ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MASTERS OF BUSINESS ADMINSTRATION

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ST.MARY 'S UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN BUSINESS ADMINISTRATION.

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SGS/0116/2013B

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March, 2023

ADDIS ABABA, ETHIOPIA

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EFFECTS OF ENTERPRISE RESOURCE PLANNING IMPLEMENTATION ON ORGANIZATIONAL PERFORMANCE: THE CASE OF MIDROC GOLD MINING PLC

ENDORSEMENT

This thesis is submitted to St. Mary‘s University, School of Graduate Studies for examination with my approval as a university advisor.

Advisor’s Name	**Signature**	**Date**
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DECLARATION

I hereby declare that this thesis is my original work, prepared under the guidance of Muluadam Alemu (Ph.D). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted for any degree.

Name	**Signature**	**Date**
Elizabeth Gebru		March 2023

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ABBREVIATIONS/ACRONYMS

ERP	enterprise resource planning
ERPS	enterprise resource planning system
IS	information system
IT	information technology
Pvt	private
PLC	private limited company
SPSS	statistical packages for social sciences
DRP	distribution requirement planning
MRP	material requirement planning
SCM	supply chain management

ACKNOWLEDGEMENTS

First and foremost, I want to thank the Almighty Lord for his protection and provision in allowing me to complete my studies this far.

I am extremely grateful to the senior management of MIDROC GOLD MINE PLC for their assistance.

I want to thank my advisor, Muluadam Alemu, (PhD) for his advice, encouragement, and constructive feedback.

In a very special way, I would like to thank my husband, Ato Ashenafi Amde, for his love, commitment, and support.

ABSTRACT

The main objective of this study was to investigate effects of enterprise resource planning (ERP) system on organizational performance in MIDROC Gold. The research followed an explanatory research design as it explains the relationship between dependent variable and independent variables (used in the study. The target population for this study consists of employees who are working on ERP system in different departments at MIDROC GOLD. Eighty-one (81) respondents were targeted for the study and hence the same number of questionnaires was distributed. However, out of this number, 67 questionnaires were received. Out of which, 7 (seven) were carelessly or inappropriately filled and were therefore not used in the analysis making a response rate of 74%. The remaining 14 questionnaires were not returned back. Both descriptive and inferential statistics were used to analyse the data using SPSS version 20. Correlation was used to test the strength and direction of the relationship between the variables. Regression analysis was used to test the effect of the independent variables (ERP system) on dependent variable (organizational performance) and to test the hypotheses and the result had shown inventory management, information system, internal process and decision making positive and strong relationship with organizational performance and hence found to be identified as statistically significant factors which affect organizational performance. However, organizational business value and employee management had shown negative relationship with the dependent variable and thus found to have statistically insignificant effect on organizational performance. The researcher recommends MIDROC Gold to build on the ERP system practices (internal process, inventory management, and decision making and information system) and the organization is recommended to work hardly on the two variables/ERP system practices (organizational business value and employee management). Finally, other researchers should carry out research in other organizations that deployed ERP system as organizational business value and employee management unexpectedly have shown negative relationship with organizational performance.

***Keywords**: - ERP system, organizational performance, dependent variables, independent variables.*

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Enterprise Resource Planning (ERP) systems have been designed to integrate data and optimize its distribution between functions and services in order to improve operational performance (Shen *et al*., 2016). The result confirmed that ERPs are important resources for creating the ability to control commercial activities, creating a competitive advantage for the company in combination with the company's existing competitive edges (Alomari *et al.*, 2018). Integration is carried out by sharing a common database of all data processing functions and applications with the company (Mphumi *et al*., 2017).

The primary reason why businesses adopt ERP is a way of streamlining business operations, enhancing job performance, and generating value by improving the integration of best practice job processes, management functions, real-time reporting, and knowledge analysis capabilities. Most businesses probably face business problems because they invest a significant amount of money in ERP applications, but they do not reap any benefits at the end of the day and are left with a huge ERP investment that they did not get anything out (Elmonem *et al*., 2016).

Enterprise Resource Planning (ERP) is a computer information system that integrates all of a company's business operations and procedures. ERP systems include many of the capabilities seen in other forms of manufacturing software, such as project management, supplier management, product data management, and scheduling are all examples of management. The purpose of ERP is designed to offer continuous, real-time information to all employees (Management Encyclopedia, 2006). It is a software solution that integrates business functions and data into a single system to be shared within a company. While ERP originated from manufacturing and production planning systems used in the manufacturing industry, ERP expanded its scope in the 1990's to other "back-office" functions such as human resources, finance and production planning (Swartz & Orgill, 2001). Moreover, in recent years ERP has incorporated other business extensions such as supply chain management and customer relationship management to become more competitive. An ERP system is software that aims to integrate and deliver answers to many company operations, such as finance, human resources, manufacturing, materials management, and sales, into a single database system (Davenport, 2000).

