree), but with 60% far from 3(neutral) and with 40% closer to 4(agree). Hence, the respondents are responded to neutral and agree respectively. In addition to this, the standard deviation (0.501) for this question is less than 1 (SD < 1) with a low standard deviation.
The analyzed data in the table demonstrates that all of the respondent were agreed and accepted that there is exist a database management systems helps in providing accurate information for any decision making in the bank. Therefore, The analyzed data confirm that the database management system(DBMS) helps in providing accurate information for decision making at CBE, in Gurage zone are exist significantly at agreeable or database management system are fairly exist providing accurate information for decision making.

QN5. The skill full MIS-Expert and a clear process of MIS is support operational performance of each individual tasks in the bank.

Related to the Availability of expertise man power and clear process of MIS support operational performance for each individual task working with MIS in commercial bank of Ethiopia. From total of N = 93 respondents, the collected responses related to the skill full MIS expert and clear process support operational performance of each individual task (Mean = 3.64 and SD =0.588) the mean value (3.64) exists between 3(neutral) and 4(agree), but with 64% far from 3(neutral) and with 36% closer to 4(agree). Hence, the respondents are responded to neutral and agree respectively. In addition to this, the standard deviation (0.588) for this question is less than 1 (SD < 1) with a low standard deviation. The analyses data in the table demonstrates that all of the respondent were agreed and accepted that there is exist a skill full MIS expert and clear process of MIS in CBE. Therefore, the analyzed data confirm that the skillful MIS expert and clear process of MIS is available to solve problem happen and understand easily process of working with MIS for each individual tasks in CBE, in Gurage zone are exists significantly at agreeable or The study were analyzed and conclude that there are experts those provide support for MIS application and solve for

problems happens in the bank, and also the process of working with MIS is clear and simple for each individuals.

QN6 “Application system is helpful in supporting the overall managerial function”

In the process of verifying that the application systems supports operational performance for the overall managerial function working with MIS in commercial bank of Ethiopia, in Gurage zone, fromtotal of N = 93 respondents were replaying with making (Mean = 3.68 and SD =0.386) the mean value (3.68) exists between 3(neutral) and 4(agree), but with 68% far from 3(neutral) and with 32% closer to 4(agree). Hence, the respondents are responded to neutral and agree respectively. In addition to this, the standard deviation (0.386) for this question is less than 1 (SD < 1) with a low standard deviation. The analyzed data in the table demonstrates that all of the respondent were agreed and accepted that there is exist an application systems that are supporting overall managerial function in the bank. Therefore, The analyzed data confirm that the application systems supports overall managerial function at CBE, in Gurage zone are exist significantly at agreeable or applicationsystems are fairly exist supporting overall managerial functions in the bank.

Table: 4. 8: Mean, Std. deviation, minimum and maximum values analysis for both independent anddependent variable.

Table 4.8: Mean, Std. deviation, minimum and maximum values analysis for both independent and Dependent variable.

Variables	N	Minimum	Maximum	Mean	Std. deviation	Variance
Effect of MIS	93	3	5	4.63	0.40	0.164
Operational performance	93	3	5	4.8	0.41	0.169
Valid N (list wise)	93					

Source: SPSS result, 2024.

V.No.2: The Effect of MIS in CBE.

The effect of MIS expressed based on the availability of five components such as: network and infrastructure, Digital banking (E - Banking), Database management system, people and process, and Application system Table 4.9 points out the analysis for the availability of effect of MIS in commercial bank of Ethiopia, in Gurage Zone via descriptive statistics tool with minimum value

replied 3 (neutral) and maximum value replied 5 (strongly agree). The mean and standard deviations were 4.63 and 0.40 respectively. From these given figures we realize that, the mean value (4.63) exists between 4 (agree) and 5(strongly agree), but with 37% closer to 4(strongly agree) and with 63% far from 3 (agree). Additionally, the standard deviation (0.40 < 0.5) shows that the variation between the values for maximum and minimum responses with mean value (4.63) is very low or insignificant. This means that most of the responses are closer to 5 (strongly agree) significantly.

Therefore, majorities of the respondents were fairly accepting the existence the effect of MIS in CBE, Gurage Zone at strongly agreeable stage or the effect of MIS is fairly exist.

V.No.3: Availability of the operational performance in CBE

Table 4.9 points out the analysis for the availability of operational performance in commercial bank of Ethiopia, in Gurage Zone via descriptive statistics tool with minimum value replied 3 (neutral) and maximum value replied 5 (strongly agree). The mean and standard deviations were 3.8 and 0.41 respectively. From these given figures we realize that, the mean value (4.8) exists between 4 (agree) and 5(strongly agree), but with 20% closer to 5(strongly agree) and with 80% far from 4 (agree). Additionally, the standard deviation (0.41 < 0.5) shows that the variation between the values for maximum and minimum responses with mean value (4.8) is very low or insignificant. This means that most of the responses are closer to 5 (strongly agree) significantly. Therefore, majorities of the respondents were fairly accepting the existence of operational performance in CBE, Gurage Zone at strongly agreeable stage or operational performance is fairly exists.

