DEBRE MARKOS UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF MANAGEMENT

THE EFFECT OF ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM ON ORGANIZATIONAL PERFORMANCE IN THE CASE STUDY OF EEU DEBRE MARKOS DISTRICT, ETHIOPIA

THE THESIS SUBMITTED TO THE DEPARTMENT OF MANAGEMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (MBA)

BY

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January 2025

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THE EFFECT OF ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM ON ORGANIZATIONAL PERFORMANCE: A CASE STUDY OF EEU DEBRE MARKOS DISTRICT, ETHIOPIA

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Declaration

It is to certify that the thesis entitled "The Effect of Enterprise Resource Planning (ERP) System on Organizational Performance In The Case Study of EEU Debre Markos District: Evidence From Ethiopian Electric Utility Companies," submitted in partial fulfilment of the requirements for the degree of Master of Business Administration Under the College of Business and Economics, Debre Markos University, is a record of original work carried out by me and has never been submitted to this or any other institution for any other degree or certification. The assistance and help I received during this investigation have been duly acknowledged.

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Approval of Thesis for Defense

I hereby certify that I have supervised, read, and evaluated this thesis titled "The Effect of Enterprise Resource Planning (ERP) System on Organizational Performance In The Case Study of EEU Debre Markos District: Evidence From Ethiopian Electric Utility Companies," prepared by Fikir Yirga under my guidance. I recommend the thesis be submitted for oral defense.

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I hereby confirm that the changes required by the examiners have been carried out and incorporated in the final thesis. Name of Student_____Signature_____Date_____

As members of the board of examiners, we examined this thesis entitled "The Effect of Enterprise Resource Planning (ERP) System on Organizational Performance In The Case Study of EEU Debre Markos District: Evidence From Ethiopian Electric Utility Companies," by Fikir Yirga. We hereby certify that the thesis is accepted for fulfilling the requirements for the degree of Masters in Business Administration award.

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Acronyms and Abbreviations

ANOVA Analysis of Variance

ERPS Enterprise Resource Planning System

CRM Customer Relationship Management

SCM Supply Chain Management

IS Information System

SPSS Statistical Package for Social Science

OP Organizational Performance

VIF Variance Inflation Factor

IP Internal Process

IM Inventory Management

MRP Material Requirement Planning

CBE Commercial Bank of Ethiopia

EEPCO Ethiopian Electrical Power Porporation

ERC Ethiopian Railways Corporation

EEUDMD Ethiopian Electric Utility Debremarkos District.

IT Information Technology

SME Small Medium Enterprise

QMS Quality Management System

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Abstract

Enterprise resource planning (ERP) systems play a fundamental role in supporting in several industries including the service and product industries. the relationship between ERP systems and organizational performance, as well as their effects, have not been clearly identified and well recognized at EEU Debre Markos District. The main purpose of this study was to examine the effect of ERP system on organizational performance. The study adopted a cross sectional research design. And analysed descriptive and inferential statistics. Systematic sampling was used to select a sample of 250 employees from 665. The demographic features of the respondents and their overall assessment of the link between the dependent and independent variables were described using descriptive statistics including frequency, percent, mean, and standard deviation. The inferential statistics like Pearson correlation and simple linear regression were used to show the relationship between independent and dependent variables. In addition, to determine the effect of independent variable (ERP) system on the dependent variable (OP). The findings of the study indicated that, ERP system has positively and strongly correlated and claimed statistically significant relationship in organizational learning, decision making, Supply chain management, inventory management and customer relationship management on organizational performance. Finally, The study recommends improvements in internal processes, information systems, organizational business value, and employee management to enhance organizational performance. As a result, it enables to improve the benefits from ERP system.

Key Words: ERP system, Inventory management, Employee management, Internal process, Organizational learning, Decision making, Information system, Organizational business Value and Supply chain management,.

CHAPTER ONE
INTRODUCTION

1.1. Background of the Study

Enterprise resource planning (ERP) systems play a fundamental role in supporting various industries. According to Abugabah and Sanzogni (2009), ERPS is hugely responsible of optimum performance industries such as the transport, telecommunications, and education, manufacturing as well as airline industries. Njihia and Mwirigi (2014), observe further these systems support a spectrum of activities in modern organizations including sales, billing, marketing, human resource management, quality control and production thus ensuring general performance of the organization through facilitation of these pertinent processes. Motwani (2016) makes a similar observation noting that ERPs are of fundamental benefit to firms in terms of facilitating performance.

ERP systems are regulatory and flexible, integrating information and processes within an organization (Hendricks et al. (2014). As such, the ERP systems, integrate the firm's internal and external management information throughout the company, embracing a spectrum of process including sales, marketing, customer relations, services, manufacturing, accounting/stoke finance and management among others Garcıa & Bernal (2007). The effect of ERP systems on organizational performance is therefore observable from the fact that these systems effectively facilitate organizations principal process.

Enterprise Resource Planning (ERP) is a cross-functional enterprise system directed by a modulate group of software modules that sustain the basic internal business processes of any given organization Kumar and Hillegersberg (2000). Kumar and Hillegersberg (2000) define enterprise resource planning (ERP) systems as ‘‘configurable information Systems packages that integrate information and information-based processes within and across functional areas in an organization (Maxie *et al*. (1991). In information systems (IS) area, implementation is defined as the process that begins with the managerial decision to install a computer based organizational information system and is complete when the system is operating as an integral part of the organization's information system (Zhang *et al*. (2005).

ERP software provides integration of every aspect of procurement, production and delivery for manufacturers regardless of whether they are a make-to-stock, make-to-order or engineer-toorder

manufacturer. A manufacturing company will be concern with software functionality that focuses on maintaining optimal inventory levels, facilitating quick movement of goods,providing strong front office functionality for customer service personnel, and delivery flexible reporting for management.). In Africa, countries such as South Africa, Kenya, Nigeria, Ghana, Egypt and Tunisia have witnessed an increase in the usage of the ERP systems by their firms. South Africa leads Africa in terms of companies that have applied ERP systems to facilitate organizational processes (Mukwasi C. M. & Seymour L. F., 2014). Other countries such as Egypt, Kenya, Nigeria and Ghana have also proved a four significant increase in the number of organizations adopting the use of ERP systems.

Establishment Electric power was introduced to Ethiopia in the late 19th century, during the regime of Minilik. He got constructed the first hydro power plant on Akaki river in the year 1912 in order to supply power to the small factories that had been established in Addis Ababa. Consequently, the power supply that had been limited to small factories and the place was extended to public places and major roads in the vicinity of the place.

In the year 1948, an organization that had been vested with the power to administer the enemy property was evolved to an organization called Shewa Electric Power. The new organization Shewa although with limited capacity, managed to increase the power supply not only in Shewa, but also other administrative regions. In lights of its functions, its name was changed to "Ethiopian Electric Light and Power" in the year 1955. Soon after, its establishment, the supervision and management of the organization was vested in the Board of Director appointed by government.

After eight months of it's' establishment, the Ethiopian Electric Light and Power was transformed to the "Ethiopian Electric Light and Power Authority" (charter of the Ethiopian Electric Light and Power).

The newly established authority was conferred with the powers and duties of the previous one. In light of the socio economic development of the country, the authority continued to increase the scope of its operation in order to accommodate new changes. After being in operation for about 50 years in this manner, major changes in the objectives and structural setup of the organization took place relative to the changes in the socio economic conditions of the country.

In the year 1987 Ethiopian Electric Light and Power Authority was transformed to the Ethiopian Electric Power Corporation and also in the year 2006 E.C to organize two companies Ethiopian electric Utility and Ethiopian electric power by recognizing its functions EEU to distribute electricity and collect bill from customers whereas EEP generation and transmitting electricity on the basis of the principles of commercialization and decentralizationcouncel of minister R.no, 303/2013)

A number of companies in Ethiopia like: Commercial Bank of Ethiopia (CBE), Ethio-Telcom, Ethiopian electrical power corporation (EEPCO), Ethiopian insurance Corporation, Addis Ababa water and sewerage authority and Ethiopian railways corporation (ERC) adopted enterprise resource planning (ERP) system and facilitate their operation and to boost up their performance towards their goal (www.erpst.com, 2017). Among those companies, Ethiopian electric utility has implemented the system. However, the studies reviewed by the researcher those related to effect and implementation of ERP system focused on government organizations and contexts which present a contextual gap. Thus, the researcher attempts to study the effect of ERP system on organizational performance, particularly, at Ethiopian electric utility Debremarkos District.

1.2. Statement of the Problem

An effective business strategy centers on an aggressive, efficient use of information technology; for this reason the ERP systems have emerged as the core of successful information management, and the enterprise backbone of many organizations (Karimi J., 2017). Companies are under vast pressure to ensure continuity of key operations with fewer resources. But many companies most of the time look to their enterprise resource planning (ERP) systems to find efficiencies, improve processes, reduce complexity, integrate systems, and eliminate redundancy.

A study conducted by Saleh T. & Thoumy M., 2018 conform that ERP modules have a positive varying effect on organizational performance measures, Bernroider E. W. N., 2008 confirmed on his study that implementing the ERP systems enable extra efficiency on organizational performance than non-adopting organizations, and Calisir & Calisir, 2004; Gattiker & Goodhue, 2005; Ruivo, Oliveira, & Neto, 2012 proves that many organization believes that ERP systems help users collaborate throughout and across departments, companies, and the industry network, increasing productivity and the performance of firms and their clients.

Therefore, enterprise resource planning (ERP) plays a crucial role in improving organizational performance. Thus, organizations are investing huge amount of money on it with guarantee that it will earn them a competitive advantage in the world of business. Now a day in Ethiopia a lot of organizations are adopting this system, by believing that the system could improve their performance (Engidayehu G., 2014).

According to the preliminary survey conducted by the researcher and communicated with the Dirctor and Human resource management development, the effect of ERP system on organizational performance and the degree of association of these two variables will be not evidently identified and well recognized. This implies a knowledge gap regarding the effect of ERP systems on organizational performance and their relationship within the Ethiopian Electric Utility Debre Markos District. These existing problems and empirical evidences caused this research with the purpose of examining the effect of effect of ERP system on organizational performance between 665 sample respondents. Thus, this study began from the understanding of the need to effectively administer the effect of ERP system on organizational performance at Ethiopian Electric Utility Debre Markos District.

1.3. Research Questions

The study answered the following fundamental research questions.

- What is the magnitude and Variation of ERP system and performance of Ethiopian Electric Utility Debre Markos District?
- Does the organization secure expected benefit from implementing the ERP system at Ethiopian Electric Utility Debre Markos District?
- Is there a relationship between ERP system and organization performance at Ethiopian Electric Utility Debre Markos District?
- To what extent the ERP system influences organizational performance at Ethiopian Electric Utility Debre Markos District?

1.4. Objectives of the study

1.4.1. General Objective

The general objective of this study is to examine the effect of Enterprise Resource Planning (ERP) System on organization performance at Ethiopian Electric Utility Debre Markos District (EEUDMD).

1.4.2. Specific Objectives

The specific objectives were:

- To estimate the magnitude level and variation of ERP system and performance of Debre Markos District
- To examine the benefits from implementing ERP system at EEU Debre Markos District.
- To show that existing relationship between ERP system and the performance of EEUDMD
- To determine the effects of ERP system on the performance of Debre Markos District.

1.5. Significance of the Study

The purpose of the study was to examine the effect of ERP system on organizational performance at Ethiopian Electric Utility Debre Markos District; and the findings produce empirical results that contribute to the private sector to show that, to what extent the ERP system affect their operation and its linkage to organizational performance. It is also useful to enhance the benefit gained by the system and other private sector who does not adopt the system will find the results of the research as a useful device to understand and learn that the system has a contribution on organizational performance. The study was also serving as a secondary source for those who want to make further study. In general, this research is essential for any organizations as a document to enhance organizational performance.

1.6. Scope of the Study

The study mainly focuses on the assessment of the effect of ERP system on organizational performance of Ethiopian Electric Utility Debre Markos District. Thematically, it was focuse on

the operational performance and benefits from adopting the ERP system (which is conceptualize by many variables). Only nine ERP system roles are extracted from literature was considered in this study even though, there are many ERP system roles to be considered in the effect of ERP system on organizational performance.

1.7. Organization of the Study

The study was organized in the following ways. The first chapter is the introduction. It covered the background of the study, the statement of the problem, the research questions, the study's objectives, the study's significance, and the delimitation of the study. The second chapter is a literature review and treats theoretical, empirical, and conceptual aspects. The third chapter is research methodology. It comprised research design, data sources, population and sampling technique, sampling design, and the method of data analysis. The fourth chapter is data analysis. In this section, collected data was interpreted and discussed in light of empirical studies. Chapter five's last chapter provided a summary, conclusions, and future directions.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

This chapter attempted to provide a context for the study. This study examined the effect of enterprise resource planning (ERP) system that help the researcher to understand and identify the effect being studied more appropriately. The review includes basic issues like: concepts and meaning of ERP system, Theories of ERP system, the roles of ERP system, effect of ERP system & organizational performance and finally the conceptual framework model.

2.2. Concept and Meaning of ERP System

There are different definitions of ERP. An Enterprise resource planning system commonly known as an ERP system can be defined as a set of commercial software packages and hardware that promise unified integration of information flow through all functional areas in a firm via providing them access to single database. “Integration” is the key word for ERP implementation. Enterprise resource planning (ERP) is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes such as order fulfillment or billing. The ERP software encompasses the best business practices which a firm can use to replace existing legacy systems. An ERP system supports most of the business system that maintains in a single database the data needed for a variety of business functions such as manufacturing, supply chain management, financials, projects, human resources customer relationship management, knowledge management and talent management (Nishad Nawaz, K Channakeshavalu, 2013).

According to Spano and Bello (2010), ERP is a kind of advanced Information System (IS), which is capable of providing a comprehensive impression of the firm as well as shared database in which the firm‟s transactions are both recorded and stored. Parr and Shanks (2000), explain that the ERP system software typically comprises of several enterprise software modules, which are purchased separately, based on the organizations specific technical capabilities and needs, such as sales, service and product development and intra-organizational communication. Some of the most common ERP modules consist of those for material

purchasing, product planning, inventory control, accounting, distribution, marketing, human resource and finance.

According to Laudon and Laudon (2013), an ERP system comprises integrated software modules. and a central database that facilitates an organization to manage the efficient and effective use of resources (materials, human resources, finance etc.) by automating and incorporating business processes, data sharing throughout the enterprise and enabling information access in real-time environment. Scholars have argued in favor of multiple business value of ERP. Some of the stated values include improved business insight (due to the possibility or availability of real-time information produced by reports) lower organizational operational costs (via well-defined and more streamlined business activities and processes), enhanced collaboration between organizational staff, as well as between the organization and other stakeholders through effective data sharing in requisitions, contracts and purchase orders (Al-Mashari, 2003; Fosser, et al.,2008; Dirisu, et al., 2013). Thus, a firm implementing an ERP system can have benefits such as fast and accurate information gathering, quick decision making, low inventory cost, improved interaction with customers, improved product quality and manage the entire organizations‟ resources efficiently and effectively.