Organizations measure the effectiveness of ERP system in different ways. For instance; was the implementation completed on time & within the specified budget? ; does ERP software provide real-time, accurate data & complete visibility; has ERP enabled streamlined processes & standard business operations? Furthermore, employees commitment to using ERP, Real-Time Data & Analysis for Continuous Improvement, Monitoring KPIs to achieve long term objectives; Measuring Intangible Benefits.

ERP offers businesses a different and much more useful capability, bringing all the different processes together to create one integrated system. ERP can comprise and combine different modules to meet a company's specific needs, and indeed to serve different industries. Generally, ERP has the following values to organizations:-Centralized control, Better management, enhanced customer service, increased sales, mobility, Long-term planning, Standardization, Regulatory compliance and logistics management. Organizational performance is a method of measuring the success of the organization to ensure that it achieves its goals. Organizational performance measurement plays an important role in organizational growth. Through measuring performance, a firm can identify and track progress against organizational goals, seek opportunities for improvement, and compare performance against both internal and external standards, and formulate strategic activities through reviewing its performance (Hwang, 2011). Lee, Hong, and Katerattanakul (2004) divided organizational performance into two categories financial performance and non-financial performance.

Empirical studies from a survey of companies that have used enterprise resource planning (ERP) systems show that Enterprise resource planning (ERP) ERP has a massive impact on organizational performance, such as recording and sharing real-time information, reduces inventory shortages, increasing operational efficiency, enables employee performance monitoring, improves the quality of managerial decisions ,integrates and coordinates resources, guides and controls actions of middle managers and employees to ensure plan adherence, increases knowledge and skill transfer between employees, and improves customer relation management. (Cakici O. E. et al., 2010; Cachon & Fisher, 2000; Simoes, Gomes, & Yasin, 2001; Zollo & Winter, 2002; Zeng Y. et al., 2012; Al-Tarawneh, 2012)

An ERP system helps a company to handle its operations holistically in order to stay competitive in today's business climate (Beheshti& Beheshti, 2010). Therefore, operational efficiency should be a key outcome when a business chooses to adopt a technical program at its place of operation. Research on operational efficiency effects shows that, in most situations, end user performance declines rapidly after the technology is implemented (Rouhani & Mehri, 2018). However, until individual employees within these organizations use IT properly and effectively to execute their organizational activities, these advantages will not be realized (Sun & Bhattacher, 2011). Enterprise resource planning (ERP) system in the past adopted in giant reengineering of business processes and the advantage of innovative software to keep up those new processes (Robey *et al*., 2012). By 2013, an estimated 30,000 organizations all over the world planned to apply the system (Jalal, 2011). By then, it was noted that many companies and even some small-sized ones had begun to hold the concept (Jacobs & Bendoly, 2013). 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, 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. 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.

Researches were conducted on ERP system implementation issues and success and failure factors in certain sectors globally and in the Ethiopian context. These methods might not show the extent of impact or effect. So, it requires advanced research methodology which shows the real/extent of impact or effect of adopting ERP in an organizational performance. Because the mining industry is dependent on modern information Technology (IT) and Information System (IS), it invests a huge amount of money for implementing ERP systems and providing service to the general publics and also is the role player in supporting the rapid growth and development of the country’s economy. Furthermore, conducting a study on the effects of ERP implementation on organizational performance on different organizations can give a holistic (all rounded) picture on

the effect of ERP implementation in organizational performance of the mining industry. Although some researches in MIDROC Gold Group are carried out in different problems/areas, the researcher couldn't find a research done in this area (a study on the effects of ERP implementation on organizational performance of MIDROC group). Thus, clear understanding on the significance of ERP system implementation is critical as organizations invest resources for implementation. As stated above, MIDROC Gold spends two years and invests around 10.5 million birr to deploy the system. Furthermore, the documents reviewed by the researcher those related to the implementation of the established ERP system in MIDROC Gold, there exists some areas which enhance the performance of the organization and some are not. Thus, the researcher attempted to study the effect of ERP system on organizational performance, particularly, MIDROC Gold).

1.2. Statement of the problem

An ERP system is intended to affect a wide range of business processes and activities inside a company, and it is frequently implemented with high expectations for the advantages and transformation that the project will bring (Ibrahim, 2010).

There are some studies conducted to examine the implementation of ERP in the Ethiopian context. For instance: (Engidayehu (2014) studied Enterprise Resources Planning (ERP) Implementation in Ethio-telecom, focusing on the practice and challenges of ERP system. Elsa (2015) conducted study on ERP post-implementation management framework at the Ethiopian Airlines. Foziya (2017) examined factors affecting the Implementation of Enterprise Resource Planning at Commercial Bank of Ethiopia. The above-mentioned researches were conducted on ERP system implementation issues and success and failure factors in certain sectors both globally and in the Ethiopian context. Therefore, to the best of the knowledge of the researcher no sufficient empirical studies have been conducted regarding the effect of ERP systems implementation on organizational performance focusing on mining industry.