4.4. Model Assumption Test

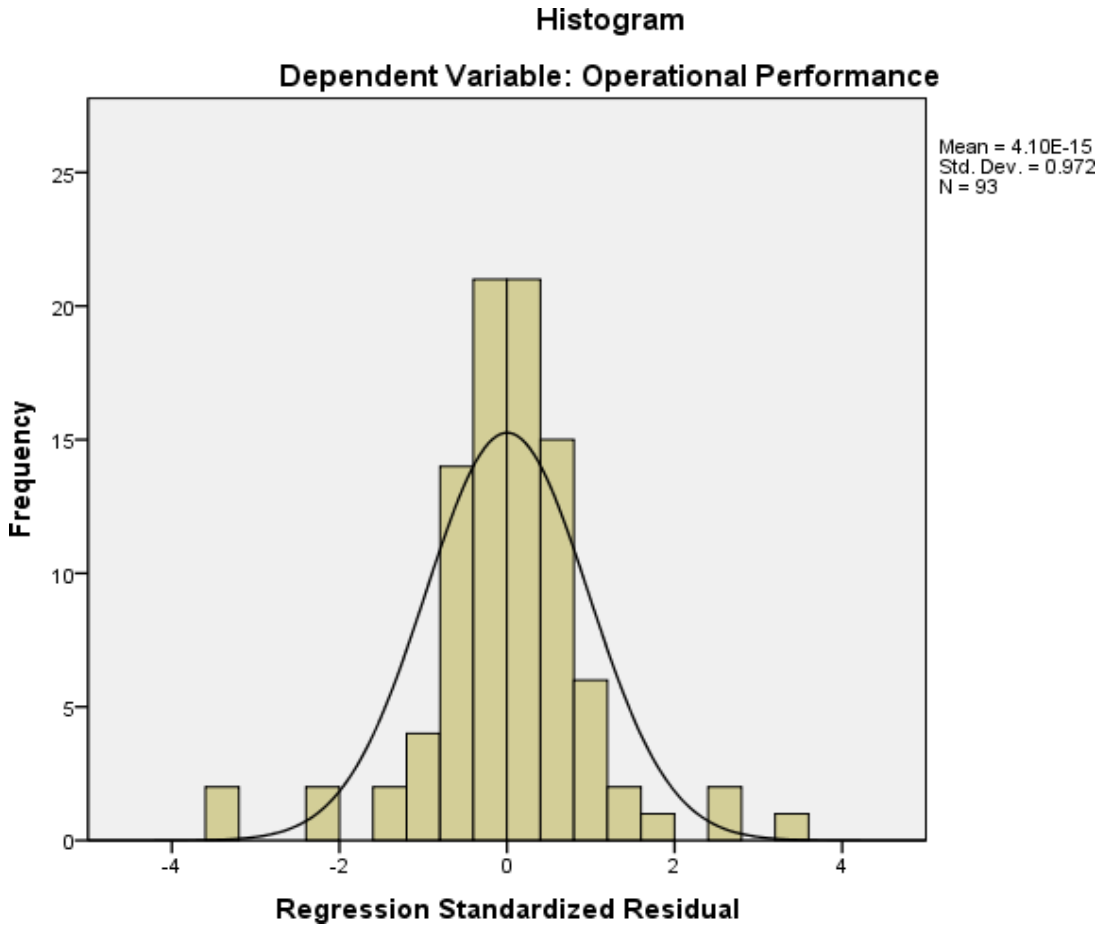
4.4.1. Normality of Residuals (normality Test)

To be sure that the model is good or best fit, it is important to examine the residuals. According to (Darlington, 2018) the difference between the values of the outcome predicted by the model and the values of the outcome observed in the sample are known as residuals. Normality can further be checked through histograms of the standardized residuals (P.STEVENS, 2016). Histograms are bar graphs of residuals with a super imposed normal curve that show distribution.

The residuals should follow a normal distribution about the predicted dependent variable with a mean score of 0 and standard deviation of 1. A mean of 0 indicates the line is in the middle of the

points once again, some are above and some are below. The normal distribution was shaped like bells it is symmetric, and most points were in the middle, with fewer and fewer farther from the mean. And the bell shape means that most points were close to the line, and there were fewer points farther from the line.

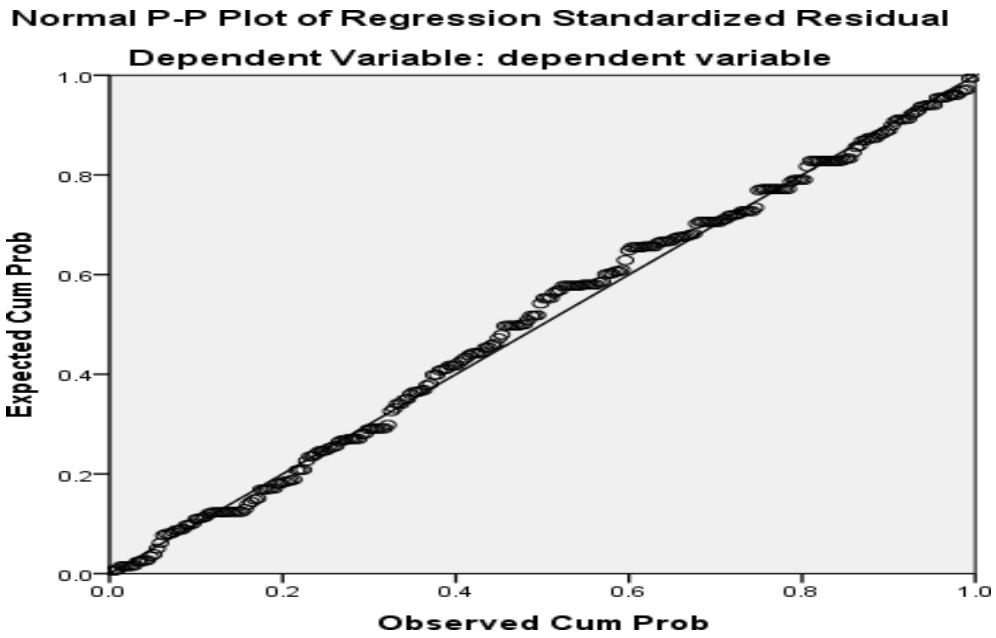
The histogram depicted in figure below shows that the residuals seem normally distributed and residuals were distributed with the approximate mean of 0 and standard deviation of 0.97 which was approximately 1. Thus the model fulfilled the assumption of normally test.



Source: SPSS Result.

4.4.2. Test of linearity

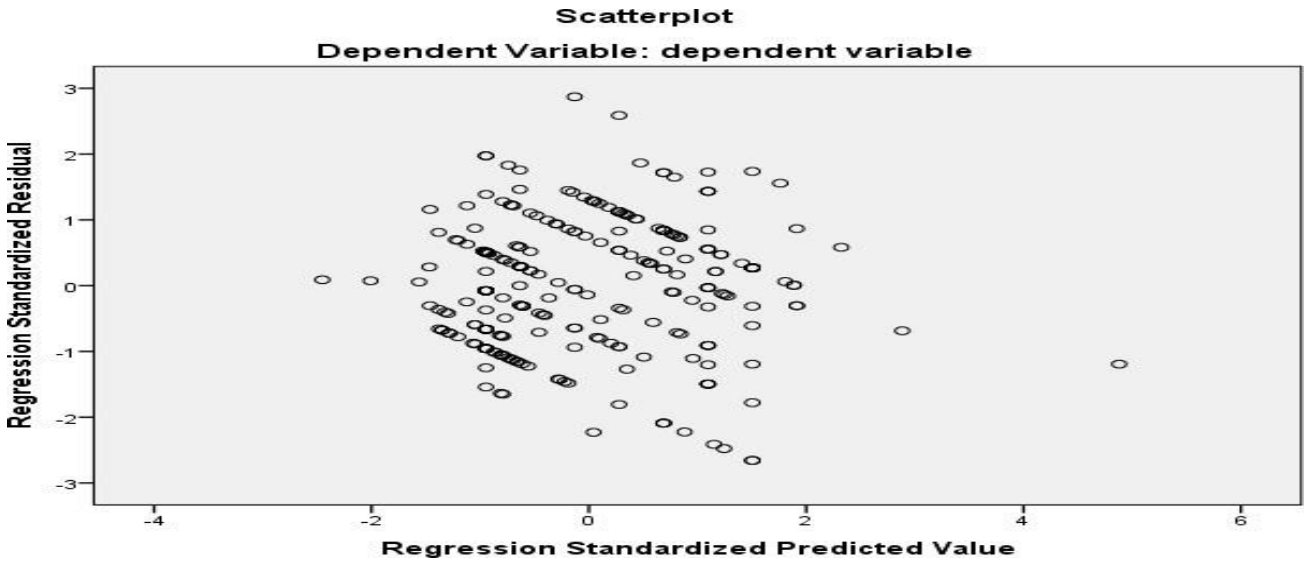
Linearity is used check whether all the estimates of regression including regression coefficients, standard errors and tests of statistical significance are biased or not (Keith, 2014). There is no linearity problem on the data for this study residual follow at straight line.