2.3. Evolution of ERP System

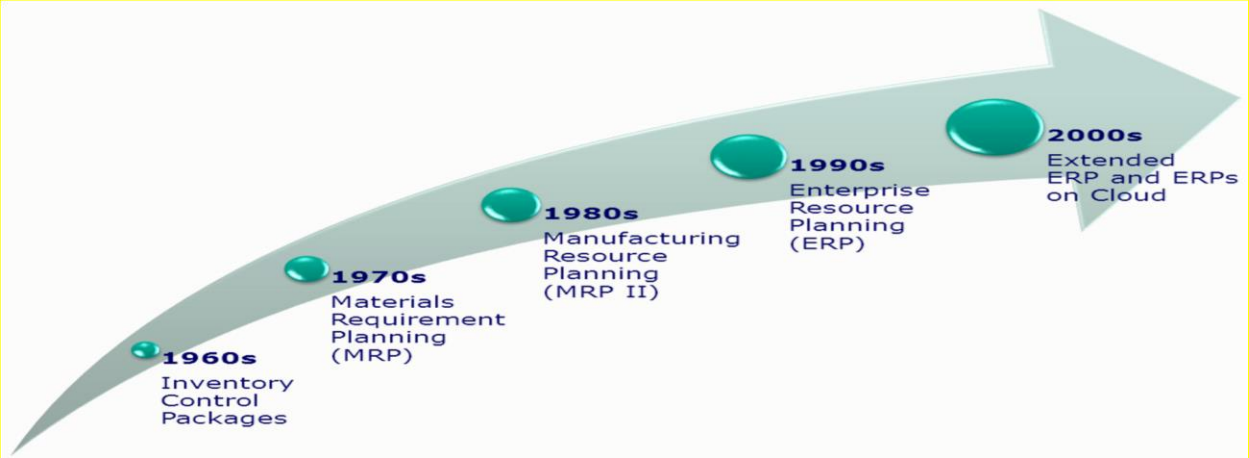
Most research studies view the evolution of ERP systems from a manufacturing perspective. In the late 1950s and the early 1960s, automated reorder point (ROP) systems were used for scheduling production, ordering materials, and shipping products within an assigned plant area. the mid-1960s, computerized materials requirements planning (MRP) systems began to replace ROP systems. These systems represented the first off-the-shelf business application systems available in the market. They supported the creation and maintenance of master data and bill of materials (BOM) across all products and parts in one or more plants. BOM processors and forecasting algorithms along with computerized production reporting tools formed typical parts of the MRP system. In the mid-1970s, manufacturing resources planning (MRP II) systems began to replace MRP systems. MRP II systems integrated materials as well as production capacity requirements in the calculation of overall production capabilities. In addition, advanced reporting capabilities enabled the efficient scheduling and monitoring the execution of production plans. The IT underlying MRP and MRP II systems focused primarily on automating

transactions in order to increase the firm‟s operational efficiency. (Chung & Snyder, 2000; Klaus, Rosemann, & Gable,2000; Rondeau & Litteral, 2001).

The MRP systems typically ran on mainframes, reflected centralized computing, involved limited interactions between users and the system, and had low levels of functional integration. The MRP II systems, in contrast, mainly used multi-user networks and ran on a variety of IT platforms. The late 1980s witnessed rapid advances in technology and MRP II systems were integrated with other systems such as computer integrated manufacturing (CIM), just-in-time (JIT), electronic data interchange (EDI), and manufacturing execution systems (Hsieh & Kleiner,1992; Rondeau & Litteral, 2001).

In the early 1990s, ERP systems replaced MRP II systems. ERP systems extended MRPII system functionalities to include functions such as human resources, sales and distribution, and quality to create seamless, integrated information flows across the entire firm. ERP systems comprise of a suite of integrated products that use a common IT architecture and can be linked or de-linked and integrated with legacy and other application systems. These systems run on multiuser networks and allow the simultaneous aggregation, de-aggregation, and manipulation of real time data across functions. ERP systems now form the IT backbone of firms and their functionalities have extended to include inter-firm integration facilitated by business applications such as electronic-commerce (E-Commerce), SCM, and CRM (Sadagopan, 1999; Chung & Snyder, 2000).

ERP systems produced by companies such as SAP (Systems Applications and Products in Data Processing) gained more interest in the market because they enabled firms to upgrade their capabilities and to improve their business processes and procedures. In the highly competitive and rapidly changing business environment, a firm needs to make right and timely decisions. ERP systems enabled firms to gain competitive advantages through integrating and optimizing business processes (Davenport, 1998). For that reason, ERP has gained importance in the business strategy field.



Source: -Rashid, Hossain & Patrick (2002).

Figure2: 1 shows the historical evolution of ERP system.

2.4. The Roles of ERP System

2.4.1. The Roles of ERP in Information System

Shuhaimi N. S. A. et al., (2016), argued that the main role of ERP systems in firms is the facilitation of access to appropriate operational data in real-time. Arnold (2006) argues that these systems suit management desires for informed decision making through making a way into crucial information accessible to managers in real-time. This achievable because ERP systems permit for the collection and storage of huge amounts of information in centralized database (Shuhaimi N. S. A. et al., 2016). Therefore companies able to balance constant and precise information transporting personnel, units and departments and reach a complete and endless information flow (Al-Tarawneh, 2012).

The collected information in the databases can be used straight or the organization can use other forms of data pulling out techniques and technologies to make the data more fitting for managerial decisions (McFarland M. S. J., 2012). Ponorica, *et al.,* (2013) conducted similar study when they disagree that ERP systems present uninterrupted and accuracy of information and thus enhance the managerial decision-making processes. Everyone in the organization

depending on the type of information they are allowed to access is able to access the information they need to carry out their tasks.

Other studies show that managers in organization nowadays consider ERP systems as competent of generating extremely important information that is not important to the management but to the rest of the employees in a firm. Some basic information that can be obtained in the ERP systems includes financial and non-financial information (Gavrea C. et al., 2011). The financial information that managers and employees can acquire from ERP systems are diverse. These include net profit, profitability, return on assets, share prices, installation, and maintenance costs. The non-financial information built-in firm learning processes and internal processes including such things as decision made, meetings and records customer feedback, complaints and satisfaction (Shuhaimi N. S. A. et al., 2016). Shuhaimi N. S. A. et al., 2016 disagree that ease of use and control of information in the databases could let the firm to create and control various types of financial and managerial reports and able to modify them based on user's needs. As a result, the majority scholars seem to agree that a successfully adopted ERP system positively contributes to access to information in the firm.

2.4.2. The Role of ERP Systems in Enhancing Business Value

Organization objectives for information technology (IT) are supported by their major two business goal of operational effectiveness and strategic positioning (Porter M. E., 2010). Operational effectiveness can be defined as doing similar activities better than competitors' andgive attentions on efficiency and effectiveness of functions. Strategic positioning contains performing activities in strategically different ways and consists of structure and accessibility goals.

Table 2: 1 Breakdown of IT Business Objectives

Business Objectives - Goals for IT			
Operational Effectiveness		*Strategic Positioning*	
Efficiency	Reduce Operating Costs	Structure	Improve Practices
	Increase Productivity		Create Competitive Adv.
Effectiveness	Increase Flexibility	Reach	Increase Geographic Reach
	Increase Responsiveness		Increase Customer Access

Organization have implementing several supports of operations strategy such as continuously improving, running operations at minimal costs yet with speed and high trustworthiness, and the ability to change (Datta P. P. & Roy R., 2011). The business value of ERP systems is achieving recognition among many companies. The industry value of ERP systems is achieving recognition among both large firms and SMEs. Between the years 1997-2007, organizations spent beyond 70 billion US dollar on ERP system all over the world (Welch J. & Kordysh D., 2007).

A lot of investment focus in this technology is partly a product of intensifying worldwide strategic partner networks. SMEs are able to create a center of attention business form larger customers previously believed to be out of reach. Basically defined, they connect both humans and applications with structured communication to offer the desired information at the exact time. This mutual environment outcomes in increased efficiency and effectiveness (Ruivo P. et al., 2012).

2.4.3. The Roles of ERPS in Customer Relationship Management (CRM)

Superior customer satisfaction is vital for organizations give the impression of being to survive a competitive global manufacturing environment. in reality, CRM has been increasingly considered as a heart business strategy (Lindgreen A. et al., 2006). The business value of having loyal customers and the cost of replacing former ones emphasizes the importance of minimizing defections as research shows high customer retention achieves above-average profits and higher growth in market share (Reichheld F. F. & W. Earl Sasser J., 1990). Customer service, product quality, and on-time delivery, are quite a few aspects of business that influence the level of satisfaction. In terms of customer service, online stages can improve client relations by giving simple and prompt access to data from any area inside or outside of the office.

Customers, and other stakeholders provided with security clearance are capable to access preferred information as they needed. Also, ERPs manage the cost of adaptability in reactions to client data demands. The benefits of speeding up communication and transaction times with customers can shorten product cycles (Lederer et al., 2001). Kumar M. & Antony J., (2008)directed a study and played out a relative examination of lean, Six Sigma, and ISO guaranteed firms to catch the assessments and voice of assembling clients in the U.K. The outcomes distinguished the three most significant models to win customer loyalty as manufacturing quality, product reliability, and on-time delivery of the final product. In spite of

increments in CRM speculation by organizations, the achievement rate for executions is below 30%(Rigby et al., 2002). Thus there is room for improvement in this area.

2.4.4. The Roles of ERPS in Inventory Management

Inventory management is worried with the condition and amount of all assets ready or used in production as well as any operations from the moment raw materials are received to finished products being shipped to clients. Traditional inventory control systems depend on periodic counting due to the boring nature of labor-intensive systems. Though labor-intensive and costly, periodic counting is essential to decide how many assets are in store and where they are to be found throughout the facility. Cycle inventory counting is a different costly strategy that is regularly used in facilities. In this system, items are classified based on their regularity of use and based on their cost. Things with higher use or greater expenses are checked all the more regularly. Both periodic counting and cycle counting fail to optimize asset utilization and availability of inventory. Meanwhile, studies show that a constant survey strategy supported by real-time automated updates decreases on-hand inventory needs, reduces the likelihood of having an inventory shortage, lowers the order frequency and harmonizing costs and reduces the likelihood of having an inventory shortage (Cakici O. E. et al., 2010). Inventory difference is a problem that starts from the time a shipment of equipment is received. Research explain that deliveries which are timely, undamaged, furthermore, that contain the specific amounts, items, and delivery documentation just show up to offices 40 to 60 percent of the time (Sahin, 2004).

The availability of automated, timely, and relevant data can lead to improved reliability of inventory status, better management of quality problems, improved compliance to regulations, efficient product recalls, and reduced budget redundancies of assets. The role of ERP technology on inventory management extends beyond continuous review. Companies have implemented error-proofing functions to automate the prevention of mistakes in operational processes thereby meeting standardized work practices. During production, employees are able to consult with the automated system to determine the exact piece of equipment needed, locate it within the warehouse, and quickly refer to a step-by-step guide for assembly opposing potential mistakes such as choosing the wrong piece for assembly.

2.4.5. The Roles of ERPS in Employee Management

The difficulty and dynamic nature of activity within a manufacturing organization makes it hard for centralized facility managers to efficient manage the firm's employees. An absence of perceivbability across business works additionally adds to the misfortune that managers face every day. Employees of small businesses are often encouraged to perform multiple work functions, which promote rapid adaptation to external and internal changes. For example, during a period of global economic recession, companies receive fewer purchase orders, which consequences in organization looking to cut personnel to meet reduced demand. As demand for products goes higher, organization utilizing ERPs can make significant decisions such as whether to employ temporary or full-time personnel. The user-friendly nature of ERP systems and its integration with managerial processes minimizes the time-consuming process of training and education and allows managers to decide temporary workers to remain costs low yet not suffer from late productivity. Performance monitoring of staff is another advantage of ERPs. This type of control brings useful time-sensitive information such as tracking a worker's progress with an assigned task, identifying the other team members collaborating on the task, and storing any communication between the customers, suppliers, or staff. Also, employee monitoring ensures that suitable organization principles are being followed (Ramirez et al., 2010). While there is research taking note of the workforce's general aversion of checking, an ERP's follow-up capabilities are less intrusive since they focus on employee productivity rather than tracking their physical location.

Though further research is needed to provide evidence, Anand G. et al., (2009) noted the possibility in that ERPs can successfully fulfill continuous integration (CI) requirements and capture employee tacit knowledge and make easy bottom-up process enhancement ideas. Pearlson K. & Saunders C. S., 2001 declared that business entity only stay competitive advantage arises from the knowledge and experience of employees who are able to direct that knowledge to business problems. Furthermore, Barney, (1991) recognized human capital as a critical resource due to its impact on strategic decision-making by managers.

2.4.6. The Roles of ERPS in Supply Chain Management

Huge companies are dependent on small medium enterprise (SMEs) for their quality of products at lower costs. Increasing demand from the global market for these products has raised awareness of the significance of supply chain management (SCM) issues and the need for SMEs to invest in IS and quality management system (QMS). Recording and sharing real-time information has become crucial to improving performance in supply chain management. Facility managers who receive suitable information are able to facilitate decision-making, which can lead to shorter lead times and smaller batch sizes (Cachon & Fisher, 2000). Poirier C. & Quinn F., (2003)explain that the majority organizations are installing ERP system. ERP system enhances efficiency to these needs by providing real-time information related to product availability, inventory levels, the status of shipments, and production requirements (Lancioni R. A. et al., 2000). Managers can advantage from minimizing risk with forecasting in part due to the sharing of master production schedules with suppliers and customers. This allows detailed production quantity and timing decisions(Krajewski L. & Wei J. C., 2001). In addition to that, processing purchase orders and tracking shipments have been identified as critical integration tools (Barua, Konana, Whinston, & Yin, 2004; Frohlich & Westbrook, 2002). The Roles of ERP in Internal process .

According to Spano and Bello (2010) an ERP system can be understood as a software application that lead to firm's needs by assuming a process view as opposed to a functional view approach to determine the attainment of organizational strategic objectives by effectively integrating organizational functions and processes. Bosilj-Vuksic and Spremic (2004) explain that businesses processes are the overall tasks and activities that cross-conventional organizational and functional limits and that IT offers the best mean of integrating these activities and tasks. Mwirigi (2014) has argued that an ERP system carry a range of activities in recent organizations together with sales, billing, marketing, human resource management, quality control and production.

Zeng, et al., (2012) have contended that ERP systems do enhance efficiency of organizational processes and lead to cost cut. Spano and Bello (2010) argue that ERP are able to balance and enhancement organizational processes since they are designed to do just that. Bosilj-Vuksic and

Spremic (2004) explain that ERP systems are usually shaped to supplement business functions including manufacturing, processing and distribution.

In other words, these systems are recognized to provide, automate support to broad ranging business processes. consequently, ERP systems facilitate not only facilitate the integration of organizational processes, it also enhances standardization of processes across multiple business units with the objective of enhancing efficiency and making of profits (Bosilj-Vuksic & Spremic, 2004; Botta-Genoulaz & Millet 2006).

In addition, these systems are considered extremely important in them maintain of decision making. Ucakturk and Villard (2013) have argued that they add to the ease of use information serving the companies to encompass information in real time to make wise decisions and precise prognostics regarding the organization. One such vital support can be observed in the health sector, where the Clinical Decision Support (CDS) system facilitates disease diagnosis and surveillance (Berner, 2009). This is in line with Kelton, *et al.,* (2010) study which found that adaptation of ERP systems affects decision making processes in various contexts.

2.4.7. The Roles of ERPS in Internal process

According to Spano and Bello (2010) an ERP system can be understand as a software application that lead to firm's needs by assuming a process view as opposed to a functional view approach to determine the attainment of organizational strategic objectives by effectively integrating organizational functions and processes. Bosilj-Vuksic and Spremic (2004) explain that businesses processes are the overall tasks and activities that cross-conventional organizational and functional limits and that IT offers the best mean of integrating these activities and tasks. Mwirigi (2014) has argued that an ERP system carry a range of activities in recent organizations together with sales, billing, marketing, human resource management, quality control and production.