Because the mining industry is dependent on modern information Technology (IT) and Information System (IS), it invests a huge amount of money for implementing ERP systems and providing service to the general publics and also is the role player in supporting the rapid growth and development of the country's economy. Especially, although some researches in MIDROC Gold Group are carried out in different problems/areas, the researcher couldn't find a research done in this area (a study on the effects of ERP implementation on organizational performance of

MIDROC group). As stated above, MIDROC Gold spends two years and invests around 10.5 million birr to deploy the system. Additionally, employees and managers demonstrated lack of commitment to fully utilizing the system due to lack of enough understanding of the effect of ERP system implementation on organizational performance. Therefore, the researcher attempted to investigate and show how implementation of ERP system affects the performance of an organization and generally aimed to fill the above stated gaps in the literature focusing on MIDROC Gold as there have been no previous studies on this company in this area by incorporating the independent variables: information system, organizational value, internal process, employee management, decision making, and inventory management on the dependent variable organizational performance.

1.3. Objective of the study

1.3.1. General objectives

The general objective of this study is to investigate the effect of enterprise resource planning implementation on organizational performance in MIDROC GOLD MINE PLC.

1.3.2. Specific objectives

The research has the following specific objectives:-

- To identify if information system has an effect on organizational performance in MIDROC Gold.
- To determine the effect of organizational business value on organizational performance in MIDROC Gold.
- To study if employee management has an effect on organizational performance in MIDROC Gold.
- To identify if internal process has an effect on organizational performance in MIDROC Gold.
- To examine the effect of decision making on organizational performance in MIDROC Gold.
- To examine the effect of inventory management on organizational performance in MIDROC Gold

1.4. Research hypothesis

H_1: Information system has statistically significant effect on organizational performance in MIDROC Gold.

H_2: Organizational value has statistically significant effect on organizational performance in MIDROC Gold.

H_3: Employee management has statistically significant effect on organizational performance in MIDROC Gold.

H_4: Internal process has statistically significant effect on organizational performance in MIDROC Gold.

H_5: Decision making has statistically significant effect on organizational performance in MIDROC Gold.

H_6: Inventory management has statistically significant effect on organizational performance in MIDROC Gold

1.5. Significance of the study

The findings of the research provides enormous insights to various stakeholders. Generally, the findings of the study provides many contributions to the following bodies and other related stakeholders:-

To the organization under investigation, the study provides useful information and practical suggestions that may help managers of the company at different levels and users to get a better understanding of deploying such systems. Besides, the findings will enable the management to check if the ERP implementation goes in line with the strategic goal of the organization. The study also adds to the body of knowledge in the area of information technology and ERPs and its results can contribute to improved decision-making and setting ERP expectations at the time of ERP purchase and implementation. Future researchers can use the findings investigated in this study to develop relevant measures to assess the organizational performance of future adopters of ERP systems and carrying out studies using other research designs and approaches capitalizing on the method deployed in this study. The study is also helpful to companies in other sectors of the economy that may be willing to take advantage of the benefits of ERP in line with organizations strategic decision making. The study will be beneficial to researchers, academicians and students pursuing the subject in the way it offers valuable insight and a basis for further research.

1.6. Scope of the study

The study is confined to evaluating the ERP deployment at MIDROC Gold. The conceptual scope is limited to the existing ERP implementation scenario at MIDROC Gold and the ERP implementation problems and its effect on organizational performance.

To complete the research, it is preferable to obtain all relevant information from all MIDROC Gold functional or business and technical team members, which are made up of subject matter experts and technical staffs. However, this paper only addressed a subset of the ERP project's concerned bodies. The study deployed explanatory research design and quantitative approach for data analysis. The other main point to be incorporated in this part of the study is that the geographic location. The study was conducted in Addis Ababa specifically, at MIDROC Gold.

1.7 Definition of key terms

Internal process: defined as business processes that are performed within an organization without the involvement of any external partners. Internal processes are all the activities and key processes required in order for the company to excel at providing the value expected by the customers.

Organizational business value: Organizational business values are a set of core beliefs held by an organization. They act as guiding principles that provide an organization with purpose and direction and set the tone for its interactions with its customers, employees and other stakeholders.

Inventory management: - Inventory refers to all the items, goods, merchandise, and materials held by a business for selling in the market to earn a profit. It is concerned 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

Information system: - is a computer system consisting of hardware and software that serves as the backbone of an organization's operations. An IS gathers data from multiple online systems, analyzes the information, and reports data to aid in management decision-making. An Information system in an organization provides processes and information useful to its members and clients. It helps it to operate more effectively.