Source: survey data

4.4.3. Hetroscedastcity Test

Heteroscedasticity is the equality or violation of the residuals for every set of values for independent variable. So the researchers assume that errors are spread out constantly between the variables. Heteroscedasticity problem exist when scatter plot is greater than 3.3 and less than -3.3. Therefore as it was indicated in figure below the data did not violate Heteroscedasticity assumption and instead it was homoscedastic.



Source : survey data

4.4.4. Multicollinerity Test

Multicollinearity is a problem that occurs with regression analysis when there is a high correlation of at least one independent variable with a combination of the other independent variables. As variables are highly correlated in multiple regression analysis, it is difficult to identify the unique contribution of each variables are predicting the same variance in the dependent variable because the highly correlated variables are predicting the same variance in the dependent variable. In this situation, the – overall p – value may significant but the p - value for each predictor may not significant. Variance inflation factor can be used VIF of greater than 5 is generally considered evidence of multicollinearity (Marczyk, 2005). Accordingly, as we can see from table 4.10 below there is no multicollinearity in this case.

Table 4.9:- Multicollinearity Test

Coefficients [a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	p-value	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
(Constant)	0.717	0.271		1.90		0.00		
Application System	0.640	0.062	0.610	6.57	0.710	0.00	0.70	1.417
Digital Banking	0.430	0.029	0.421	0.10	0.822	0.00	0.87	1.143
MIS DBMS	0.408	0.071	0.401	1.28	0.594	0.00	0.47	2.128
People and Process	0.418	0.073	0.404	2.01	0.567	0.00	0.52	1.922
Network and Infrastructure	0.621	0.077	0.611	3.38	0. .560	0.00	0.71	1.399

a. Dependent Variable: Operational Performance

4.5. Inferential Analysis

4.5.1. Correlation

Correlation between dependent and independent variables

Correlation is 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 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 correlation coefficient equal to 0. A positive correlation means that is one variable gets bigger; the other variable tends to get smaller. In statistics, a perfect positive correlation means that is represented by 1 while 0 indicates no correlation and negative 1 indicates perfect negative correlation Pearson correlation and Sig. (2 - tailed) are commonly used measure of correlation that estimate relationship between two interval variables (Ratner, 2009).

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 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 (Nickolas, 2021).

The correlation analysis for this study was conducted to determine whether a statistically significant relationship exists between the dependent (operational performance) and the independent variables (Network and infrastructure, digital banking (E – banking), DBMS, people and process, Application system). The operational performance is positively correlated and statistically significant with the effect of MIS in the spearman's correlation of $r_s = 0.562$, $p < 0.01$ which indicates moderate relationship between the two variables.

Table 4.10:- Correlation matrix table

		OP	**AS**	**DB**	**DBMS**	**PP**	**NI**
OP	Pearson's Correlation	1					
	Sig. (2-tailed)	.000					
AS	Pearson's Correlation	.710**	1				
	Sig. (2-tailed)	.000					
DB	Pearson's Correlation	.822**	.720**	1			

	Sig. (2-tailed)	.000	.0.004				
DBMS	Pearson's Correlation	.594**	.504**	.257**	1		
	Sig. (2-tailed)	.000	.000	.006			
PP	Pearson's Correlation	.567**	.410**	.221**	.672**	1	
	Sig. (2-tailed)	.000	.000	.017	.000		
NI	Pearson's Correlation	.560**	.362**	.300**	.454**	.446**	1
	Sig. (2-tailed)	.000	.000	.002	.000	.000	.000

* . Correlation is significant at the 0.05 level (2-tailed)

** . Correlation is significant at the 0.01 level (2-tailed)

Table 4.10 present the inter-correlations among the variables being explored. In other words it represents the correlation matrix between the independent variables and the dependent variables. From the analysis, it can be observed that there exist a positive moderate and statistically significant relationship between the effect of MIS and operational performance. The above table shows that there exists a positive moderate statistically positive relationship between Application System (i.e operational task performed by application system) and operational performance ($r= 0.710$, $p < 0.01$). There is also positive moderate and statistically significant relationship between Digital banking (i.e the operation done digital via digital operation of the system) and operational performance ($r = 0.822$, $p < 0.01$).

There is also positive moderate and statistically significant relationship between Database management system (DBMS) and operational performance ($r = 0. 594$, $p < 0.01$). There is also positive moderate and statistically significant relationship between people and process, and operational performance ($r = 0.567$, $p < 0.01$). Finally there is positive moderate and statistically significant relationship between network and infrastructure, and operational performance ($r =0.560$, $p < 0.01$). Hence, correlation analysis only shows the existence of positive and significant relationship between the independent and dependent variables. Based on the above preliminary test results, the assumption of multiple linear regression analysis models had met.

The above result all indicates that there was a positive and strong correlation between operational performance and the effect of management information system (MIS) variables studied in this research done by researcher.

4.5.2 ANOVA

The following table 4.11 shows the ANOVA results of the linear regression analysis. The significance value of 0.000 indicates that regression relationship is significant in predicting the effect of the five blocks of the independent variables (network and infrastructure, digital banking, DBMS, people and process, and application systems) on dependent variable, operational performance. The F – ratio in the ANOVA table tests whether the overall regression model is good fit for the data. The F – value shows 133.19 which are greater than the F critical it shows the model is significant. The F – test of overall significance indicates whether your linear regression model provides a better fit to the data than a model that contains no independent variables. In this post, the researcher looks at how the F –test of overall significance fits in with other regression statistics, such as R- squared. R- Squared tells you how well your model fits the data, and the F – test is related to it. An F- test is a type of statistical test that is very flexible. You can use them a wide variety of settings. F-tests can evaluate multiple model terms simultaneously, which allows them to compare the fits of different linear models. In contrast, t-tests can evaluate just one term at a time, the investigator employed t- test to determine the significance of each individual variable used in this study as a predictor of the operational performance. The p – value under sig. column was used as an indicator of the significance of the connection between the dependent and independent variables. At 95% confidence level, a p - value less than 0.05 was interpreted as measure of statistical significance. As such, a p – value above 0.05 indicates a statistically insignificant association between the dependent and independent variables.