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2.4.8. The Roles of ERPS in Organizational Learning

Organizational learning can be conceptualized as an information management scheme, which involves systematic endeavor to transfer knowledge and skills throughout the whole firm (Zeng Y. et al., 2012). Ponorica, *et al.,* (2013) observe that organizational learning a change in firm's knowledge, which happens as a function of experience. The knowledge consists of declarative facts and knowledge, skills and routines as well as procedural knowledge. Researchers have used different means to measure organizational learning including determining cognitions of members, measuring knowledge embedded in routines and viewed changes with respect to reflective of changes in knowledge.

Based on that ERP system is valuable when it effectively enhances business information processing and provides the advantageous information enabling firm to achieve business planning, decision making, and business objectives (Hsu, 2013). Masquefa, (2008) contends that ERP is systematically generated around the best practices within firm and embedded business routines. Therefore, it is difficult to imitate and transfer. Moreover, e-business is an information

system based on internet technology such as extranet, EDI communication, and e-commerce that links organization's enterprise systems and information systems of business partners. Also, previous research found that integration of ERP and e-business has a positive impact on business value (Hsu, 2013). The speed of accumulation and assimilation of resources is the key to firm growth, as are opportunities arising from underutilization of its resources. Firms continually search for new ways to increase productivity and efficiency. New knowledge yields new ways of using existing resources or new ways of combining sets of resources (Gorla, *et al.*, 2010).

2.4.9. The Roles of ERPS in Decision Making

According to Al-Tarawneh, (2012), decisions are the outcome of a careful discussions and examination of alternatives. Decision-making process takes place at all levels of the organization and it involves problem identification and the consideration of multiple alternatives. The decision-making procedure is therefore a crucial process in the organization and a primary determinant of company success. in addition, decision-making is a extremely information dependent process, one which make use of heavily from the stakeholders and incorporate managerial intelligence to ensure the realization of potentially effective decisions (Ucakturk A. & Villard M., 2013).

As such, in business, decision-making is the identification and selection, from among a multiplicity of alternatives, a possible solution or strategy to a given problem in light demands of the circumstances (Al-Tarawneh, 2012). Nooriae (2012) challenges that decision-making is one of the major managerial functions and one with potential positive or negative consequences for organizational performance. It is suggested that this information-dependent attribute of decision making process is what makes ERP systems important to it. As such, ability in decision-making separates a performing from a non-performing organization and a successful from unsuccessful organization. This means that any input that facilitates supplements or enhances the quality of managerial decision-making directly enhances performance (Zeng Y. et al., 2012).

ERP also increases the availability of information helping the companies to have information in real time to make intelligent decisions and precise prognostics regarding the organization. Ucakturk A. & Villard M., (2013) contend that the key function of information systems (IS) is the ability to have crucial information for product and service development, and supporting key

business strategies including decision-making. In a study, Kelton A. S. et al., (2010) found that the implementation of ERP systems affects decision-making processes in various contexts.
Ponorica, *et al.*, (2013) makes a parallel observation when they argue that ERP systems support consistency and accuracy of information and for this reason improve the managerial decisionmaking processes. In a study conducted by Lečić D. & Kupusinac A., (2013), it was found that ERP systems act as fundamental decision support system, which integrates memory and processes to carry out simulations such as "what if" simulation. They further persistent that data warehouse performs analyses that support decision-making.

Ucakturk A. & Villard M., (2013) find that ERP systems are high reliable source of information for managerial decision-making. They further contend that ERP facilitate real time environmental analysis and provide managers with information that they can use strategically to ensure organizational performance. Management can, therefore, make decisions faster and with very few errors. Data becomes very visible across the organization. ERP systems enable managers to control the whole business and accelerate decision-making.

Through the use of ERP, managers are capable to access precise, well-timed and complete information that support their decision-making competencies (Al-Tarawneh, 2012). Ucakturk A. & Villard M., (2013) found that companies that had implemented ERP systems reported making successful and effective decisions. This result that ERP system improves the quality of the managerial decision regarding how to operate the company, react to pressure and opportunities and successfully position the company within a aggressive business context.

2.5. Organizational Performance

- Organizational performance is the most important construct in management research. The definitions of organization performance define by different authors and researchers. For instance Lebans & Euske 2006: p. 71 cited in Gavrea C. et al., 2011 provide a set of definitions to illustrate the concept of organizational performance:
- Performance is a set of financial and nonfinancial indicators which offer information on the degree of achievement of objectives and results
- Performance is dynamic, requiring judgment and interpretation.

- Performance may be illustrated by using a causal model that describes how current actions may affect future results.
- Performance may be understood differently depending on the person involved in the assessment of the organizational performance (e.g. Performance can be understood differently from a person within the organization compared to one from outside).
- To define the concept of performance is necessary to know its elements characteristic to each area of responsibility.
- To report an organization's performance level, it is necessary to be able to quantify the results. and also another authors Richard illustrated that organizational performance comprise three specific areas of firm outcomes: financial performance (return on investment, Profits, return on assets, etc.); product market performance (sales, market share, etc.); and shareholder return (economic value added, total shareholder return, etc.) in another way, firm performance can be measured using achieved performance approach (also referred to as subjective performance measure) where Likert-like scaling is used to measure firm performance from the top management perspectives(Selvarajan et al., 2007). Likert-like is a question that uses a five-point scale, sometimes referred to as a satisfaction scale, which ranges from one extreme attitude to another. Typically, interviews question includes a moderate or neutral option in its size.

Organizational performance also defined as the capacity and ability of an organization to efficiently utilize the available resources to achieve the stated goal, as well as considering its relevance to the user. Organizational achievements is calculated from more than a few indicators both qualitative and quantitative (Hashem S. J., 2015). These include financial performance and non-financial performance. Performance measures may be cost-oriented or non-cost oriented and can be internal or external. Even though organizational performance is the most broadly use dependent variable in organizational research, it still remains unclear and loosely defined. It has been traditionally conceptualized in terms of financial measures; but some scholars have proposed a wider performance construct that incorporates non-financial measures including among others market share, product quality, and company image and others (Richard et al., 2009).

Financial measures of performance are criticize for missing impartiality (Emmanuel et al., 1990); and support short-termism (Harris et al., 1994). Most management practices built more or less financial measures allow little relation to a company's improvement in achieving long term objectives. And also it criticizes for lacking sense of balance because they more of concerned with physical assets and ignore, for instance, perspectives of customers, and internal business processes. All these perspectives are necessary under the circumstances where companies transform themselves for competition based on information. Under the circumstances, nonfinancial measures of performance have also been used to measure the performance of a firm (Kaplan, 2009). Some studies Youndt M. A. et al., (2004) suggest giving a way for managers to assess their own firm's performance relative to others in the same industry or sector. They suggest the use of multiple items and multiple respondents to assess performance. This study opts to use non-financial in order to assess the performance of the organization under study. The items are non-cost oriented including Operational Efficiency, quality of product, Profitability, efficiency and effectiveness.

2.5.1. Operational Efficiency

Operational efficiency is the relationship between an organization outputs and input that when healthy, helps business cut down on unnecessary cost while increasing revenue. It encompasses several strategies and techniques used to accomplish the basic goal of delivering quality goods to customers in the most cost-effective and timely manner. Resource utilization, production, distribution and inventory management are all common aspects of operational efficiency.

2.5.2. Quality of Product

The word quality perceived differently by the different authors among that Dr. Joseph Juran define quality product a way to incorporate features that have a capacity to meet consumer needs (wants) and give customer satisfaction by altering products (goods) to make them free from deficiency or defect. Dave Feldman also defines the degree to which we elegantly meet user need. Also, ISO 9000 describe the degree to which a commodity meets the requirements of the customer at the start of its life. Harvery and green, (1993) Saied that if we say a product is quality it fits its intended purpose. In general, a quality product only when it satisfies various criteria for its functioning for the consumer in addition to the physical criteria.

2.5.3. Profitability

Profitability is ability of a company to use its resource to generate revenue in excess of its expenses.

2.5.4. Efficiency and Effectiveness

The words efficiency and effectiveness are often considered synonyms, along with the term like competency, productivity and proficiency however in more formal management discussion the word efficiency and effectiveness take on very different meanings. In the context of process, reengineering Lon Roberts (1994) define efficiency as to the degree of economy with which the process consumes resource especially time and money while he distinguishes effectiveness as how well the process actually accomplishes its intended purpose. Another way to the customer point of view efficiency is doing things right and effectiveness is doing the right thing.

2.5.5. Relationship of ERPS and Organizational Performance

ERP system integrates information used by the accounting, process, distribution, and human resources departments into a perfect computing system (Motwani et al., 2006). The industry hold of enterprise systems may in fact be the most important development in the company use of information technology in the 2000s. It specifically deals with the need for mixing of application programs for various company role or processes in a processing firm, such as accounting, sales and process. Different industry applications can every single one use a common database that serves as the combine mechanism (Juell-Skielse, 2006).

ERP systems are anticipated to grant at least in theory, flawless mixing of processes across divisional areas with enhanced workflow, standardization of a range of business practices, improved order management, accurate accounting of inventory, and better supply chain management (Mabert A. et al., 2000). It arrived when process improvement and accuracy of information became critical strategic issues. The stress on supply chain management and the improvement of information technology created a need for enterprise broad integration. In the past few years, ERP has become critical for more or less every firm to enhance their performance. Today, over 60% of companies have adopted or plan to implement ERP system (Hsiuju Rebecca Yen & Chewn Sheu, 2003).

Past study indicates that companies who have adopted ERP systems and their impact on management practice confirms a number of such benefits. The most highly-rated perceived benefits occupy increased elasticity in information generation, improved quality of reports, increased integration of accounts applications and improved decisions based on timely and reliable accounting information. Many scholar study suggests that businesses wait for ERP systems to deliver improved organizational performance (Charalambos S. & John A., 2005). Thus, it is highly doubtful that any two adaptations will have the same necessities or consequences, still if they are based on the same generic software packages. Still the potential benefits might be expressed, purpose of the actual benefits from adopting an ERP system is difficult to predict.

several managers hesitation to gaining value and competitive return from ERP systems (Siau K. & Tian Y., 2001). The key motive of organizations is objectives and acquires effectiveness (Daft R. L., 2003). ERP systems are considered as a dream come true by various and are in most cases implemented in order to enhance organizational effectiveness. Many studies also illustrated cases where the implementation unsuccessful and the effect had the reverse effect on organizational performance. Nevertheless, ERP systems are vast and complex and have a different adaptation results. In the other hand, the effectiveness is multi concept and complex to measurement (Demirbag M. & Koh S.C, 2006). It comprises strategic, operational, human resource and structural properties of organization.

Different studies points that measurement of benefits and risks of ERP has remained of strategic interest to the adopting organizations. Getting operational efficiencies such as developments in productivity, optimizing inventory and data integration capabilities are some of the main profit being sought by ERP implementers(Kamhawi E. M., 2008). In examining implementing motives, (Raymond L. & Uwizeyemungu S., 2007)prove in their study of Canadian Small & Medium enterprises (SMEs), that the companies with important organizational capacities, marketable dependence on major customers and tendency of bringing novel products are internally predisposed to ERP implementation, while those firms which are paying attention on networking and partnerships with other firms are externally exposed towards implementation of ERP. Unfavorably disposed firms are outline as encompass less contributing to environmental, organizational and technological tendencies towards the adoption of ERP.

Kamhawi E. M., 2008 finds that having strategic management and decision making abilities are the main themes pressuring ERP implementation decision, while set up costs and accessibility of resources are the main challenges to implementation of ERP. The result certainly confirm the standpoint of Huang & Palvia, 2001 study in which they draw attention to the differences in challenges in implementing ERP, in developing and developed countries. Huang & Palvia, 2001discover that the companies in developing countries exposeto various cultural, economic and infrastructure challenges to implementation of ERP in contrast to their developed countries counterparts. However, Buonanno G. et al., 2005disagree with this situation and conclude that firms do not consider financial constraints as the obstacle to ERP adoption, but reflect on organizational and structural factors as the main influencing reasons thereof.

Given the significant investment of time, money and resources in ERP projects, the authors have looked at the performance impacts of ERP in a post adoption scenario. conduct a survey of Hong Kong based firms, Law C. & Law E., 2007 discover that user satisfaction of ERP and business process development positively affects organizational performance. They state positive empirical relationship between the strategic aim after the implementation of ERP and organizational performance. Velcu O., 2007study strengthen the above findings, as the study make known that firms driven by technologically-led motives versus business-led motives identify differently towards benefits of implementing ERP.

Another authors Al-Dhaafri H. S. et al., 2014 examine the mediating effect of organizational excellence between ERP and organizational performance and their finding showed that effect of ERP on organizational performance, whereas organizational excellence where found to fully mediate the effect on the same relationship.

2.6. Conceptual Framework

This study, were guided by the following conceptual framework, which used to explain the interrelationship between the variables. The proposed model is self-made and explains the relationship between employees ERP and organizational performance. Organizational performance is a dependent variable and ERP system is independent variable. As well, effect is a mediating or intervening variable that explains the relationship between the dependent and independent variable as shown below.

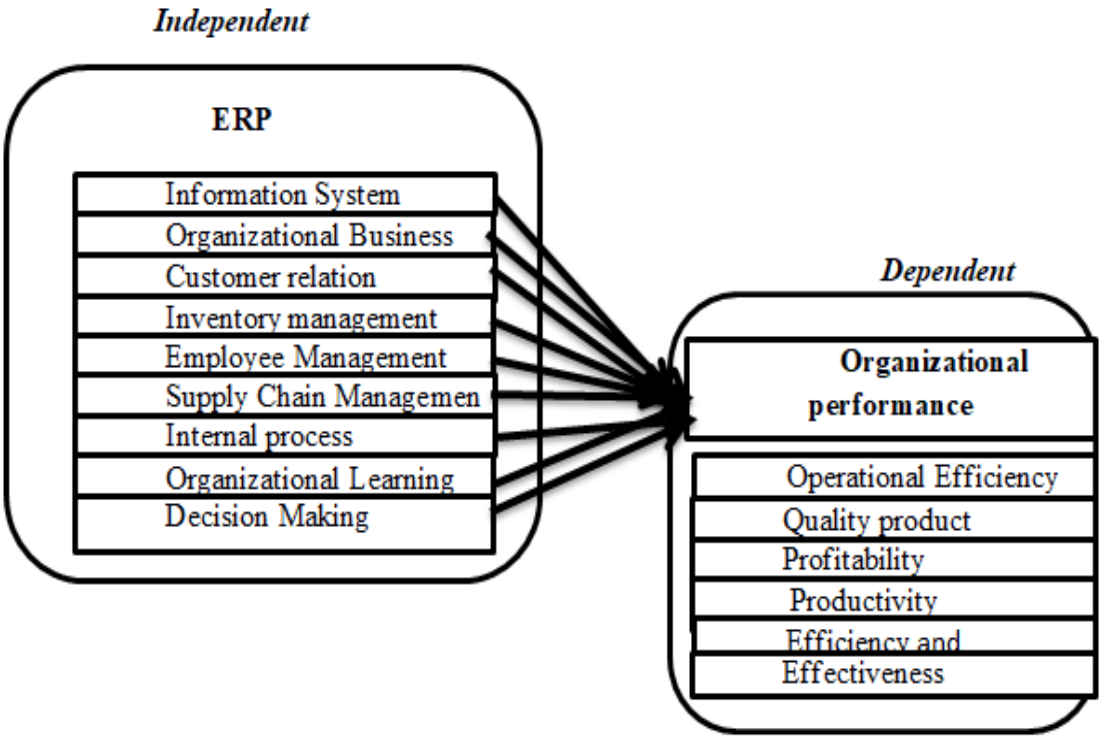


Figure2: 2 Conceptual framework model (Koech G. K., 2017)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction

This chapter provides an overview of the study's approach. It includes research design, samples and sampling technique, data collection methods and procedures, and data processing and analysis methods.