Employee management: -An employee management system is technology designed to streamline core HR services and improve workforce productivity. It accomplishes these goals largely by automating labor-intensive, administrative tasks and using analytics to drive business decisions.

Decision making process: - the process whereby an individual, group or organization reaches conclusions about what future actions to pursue given a set of objectives and limits on available resources. This process will be often iterative, involving issue-framing, intelligence-gathering, coming to conclusions and learning from experience.

Organizational performance: - organizational performance is a method of measuring the success of the organization to ensure that it achieves its goals. Organizational performance measurement plays an important role in organizational growth.

ERP System: - Enterprise resource planning (ERP) is a type of software system that helps organizations automate and manage core business processes for optimal performance. ERP software coordinates the flow of data between a company's business processes, providing a single source of truth and streamlining operations across the enterprise. It's capable of linking a company's financials, supply chain, operations, commerce, reporting, manufacturing, and human resources activities on one platform.

1.8 limitation of the study

The key restriction of this study is unable to find prior studies done in MIDROC Gold in ERP system Implementation. Furthermore, even if there are several practices of ERP the, research didn't cover the comprehensive list of the practices but addressing information system, organizational business value, internal process, employee management, inventory management and decision making and organizational performance as dependent variable.

1.9 organization of the study

This research is organized in five chapters. Chapter one is about the introduction comprising of background of the study, statement of the problem, research objectives, and hypotheses, scope of the study, significance of the study, limitation and organization of the study. Chapter two presents critical review of the literature on the effects of ERP implementation on organizational performance. It consists of introduction, theoretical review, empirical review, and conceptual

Frame Work. Chapter three covered the methodology part comprising of introduction, research design, and population of the study, Sample Size and Sampling techniques, sources of data, data collection tools, data analysis method ,validity ,reliability and ethical considerations. Chapter four represents data analysis and interpretation, results and discussion. It discussed the response rate, the socio demographic characteristics of respondents and the effect of ERP implementation on organizational performance. The last chapter, chapter five, will present the summary of findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter looks at the issues related to the effect of ERP on organizational performance. It develops a theoretical framework to justify the need for the current study, conceptual framework to guide the study discussion and the empirical review on the relationship between Enterprise Resource Planning (ERP) and organizational performance. The chapter also looks at the research gaps.

2.2. Review of Theoretical Literature

2.2.1 The concept of ERP

Enterprise Resource Planning (ERP) is a computer information system that integrates all of a company's business operations and procedures. ERP systems include many of the capabilities seen in other forms of manufacturing software, such as project management, supplier management, product data management, and scheduling are all examples of management. The purpose of ERP is designed to offer continuous, real-time information to all employees (Management Encyclopedia, 2006). It is a software solution that integrates business functions and data into a single system to be shared within a company. While ERP originated from manufacturing and production planning systems used in the manufacturing industry, ERP expanded its scope in the 1990's to other "back-office" functions such as human resources, finance and production planning (Swartz & Orgill, 2001). Moreover, in recent years ERP has incorporated other business extensions such as supply chain management and customer relationship management to become more competitive. An ERP system is software that aims to integrate and deliver answers to many company operations, such as finance, human resources, manufacturing, materials management, and sales, into a single database system (Davenport, 2000).

ERP systems are huge, sophisticated, multipurpose, modular, and generic systems that support and integrate an organization's core functional areas. An ERP system is more than just an IT solution, and deploying one may be seen of as a change management exercise that entails a review of business processes throughout the whole organization, which needs careful management (Nafeeseh & AlMudimigh, 2011).

Enterprise Resource Planning (ERP) is a multi-segmented software solution that helps businesses updates their procedures. It replaces a variety of stand-alone historical systems with one that allows for organizational-wide integration, transforming corporate transaction operations. According to Malhotra and Temponi (2010) Enterprise Resource Planning (ERP) is software that tries to combine various departments and functions inside a corporation into a single computer system that can fulfill all of those departments' specific needs. ERP has the ability to merge all software applications that fulfill the needs of certain tasks into a single, integrated software program that works off a single database, allowing diverse departments to readily share information and communicate with one another (Umble *et al*., 2013).