Table 4.11:- ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	10.224	5	2.045	133.19	.000[b]
Residual	5.359	87	.062		
Total	15.583	92			

a. Dependent Variable: Operational Performance

b. Predictors: (Constant), Network and Infrastructure, Digital Banking, Application System, People, Process and MIS DBMS

4.5.3. Regression Analysis

Multiple linear regression (MLR), also known simply as multiple regression, is a statistical technique that uses several explanatory variables to predict the outcome of a response variable. The goal of multiple linear regressions is to model the linear relationship between the explanatory (independent) variables and response (dependent) variables. In essence, multiple regressions are the extension of ordinary least-squares (OLS) regression because it involves more than one explanatory variable (Hayes, 2024).

Multiple linear regression analysis was employed to examine the relationship between dependent variable (operational performance) and one or more independent variables Effect of MIS (Application system, Digital banking, DBMS, people and process, Network and infrastructure). The result also helps us to have overall understanding between the relationships of independent and dependent variables: bellow table coefficient, standard error, t-value, and p- value for all explanatory variables and the value of R – squared, standard error of regression and F-statistics with P – value analyzed as follows: The regression analysis was undertaken at 5% significance level. The study obtained the model summary statistics as displayed in the following table. The coefficient of determination also known as the R2 indicates the deviations in the response variable that is as a result of changes in the predictor variables. R-squared measures the fraction of the variability in the data that is explained by the model. It is a number between 0 and 1 with 1 being a perfect fit model (all observations are predicted exactly). The Adjusted R-squared is like R-squared with an adjustment to account for the number of predictors in the model. Adding predictors, even nonsense ones, will increase R-squared, this indicate that 65.6% of the dependent variable (operational performance) is explained by the independent variables

Table 4.12:- Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R square change	F change
1	.810[a]	.656	.636	.24820	.656	33.192
Dependent variable: operational performance						

Source: SPSS Result

4.5.4. Coefficient of Regression Analysis

The standardized beta coefficients compares the strength of the effect of each individual independent variable to the dependent variable, the higher the absolute value of the beta coefficient, the stronger the effect and useful to know which of the different independent variable is more important. They are used in comparison of impact of any independent variable on the dependent variable. As indicated in regression coefficients table (4.13), application system had the highest standardized coefficient (0.610) followed by network and infrastructure (0.601). This revealed that the application system had higher relative effect on operational performance and next network and infrastructure, digital banking, DBMS, people and process, are ranked from three to five respectively in their relative importance on the effect of operational performance. As it can be seen from the regression coefficient table, the predictor variables of all independent variables practices are statistically significant in predicting the effect of operational performance because all their p – values are less than level of 0.05. The study conducted was employed a regression analysis to explain by how much the independent variable explains the dependent variable. To portray the predictable relationship and its effect between the above variables, the study adopted the following linear regression model:

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta\ 4X4 + \beta\ 5X5 + \varepsilon$

$Y = 0.601X1 + 0.421X2 + 0.401X3 + 0.404X4 + 0.610X5$

Where Y = Operational performance, X1 = Network and infrastructure, X2 = digital banking, X3 = DBMS, X4 = people and process, and X5 = Application System and ε is the error term. $\beta 0$ = constant (Y - intercept) and $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, and $\beta 5$ are regression coefficient of respective variables. From the above equation, which was constructed from the analysis result of following table, when all variables are held at zero (constant), the value of dependent variable/ operational performance/would be 0.717? However, holding other factors constant, a unit increase in network and infrastructure would lead to a 0.601 increase in dependent variable/ operational performance, unit increase in digital banking would lead to a 0.421 increase in dependent variable/ operational performance, a unit increase in DBMS lead to a 0.401 increase in dependent variable/operational performance, a unit increase in people and process lead to a 0.404 increase in dependent variable/operational performance, and finally, a unit increase in application system lead to increase operational performance by 0.610. The discussed regression coefficient results show that five out of five are statistically significant in predicting the operational performance.

Table 4.13:- Coefficient of Regression Analysis

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**p – value**
Model	**B**	**Std. Error**	**Beta**		
(Constant)	0.717	0.271		1.908	
Application System	0.640	0.062	0.610	6.517	0.710
Digital Banking	0.430	0.029	0.421	.102	0.822
MIS DBMS	0.408	0.071	0.401	1.238	0.594
People and Process	0.418	0.073	0.404	2.031	0.567
Network and Infrastructure	0.621	0.077	0.601	3.368	0. .560

Dependent variable: operational performance

Source: SPSS Result

The above coefficients table illustrates the effect of MIS on operational performance in commercial bank of Ethiopia. At this point using this multiple linear regression coefficient results, the proposed hypotheses for this study were tested as follows.

The above Table 4.13 shows that R value is 0.656 which indicates there is a positive relationship between the operational performance and independent variables are able to measure/predict operational performance. In model summary adjusted R square tells us the righteousness in shape of model and its value which is 0.636 means all independent variable are able to measure/ predict operational performance at 63.6 (0.636 x 100) percent. The marginal value provides the impact that unit changes in individual independent variable have on different levels of operational performance when all other variables are held constant. Therefore confirmed and accepted hypothesis and concluded there is statistically significant effect of management information system on operational

H1: network and infrastructure has positive and significant influence on operational performance

The result of Linear multiple regression analysis of table 4.14 above clearly indicates that in commercial bank of Ethiopia network and infrastructure has effect on operational performance ($p<0.01$). Besides, the value of beta ($\beta = 0.601$) shows that the positive influence of network and infrastructure on operational performance. This implies that a beta value of 0.601, which implies

that a 1 unit increase in network and infrastructure, will cause 0.601 unit standardivetion in operational performance of CBE. Hence, the above proposed result is supported by **khresat and Alaa** (Khresat, 2014) in which network and infrastructure has positive and significance influence on government organizational performance.

H2: Digital banking has positive and significant influence on operational performance

The result of multiple regression analysis in table 4.14 above clearly indicates that in the commercial bank of Ethiopia digital banking has significant influence on the operational performance ($p< 0.01$). Besides, the value of beta in CBE ($\beta = 0.421$) demonstrates that the positive influence of digital banking on operational performance. This implies that a beta value of 0.421, which implies that a 1 unit increase in digital banking, will cause 0.421-unit standard deviation in operational performance of CBE. Thus, the above proposed hypothesis is accepted. The above result is supported by the study of (Gakuo, 2011) who found digital banking as having a significant impact on operational performance in banking sector.