3.2. Description of Study Area

Debre Markos, close to a strategic mountain, Mount Chokea, and the capital of East Gojjam Administrative Zone, is located 300 kilometres North-West of Addis Ababa, the capital city of the FDRE, 265 kilometres from Bahir Dar, the capital of the Amhara Region. The town has a population of 62,469 people. Males made up 29,901 (47.8 percent) of the population, while females made up 32,568 (52.2 percent) (CSA, 2007). The population growth rate in the low variant was 2.4 percent, and the average household size in the town was 3.2. CSA (2013) states that most urbanites attended Ethiopian Orthodox Tewahido church services. The Amharic language is spoken by 98 percent of the population. The remaining 2% of the population speaks Tigrigna, Agew, and Afaan Oromo (Debre Markos Town Administration, 2023).

In EEUDMD customers become increase time to time. become expanded east and west Gojjam Zone expanded many companies can start different business it require more electric power.EEU DMD i.e. it consists of 21 CSCs.

According to the Etiopian Electric Utility Debre Markos District office (2023), 21 customer service centers. Twenty one of them, Debre Markos CSC 01, Debre Markos CSC 01, Amanueal CSC, Bichena CSC, Dejen, Ginde-Woyn, Kuy, Motta, Digo-Tsion, Lumamie CSC, Merto-Lemariyam, Yejubie, Burie, Finote Selam, Shindi, Denbecha, Feres-Bet, Debre Eliyas,Gebeze-Mariyam,Debrework and Yeduha CSC, distribute electric power and collect the bill . This study specifically focuses on these 21 CSCs.

3.3. Research Approach

This study employs a cross sectional research design. A descriptive and inferential statistics was applied. Descriptive statistics to describe the data without making conclusion. And inferential Statistics applied to examine the relationship between the independent and dependent variables.
By gathering and examining numerical data, the researcher used a quantitative research approach to understand events. According to Kothari (2004), the qualitative research approach is a research methodology that entails gathering and examining non-numerical data, such as observations, interviews, and text, in order to obtain understanding of people's experiences, behaviors, and attitudes. In contrast, the quantitative approach necessitates producing statistical data that can be subjected to rigorous, formal, and rigid quantitative analysis. When a study topic requires a quantitative response and researchers wish to extrapolate the findings from samples to the entire population, they employ cross sectional design approaches (Sukamolson, 2007).

3.4. Research Design

Examining the effect of the ERP system on organizational performance at Ethiopian Electric Utility Debre Markos District was the main objective of this study. This study employed a cross sectional design strategy to mitigate the potential bias of a single quantitative data set (Creswell, 2009). Correlations in particular have been used from the inferential research design since they improve the study's ability to demonstrate the connection between the ERP system and organizational performance at the Ethiopian Electric Utility Debre Markos District. Therefore, the method selected is suitable for this research.

3.5. Population, Sample size and Sampling Techniques

3.5.1. Population

Population defined as the whole group of people, events or things of interest that the researcher needs to study (Garson, 2012). To perform this study, the first step was to get the total number of population. Currently, there were 665 total populations that have been currently working in the ERP system including the customer service manager and district director found in Ethiopian Electric Utility Debre Markos District as July 2015 E.C. The target population has applied in

each individual working in different work teams of Ethiopian Electric Utility Debre Markos District Office.

3.5.2. Sample size

The researcher used a stratified proportional sampling technique to select samples. This main reason is that this method is suitable when the population is composed of several subgroups that are vastly different in number. If the population from which a sample is drawn is not homogeneous, the stratified sampling technique is usually used to obtain a representative sample (Kothari, 2004).

Using the Yamane (1967) sample size determination formula, the researcher determined the sample size. This formula calculates the sample sizes with a 95% confidence level and p=0.05.

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

Where; **n**= number of sample; **N**= total population in companies; **e** = sampling error

$$\mathbf{n}=\frac{665}{1+665(0.05)2}=\mathbf{250}$$

The sample of the total population is stratified on the basis of each department. Hence, the sample size representing the number of each department who receives questionnaires divided into strata and calculated using this simple formula (Mitiku, 2017, as cited in Mebit, 2020).

X= n (p) / N

Where X = sample size in each department

n = total sample size of the study who receives questionnaires

P = population size of the department in each stratum excluding the customer service manager and dirctor .

N = total population of the study excluding the customer service manager and dirctor.

Table 3: 1 Sample size distribution

No	Type	Total household head	Sample size	Proportion	Tools of data collection will be used
1	Customer service(CRM)	41	41*250/665=15	6	Closed– and open-ended questionnaires
2	HR	4	4*250/665=2	0.8	
3	Finance	40	40*250/665=15	6	
4	Construction	80	80*250/665=30	12	
5	Maintenance	115	115*250/665=43	17.2	
6	Billing	48	48*250/665=18	7.2	
7	Logistic & supply	90	90*250/665=34	13.6	
8	Automation	8	8*250/665=3	1.2	
9	Distribution	70	70*250/665=26	10.4	
10	Operation	120	110*250/665=45	18	
11	Network planning	45	45*250/665=17	6.8	
12	IT	4	4*250/665=2	0.8	
	Grand Total	**665**	**250**	**100**	

Source: SPSS outputs (2024)

3.5.3. Sampling Technique

For the problem the researcher set out to investigate, the population. A systematic sampling technique was used. The list of employee in office was used as a sampling frame, and based on interval sampling procedures were used to choose the study participants. The sample was selected from the company's employee attendance list based on their work experience on the ERP system. This criterion may enable the selected respondents to complete the survey questions appropriately based on their knowledge experiences regarding the system.

3.6. Data Sources and Instruments

To achieve the desired objective of the study, there was a need for appropriate data sources. The data for this study was collected from both primary and secondary sources.

3.6.1. Primary Data Sources

The primary data for this study were collected from different sources; such as, the residents who were living permanently in the area (respondents), CSC experts and district, head officials, ERP core team and District management team.

3.6.1.1.Questionnaire

A questionnaire has been developed and prepared taking in to account results of literature review. The questionnaire was prepared in both an open-ended and closed-end type in English language. Before the actual data collection has been done, questionnaires were translated in to Amharic language due to two reasons; first, Amharic is the working language of the study area; second, it makes the question more clear and understandable to the respondents. The questionnaire that were distributed to respondents enabled the researcher to generate qualitative data, which generated inputs for analytical operations to arrived at certain results, so as to postulate on problems and their probable but applicable solutions.

3.6.2. Secondary Data Sources

To realized the purpose of this research, the researcher has gathered secondary data (second hand information) that related and relevant to the topic from published and unpublished materials, professional journal articles, thesis papers and books. This helped the researcher to crosscheck and validate the results of primary data.

3.7. Data Collection Procedures

First contact was established in order to obtain complete assistance in managing and gathering the data. The respondents who completed the questionnaire were then identified. The goal of the study and instructions for filling out the questionnaire were then explained to the respondents. In order to prevent misunderstandings and uncertainties, the respondents were also given clarifications on a few of the questions during the questionnaire's administration. The respondents were then given the questionnaires using the drop-off technique. Like the interview responses, the completed questionnaires will be gathered (pick-up method) and arranged in a methodical manner. Ultimately, the gathered information was cleaned, coded, and verified before being subjected to both quantitative and qualitative analysis.

3.8. Data Analysis Method

According to Githinji Angela (2014), as cited by Mebit (2020), data analysis is the process of reducing comprehensive data to a manageable size, creating summaries, searching for patterns, and applying statistical methods. To ensure completeness and logical consistency of responses, the researcher edited the data every day, correcting any errors or gaps as soon as they were found. After the data was edited, the researcher used quantitative techniques to analyze the data. The researcher then generated descriptive statistics, such as frequency distribution, percent, mean, and standard deviation. The analyses of the study were also use inferential statistics like Pearson's correlation and simple linear regression. The correlation analysis was employed to found out the strength of a relationship between two variables; ERP system and organizational performance. Moreover, the regression analysis will use to establish the effect of ERP system on organizational Performance. The data that is collected through interview and open ended questionnaire were analyzed qualitatively and logically interpreted by the researcher in a way to solve the research problem.

3.9. Validity

According to widely accepted research principles, a research instrument is considered valid if it accurately accomplishes its intended goal and measures what it is supposed to measure. Validity was taken into account in this investigation. Because the questions utilized in this study were adapted from previous literature reviews on pertinent topics that addressed how ERP systems affect organizational performance. The questionnaire was adjusted with the thesis advisor's essential suggestions in order to pass another validity test for this study.

3.10. Reliability

The test of data reliability is an essential examination of sound measurement. A measuring instrument is consistent if it provides consistent results, (Kothari, 2004 cited in Enderas A., 2017). The appropriate test for reliability is inter-item consistency reliability which is popularly known as the Cronbach's coefficient alpha.

According to Joseph and Rosemary (2003) as cited Adane A., 2017 Cronbach's alpha reliability coefficient (a) normally ranges between 0 and 1. According to these authors, there is a greater

internal consistency of the items if the Cronbach's alpha coefficient closes to 1.0. Based on the following rule of thumb of (George and Mallery, 2003, p. 231), if "a > 0.9 – 'Excellent', a >0.8 – 'Good', a >0.7 'Acceptable', a >0.6 – 'Questionable', a >0.5 – 'Poor', and a <0.5 – 'Unacceptable'." The pilot test was done on 10 respondents from the study population who were then excluded from the final study to get rid of biasness. Accordingly, reliability analysis was run to check the reliability of the instrument employed in this research and the result presents as follows.

Table 3: 2 Coefficient of reliability

Alpha value	Number of Items
0.895	28

Source: SPSS outputs (2024))

As shown in the above table 3.2, the coefficient of reliability for the data collection instrument for all 28 items is 0.895. In this regard, items with a coefficient alpha greater than 0.80 are consider having good reliability. Therefore, based on the above test results, the instrument scored acceptable Cronbach's alpha and the instrument is found reliable. As well, the reliability score for the individual items of effect of ERP in organizational performance between 0.712 and 0.981. Therefore, based on the test results as shown below in table 3.3, individual items of the instrument scored acceptable Cronbach's alpha and each items of the instrument found reliable.

Table 3: 3 Coefficient of reliability for each item

No	Individual variables	Items in number	Alpha value
1	Information System	5	0.806
2	Organizational Business Value	5	0.857
3	Customer Relationship Management (CRM)	4	0.956
4	Inventory Management	3	0.804
5	Employees Management	3	0.894
6	Supply Chain management	2	0.714
7	Internal Process	2	0.712
8	Organizational Learning	2	0.981
9	Decision Making	2	0.804

Source: SPSS outputs (2024)

3.11. Ethical Considerations

Ethics in research ensures that no one is harmed or suffers adverse consequences from research activities (Cooper & Schindler, 2014). All informants participated in the study through informed consent. No informant was persuaded or compelled to participate in the study. Furthermore, the research's benefit was communicated to respondents. Every effort was made not to expose the identity of the informants while reporting results.

Therefore, every effort was made to carefully document and objectively report the data obtained from informants and documentary sources. Moreover, all assistance and sources from which information was drawn were acknowledged. Finally, the researcher reported findings in complete honesty.

CHAPTER FOUR

4. RESULTS AND DISCUSSION

This chapter focuses on the analysis of the results of the study. The chapter has two sections. At the first section of the chapter, the demographic profiles of the respondents were presented. In the second section, the main part of the study, the analysis and interpretation of data those were collected through questionnaire results was presented.

Each section's findings were presented in accordance with the thesis's primary research topics. The study was analyzed descriptively and inferentially, respectively.

4.1. Descriptive Statistics

Table 4: 1 Response rate, Mean and variation of ERP system and performances

Variables	Frequency, %, and mean	Variation(SD)
Response frequency (N ,%)	204(81.6%)	
Non-Response frequency	46(18.4%)	
Grand Mean of ERP system.	3.745	0.547
Grand Mean of Performance	4.09	0.33

Source: SPSS outputs (2024)

A self-administered questionnaire and a semi-structured interview guide were used to gather data for this study from a sample of 204 responders, or 82.93% of the 250 questionnaires that were given. The response rate was sufficient to draw a reliable conclusion on how ERP systems affect organizational performance. Accordingly, the analysis of this study was based on 204 respondents only.

For every variable and response from every respondent, descriptive statistics were calculated as frequency distribution, percentage, mean, and standard deviation. The proportion of respondents who selected each response was calculated using the frequency distribution and percent. In the same way, the computed mean is used to quantify the central tendency on each dimension in the

questionnaire, indicating the respondents' levels of agree ableness and disagreeableness or their perceptions on different aspects. Furthermore, the standard deviation value shows the degree to which a result deviates from the mean.

The over all average of ERP system 3.745 and variation by standard deviation is 0.547 i.e Mean±SD is 3.745±0.547 .

The mean 3.745 indicates that, most of the respondents response level of ERP system is approximate to agree level. This implies that the questions raised for employee, devisable manager and directors regarding to ERP sytem in Debremarkos district EEU level is agree on the likert scale measurements. And the standard deviation value 0.547 indicates that the questions raised for employee, devisable manager and directors regarding to ERP sytem in Debremarkos district EEU level variation among all respondents is 0.457 from the grand mean level 3.745 which is less than one level of agreement.

The average performances at Debremarkos EEUP is 4.09 and standard devation value is 0.33 i.e mean±SD is 4.09±0.33. The mean value 4.09 indicates that, level of Performances of Debremarkos District EEU is more than agreement level in likert scale measurements. And the standard deviation value 0.547 indicates that the questions raised for employee, devisable manager and directors regarding to performance in Debremarkos district EEU level variation among all respondents is 0.33 from the grand mean level 4.09 which is less than half level of agreement.

From the above ERP System and performance. The performance level of Debremarkos District EEU value 4.09 is greater than the mean ERP system 3.745. The variation units of performance is less than the variation of ERP sytem.

4.1.1. Demographic Profile of the Respondents

The first part of the questionnaire consists of four items about demographic data of the respondents such as: sex group of respondents, age group of respondents, academic qualification of respondents and work experience of the respondents; this helped the researcher to understand

the characteristics of respondents with in different categories and the following table summarized the demographic data of the respondents.

Table 4: 2 Demographic profile of the respondents

No	Items	N=204	Frequency	Percent %	Rank
1	Sex of the respondents	Male	110	54	1
		female	94	46	2
2	Age of the respondents	18-25	26	12.7	3
		26-33	92	45.1	1
		31-41	86	42.2	2
3	Academic qualification of the respondents	Level IV	86	42.2	2
		First degree	104	51	1
		Second degree and above	14	6.8	3
4	Work Experience of the respondents	1-5 years	110	54	1
		6-10 years	82	40.2	2
		11 and above	12	5.8	3

Source: SPSS outputs (2024)

According to Table 4.2, More than fifty percent of the respondents 54% were male, while the remaining 46 %, were female. Despite the fact that there were less female respondents than male respondents, this gender mix made sense in order to understand the impact of the ERP system at Ethiopian Electric Utility Debre Markos District.

In terms of the respondents' age range, the first group consisted of 46 (45.1%) respondents who were between the ages of 26 and 33. The second group had 43 (42.2%) within the age category of 31-41 years. Additionally, 13 people (12.7%) in the 18–25 age range made up the third group. All things considered, the majority of respondents 59, or 57.8%—were between the ages of 18 and 33. This suggests that the majority of respondents were young and at a dynamic age range, making it simple to gather data about ERP systems.