ERP refers to large commercial software packages that promise a seamless integration of information flow throughout an organization by combining various sources of information into a single software application and a single database. Enterprise resource planning systems encompassing modules supporting functional areas such as planning, manufacturing, sales, marketing, distribution, accounting, financial, human resource management, project management, inventory management, service and maintenance, transportation and e-business. The architecture of the software facilitates transparent integration of modules, providing flow of information between all functions within the enterprise in a consistently visible manner. Apart from the ideas mentioned above the major characteristics of ERP systems are: a packaged software system designed for the client environment, the integration between the modules and across the entire organization, access to data in real time, data storing and retrieving processes in an enterprise-wide database, and management and analysis functionalities (Fiona, 2002)

Material Requirements Planning (MRP) and Distribution Requirements Planning (DRP) systems from the 1960s developed into ERP, a term coined by Gartner Research Group in 1992 (Esteves et al, 2001). MRP, which was first used in the 1970s to create operation schedules, structure production systems, and purchase raw materials, developed into MRP II in the 1980s to coordinate industrial operations. The availability and affordability of new technology in the 1980s made it easier to integrate business systems that generated material with capacity needs connected with the operation plan (Manneti, 2001).

The improvement of technology in the early 1990s permitted the development and integration of all business processes that support the planning and control of all resources needed to take

customer orders, make the product, ship and account for orders (Manneti, 2001). The migration to ERP helped to integrate key business processes including product design, information warehousing, materials planning, capacity planning, communication systems, human resources, finance, and project management (Manneti, 2001).

ERP systems has become one of the most renowned business software in the marketplace and an essential part of everyday IT investments for many organizations that believe ERP system will deliver resolutions for their IT problems and therefore provide effective online transactions with the current electronic systems era. In addition, it is indicated that one of the meaningful and global improvements of IT is the wide recognition of ERP systems by many organizations including very big public organizations worldwide which brands ERP systems as the most rapid growing system in the operational area (Zhang et al., 2008).

Moreover, ERP systems are expected to have additional characteristics such as support for multiple currencies and languages (but not Amharic), which is critical for multinational companies, and support for specific industries. Hence; companies who are implementing the ERP system are benefiting from the single integrated system by transforming or reengineering their mostly legacy information system. It is also defined as a method for the effective planning and controlling of all the resources needed to take, make, ship and account for customer orders in a manufacturing, distribution or service company. ERP systems are configurable information systems packages that integrate information and information-based processes within and across functional areas in an organization (Henry, 2002).

2.2.2. The roles of ERP system

2.2.2.1 The Roles of ERP in Inventory Management

Inventory management is concerned 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 *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 (Source).

2.2.2.2. 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 efficiently manage the firm's employees. An absence of perceiving ability across business works furthermore 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 *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 & Saunders, 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.

2.2.2.3. The Roles of ERPS in Internal process

According to Bosilj and Spremic (2004), internal processes are all the activities and key processes required in order for the company to excel at providing the value expected by the customers. Internal Processes are lead indicators where management intervention is possible to affect customer and financial outcomes. There are several activities that happen in the organization on a daily basis, these include communication, accounting, management, sales, and access to information, evaluation and monitoring as well as marketing among others Botta & Millet (2006). The perspective, according to Gekonge (2005) as quoted by Kairu *et.al* (2013), internal processes perspective focuses on the internal business results that lead to financial success and satisfied customers to meet the organizational objectives and customers' 18 expectations, organizations must identify the key business processes at which they must excel. These key business processes are monitored to ensure that outcomes will always be satisfactory (Berner (2009). The process can be broadly categorized into three groups; Operations Management, Customer Management and Regulatory or social processes. Operations Management can be conceptualized as the administration of business practices to create the highest level of efficiency possible within an organization. It is concerned with converting materials and labor into goods and services as efficiently as possible to maximize the profit of an organization. Operations management teams attempt to balance costs with revenue to achieve the highest net operating profit possible. Operations management handles various strategic issues including determining the size of manufacturing plants and project management methods, and implementing the structure of

information technology networks. Other operational issues include the management of inventory levels, including work-in-process levels and raw materials acquisition; quality control; materials handling; and maintenance policies (Shuhaimi *et a*l. (2016); (Bosilj & Spremic (2004). Operations management entails studying the use of raw materials and ensuring minimal waste occurs. Managers utilize numerous formulas such as the economic order quantity formula to determine when and how large of an inventory order to process and how much inventory to hold on hand.

The second aspect of internal process incorporates customer management. Customer relationship management (CRM) is a term that refers to practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer lifecycle, with the goal of improving business relationships with customers, assisting in customer retention and driving sales growth (Botta & Millet, 2006).

A well-chosen customer management process is one that allows the firm to capture customer feedback. This valuable information can and should be used by management (Shuhaimi et al. 2016). Positive feedback can be built on to offer even more great service and negative feedback can be corrected and acted upon. The third dimension to internal processes relates to the regulatory and social processes 19 within the firm. It concerns the establishment of good or cordial relations with various stakeholders (Berner 2009). The various external stakeholders that the firms seek to establish good relations with include investors, creditors, the government and regulatory authorities as well as the general public affected in one way or another by the firm's operation (Kusek & Rist (2014);(Bosilj & Spremic (2004).

2.2.2.4. 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 an 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 & Villard, 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 *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 & Villard, (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 *et al*., (2010) found that the implementation of ERP systems affects decision-making processes in various contexts.