H3: Database management system (DBMS) has positive and significant influence on operational performance

The result of multiple regression analysis in table 4.14 above clearly indicates that in the commercial bank of Ethiopia DBMS has significant influence on the operational performance ($p < 0.01$). Besides, the value of beta in CBE ($\beta = 0.401$) demonstrates that the positive influence of database management system (DBMS) on operational performance. This implies that a beta value of 0.401, which implies that a 1 unit increase in database management system, will cause 0.401 unit standardivetion in operational performance of CBE. Thus, the above proposed hypothesis is accepted. The above result is supported by the studies of (Berisha-Shaqiri, 2014) who found DBMS as having significant effect on operational performance.

H4: People and process has positive and significant influence on operational performance

The result of multiple regression analysis in table 4.14 above clearly indicates that in the commercial bank of Ethiopia, people and process has significant influence on the operational performance ($p < 0.01$). Besides, the value of in CBE ($\beta = 0.404$) demonstrates that the positive influence of people and process on operational performance. This implies that a beta value of 0.404, which implies that a 1 unit increase in people and process, will cause 0.404 unit standard deviation in operational performance of CBE. Thus, the above proposed hypothesis is accepted. The above

result is supported by the study of (Karim A. J., 2011) who found people and process as having significant effect on operational performance.

H5: Application system has positive and significant influence on operational performance

The result of multiple regression analysis in table 4.14 above clearly indicates that in the commercial bank of Ethiopia, Application system has significant influence on the operational performance ($p < 0.01$). Besides, the value of in CBE ($\beta = 0.610$) demonstrates that the positive influence of Application system on operational performance. This implies that a beta value of 0.610, which implies that a 1 unit increase in network and infrastructure, will cause 0.610 unit standard deviation in operational performance of CBE. Thus, the above proposed hypothesis is accepted. The above result is supported by the study of (Alex, 2015) who found Application system as having significant effect on operational performance.

In general, the multiple regression analysis of table 4.14 clearly demonstrates that the independent variable of the effect of MIS has positive and significant influence on the dependent variable operational performance in commercial bank of Ethiopia.

Table 4.14:- Summary of hypothesis testis

No	Hypothesis	Tool	Result
H1	Network and infrastructure has positive and significance Influence on operational performance.	Regression	Accepted
H2	Digital banking (E - banking) has positive and significance influence on operational performance.	Regression	Accepted
H3	Database management system (DBMS) has positive and significance influence on operational performance.	Regression	Accepted
H4	People and process has positive and significance influence on operational performance.	Regression	Accepted
H5	Application system has positive and significance influence on operational performance.	Regression	Accepted

Source questionnaires survey (2024), N = 93

4.6. Qualitative Analysis

In this study, in-depth interviews went beyond the face-to-face interviews and elicited explanations of issues raised there. Individual who met the criteria from different perspective of the operational work done through MIS application in the bank. The criteria for the selection included relevant experience, the positions of the operational work in which own each authority of the operational work, and MIS/IT department. They were the major sources of information and improved the quality and reliability of the study.

Interview questions to be answered by the selected employees of the commercial bank of Ethiopia from Hosanna district to branch in Gurage Zone. The researcher follows an unstructured interview which is a type of interview that is non-directive it's nature. Here, the interviewer does not rely on a set of standardized questions but adopts spontaneity when gathering relevant information from the respondent in line with the purpose of the interview as indicated before respondents asked about the effect of MIS on operational performance in a case study of commercial bank of Ethiopia in Gurage Zone. The Structured interviews were conducted with 1 MIS and IT managers, 3 MIS and IT department officers, 1 Human Resource management and research directorate director, 1 customer account and transaction control department manager, 1 Finance department manager, Credit and international banking department head, 1 digital banking department head and 1 digital banking officers. With a total of 9 respondents for the interviews in commercial bank of Ethiopia at district level in Gurage Zone.

The respondents were asked about the Network and Infrastructure of the bank for the use of MIS product application and the digital banking uses for better service and bank profitability. On other hand the skillful people and clear process for the use of MIS how they support the operational performance of the bank? And to what extent does the MIS- DBMS uses it to store data and information for the future uses and business forecast of the bank and how it supports the overall managerial function of the CBE in Gurage Zone.

The network and infrastructure of the commercial bank Ethiopia in Gurage Zone are well organized and follow the scientifically set standards for the network installation, for each of branches before the installation of the network for each branch there are hired employees who select the topology for the network installation of the braches based on the building setups and according to the attractive environment for both employees and customers of the bank. The bank also has up to date device and other network infrastructure and has well-skilled professionals for an automatic response of the

problem happened and for the business continuity, but the bank should have to increase the network speed that Ethio – telecom provide for the having the speed of 27MB/S, because of the speed problem happing currently in the bank. Therefore, the CBE in Gurage Zone has well standardly installed network with secure LAN configuration and up to date network device and infrastructure this were supporting to MIS application to be applicable in the bank since the network and infrastructure is the heart of MIS application to operate in the bank, this helps operational performance to be efficient.

Network infrastructure refers to all of the resources of a network that make network or internet connectivity, management, business operations, and communication possible. Network infrastructure comprises hardware and software, systems and devices, and it enables computing and communication between users, services, applications, and processes and also in this digital age, an organization's agility and productivity depend on more than just hardworking employees and excellent equipment. Running a smooth operation also requires a robust, clean, and secure network and infrastructure (Daniel, 2019).

The Digital banking (**E-banking**) is a banking service providing for the customer of the CBE in different digital banking service like: ATM, POS machine, Mobile banking (mobile application transaction and offline code transaction), Internet banking, and CBE birr (mobile application and offline code transaction) and CBE teta (for international deposit account). The Today digital banking is boosting international, national and local economy of any country in simplifying life, supporting E – Commerce, and online business. The digital banking (E - banking) of CBE also provides different service like airline ticket booking and paying, mobile air time buying, integrating with different application providing different social service and integrating with telebirr, transferring to telebirr account and different utility service like :- water bill payment, electric utility payment, fuel payment and immigration payment service provided through this digital banking. The bank also takes the digital banking as one of the strategic pillar plan and development of the bank, as the commercial bank of Ethiopia plan and the Hosanna district takes applying the plan to provide 50% of transaction are going to digitalization in 2022EC/2030 G.C this helps the bank to increase customer satisfaction, increase bank profitability by increasing the commission get up to 80M (eighty million ETB) and reducing up to eighty thousand (80000) employee with different infrastructure and asset assigned for those employee. In addition to this all the customer of CBE having digital banking services can access and get any banking services 7d/24h per week anywhere.