Regarding the respondents' educational background, the majority of them52, or 51.0% had a first degree. 43 (42.2%) of the respondents in the second group had a Level IV diploma. The remaining seven responders, or 6.8%, have a second degree or higher. This indicates that the majority of respondents 57, or 51% had a first or higher degree, which made it easy to compile information about ERP systems.

In terms of respondents' job experience, the first group of responders55, or 54%had worked for the company for 1–5 years, while 41, or 40.2%, had worked there for 6–10 years. The remaining six respondents, or 5.8%, had worked for the company for one to five years. Consequently, every single one of the 100 (100%) responders had worked for Ethiopian Electric Utility Debre Markos District. This finding suggests that the chosen respondents were qualified to answer the survey in light of their prior and subsequent work experiences at Ethiopian Electric Utility Debre Markos District prior to the implementation of the ERP system.

4.1.2. Perception of Respondents on Relationship Between ERPS & OP

4.1.2.1. Roles of ERPS in Information System

Table 4: 3 Perception of respondents on roles of ERP in Information System

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system provides real time information.	SDA	3	1.5	3.91	0.55
		DA	5	2.5		
		N	38	18.6		
		A	138	67.6		
		SA	20	9.8		
2	ERP system provides accurate information.	SDA	6	2.94	3.59	0.51
		DA	5	2.5		
		N	80	39.2		
		A	110	54		
		SA	2	1		
3	ERP system provides reliable information.	SDA	5	2.5	3.57	0.52
		DA	10	4.9		
		N	80	39.2		
		A	105	51.5		
		SA	4	1.9		
4	ERP system provides timely information.	SDA	2	1.0	3.74	0.47
		DA	1	1.0		
		N	40	19.6		
		A	150	73.5		
		SA	10	4.9		
5	ERP system Improved decision	SDA	4	2	3.41	0.59

	making.	DA	10	4.9		
		N	120	58.8		
		A	60	29.4		
		SA	10	4.9		
	Grand mean Role of ERP in information system				**3.64**	**0.528**

Source: SPSS outputs (2024)

Table 4.3 presents the perceptions of respondents on Roles of ERP system in Information System. Items were measured in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each item has discussed in detail as follows. As indicated in Table 4.3, for ERP system provide real time information system, the majority 138(67.6%) of the respondents agreed, and 20(9.8%) of the respondents strongly agree and the rest 38(18.6%) of the respondents neither agree nor disagree and 8(4%) of the respondents disagree and strongly disagree. As well, the mean (± SD) of ERP system provide real time information system was 3.91 (±0.55). This result implies that ERP system provide real time information system to its users.

As shown in Table 4.3, for ERP system provides accurate information, more than half of the respondent 112(55%) of the respondents agreed, strongly agree and the rest 80 (39.2%) of respondents answer neither agree nor disagree and 11(5.44%) of respondents disagree and strongly disagree that ERP system provide accurate information. In addition, the mean (± SD) of ERP system provides accurate information was 3.59 (±0.51). From this result, the researcher understood that the ERP system provide accurate information.

As pointed out in Table 4.3, for the ERP system provides reliable information, 109 (53.4%) of the respondents answered agreed and strongly agree , and the rest 80 (39.2%) & 10(4.9%) and 5(2.5%) of the respondents chose neither agree nor disagree and disagree and strongly disagree respectively. Also, the mean (± SD) of ERP system provides reliable information was 3.57 (±0.52). This finding implies that ERP system has a roles in provide reliable information.

As presented in Table 4.3, for ERP system provides timely information, 76 (63.7%) and 10(4.9) of the respondents agreed and strongly agree respectively. The rest 40 (19.6%) and 1(1%) and 2(1%) of the respondents chose neither agree nor disagree and disagree and strongly disagree

respectively. Additionally, the mean (± SD) of ERP system provides timely information was 3.74 (±0.47). This finding suggests that ERP system provide timely information as needed.

As we saw in Tabel 4.3, for ERP system Improved decision making, the majority of the respondents rate 120(58.8%) neither agree nor disagree. the rest 10(4.9%) and 60 (29.4%) &10 (4.9%) and 2(1%) of the respondents choose strongly agree, agree disagree and strongly disagree respectively. In addition, the mean (±SD) of ERP system Improved decision-making was 3.41 (±0.59). The majority 120(58.8%) of the respondents were chose neutral. This finding shows that ERP system has less role in decision making. Even if the majority of the respondent neither agree nor disagree a study conducted by Lecic and Kupusinac (2013) support that the ERP systems act as vital decision support system, which integrates memory and processes to perform simulations such as "what if" simulation. The ability of the ERP systems to support the decision making process is because as Ucakturk and Villard (2013) contend they provide crucial information for product and service development, and supporting the making of vital business strategies.

In sum, as illustrated in Table 4.3, all role of ERP system in information system was 3.64 (±0.528). This finding shows that, ERP system has huge role in information system. The interview results also confirm the finding of the quantitative data, that ERP system has a great role in information system especially in decision making process. Correspondingly the interview result of the divisional manager conforms that "The current ERP system version is called Michrosoft Dynamic Nav it is latest so that it easy to store and retrieve real time information especially for those which need quantitative decision". This finding fit with AlTarawne, 2012; Nooriae, 2012 study, that the ERP systems harmony managers access to accurate, timely and complete information to support their decision-making competencies.

4.1.2.2. Roles of ERPS in Organizational Business Value Table

Table 4: 4 Perception of respondents on roles of ERPS in OBV

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system can reduce operating cost	SDA	4	2	3.64	0.63
		DA	10	5		
		N	80	39.2		
		A	94	46		
		SA	16	7.8		
2	ERP system can improve productivity.	SDA	4	2	3.63	0.66
		DA	6	3		
		N	84	41.1		
		A	90	44.1		
		SA	20	9.8		
3	ERP system can enhance responsiveness.	SDA			3.69	0.77
		DA				
		N	102	50		
		A	64	31.4		
		SA	38	18.6		
4	ERP system increase customer access.	SDA			3.63	0.67
		DA				
		N	98	48		
		A	84	41.2		
		SA	22	10.8		
5	ERP system creates competitive advantage.	SDA			3.63	0.74
		DA	2	1		
		N	102	50		
		A	70	34.3		
		SA	30	14.7		
	Grand mean Role of ERP in organizational business value				3.64	0.69

Source: SPSS outputs (2024)

Table 4.4 presents the perceptions of respondents on Roles of ERP system on organizational business value. Items were measured in terms of frequency, percent, mean and standard deviation. Based on the results, each item has discussed in detail as follows.

As shown in Table 4.4, for the statement of ERP system can reduce operating cost, the majority 94(46%) of the respondents answered agreed and 16(7.8%) of the respondents strongly agree, the rest 80(39.2%) ,10(5%) and 4(2%) of respondents where neither agree nor disagree,disagree and strongly disagree, In addition, the mean (± SD) of ERP system can reduce operating cost was 3.64 (±0.66). This result shows that ERP system helps in reduce operating cost. this finding also in line with Huang, et al., (2009) study. They assess the impact of ERP on operating costs of firms determined that the systems led to the reduction of operation costs for the adopting firms. Another scholars Kang, Park and Yang (2008) argued that ERP systems led to the reduction of operational costs through facilitation of businesses processes including information exchange and decision making.

As indicated from Table 4.4, for ERP system can improve productivity, 84(41.1%) of the respondents chose neutral followed by the response rate 90(44.1%) and 20(9.8%) the respondents chose agree and strongly agree respectively. The rest 6(3%), 4(2%) respondents disagree and strongly disagree respectively. The majority 90(44.1%) of the respondents respond agree. As well, the mean (± SD) of ERP system can improve productivity was 3.63 (±0.66).This finding indicates that ERP system has a great role in improving productivity.

According to Table 4.4, for the statement of ERP system can enhance responsiveness, 102 (50%) of the respondents answered neutral which followed by 64(31.4%) response rate of the respondents chose agree. In addition, with the response rate 38(18.6%) of the respondents said strongly agree. and the mean (± SD) of ERP system can enhance responsiveness was 3.69 (±0.77). From this finding, the researcher understood that Ethiopian Electric Utility Debre Markos District has improved its responsiveness to user and customers after adopting the ERP system.

As shown from Table 4.4, for the statement of ERP system creates competitive advantage, more than half of the respondents 98(48%) chose neutral which followed by the response rate

84(41.2%) of the respondents said agree. The rest 22(10.8%) of the respondents chose strongly agree. As well, the mean (± SD) of ERP system increase customer access was 3.63 (±0.67). This result indicates that at Ethiopian Electric Utility Debre Markos District improved customer access after adopting ERP system. As presented in Table 4.4, for the statement of ERP system creates competitive advantage, 102 (50%) of the respondents neutral. And with the response rate 70(34.3%) and 30(14.7) of the respondents said agree and strongly agree respectively. Additionally, the mean (± SD) of ERP system creates competitive advantage was 3.63 (±0.74). This finding suggests that ERP system creates competitive advantage at Ethiopian Electric Utility Debre Markos District .

In total, as illustrated in Table 4.4, role of ERP in organizational business value was 3.64 (±0.69). This finding shows that, ERP system enhance Ethiopian Electric Utility Debre Markos District organizational business value by reduce its operating cost, improve productivity, enhance responsiveness, increase customer access and creates competitive advantage. As well, interview result conforms the finding of quantitative data. “ERP system has a huge role in Ethiopian Electric Utility Debre Markos District s organizational business value, for instance it helps in facilitating real-time information on production schedules, showing detail information of product and raw materials available at warehouse, reports on sales of product, commission of agents, accounting information like financial statement and it also shows what planned and what has actually done. So that it enhances the organization responsiveness by giving such information to the concerned body, as well it has a vital role in reducing the operating cost of production”.

4.1.2.3.Roles of ERPS in Customer Relationship Management (CRM)

Table 4: 5 Perception of respondents on roles of ERPS in CRM

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system helps the organization to develop the loyal customers.	SDA			3.70	0.95
		DA	22	10.8		
		N	66	32.4		
		A	68	33.3		
		SA	48	23.5		
2	ERP system enhances quality services at Ethiopian Electric Utility Debre Markos District .	SDA			3.73	0.60
		DA	8	3.9		
		N	46	22.5		
		A	142	69.6		
		SA	8	3.9		
3	ERP system can shorten the product life cycle at Ethiopian Electric Utility Debre Markos District .	SDA			3.91	0.63
		DA	2	1		
		N	44	21.6		
		A	128	62.7		
		SA	30	14.7		
4	ERP system attracts new customer.	SDA			3.66	0.71
		DA				
		N	98	48		
		A	78	38.2		
		SA	28	13.7		
	Grand mean Role of ERP system in CRM				3.75	0.578

Source: SPSS outputs (2024)

Table 4.5 presents the perceptions of respondents on role of ERP system in customer relation management. Items were measured in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each item has discussed in detail as follows.

As illustrated in Table 4.5, for the statement of ERP system helps the organization to develop the loyal customers, 68(33.3%) of the respondents agree followed by 66(32.4%) of the respondents neither agree nor disagree. The rest 48(23.5%) & 22(10.8%) of the respondents were strongly agreed and disagreed respectively. The majority of the respondents 68(33.3%) were in the position of agree. In addition, the mean (± SD) of ERP system helps the organization to develop the loyal customers was 3.70(±0.95). This finding indicates that ERP system help Ethiopian Electric Utility Debre Markos District s' to develop loyal customers.

As shown in Table 4.5, for the statement of ERP system enhances quality services at Ethiopian Electric Utility Debre Markos District , more than half 142(69.6%) of the respondents agreed. The rest 46 (22.5%), 8(3.9) & 8(3.9) of the respondents said neither agree nor disagree, disagree and strongly agree. More than half of the respondents 150(73.5%) answered agree. Moreover, the mean (± SD) of the methods of ERP system enhances quality services at Ethiopian Electric Utility Debre Markos District was 3.73(±0.60). This implies that ERP system help Ethiopian Electric Utility Debre Markos District to enhance its service quality.

As presented in Table 4.5, for the statement of ERP system can shorten the product life cycle at Ethiopian Electric Utility Debre Markos District , 128(62.7%) of the respondents supposed agreed that followed by 44(21.6%) response rate of the respondents chose neutral. The rest respondents with response rate 30(14.7%) & 2(1%) were decide strongly agree and disagree. Furthermore, the mean (± SD) of ERP system can shorten the product life cycle at Ethiopian Electric Utility Debre Markos District was 3.66(±0.71). From this finding, the researcher determined that ERP system help Ethiopian Electric Utility Debre Markos District in shorten the product life cycle as compared with before the adoption of ERP system.

As pointed out in Table 4.5, for the statement of ERP system attracts new customer, 98 (48%) of the respondents neutral which followed by the response rate 78 (38.2%) of the respondents chose

agree and similarly, another 28(13.7%) of the respondents said strongly agree. In sum, 106(51.9%) of the respondents were agreed. Likewise, the mean (± SD) of ERP system attracts new customer was 3.66(±0.71). This finding indicates that ERP system attract new customer at Ethiopian Electric Utility Debre Markos District .

To sum up, from Table 4.5, role of ERP system in customer relation management was 3.75(0.578%). These findings show that ERP system has a major role in customer relation management at Ethiopian Electric Utility Debre Markos District .

The interview results confirmed that ERP system has main roles in developing loyal customer, attracting new customer, enhancing service quality and shorting the product life cycle.

4.1.2.4. Roles of ERPS in Inventory management

Table 4: 6 Perception of respondents on roles of ERPS in IM

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system minimizes labor intensive system at Ethiopian Electric Utility Debre Markos District .	SDA			3.75	0.80
		DA				
		N	96	47.1		
		A	62	30.4		
		SA	46	22.5		
2	ERP system can save time and cost.	SDA			3.75	0.71
		DA				
		N	84	42.2		
		A	88	43.1		
		SA	32	15.7		
3	ERP system avoids cycle inventory counting system.	SDA			3.83	0.58
		DA				
		N	54	26.5		
		A	130	63.7		
		SA	20	9.8		
	Grand mean Role of ERP system in inventory management				3.78	0.42

Source: SPSS outputs (2024)

Table 4.6 presents the perceptions of respondents on roles of ERP system in inventory management. Items have measured in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each item has discussed in detail as follows.

As explained in table 4.6, for the statement of ERP system minimizes labor intensive system at Ethiopian Electric Utility Debre Markos District , 96(47.1%) of the respondents neutral followed by 62(30.4%) of the respondents strongly agreed. The rest 46(22.5) of the respondents decided on strongly agree. The majority response rate of the respondents 108(52.9%) were in the position of agree. As well, the mean (± SD) of ERP system minimizes labor intensive system at Ethiopian Electric Utility Debre Markos District was 3.75(±0.80). From this result, the researcher understood that ERP system has a major role in minimizing labor intensive system.

As shown in table 4.6, for the statement of ERP system can save time and cost, 88(43.1%) of the respondents selected agree followed by 84(42.2%) of the respondents believed neither neutral nor disagree. The rest 32(15.7%) of the respondents decided on strongly agree. More than half of the respondents 120(58.8%) were in the position of agree. Additionally, the mean (± SD) of ERP system can save time and cost was 3.75(±0.71). This finding implies that ERP system can save time and cost.

As illustrated in table 4.6, for the statement of ERP system avoids cycle inventory counting system, more than half 130(63.7%) of the respondents chose agree followed by 54(26.5%) response rate of the respondents replied neither agree nor disagree. The rest response rate 20(9.8%) of the respondents decided on strongly agree. The majority of the respondents 130(73.5%) were in the position of agree. Moreover, the mean (± SD) of system avoids cycle inventory counting system was 3.83(±0.58).This finding indicates that adoption of ERP system help in avoiding cycle inventory counting system.