2.2.2.5. The Roles of ERPS in Information system

This research adopts an explanation of an information system that supports the basic concepts of what constitutes an ERP system. In the view of Iiavari (1991) an Information System is a collection of subsystems defined by either functional or organizational parameters that support decision making and control the organization. Lucas (1981) highlights the fact that information technology is used to capture, transmit, store, retrieve, manipulate, or display information in one or more businesses. An Information system in an organization provides processes and information useful to its members and clients. It helps it to operate more effectively. The information concerns its customers, suppliers, products, procedures, operations (Avison & Fitzgerald, 2006). The role of IS in an organization are increasing and encompassing all the various activities and the developments approaches have to take these growing considerations into account.

According to Chang and King (2005), the Information Systems can be defined as an integration of hardware, software, human skills and management processes that enhance IS performance to maximize the returns on investment. Furthermore, Information systems combine people, hardware, software, data and networks to perform input, processing, output and control activates (O'Brien, 2004). The IS implementation and integration is a very complex process and broad systems are employed to their organizational structure for transformation. Jarvinen (1991) found the IS field is very broad, with a number of different definitions depending on the researchers point of view and an ERP system is considered as that vast information system that integrates all the

information that runs through the organization into a uniform system (Davenport, 2008).In addition to this, the material relevant to IS frameworks and methodologies and its consequent outcomes has also been reviewed and the best methodology selected based on the desired outcome of this research study. Technology plays a key role in today's business environment. Many companies greatly rely on computers and software to provide accurate information to effectively manage their business. It is becoming increasingly necessary for all businesses to incorporate information technology solutions to operate successfully. One way that many corporations have adopted information technology on a large scale is by installing Enterprise Resource Planning (ERP) systems to accomplish their business transaction and data processing needs.

Enterprise Resource Planning (ERP) systems are software packages that use relational database technology to integrate various units of an organization's information system. ERP systems provide several separate, but integrated modules, which can be installed as a package for any organization (Scapens & Jazayeri, 1998). Many large corporations use several different and separate information systems, often because they have merged with and/or acquired other companies with varied systems. An ERP system integrates these separate information systems and results in improved data reliability and processing efficiency. ERP systems quickly became popular with large corporations that needed a seamless integration of their business, but are now frequently used by small to mid-sized companies. The excellent ability of ERP systems to simplify business transaction processing, eliminate work that adds little or no value, and simultaneously improve customer service are the main reasons for the outstanding success and popularity of these systems (Gibbs, 1997). ERP systems have made legacy systems outdated and obsolete for many companies

2.2.2.6. The roles of ERPS on organizational business value

Organization objectives for information technology (IT) are supported by their major two business goal of operational effectiveness and strategic positioning (Porter, 2010). Operational effectiveness can be defined as doing similar activities better than competitors and give attentions on efficiency and effectiveness of functions. Strategic positioning contains performing activities in strategically different ways and consists of structure and accessibility goals. Organizations have implemented 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 & Roy, 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 & Kordysh, 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 outcome in increased efficiency and effectiveness (Ruivo *et al*., 2012).

2.2.3. Organizational Performance

Organizational performance is a method of measuring the success of the organization to ensure that it achieves its goals. Organizational performance measurement plays an important role in organizational growth. Through measuring performance, a firm can identify and track progress against organizational goals, seek opportunities for improvement, and compare performance against both internal and external standards, and formulate strategic activities through reviewing its performance (Hwang, 2011). Lee, Hong, and Katerattanakul (2004) divided organizational performance into two categories financial performance and non-financial performance.

Financial performance, that is the ability to generate profits or profitability assessed by financial measures such as the return on investment ratio (ROI), return on assets ratio (ROA) and non-financial performance, which is organizational effectiveness and efficiency assessed by service delivery lead time, labor efficiency variance and number of customer complaints, in other word, operational/managerial and strategic benefits like market share, product quality, company image and economic value added, which have no immediate effect on the financial position of the firm but are rather of a more long-term character. Most management practices built around financial measures bear little relation to a company's progress in achieving long term objectives. Financial measures are also criticized for lacking balance because they are more 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 (Emmanuel et al., 1990).

2.2.4. ERP and Organizational performance

ERP Systems and Performance The core part of corporate strategic management is considered to be organizational efficiency and its development, and so most of the researchers' efforts in this field are oriented to this aspect (Tseng and Lee, 2014; Masa'deh et al.,2015). Empirically, the correlation between IT and company results is abundantly established (Lucia *et al*., 2014) recorded a major impact on organizational efficiency (market share, profitability and sales volume) in US and Spanish companies from the introduction of e-business (internal integration and external diffusion). Scholars and practitioners have shown great interest in learning how different techniques can produce competitive advantage and so on, such as IT execution, human resources expertise, diversification, mergers and acquisition, etc (Breznik, 2012; Lee, 2015).