The MIS product application also used to support the operational activities of the internal regular operation by increasing its efficiency, and Beneficiary account management and transaction processing system used to boost service for both internal and external customer of the bank by increasing the operational performance reducing time consuming. The MIS support the regular operation like human resource management by using the sub system components of MIS by using this system the HR- officer perform the operational activity like managing annual or strategic human resource plan, manage employee recruitment process, manage employee profile, manage training and development information, manage employee leave information, manage employee promotion and transfer information, manage employee discipline and separation information. The MIS product has also Core banking system, Business Intelligence system, procurement management system, project management system, finance management system, material management system and decision support system. Beneficiary Account management and transaction process system used to register and open different types of bank account for customers and based on the opened account the user of account can credit, debit and perform different transactions, this system helps also to control and operate account related and transaction operational tasks.

The MIS has great role in collaborating internal works integrating different department by system to share and access information this makes the internal co-workers efficient, the system also integrate the branch to district office and district to main office for the integrity of operational work and increase performance and it also used to integrate with other bank to provide the digital banking ATM (automatic transaction machine) service to provide better service for customer of the bank.

The MIS also helps the management functions by proving the service like planning the 13 quarter batch, annual plan, and strategic plan of the bank, analyzing the performed plan it helps to forecast the work force plan for material and fixed asset plan, and forecast future business performance. Business intelligence system (BIS) helps in analyzing performance and score digitalizing rate, it also used to record the scored performance rate for employee that taken as competing result in the bank for different internal completion either for promotion or for internal vacancy. The BIS used to control suspicious transaction and how much time the employee active on work by using business intelligence. The BIS has NG screener module accessed only by branch manager for activity control: protocol for password and password changing, manager view each activity on each node for each individual, daily audit and ticket audit, VISA account and different form filled. Manager can provide decision by using decision support system (DSS), this system used to provide different

types of information stored in MIS database and also used to generate different types of report generated by managers.

MIS contain system in the integrated system that is called IBM-control desk system. In this control desk system there are two systems the first system is a service support system (SSS) the purpose of this system are for service continuity and business continuity of the bank for better operational performance of the bank. the second is on time response evaluation system this system helps a bank for evaluating for the request that the operational workers request for problem solving for the IT support team for solving problem like E- banking problem (mobile banking, ATM support, and POS machine problem), System problem, Network and hardware problem, Application based support (software and driver) including core banking problem from branch and district. Provide service support either in Remote or in person. Roll out request operational analyses, security audit analysis and audit securing the bank and partnership--MOTI – ATM distributer vender and Ethio-telecoms.

Generally the MIS product is providing various and huge service that support to boost operational performance of the bank by providing better service for the customer, collaborating different department and with another bank, increasing bank profitability by providing, and supporting managerial functions.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

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 5.2 and 5.3 respectively. Whereas the possible recommendations and suggestion for further research are also presented in section 5.4 and 5.5, respectively.

5.2. SUMMARY OF MAJOR RESEARCH FINDINGS

The purpose of this study was to assess the effect of management information systems on operational performance in the case of commercial bank of Ethiopian (CBE). This study of the effect of MIS was limited to operational performance within geographic location of Gurage Zone only. Further, this study was focused on purposively selected population of the bank working on different operational position of the core business process of the bank from district to branch. The Core business of the bank at district level those their operational works depend on MIS are: human resource and research department, Credit and international banking department, Legal department, internal audit department, internal control and quality department, digital banking department, procurement and facility department and MIS & IT support department. At the branch level there is no department but according to the branch grade level that the bank follow from Grade one (I) – Grade four (IV) branch manager, quality and control manager, business manager, Digital banking manager, customer service manager, operational officer and customer service officer. Based on the above description the purposively selected population position was categorized as manager, operational manager, and senior operational officer and MIS/IT officer position. The selection has been made based on purposive selection techniques. The operational performance was taken as the dependent variable and variable such as network and infrastructure, digital banking, DBMS, people and process, and Application system were considered as the independent variables in this study.

The basic questions of this study were focused the effect of MIS and operational performance based on the availability of the following question 1) the availability of Network and infrastructure, 2) the

availability of digital banking, 3) the availability of usable application systems, 4), The availability of responsive Database management system (DBMS), 5) the availability of expertise and adequate people and feasible process of MIS, 6) How the digital banking (E- banking) support in increasing bank profitability, 7) how the application system and DBMS is helpful in supporting overall managerial functions in the banks, and 8) How the application system and DBMS is helpful in supporting overall managerial functions in the banks. The availability of all variables 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.

In this study, both primary and secondary data were used as source of information, based on the research objective, English version questionnaires were prepared adopted from previous study. One hundred fifteen (115) employee were approached using non – probability sampling (purposive sampling technique). From survey forms, 93 are completed and returned. This is 81 percent response rate.

Regarding the demographic information distribution of the respondents made through the descriptive and frequency statistic data analysis techniques, the table 4.1 illustrates that majority of the respondents (68.8%) were males and (31.2%) were females. With respect to age information of the respondents majority of the respondents are younger which is 53.8% are between the age of (30– 40 years old) this mean that most of the employee working in CBE are younger. Moreover the table 4.1 also indicates that majority of the respondents has master's degree (50.5%) and the next most educational level is degree holder (46.3%). As table 4.1 illustrates majority of the respondents has married status (80.6%). Majority of the respondents has experience of above 10 years (29.0%) and the next most experience year is between 7 – 10 years (26.9), and majority of the respondents has position of senior operational officer (49.4) and the next most position of respondent is business manager (23.7%).

When the effect of MIS in CBE is reviewed how it was enhancing operational performance in CBE based on fast network and well organized and installed infrastructure having enough computer for operational work, operating the digital banking, responsive database management system(DBMS), expertise people and feasible process, and application systems. As the findings of this study indicated in table No. 4.14 respondents of the CBE agreed with the five dimensions of the effect of MIS. Moreover, the respondents agreed with the five dimensions of the effect of MIS by giving the

higher rate scale to digital banking, followed by application system, network and infrastructure, DBMS and people and process with average mean of 4.70, 4.28, 4.75, 4.32, and 4.61 respectively.

Also the results of the correlation analysis in table 4.16 shows that all the independent variable i.e. network and infrastructure, digital banking, DBMS, people and process, and application system are positively and significantly correlated with dependent variable i.e. operational performance at 96 percent confidence level ($p<0.01$). The highest correlation is signified by application system (0.711), followed by DBMS ($r = 0.591$), network and infrastructure ($r = 0.571$), people and process ($r = 0.56$), and digital banking ($r = 0.388$).

The result of the reliability for all variables in table 4.17 shows that all variables in this study Cronbach alpha coefficient was used on statistical application software SPSS. Thus, the Cronbach's alpha for this study was found to be 0.85. This indicates that internal consistency or reliability for variables in this study is found at acceptable or respectable rate.