To sum up, in table 4.6 shown that, ERP system has an important role in inventory management by minimizing labor intensive system, by minimizing time and cost and by eliminating cycle inventory system at Ethiopian Electric Utility Debre Markos District . The mean score was 3.78(±0.42).

4.1.2.5. Roles of ERPS in Employees Management

Table 4: 7 Perception of respondents on roles of ERPS in EM

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system helps the managers to control the day to day activities of the employees	SDA			3.60	0.63
		DA	2	1		
		N	92	45.1		
		A	96	47.1		
		SA	14	6.9		
2	ERP system helps the managers to identify employees' performance.	SDA			3.68	0.55
		DA				
		N	74	36.3		
		A	122	59.8		
		SA	8	3.9		
3	ERP system can help the managers to measure employees' productivity.	SDA			3.60	0.58
		DA				
		N	92	45.1		
		A	102	50		
		SA	10	4.9		
	Grand mean Role of ERP system in employees management				3.62	0.58

Source: SPSS outputs (2024)

Table 4.7 presents the perceptions of respondents on roles of ERP in employees management. Statements have measured in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each statement has discussed in detail as follows.

As explained in table 4.7, for the statement of ERP system helps the managers to control the day to day activities of the employees, 96(47.1%) of the respondents agree followed by 92(45.1%) of the respondents believed neither agree nor disagree. The rest response rate 14(6.9) of the respondents decided on agree. In addition, the mean (± SD) of ERP system helps the managers to control the day to day activities of the employees was 3.60(±0.63). From this finding, the

researcher understood that adoption of ERP system help Ethiopian Electric Utility Debre Markos District s's managers to control their employees day-to-day activates of the work.

As shown in table 4.7, for the statement of ERP system helps the managers to identify employees' performance, more than half 122(59.8%) of the respondents confirmed their agreement followed by 74(36.3%) of the respondents assured neutral. The rest response rate 8(3.9%), of the respondents decided on strongly agree. In total More than half of the respondents 130(63.7%) were in the position of agree. Moreover, the mean (± SD) of ERP system helps the managers to identify employees' performance was 3.68(±0.55). This finding implies that ERP system help Ethiopian Electric Utility Debre Markos District managers to identify employees' performance at Ethiopian Electric Utility Debre Markos District .

As illustrated in table 4.7, for the statement of ERP system can help the managers to measure employees' productivity, more than half 102(50%) of the respondents agreed that followed by 92(45.1%) of the respondents replied neither agree nor disagree. The rest response rate 5(4.9%) of the respondents strongly agree. Also, the mean (± SD) of ERP system can help the managers to measure employees' productivity was 3.60(±0.58). From this finding, the researcher understands that ERP system has a roles for manager in measuring employees productivity.

In sum, in table 4.7 revealed that, the roles of ERP system in employees management has an effect and the group mean of with its significance score was 3.62 (±0.58). This also indicate that ERP system have a well-known contribution in employees management by controleing the day to day activities of employees, by identifying their performance and by measuring their productivity. Correspondingly, the interview results of division managers confirmed that ERP system has crucial roles in employee management. By showing a report of time spend that each employee for the job they assign. So that it possible to measure their performance as a result promotion and other benefit can easily undertake.

4.1.2.6. Roles of ERPS in Supply Chain Management (SCM)

Table 4: 8 Perception of respondents on roles of ERPS in SCM

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system shortens ***lead time*** (the time taken between the customer order up to the customer receive his/her order).	SDA			3.76	0.53
		DA				
		N	58	28.4		
		A	136	66.7		
		SA	10	4.9		
2	ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers.	SDA			3.83	0.55
		DA				
		N	25	24.5		
		A	138	67.6		
		SA	16	7.8		
	Grand mean Role of ERP system in supply chain management				3.80	0.44

Source: SPSS outputs (2024)

Table 4.8 presents the perceptions of respondents on role of ERP system in supply chain management. Statements were measure in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each statement has discussed in detail, as follows.

As described in table 4.8, ERP system shortens ***lead time*** (the time taken between the customer order up to the customer receive his/her order), more than half of the response rate 136(66.7%) of the respondents agreed followed by 58(28.4%) of the respondents believed neither agree nor disagree. The rest 10(4.9%) of the respondents decided on strongly agree. The majority of the respondents are in the position of agree. As well, the mean (± SD) of ERP system shortens ***leadtime*** was 3.76(±0.53). From this finding, the researcher suggested that ERP system has an effect on minimizing the time taken between the customer orders up to the customer receive his/her order.

As shown in table 4.8, for the statement of ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers, again more than half of the response rate 158(75.4%) of the respondents agree and the rest 50(24.5%) of the respondents decide neither agree nor disagree. In addition, the mean (± SD) of ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers was 3.83(±0.55). These results show that ERP has a positive outcome in minimizing risk associated with forecasting due to the sharing of production schedules.

To sum up, in table 4.8 shown that, role of ERP system in supply chain management group mean of the overall benefits score was 3.80 (±0.44). This result suggests that ERP system has a wellknown contribution in supply chain management activities of Ethiopian Electric Utility Debre Markos District . in minimizing lead time and minimizing risk associated with the sharing of production schedules. Likewise, the interview result of divisional managers confirmed that ERP system has a vital role in Ethiopian Electric Utility Debre Markos District supply chain activity by providing web page information so that customer can easily access information whatever they are and easily order what they need to purchase.

4.1.2.7. Roles of ERPS in Internal Process (IP)

Table 4: 9 Perception of respondents on roles of ERPS in IP

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system facilitates the integration of business units of Ethiopian Electric Utility Debre Markos District .	SDA			3.70	0.66
		DA				
		N	84	41.2		
		A	98	48		
		SA	22	10.8		
2	ERP system improves decision making processes in Ethiopian Electric Utility Debre Markos District business units.	SDA			3.70	0.67
		DA				
		N	84	41.2		
		A	96	47.1		
		SA	24	11.8		
	Grand mean Role of ERP system in internal process				3.70	0.59

Source: SPSS outputs (2024)

Table 4.9 presents the perceptions of respondents on role of ERP system in internal process. Statements were measure in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each statement has discussed in detail, as follows.

As described in table 4.9 for the statement of ERP system facilitates the integration of business units of Ethiopian Electric Utility Debre Markos District . The majority of the response rate 120(58.8%) of the respondents agree and the rest respondent followed by 84(41.2%) of the respondents neither agree nor disagree. As well, the mean (± SD) of ERP system facilitates the integration of business units of Ethiopian Electric Utility Debre Markos District was 3.70(±0.66). From this finding, the researcher suggested that ERP system has a great role in integrating the business unites of Ethiopian Electric Utility Debre Markos District .

As shown in table 4.9, for the statement of ERP system improves decision making processes in Ethiopian Electric Utility Debre Markos District business units, 96(47.1%) of the respondents agree and followed by the response rate 84(41.2%) of the respondents neither agree nor disagree. The rest 24(11.8%) response rate of the respondent decided on strongly agree. The majority of the response rate 120(58.9%) of the respondent agree. In addition, the mean (± SD) of ERP system improves decision making processes in Ethiopian Electric Utility Debre Markos District business units was 3.70(±0.67). These results implies that ERP system improves decision across the business unites of Ethiopian Electric Utility Debre Markos District .

To sum up, in table 4.9 shown that, role of ERP system in internal process of Ethiopian Electric Utility Debre Markos District group mean of the overall benefits score was 3.70 (±0.59). This result suggests that ERP system has a great role in internal process of Ethiopian Electric Utility Debre Markos District in facilitating integration across Ethiopian Electric Utility Debre Markos District business unites and improving the managerial decisional roles.

This finding in line with According to Gartner (2010), that ERP systems provide firms with the ability to enhance internal process through the integration of all the activities and function areas of a company.

4.1.2.8. Roles of ERPS in Organizational Learning (OL)

Table 4: 10 Perception of respondents on roles of ERPS in OL

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system generates best practice within the organization.	SDA			3.91	0.60
		DA				
		N	46	22.5		
		A	130	63.7		
		SA	28	13.7		
2	ERP system supports electronic data interchange (EDI) with in organizations & stake holders.	SDA			3.92	0.59
		DA				
		N	44	21.6		
		A	132	64.7		
		SA	24	13.7		
	Grand mean Role of ERP system in Organizational Learning				3.92	0.53

Source: SPSS outputs (2024)

Table 4.10 presents the perceptions of respondents on role of ERP system in Organizational learning. Statements were measure in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each statement has discussed in detail, as follows.

As described in table 4.10 for the statement of ERP system generates best practice within the organization. 130(63.7%) of the respondents agree followed by 46(22.5%) of the respondents believed on neither agree nor disagree. The rest 28(13.7%) of the respondents decided on strongly agree. More than half 158(77.4%) of the respondents are in the position of agree. As well, the mean (± SD) of ERP system generates best practice within the organization was 3.91(±0.60). From this finding, the result shows as that ERP system has generate best practices at Ethiopian Electric Utility Debre Markos District .

As shown in table 4.10, for the statement of ERP system supports electronic data interchange (EDI) with in organizations & stake holders, more than half of the response rate 160(78.4%) of

the respondents agree. The rest 44(21.6%) response rate of the respondents decided strongly neither agree nor disagree. In addition, the mean (± SD) of ERP system supports electronic data interchange (EDI) with in organizations & stakeholders was 3.92(±0.59). This result implies that ERP system support electronic data interchange with in Ethiopian Electric Utility Debre Markos District and its stake holders.

To sum up, in table 4.10 shown that, role of ERP system in organizational learning group mean of the overall benefits score was 3.63 (±0.64). This result implies that ERP system has a main role in Ethiopian Electric Utility Debre Markos District organizational learning by generating best practices and by having electronic data interchange (EDI) to facilitate Ethiopian Electric Utility Debre Markos District business.

4.1.2.9. Roles of ERPS in Decision Making (DM)

Table 4: 11 Perception of respondents on roles of ERPS in DM

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	ERP system can identify the performing units from non performing units.	SDA			3.85	0.65
		DA				
		N	60	29.4		
		A	114	55.9		
		SA	30	14.7		
2	ERP system enhances the quality of managerial decision making process.	SDA			3.87	0.62
		DA				
		N	54	26.5		
		A	122	59.8		
		SA	28	13.7		
	Grand mean Role of ERP system in decision making				3.86	0.54

Source: SPSS outputs (2024)

Table 4.11 presents the perceptions of respondents on roles of ERP in decision-making. Statements were measure in terms of the calculation of their frequency distribution, percent,

mean and standard deviation. Based on the results, each statement has discussed in detail, as follows.

As shown in table 4.11, for the statement of ERP system can identify the performing units from non performing units, 114(55.9%) of the respondents agree followed by 60(29.4%) of the respondents believed neither agree nor disagree. The rest 30(14.7) response rate of the respondents decided on strongly agree. In addition, the mean (± SD) of ERP system can identify the performing units from non-performing units was 3.85(±0.65). From this finding, the researcher understood that ERP system helps to identify performing unit from non performing units (department) of Ethiopian Electric Utility Debre Markos District .

As shown in table 4.11, for the statement of ERP system enhances the quality of managerial decision-making process, more than half 150(73.5%) of the respondents confirmed their agreement. The rest response rate 50(24.5%) of the respondents assured neither agree nor disagree. furthermore, the mean (± SD) of ERP system enhances the quality of managerial decision making process was 3.87(±0.62). This finding implies that ERP system improve the quality of decision making process at Ethiopian Electric Utility Debre Markos District .

In sum, in table 4.11 revealed that, the roles of ERP system in decision making group mean of the overall benefit score was 3.86(±0. 0.54). This intends that ERP system has a higher significance in decision making process of Ethiopian Electric Utility Debre Markos District by identifying performing units from non performing unites therefore it enhance the quality of the decision making process.

4.1.3. Effect of ERPS on OP

Table 4: 12 Perception of respondents on relationship of ERPS & OP

No.	Items	N=204	Frequency	Percent %	Mean	SD.
1	Ethiopian Electric Utility Debre Markos District gives quality service after adopting the ERP system.	SDA			4.14	0.67
		DA				
		N	32	15.7		
		A	110	53.9		
		SA	62	30.4		
2	Ethiopian Electric Utility Debre Markos District increase productivity after adopting the ERP system.	SDA			4.16	0.68
		DA	2	1		
		N	26	12.7		
		A	112	54.9		
		SA	64	31.4		
3	Ethiopian Electric Utility Debre Markos District increase quality product after adopting the ERP system.	SDA			4.11	0.60
		DA				
		N	26	12.7		
		A	130	63.7		
		SA	48	23.5		
4	Ethiopian Electric Utility Debre Markos District increase efficiency and effectiveness (Doing things right & doing the right thing) of production after adopting the ERP system.	SDA			3.95	0.59
		DA	2	1		
		N	34	16.7		
		A	140	68.6		
		SA	28	13.7		
5	Ethiopian Electric Utility Debre Markos District increase profitability after adopting the ERP system.	SDA			4.11	0.60
		DA				
		N	13	12.7		
		A	128	62.7		
		SA	100	24.5		
6	Ethiopian Electric Utility Debre Markos District has taken the competitive advantage over its counter parts.	SDA			4.01	0.63
		DA				
		N	34	16.7		
		A	122	59.8		
		SA	48	23.5		
	Grand Mean relationship of ERP system and organizational performance				4.09	0.33

Source: SPSS outputs (2024)

Table 4.12 presents the perceptions of the relationship of ERP system and organizational performance. Statements were measure in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each statement has discussed in detail, as follows.

As described in table 4.12 for the statement Ethiopian Electric Utility Debre Markos District gives quality service after adopting ERP system. 110(53.9%) of the respondents agree followed by 62(30.4%) of the respondents believed strongly disagree. The rest 32(15.7%) of the respondents decided neither agree nor disagree. More than half 172(84.3%) of the respondents are in the position of agree. As well, the mean (± SD) of Ethiopian Electric Utility Debre Markos District gives quality service after adopting the ERP system was 4.14(±0.67). From this finding, the result shows as that Ethiopian Electric Utility Debre Markos District give quality service after adopting the ERP system. As shown in table 4.11, for the statement of Ethiopian Electric Utility Debre Markos District increase productivity after adopting the

ERP system, more than half of the response rate 176(86.3%) of the respondents agree. The rest 26(12.7%) & 1(1%) response rate of the respondents decided neither agree nor disagree and disagree. In addition, the mean (± SD) of Ethiopian Electric Utility Debre Markos District increase productivity after adopting the ERP system was 4.16(±0.68). This result implies that Ethiopian Electric Utility Debre Markos District increase on productivity after adopting ERP system. similar observation noting that. without ERP systems firms experience low employee productivity levels as employees are forced to accomplish several tasks resulting in poor performance, reduced motivation and employee fatigues Exact Max (2014). Panorama Consulting Solutions (2013) observes that a recent poll revealed that organizations world over are adopting ERP systems to reduce the workload for their employees and to ensure their optimum productivity.

As described in table 4.12 for the statement of Ethiopian Electric Utility Debre Markos District increase quality product after adopting the ERP system. The majority of the response rate 178(87.2%) of the respondents agree and the rest respondent followed by 26(12.7%) of the respondents neither agree nor disagree. As well, the mean (± SD) of Ethiopian Electric Utility Debre Markos District increase quality product after adopting the ERP system was 4.11(±0.60).

From this finding, the researcher suggested that Ethiopian Electric Utility Debre Markos District increase in producing quality product after ERP system adoption.