Big and small businesses can quickly become strong competitors in developing and emerging economies by using IT to create a competitive advantage and become market leaders (Mustafa, 2015). The operating performance of the company saw substantial improvements to the ERP (Davis & Comeau, 2020). The case-study and test results indicate that the use of ERP benefits employee efficiency, gross retail sales and production costs, product processing time and time excesses, and thus supports the hypothesis that ERP has a positive effect on operational output (Ou et al., 2018). The study also showed that ERP affects the company's productivity and allows all major ERP providers to use their solutions to increase the company's performance, higher output, faster ROI and faster stock sales (Shen, *et al*., 2016). A study found that the influence of the introduction of the ERP contributed to an increase in the company's profitability by increasing the number of employees and the jobs and income ratio every year since the ERP was introduced (Madapusi *et al*., 2019).

ERP systems are designed to improve productivity by increasing an organization's ability by collecting accurate and timely information within the enterprise and the supply chain. The successful implementation of ERP systems would lead to lower inventories, reduce product growth time, improve customer service, increase production (productivity), increase profitability and improve efficiency through better customer services (Beheshti & Beheshti, 2010). To increase productivity, business enterprises invest in information systems, bearing in mind the benefits and functionality of these systems (Ifinedo et al.,2010) and converting to ERP systems and turning to ERP systems to deal with changing environment and overcome limitations of legacy systems Poon and Yu (2010). Implementation of the ERP system has led to better outcomes (Chung *et al*., 2007).

These systems have provided organizations with tremendous benefits, such as increased productivity, enhanced access to accurate and timely information, improved workflow, decreased paper dependence, shared knowledge, tight control (Bhamangol et al., 2011), and automated business processes by organizing and integrating departmental information (Monk, 2009). And these benefits are direct evidence; that is why these systems attract larger organizations with massive data volumes (Ullah *et al*., 2018). Literature indicates that different studies are carried out to identify critical factors influencing the performance of the implementation of the ERP system in the post implementation process, concentrating on industrial surveys, case studies and other research issues covered.

ERP users who use the ERP program for everyday work, have some understanding of how the system operates and are also familiar with other users (Liu *et al*. (2011). Users play a critical role in the implementation of ERP systems to determine the effect on their performance on these systems (Peslak & Boyle, 2012) and the degree of system usage directly affects the accepted benefits of the system implemented (Tai, Wang, & Chang, 2014). The performance or failure of the ERP system will affect ERP users (Koch, 2011) and the question of the importance of the ERP system to them has been a key problem in many organizations (Ramdani, 2012). Despite extensive literature on ERP systems, the performance of ERP systems from the viewpoint of end users still needs to be examined (Kwak *et al*., 2012).

Performance can be conceptualized in different dimensions (Koopmans *et al*., 2011; Qureshi *et al.*, 2013) and performance is typically relevant for individuals and organizations as a whole in relation to effectiveness and efficiency (Sonnentag & Frese, 2002; Yusoff *et al*., 2016).

Galy &Sauceda (2014) used econometric research to analyze the management activities of ERP systems post-implementation and their relationship to financial efficiency. Over the years, new technology integration activities in enterprises have increased, and many businesses have invested heavily in ERP systems in this regard, not just to consolidate all business activities into a single system, but also to achieve productivity and effectiveness in their operations.

Consequently, the effect of ERP on productivity and efficiency has been the subject of discussion among researchers and practitioners for the last two decades. Individuals need to grasp the basic concepts of ERP in order to use the systems to their fullest, which can contribute to taking advantage of the potential of these systems in terms of user productivity and effectiveness (Beheshti & Beheshti, 2010).

2.3. Review Empirical Literature

Parto et al. (2016) investigated the Impact of Enterprise Resource Planning on Financial Performance in a Developing Country. The analyses were based on data drawn among 93 Iranian manufacturing firms. The findings demonstrated that the implementation of each ERP system module separately influences financial performance indicators. Besides, the results indicated that implementing complete package of ERP system might provide synergetic impact on firm's financial performance.

Kim *et al*. (2009) investigated the relationship between IT investment and company performance using data from the top 100 electronics firms in China to study the impact of IT investment on financial performance, and they compared the results to those of similar organizations in the United States. The empirical results showed that IT investment had a positive impact on 32 company performance in China; they also showed no significant differences between the two countries. Almgren and Bach (2014) contend that ERP precipitates more profit for the company by enhancing productivity.

The researcher's further explain that ERP lead to general reduction in the cost of doing business and in so doing increase the profit margin of the firm.