Furthermore, table 4.18 depicts the results of multiple regressions of the five underpinning of operational performance. The result shows that the model tested is significant ($p < 0.01$). In commercial bank of Ethiopia the adjusted R square 0.656 indicate that 65.6 of variance in operational performance attributed to the five independent variables entered into the regression. The remaining 35.4 percent of the variance in operational performance may attribute to other factor.

5.3. Conclusion

This research examined the effect of MIS on operational performance. During the investigation the researcher used both descriptive and inferential statistical analytic technique. Based on the findings he made the research to end by outlining the following classic conclusions.

From the findings of the study showed that most respondents seem to be aware of the existence of independent variable, management information system in commercial bank of Ethiopia, having good network and infrastructure, digital banking, DBMS, people and process, and application system. Therefore, the researcher can convincingly conclude that the management information system fairly exists in CBE.

The findings of the study showed that the commercial bank of Ethiopia have good network and infrastructure. Therefore, the researcher can convincingly conclude that network and infrastructure

of the bank has well installed network, appropriately configured infrastructure and enough computer for operational work with medium speed of network that support the operational work by collaborating co – operational work for the staff and also interconnect each computer both locally and centrally. However, as a result of the finding shows commercial bank of Ethiopia is better in terms of network and infrastructure next to application system. This brought significance change in the operational performance, in availing service of management information system. Whereas, the absence the network and infrastructure could possibly undermine the success of the management information system unit as well as the bank as a whole because of that the bank is recommended to focus on this component of MIS.

The finding of the study showed that majority of respondents agreed on the availability of digital banking (E – banking) in CBE having user friendly and simple to use of digital banking and actively working of ATM service, and reducing operational work for employees reasonably. In the same way the increasing number of digital banking user customer this increases the profitability of the bank by increasing the customer satisfaction and reducing the number of employees replacing the service provided on windows of customer service by ATM service, Mobile banking, and Internet banking, therefore , the study conclude that the digital banking increases bank profitability . on the other hand the existing available telecom service become on and off frequently, which is negatively affect the digital banking service, as a result sometimes the interruption of digital banking happened and its recommended the bank to focus on this point.

The finding of the study showed that majority of the respondents are agreed on the application system of MIS providing better service for both internal and external customer of CBE, using different the application system the internal customer request for different service, like leave request, payment for different benefit the bank provides, request for different support for the problem happen inside the office and also provides response for the requested actions and by using application system facilitate internal communication, generate report, and for external customer provides service like credit and load service, account opening, mobile banking opening, ATM form filling and submission for the central and different account transactions service. Therefore the application system ensure high level service quality and effective information sharing among all the departments in the bank, and it support the day to day of each individual task, generates different report (account statement, daily log of each account, number of service proved) and the application is user friend and simple to use, generally it is supporting operational performance by providing

better service for both internal and external customer of the bank.

The finding of the study showed that majority of the respondents are agreed on the people and process in commercial bank of Ethiopia has expertise man power of for solving problem happen the bank concerning with technical problem happen to the Management information system, the expertise is specialized in three parts application systems and software, network and network related, and hardware maintenance, and the bank provide training for those work on MIS differently, according to their working areas. The process of the MIS is clear and understandable, and policies and procedures manual are available to the user of MIS. Despite the fact that a policy and procedures manual should be observed all the time and reviewed regularly is the area that the bank should focus on it.

The finding of the study showed that majority of the respondents are agreed on the database management system(DBMS), and Application system are provides accurate information for managerial function like : planning by reviewing the last past quarter work and forecasting the future by analysis the data accessed from MIS, controlling each operational work through system and evaluating each individual work by using the performance evaluation system of the MIS, and it helps in providing accurate information that helps to make precise strategic and managerial decisions. Therefore the DBMS and Application systems are plays a vital role in supporting overall managerial function and decision making process in commercial bank of Ethiopia.

In addition to the descriptive statistics, inferential statistics were made using correlation and multiple regression analysis and the results are concluded as follows.

Regarding correlation analyses, the result of the finding shows a positive and significant relationship between the effect of MIS (network and infrastructure, digital banking, DBMS, people and process, Application system) and operational performance. From this it is pertinent to conclude that the independent variables i.e. network and infrastructure, database management system, people and process, and Application system have the power to determine the market performance of the bank.

Furthermore, the multiple regression analysis notifies that in commercial bank of Ethiopia more than sixty five percent (65%) variance of operational performance is attributed to the effect of MIS (network and infrastructure, digital banking, DBMS, people and process, Application system). Therefore, the researcher can convincingly conclude that the independent variable the effect of MIS has a positive and significant influence on dependent variable operational performance in commercial bank of Ethiopia.

Generally the finding of this study conclude that the effect of MIS is positively affecting operational performance of the bank in providing better service for both internal and external customer, increasing bank profitability by reducing human resource, fixed asset by digital banking and also increasing customer satisfaction, and supporting overall managerial function and decision making process in commercial bank of Ethiopia, in Gurage Zone.

5.4. Recommendation

This study has demonstrated that the effect of MIS on operational performance of commercial bank of Ethiopia, in Gurage Zone. In light of the findings and conclusion made above, the following possible recommendation are suggested as being valuable to the bank for improving the effect of MIS application to assure operational performance of the bank.

In commercial bank of Ethiopia the Effect of MIS (Network and infrastructure, Digital banking, Database management system (DBMS), people and process, Application System) have to enhanced and applicable through the following:

- It is better the bank to improve the level of its Network and infrastructure standards by continuous development and deployment of network speed, up to date network and computer device and increase SP (service provider) telecommunication bandwidth the of speed, but the available network supply from the vender is interrupted or not sufficient 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 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 fibbers and broad bank lines and arranging especial agreement with Ethio-Telecom to have a 24/7 uninterrupted network service with full maintenance agreement.
- It is advisable the bank to culture the digital banking service for the customer and automatic fix for the problem the digital banking is facing currently is down of ATM service and the core banking for digital banking service to continually provide the service 24/7 and increase bank profitability with customer satisfaction.

- The existing MIS procedure in CBE is timely revised, easily understandable and shows the work flows for MIS reasonably. Whereas, this procedure lacks flexibility or compatibility to give directions or actions for issues outside the workflows sated in the procedure when arise. Therefore, the bank is recommended to revise the in every situation aligning with the operational work environment and feature version aspect of MIS.
- The available manpower in the MIS department has skill and knowledge for MIS, has working experience and commitment and those working on the operational environments of MIS also have skill of using and operating their task using MIS. Whereas, the bank has no adequate manpower in number and the motivational level for of these staff should be the focus part of the bank.
- Finally, because of the effect of MIS operational performance cannot be realized without MIS development and improvements through time, research study has to be undertaken and the bank has to promote importance of MIS for effective operational performance the bank.