As shown in table 4.12, for the statement of Ethiopian Electric Utility Debre Markos District increase efficiency and effectiveness (Doing things right & doing the right thing) of production after adopting ERP system, 140(68.6%) of the respondents agree and followed by the response rate 34(16.7%) of the respondents neither agree nor disagree. The rest 28(13.7%) & 2(1%) response rate of the respondent decided on strongly agree and disagree. The majority of the response rate 168(82.3%) of the respondent agree. In addition, the mean (± SD) of Ethiopian Electric Utility Debre Markos District increase efficiency and effectiveness of production after adopting ERP system was 3.95(±0.59). These results imply that Ethiopian Electric Utility Debre Markos District increase onb efficiency and effectiveness after adopting ERP system.

As shown in table 4.12, for the statement of Ethiopian Electric Utility Debre Markos District increase profitability after adopting the ERP system, 128(62.7%) of the respondents agree followed by 50(24.5%) of the respondents believed strongly agree. The rest 13(12.7) response rate of the respondents decided on neither agree nor disagree. In addition, the mean (± SD) of Ethiopian Electric Utility Debre Markos District increase profitability after adopting the ERP system was 4.11(±0.60). From this finding, the researcher understood that Ethiopian Electric Utility Debre Markos District increase on profitability after adopting the system.

As shown in table 4.12, for the statement of Ethiopian Electric Utility Debre Markos District has taken the competitive advantage over its counter parts, more than half 170(83.3%) of the respondents confirmed their agreement. The rest response rate 34(16.7%) of the respondents assured neither agree nor disagree. furthermore, the mean (± SD) of Ethiopian Electric Utility Debre Markos District has taken the competitive advantage over its counter parts was 4.01(±0.63). This finding implies that Ethiopian Electric Utility Debre Markos District has taken competitive advantage over its compotator after adopting the system.

In sum, in table 4.12, revealed that, relationship of ERP system and organizational performance group mean of the overall benefit score was 4.09(±0.33). This intends that after adopting ERP system Ethiopian Electric Utility Debre Markos District has enhanced its performance. The

interview result of divisional managers confirmed that Ethiopian Electric Utility Debre Markos District performance has enhanced as compared with before the adoption of ERP system. By enhancing the product quality, by reducing its production cost effectively. as result new customers have been increased, even product sales price has less than as of their competitors in the market.

This finding also in line with several scholars finding including Fosser, *et al.* (2008), Zeng, *et al.,* (2012), Abugabah and Sanzogni (2009) have all argued in favor of a positive link between ERP systems and the performance of various aspects of the firm such as in terms of profitability, efficiency and effectiveness, competitive advantage and enhancing quality service.

4.2. Results of Inferential Statistics

4.2.1. Correlation Analysis

As pictured in the framework, correlation was utilized to determine the relationship between the dependent variable (organizational performance) and the independent variables (information system, organizational business value, customer relationship management, inventory management, employees management, supply chain management, internal process, organizational learning, and decision making). A correlation coefficient statistically conveys the strength and direction of a linear relationship between variables; the Pearson correlation coefficient shows the strength of the association (from -1 to +1) as well as its magnitude and direction (whether positive or negative). Because the Pearson correlation coefficient approach typically yields statistically accurate results, the researcher chose to employ one of the most popular types of correlation coefficients. Evans (1996) viewed the correlation's strength as being represented by the following pattern.

0.00 - 0.19 very weak

0.2 - 0.39 weak
0.4 - 0.59 Moderate
0.6 - 0.79 strong
0.8 -1.0 very strong

Table 4: 13 Pearson's correlation analysis

	Information Sytsem	Organizational business	Customer Relation Management	Inventory Management	Employee Management	Supply Chain Management	Internal Process	Organizational Learning	Decision Making	ERP System	Organizational performance
Information System	1										
Organizational business value	.692*	1									
Customer Relation Management	.498*	.497*	1								
Inventory Management	.236*	.355*	.590*	1							
Employee Management	.370*	.310*	.357*	.285*	1						
Supply Chain Management	.235*	.891*	.408*	.762*	.464*	1					
Internal Process	.162*	.819*	.180*	.963*	.241*	.471*	1				
Organizational Learning	.299*	.276*	.260*	.156*	.402*	.407*	.596*	1			
Decision Making	.228*	.218*	.331*	.201*	.271*	.298*	.715*	.663*	1		
ERP System	.570*	.505*	.632*	.458*	.644*	.536*	.675*	.772*	.746*	1	
Organizational performance	330*	.239*	.373*	.274*	.377*	.320*	.575*	.518*	.643*	.678*	1
**. Correlation is significant at the 0.01 level (2-tailed).											
**. Correlation is significant at the 0.01 level (2-tailed).											

Source- SPSS outputs (2024)

As described in Table 4.13, the results revealed that, a strong and positive linear correlation exists between ERP system and Organizational performance (r=0.678, p = .000 < .05), which is significant because r=0.678 is found between 0.6 to 0.79. This means ERP system has positive effect on organizational performance. This finding is in line with the study result of Almgren & Bach, (2014), Constantinos et al., (2014), Gefen & Ragowsky, (2005), Harris S., (2017) and

Karimi J., (2017) who found significant and positive association between ERP system and organizational performance.

4.2.2 Regression Analysis

This section found out how the variation of the dependent variable, organizational performance (OP) is explained by a portion variation of the independent variation ERP system (ERPS). In addition, linear regression analysis where used to examine the effect of the independent variable (ERPS) on the dependent variable (OP). To achieve this, we find the coefficient of determination and test its significance, and to determine the regression line and test its slope. The coefficient of determination R2 shows how much of the variation of the dependent variable (OP), can be explained by a portion variation of the independent variable (ERPS). Table 4.15 indicates the coefficient of determination R2 for the linear regression between ERP system and organizational performance. But the researcher has conducted basic assumption tests before running the regression model. These are normality of the distribution, linearity of the relationship between the independent and dependent variables and multicollinearity tests which have shown below:

Assumption 1: Multicollinearity Test

Multicollinearity refers to the situation in which the independent/predictor variables are highly correlated. In this study, multicollinearity was checked with tolerance and Variance Inflation Factor (VIF) statistics. Andy (2006), cited by Mebit (2020) suggests that a tolerance value less than 0.1 almost certainly describes a serious collinearity problem. Burns and Burns (2008) also stated that a VIF value greater than 10 is also a concern. Similarly, Field (2009), underlines that, values for “tolerance” below 0.1 indicate serious problems, although several statisticians suggest that values for “tolerance” below 0.2 are worthy of concern. In this study, all of the independent variables found to have a tolerance of more than 0.1 and a VIF value of less than 10.

Table 4: 14 Multicollinarity test result

Coefficient [a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Information System	.447	2.236
	Organizational Business Value	.427	2.344
	Customer Relationship Management (CRM)	.474	2.109
	Inventory Management	.592	1.688
	Employees Management	.604	1.656
	Supply Chain management	.607	1.647
	Internal Process	.371	2.695
	Organizational Learning	.438	2.284
	Decision Making	.363	2.755

a. Dependent variable: Organizational performance

Source- SPSS outputs (2024)

Assumption 2: Normality Distribution Test

Regression analyses need the independent variables to be normally distributed. Skewness and Kurtosis are statistical tools, which can enable to check if the data is normally distributed or not. According to Smith and Wells (2006), Kurtosis defined as property of a distribution that

describes the thickness of the tails. The thickness of the tail comes from the amount of scores falling at the extremes relative to the normal distribution. Skewness is a measure of symmetry/balance. A distribution or data set is symmetric if it looks the same to the left and right of the center point. For this study, the skewness and kurtosis test results are within the acceptable range (-1.0 to +1.0) and it can be concluded that the data for all variable are normally distributed.

Table 4: 15 Normality test result

	N-valid	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Information System	204	-.082	.239	-.756	.474
Organizational Business Value	204	.538	.239	.552	.474
Customer Relationship Management (CRM)	204	.210	.239	.263	.474
Inventory Management	204	.272	.239	.223	.474
Employees Management	204	.312	.239	-.090	.474
Supply Chain management	204	-.172	.239	.202	.474
Internal Process	204	.461	.239	-.585	.474
Organizational Learning	204	.082	.239	.134	.474
Decision Making	204	.570	.239	.082	.474

Source: SPSS outputs (2024)

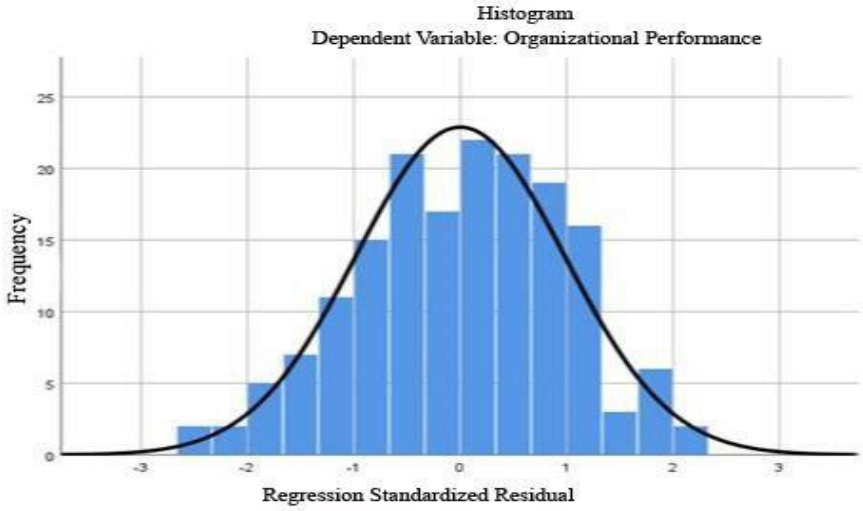
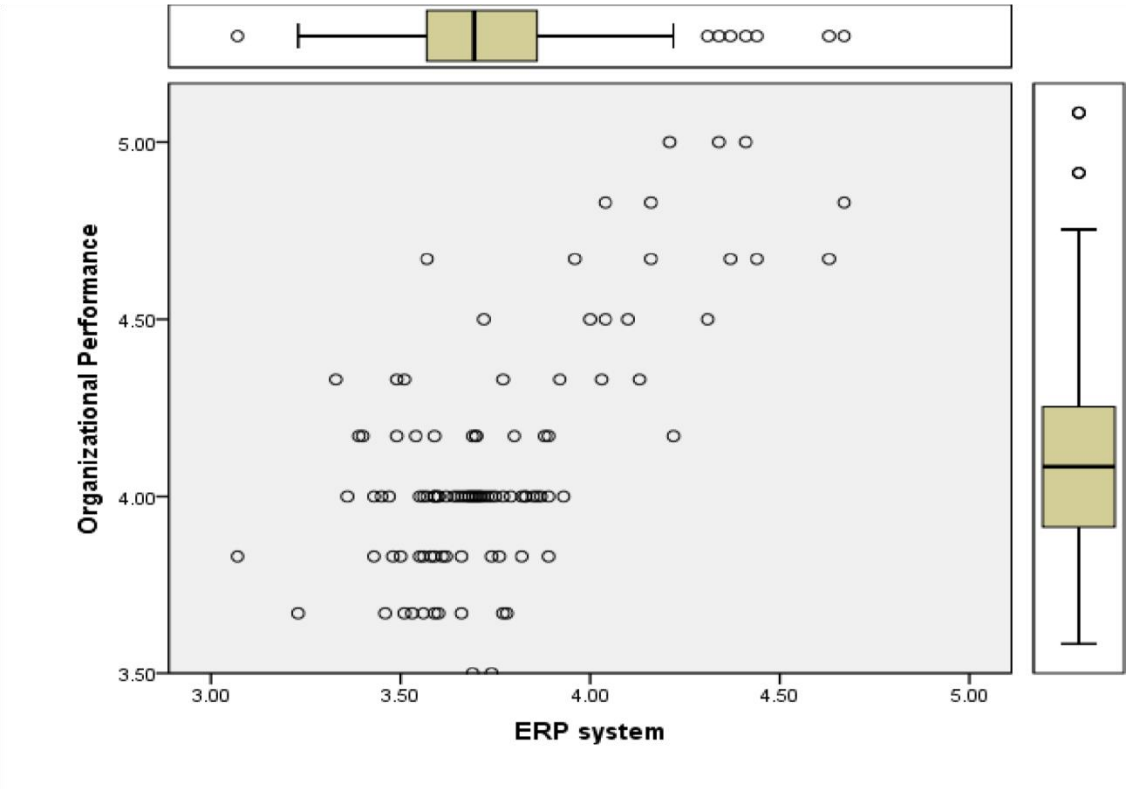


Figure 4: 1 Histogram for organizational performance

Assumption 3: Linearity of the relationship test

Linearity test tells that the visual inspections of the scatter plot that shows there exists a linear relationship between ERP system and organizational performance. For this study, the test shows that the scatter plot has a strong linear relationship.



Source: SPSS outputs (2024)

Figure 4: 2 Scatter plot dependent variable for organizational performance

Table 4: 16 Analysis model summary of R and R2 0 Model summary

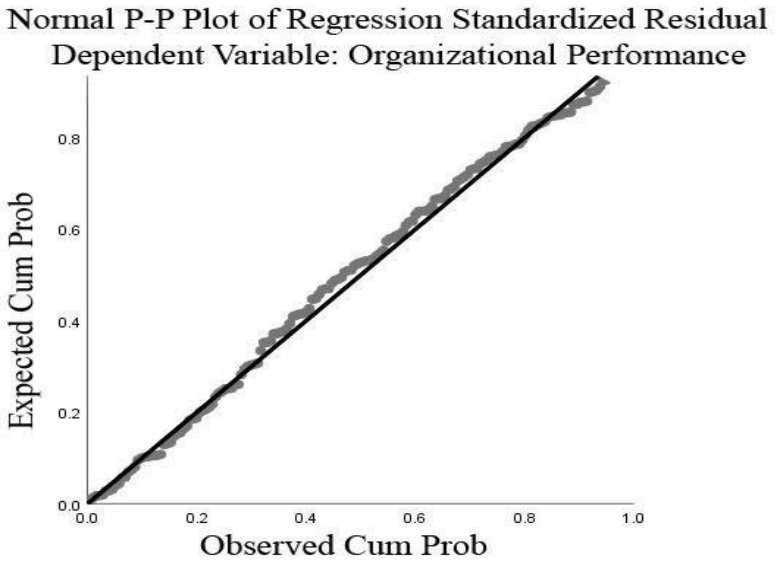
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.867[a]	.751	.748	.24363

a. Predictors: (Constant), ERP system

b. Dependent Variable: Organizational Performance

Source: SPSS outputs (2024)

From the above model summary in Table 4.16, it can be seen that R is .867 and R^2 is 0.751. This indicates about 75.1% of the variance of Organizational performance (dependent variable) can be explained by overall roles of ERP system (independent variables), the remaining 24.9% of the variance is explained by other variables which are not included in this study.



Source: SPSS outputs (2024)

Figure 4: 3 Normal P-P plot of regression standardized residual dependant variable

Table 4: 17 (ANOVA) ERPS as predictor to OP ANOVA[a]

Model		Sum of squares	Df	Mean square	F	Sig
1	Regression	6.213	9	.711	27.359	.000[b]
	Residual	4.895	194	.0477		
	Total	11.108	203			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), ERP system

Source: Source: SPSS outputs (2024)

From the ANOVA Table 4.17, the F- test result and the P Value tests whether the overall regression model is good predictor and the probability of this result is occurred by chance or not. In this regard, the F- test result is 27.359 with a significance of less than .000. This means, the probability of those results occurs by chance is < 0.01. This implies, 99 times out of 100, the estimate will reflect the true population characteristic. And it can be concluded as the overall regression model is significant, F (9, 194) =27.359, P<0.01, R^2= 75.1% (the regression model is a good to fit the data). Therefore, significant amount of organizational performance is influenced by overall role of ERP system. In other words, independent variable (ERP system) significantly predict the dependent variable (OP). This implies that, the overall roles of ERP system at Ethiopian Electric Utility Debre Markos District , affect organizational performance significantly. This result is also in line with the study finding of Almgren & Bach, (2014), Constantinos et al., (2014) and Gefen & Ragowsky, (2005) who found that organizational performance is predicted by ERP system.