5.5. Suggestion for further Research

This study assessed only the effect of MIS in commercial bank of Ethiopia (CBE). As a result, the main focus of this study was not more than reviewing and assessing the existing effect of MIS and operational performance of the bank. Therefore, the researcher would like to recommend further study on the challenges of MIS implementation in organization and the effect of MIS on the overall organizational performance by selecting other than banking sector, because since this study shows that MIS has positive effect on operational performance any organization may need to implement MIS so that the further study may show the challenges and on the other hand the study on overall organizational performance illustrate the effect dimension of MIS on overall organizational performances.

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APPENDIX

WOLKITE UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

REQUEST FOR RESEARCH DATA

Dear Respondents; this questionnaire is designed to collect data to carry out research entitled "The effects of Management information system on operational performance; in the case study of commercial bank of Ethiopia, in Gurage Zone." The information that you offer with this questionnaire is uses as a primary data in this study which the researcher conducting as a partial fulfillment of the requirements for the Degree of Masters of Business Administration (MBA) in Wolkite University. Therefore, this research is to be evaluating in terms of its contribution to our understanding of the MIS and its Effect on operational performance. Any information you provide in this questionnaire will be kept confidential and it will be used only for the academic purpose.

Instruction:

- There is no need of writing your name

- In all cases where answer options are available please **put (√) sign in** the appropriate choice answer

I would like to express my deep appreciation for your generous time, honest and promptresponses.

Contact: (**Ph.no:** +251917061177, **Gmail:** siyoumkedru@gmail.com)

You're faithfully!

PART A: GENERAL INFORMATION

1. **Gender**

   Male ☐ Female ☐

2. **Age**

   20 -30 years ☐ 31 -40 years ☐ 41- 50 years ☐ above 50 ☐

3. **Educational level of the respondents;**

   Diploma ☐ First Degree ☐

   Master's and above ☐ P.H.D ☐

4. **Marital status:-**

   Married ☐ Single ☐ Widowed ☐ Divorced ☐

5. **Work experience**

   Less than 1year ☐ 1 - 3 years ☐ 4-6 years ☐

   7-10 years ☐ above 10 Years ☐

6. **Current work position**

   Manager ☐ Operational Manager ☐

   IT/MIS officer ☐ Senior Operational officer ☐

PART B: Question Relate to independent variables of MIS on Business operations in the banks

This section is seeking your opinion regarding the selected MIS practice of your Bank. You are required to circle or tick ONLY ONE number which reflects your most appropriate response. Please indicate to what extend you agreed or disagreed with each statement by marking **[X/√].** Where 1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree

Table 1.1:- Assess the application of MIS with respect to providing better service.

What are the levels of MIS Application? 1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree		1	2	3	4	5
A	**Network and infrastructure**					
1	There is fast telecommunication networking service in CBE	1	2	3	4	5
2	There is adequate network installation in CBE.	1	2	3	4	5
3	The network in bank is interconnected for co- operational work	1	2	3	4	5
4	The bank have enough computers for the operational works	1	2	3	4	5
5	The computer in bank are locally and centrally interconnected	1	2	3	4	5
B	**Digital Banking (E- Banking)**					
6	The E-banking provide better service for customer	1	2	3	4	5
7	The ATM service work 24/7 actively work	1	2	3	4	5
8	The E- Banking service are simple to use	1	2	3	4	5
9	The E-banking reduce operational work load for employee.	1	2	3	4	5
10	The digital bank increase bank profitability.	1	2	3	4	5
C	**Database management System(DMBS)**					
11	The MIS – DBMS stores data for the future uses like forecast business	1	2	3	4	5
12	The MIS – DBMS are responsive to your required data/information	1	2	3	4	5
13	The response time of MIS in the bank is good	1	2	3	4	5
D	**People and Process**					
14	The bank has trained professionals working on MIS and experts to fix anyproblem happen.	1	2	3	4	5
15	The MIS/ IT department has adequate number of manpower.	1	2	3	4	5
16	Flexible MIS procedure exists in CBE to do works as required.	1	2	3	4	5
17	Easily understandable MIS procedure exists in CBE.	1	2	3	4	5
E	**Application System**	1	2	3	4	5
19	The application systems you are using for your works supports your overall Works.	1	2	3	4	5
20	The systems you are using increase the speed of customer service	1	2	3	4	5

21	The system uses in facilitating better knowledge management for the banks.	1	2	3	4	5
22	The system helps you in generating different types of report	1	2	3	4	5
23	The system played significant role in day to day operation	1	2	3	4	5

PART C: Question Relate to dependent variables of Operational performance in the bank

Table2. 2:- The How MIS support decision-making (Business Operations) on the bank.

How MIS Support to increase operational performance in the Commercial bank of Ethiopia? 1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree		1	2	3	4	5
1	The digital banking(E- banking) support in increasing bank profitability	1	2	3	4	5
2	The network and infrastructure of the MIS support in collaborating (Integrating) co- operational work with your staff.	1	2	3	4	5
3	MIS – system Application support you in providing better service for both Internal and external customers.	1	2	3	4	5
4	The application of MIS helps in increasing operational performance in the CBE.	1	2	3	4	5
5	The database management system (DBMS) helps in providing accurate Information for Decision making in the bank.	1	2	3	4	5
6	The skill full MIS-Expert and a clear process of MIS is support operational performance of each individual tasks in the bank	1	2	3	4	5
7	The application system of MIS is helpful in supporting overall managerial functions in the banks	1	2	3	4	5

Part D; please give suggestions/recommendations on the effect of MIS on operational performances? For managers, employees and service for customers made better?

Part A. Interview question concerned with Independent Variables

1. How do you describe the uses of MIS in the Network and Infrastructures? (Device,Standard of Installation, Speed and connectivity)

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2. How do you describe the MIS uses in Digital Banking (E-Banking)?

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3. In what extent does the System application of MIS support the bank operational work?

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4. In what extent the Database management system (DBMS) helps the operation of thebanks?

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5. In what extent does people and process of MIS are fast to Support the operational work of the bank (skill, enough human resource, clear and simple process)?

Part B:- Interview question Related to dependent variables.

6. How MIS support operational work of the bank?

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7. Does the Network and infrastructure help in collaborating and cooperatively working of Operational work at the bank?

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8. In what extent the Digital Banking increases the Profitability and providing betterservice for the bank customers?

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9. How do you describe that the DBMS of MIS support the overall Managerial function of the bank?

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10. What you want to add additionally about the MIS on operational performance of thebank?