Table 4: 18 Multiple Linear Regresssion model result:

(Coefficient) ERPS as predictor to OP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.643	.427		3.847	.001
	Information System =X_1	.112	.137	.082	.817	.452
	O. Business Value=X_2	.037	.084	.044	.458	.648
	CRM=X_3	1.56	.392	.029	3.97	.001
	Inventory Management=X_4	.940	.260	.117	3.61	.001
	Employees Management=X_5	.085	.071	.112	1.204	.232
	Supply Chain management=X_6	1.80	.471	.27	3.820	.001
	Internal Process=X_7	1.471	.0.450	.260	3.268	.031
	Organizational Learning=X_8	1.43	.0.245	.007	5.836	.000
	Decision Making=X_9	.219	.074	.356	2.952	.003

a. Dependent Variable: Organizational Performance

Source: SPSS outputs (2024)

From the above coefficient table 4.18, Beta value indicated that there is a positive relationship exists between ERP system and organizational performance. And this result is significant as p value is equal to .001 < 0.05, which means changes in the predictor value is related to changes in the response variable; i.e. organizational learning, decision making, supply chain management, inventory management,Internal process and customer relationship management are significant effect on organizational performance of Ethiopian Electric Utility Debre Markos District but not others.

To summarize, the equation of the regression line is defined as follows.

$$OP\ OP= \beta+\beta 1X1+ \beta 2X2+ \ldots \beta k\ Xk + et$$

$$OP=1.56X3+.0.94X4+1.80X6+1.471X7+1.43X8+0.219X9$$

These results show that from the nine proposed hypotheses Six were supported. The major finding of the test of the above mentioned models were that there is a positive, significant impact of the six factors: organizational learning, decision making, supply chain management, inventory management ,Internal process and customer relationship managements on the effect of organizational performance. But the rest three factors: information System, organizational business value and employees management were not significant effect on organizational performance because the p-value is greater than 5%.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter delivers the findings from chapter four and it gives the conclusions and recommendations of the study based on the objective of the study. The objective of this study was to examine the effect of ERP System on organization performance at Ethiopian Electric Utility Debre Markos District . The study has conducted based on the collection of primary data. Primary data were collected with well-structured questionnaire that contains relevant questions regarding ERP system and organizational performance at Ethiopian Electric Utility Debre Markos District.

5.1. Summary of the findings

Based on the study, the following real results were obtained:

ERP systems are essential to information systems.

- By lowering operational costs, increasing productivity, improving responsiveness, expanding customer access, and creating competitive advantage, ERP systems raise the organizational business value of Ethiopian Electric Utility Debre Markos District.
- Ethiopian Electric Utility Debre Markos District's customer relationship management mainly depends on the ERP system.
- ERP system has an important role in inventory management by minimizing labor intensive system, by minimizing time and cost and by eliminating cycle inventory system at Ethiopian Electric Utility Debre Markos District .
- ERP systems are well renowned for their ability to manage personnel by keeping tabs on their daily activities.
- ERP system has a well-known contribution in supply chain management activates of Ethiopian Electric Utility Debre Markos District. In minimizing lead-time (the time taken between the customer order up to the customer receive his/her order) and minimizing risk associated with the sharing of production schedules.
- ERP system has a great roll in internal process of Ethiopian Electric Utility Debre Markos District in facilitating integration across Ethiopian Electric Utility Debre Markos District business unites and improving the managerial decisional rolls.

- ERP system has a main roll in Ethiopian Electric Utility Debre Markos District organizational learning by generating best practices and by having, electronic data interchange (EDI) to facilitate Ethiopian Electric Utility Debre Markos District business.
- ERP system has a higher significance in decisional making process of Ethiopian Electric Utility Debre Markos District by identifying performing units from none performing unites.
- Ethiopian Electric Utility Debre Markos District has improved product and service quality, efficiency, and effectiveness after implementing the ERP system.
- The Ethiopian Electric Utility Debre Markos District found that the ERP system was a crucial component in enhancing organizational performance.
- The ERP system and organizational performance are positively and significantly correlated.
- ERP systems have undoubtedly improved a considerable amount of organizational performance, which indicates that they have a beneficial impact on and may accurately anticipate organizational performance.

5.2. Conclusions

The main objective of this study was to examine the effect of ERP System on organization performance at Ethiopian Electric Utility Debre Markos District. Three fundamental research topics were established in order to do this. Consequently, the following conclusions were reached based on a summary of the main findings and descriptive (frequency distribution, percent, mean, and standard deviation) and inferential (Pearson's correlation and linear regression) statistical data.

- The magnitude level of ERP system
- The magnitude level of performances
- Most of the respondents response level of ERP system is approximate to agree level.
- The level of Performances of Debremarkos District EEU is more than agreement level in likert scale measurements.
- The variation units of performance is less than the variation of ERP sytem.
- ERP systems give Ethiopian Electric Utility Debre Markos District access to continuous and accurate information, which supports managerial decision-making processes and enables all

employees to access the information they require to perform their daily tasks, based on the type of information they are permitted to access.

- By lowering operational costs, increasing productivity, improving responsiveness, expanding customer access, and generating a competitive edge over competitors, the implementation of an ERP system improves the organizational business value of Ethiopian Electric Utility Debre Markos District.
- At Ethiopian Electric Utility Debre Markos District, the ERP system serves a number of purposes. Improved customer service, high-quality products, and timely delivery are just a few of the business factors that affect customer happiness. Online platforms can enhance customer service by providing quick and easy access to data from anywhere within or outside the Ethiopian Electric Utility Debre Markos District. When given security clearance, customers and other stakeholders can access their desired information as needed.
- ERP system decreases on-hand inventory needs, reduces the likelihood of having an inventory shortage, lowers the order frequency and harmonizing costs and reduces the likelihood of having an inventory shortage at Ethiopian Electric Utility Debre Markos District. As well, ERP system evades cycle inventory counting system at the organization.
- ERP system has a performance monitoring advantage on workforces of Ethiopian Electric Utility Debre Markos District . This kind of control provides helpful time-sensitive information, like monitoring an employee's progress on a task, identifying other team members working on the task, and storing any correspondence between the staff, suppliers, and customers that improves the organization's productivity.
- ERP system can help the managers to facilitate decision-making processes, which can lead to shorter lead times and smaller batch sizes as well, Managers can advantage from minimizing risk with forecasting in part due to the sharing of production schedules with suppliers and customers too.
- ERP system provide systematize support to wide ranging of Ethiopian Electric Utility Debre Markos District business processes. as a result, it facilitates the integration of organizational processes, and enhances the standardization of processes across multiple business units with the objective of enhancing efficiency.

- Ethiopian Electric Utility Debre Markos District has adopted an ERP system that allows for rapid resource integration and accumulation, preventing underutilization.
- ERP system effectively enhances business information processing at Ethiopian Electric Utility Debre Markos District . by using EDI (electronic data interchange) to generate best practices across stakeholders, customers, and departments. Consequently, it offers useful data that helps the company accomplish its goals in terms of business planning, decision-making, and corporate objectives.
- ERP system create an opportunity in combing managerial intellect to ensure an insight of potentially effective decisions at Ethiopian Electric Utility Debre Markos District . this means that ERP system feed inputs for quality of managerial decision-making at Ethiopian Electric Utility Debre Markos District .
- ERP system enhances organizational performance of Ethiopian Electric Utility Debre Markos District in terms of profitability, efficiency, effectiveness, competitive advantage and by giving quality service to its customers.
- The variable which has the highest aggregated value have higher effect on the performance of Ethiopian Electric Utility Debre Markos District but not others. Organizational learning has highest effect on performance of Ethiopian Electric Utility Debre Markos District followed by decision making, supply chain management, inventory management and customer relationship managements likewise internal process has least effect on performance of Ethiopian Electric Utility Debre Markos District followed by information system, organizational business value and employees managements.
- Adopting ERP system and organizational performance had a strong, positive and significant relationship at Ethiopian Electric Utility Debre Markos District . with Pearson correlation (r= .678).
- Significant amount of organizational performance had certainly increased by adopting ERP system. which means Ethiopian Electric Utility Debre Markos District effort to utilize ERP system, as a result organizational learning, decision making, Supply chain management, inventory management, internal process and customer relationship management has been affect organizational performance significantly.

To sum up, adopting ERP system at Ethiopian Electric Utility Debre Markos District has brought highly significant effects on organizational learning, decision making, supply chain management, inventory management, internal process and customer relationship management. This effect becomes visible towards operational efficiency, cost-efficiency, enhance the quality of the outputs that they produce, as a result Ethiopian Electric Utility Debre Markos District become profitable and productive.

5.3. Recommendation

There are several benefits to Ethiopian Electric Utility Debre Markos District implementing an ERP system, including supply chain management, inventory management, customer relationship management, organizational learning, and decision-making. Nonetheless, the Debre Markos District of Ethiopian Electric Utility should rebuild its information system, internal processes, organizational business value, and staff management. Additionally, they must to improve several facets of the operation of the firm. Additionally, they should maintain the advantages of the ERP system to outperform its competitors in terms of profitability and competence for an extended period of time.

5.3.1. Further studies

This study concluded that the presence of relationship between ERP system and organizational performance. However, still many other variables might have role in terms of affecting organizational performance. It is important for other researchers to conduct research in this particular area in the future by including additional variables like financial management, employee performance appraisal and more to generate more convincing results that may increase the roles of ERP system.

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APPENDIX-II

Debre Markos University
College of Business and Economics
Department of Management
Survey on the Effect of Enterprise Resource Planning (ERP) System on Organizational Performance in the Case Study of EEU Debre Markos District

1. Introduction

This questionnaire is prepared by Fikir Yirga, who is Master of Business Administration (MBA) in general management student at Debre Markos University. The purpose of this questionnaire is to gather information in order to study the effect of ERP system on Organizational performance of Ethiopian Electric utility Debre Markos District. To effectively complete this purpose, your cooperation is reasonably necessary. As a result, please take a few minutes to complete the attached questionnaire.

2. Confidentiality

Please safely assume that any information you disclose in this questionnaire will be used for academic purposes only and kept with strict CONFIDENTIALITY, and you will stay anonymous.

3. General Guidelines

- Some sections of the questionnaire need direct replies from the list of options offered or in the area provided close them.
- Each statement has specific instructions on how to respond. As a result, before offering any comment, please carefully read the instructions and scale descriptions.
- Please try to be as honest as possible when responding, and avoid leaving any blanks.
- There is no need to write your name.

4. Contact Person

If you want any extra information or clarification on the survey questionnaire, don't hesitate to contact the researcher or advisor using the following address.

Fikir Yirga; Investigator (09-80-26-64-94) Gmail: fikiryirga23@gmail.com or Advisor Dr Habtamu A (09-10-13-68-19) Gmail: habtamu520@gmail.com

I appreciate your time spent filling out this survey.

Part One: Demographic Profile of the Respondents

Please read each question carefully and mark (□) the box corresponding to the response that best describes you and represents your opinions.

1. Gender

☐ Male ☐ Female

2. Age

☐ 18-30 ☐ 46-65

☐ 31 – 45 ☐ Above 65 years

3. **Marital Status**

☐ Single ☐ Divorced

☐ Married ☐ Widowed

4. Highest Educational Level

☐ Elementary school ☐ ☐ Diploma (TVET/College)

☐ Secondary school ☐ First degree

☐ Certificate ☐ Master's degree & above

5. How many years have you served in this company?

☐ Less than 5 ☐ 15 to 20 year's

☐ 6 to 10 year's ☐ 20 to 25 year's

☐ 11 to 15 year's ☐ More than 25

6. Your department in which you work

☐ Customer service ☐ Logistic & supply

☐ HR ☐ Automation

☐ Finance ☐ Distribution

☐ Construction ☐ Operation

☐ Maintenance ☐ Network planning

Billing Others (specify)…….

7. Management level?

☐

Top ☐ Lower ☐

Medium ☐ Others ☐

(specify)…….

8. When was your company established? Year (in Ethiopian Calendar) ☐☐ ☐☐

9. How many permanent employees do you have? Male…… Female……Total…..

Part Two: The effect of ERP system on Organizational performances

Items designed to measure your perceptions about your company's The Effect ERP system on organizational performance are detailed in the table below. Please read each statement in the table carefully and indicate your level of agreement by placing (√) using the rating scales provided in each case.

Refer to the following description on the rating scales

1	**2**	**3**	**4**	**5**
Strongly Disagree(SDA)	**Disagree(D)**	**Undecided(N)**	**Agree(A)**	**Strongly Agree(SA)**

Note: *Please apply (use) the same rating scale and corresponding description to all scales involved in this questionnaire.*

No	**Description /questions**	**Level of Agreement**				
A	**Roles of ERP in Information System**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system provides real time information.					
2	ERP system provides accurate information.					
3	ERP system provides reliable information.					
4	ERP system provides timely information.					
5	ERP system Improved decision making.					
B	**Roles of ERP in Organizational Business Value**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system can reduce operating cost.					
2	ERP system can improve productivity.					
3	ERP system can enhance responsiveness.					

4	ERP system increase customer access.					
5	ERP system creates competitive advantage.					
C	**Roles of ERP in Customer Relationship Management (CRM)**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system helps the organization to develop the loyal customers.					
2	ERP system enhances quality services at Ethiopian electric utility Debre Markos District.					
3	ERP system can shorten the product life cycle at Ethiopian electric utility Debre Markos District.					
4	ERP system attracts new customer.					
D	**Roles of ERP in Inventory Management**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system minimizes labor intensive system at Ethiopian electric utility Debre Markos District.					
2	ERP system can save time and cost.					
3	ERP system avoids cycle inventory counting system					
E	**Roles of ERP in Employees Management**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system helps the managers to control the day to day activities of the employees					
2	ERP system helps the managers to identify employees' performance.					
3	ERP system can help the managers to measure employees' productivity.					
F	**Roles of ERP in Supply Chain management**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system shortens ***lead time*** (the time taken between the customer order up to the customer receive his/her order).					
2	ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers.					
H	**Roles of ERP in Internal Process**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system facilitates the integration of business units of Ethiopian electric utility Debre Markos District.					

2	ERP system improves decision making processes in Ethiopian electric utility Debre Markos District. Business units.					
I	**Roles of ERP in Organizational Learning**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system generates best practice within the organization.					
2	ERP system supports electronic data interchange (EDI) with in organizations & stake holders.					
J	**Roles of ERP in Decision Making**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	ERP system can identify the performing units from non performing units.					
2	ERP system enhances the quality of managerial decision making process.					
K	**Relationship Between ERP System and Organizational Performance**	**SDA=1**	**DA=2**	**N=3**	**A=4**	**SA=5**
1	Ethiopian electric utility Debre Markos District gives quality service after adopting the ERP system.					
2	Ethiopian electric utility Debre Markos District increase productivity after adopting the ERP system.					
3	Ethiopian electric utility Debre Markos District increase quality product after adopting the ERP system.					
4	Ethiopian electric utility Debre Markos District increase efficiency and effectiveness of production after adopting the ERP system.					
5	Ethiopian electric utility Debre Markos District increase profitability after adopting the ERP system.					
6	Ethiopian electric utility Debre Markos District has taken the competitive advantage over its counter parts.					

Please list down any means you think ERP system in your organization can be improved; any recommendation related to organizational performance.

Thank you for your Collaboration!