According to Chtiou (2009) about 70% of the most profitable firms and 90% of the leading firms in market capitalization have implemented ERP. Gayo (2014) examined 695 leading firms in Spain on the impact of ERP on the profitability. They determined that firms that had successfully implemented ERP systems realized positive ROI, ROA, asset turnover (AT) and profit margin.

The conclusion here is that ERP promises sales increases and reduction in operational costs hence profitability for adopting firms. (Velcu 2015) notes that one of the initial studies on the relationship between ERP on organizational performance revealed that ERP had a positive effect on productivity of employees in the firm. He notes that the study determined a gross marginal product of ERP on productivity to be about 95%. (Booth et al. 2000) investigates the impact of ERP system on accounting processes of Australian companies. Their evidence suggests that ERP systems have proved to be effective in transaction processing and less effective in reporting and decision support. Further, they suggest that ERP systems provide the incentives and means for adopting newer accounting practices such as activity-based budgeting (ABB), product lifecycle costing (PLC), and balanced scorecards. (McAfee A2002) based on a survey of 101 U.S. firms that implemented SAP R/3 (former name of the enterprise resource planning software), McAfee A found that after ERP

implementation, many company performance indicators improved, including the ability to provide customers with information, order turnover time, and the completion rate of orders. (Singh and Singh 2013) show that ERP systems increase customer satisfaction by narrowing the amount of time for service or product delivery.

Furthermore, (Shannak, 2016) conducted a study to examine the impact of ERP on organizational performance basing his assessment on the balanced scorecard. He found that ERP systems increased the effectiveness and efficiency of the 33 firms that implemented them and that this resulted in a better customer satisfaction. The two explain that use of ERP systems can lead to a reduction of the order cycle times, customer response times as well as delivery speeds hence facilitate positive customer satisfaction. (Bambang *et al*., 2015) investigated the Impact of Enterprise Resources System and Supply Chain Practices on Competitive Advantage and Firm Performance. The research was carried out for 148 Indonesia Companies‟ executives. The results indicated that SCM practices and ERP systems has positive impact on competitive advantage and firm performance. Finally, that competitive advantage positively affects the firm performance. Ucakturk &Villard (2013) find that ERP systems are most 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. Mustapha& Ismail, (2013) conducted a study to examine the impact of IT on monitoring and found that firms with an integrated information system experienced significantly lower costs for monitoring. They argued that the ERP system allows the firm to store information in one place and make it easy for managers and other employees concerned with monitoring and evaluation of the firms‟ progress to obtain such vital information. In their study, (Stefanou & Revanoglou, (2006) found that an ERP implementation in a general hospital resulted in improvement in information quality which can lead to better decision making and improvements in health care, reduction of the ambiguity about order information, automated generation of the list of requirements, accurate billing and therefore no loss of income, real-time updating of patient records, existence of available information regarding the type and the quantity of ordered-granted medicines for each patient, and follow-up of suspended orders. Engidayehu (2014) conduct an assessment of ERP implementation in Ethio telecom, practice and challenges of ERP system in Ethio telecom focusing mainly on automating the major support activities of the company like finance, human resources and supply chain

management. And conclude that ERP implementation has supports the company by reducing the financial cycle time, decision making cycle time, procurement lead time and pay slip generation time. (Elsa, 2015) studied a research on ERP Post-Implementation Management Framework in of case of Ethiopian Airlines.

A case study approach and a combination of quantitative and qualitative methods have been used to collect and analyze data. The survey questionnaire and interview method were used for data collection. The quantitative data were analyzed by employing appropriate techniques of descriptive and inferential statistics using SPSS software tool. The result of the study indicated that organizational theme constructs were the most critical determinants of ERP post-implementation success; which make the highest contribution (58.93%) of the total variance. Accordingly, continuous improvement (41.02%), user involvement (6.61%), training (4.94 %), absorptive capacity (3.23%) and top management championship (3.13%) are the major constructs of organizational theme. Technical theme has a significant contribution which explains 10.36% of the total variance of ERP post-implementation success. Foziya (2017) factors affecting the Implementation of Enterprise Resource Planning at Commercial Bank of Ethiopia. The researcher has employed a case study in which qualitative research method was also used to collect and analyze data, Pattern matching technique employed to analyze the data collected through interview, direct observation and participation .The research revealed that factors which affect ERP implementation are technological, organizational and people, the stages of CBE ERP implementation (requirement analysis, solution design, solution built and test, and production transition and support).

Adane (2017) studied the effect of Enterprise Resource Planning implementation on Internal Supply Chain Performance: -The case of Ethio Telecom- The research was conducted by selecting eight independent variables and their effect on dependent variable of Internal Supply chain performance. The finding suggested six independent variables such as top management support, project management, user training, IT infrastructure, vendor support and communication have a statistically significant relationship to predict internal supply chain performance, and the remaining two variables project plan & vision and project champion are not statistically significant to predict internal supply chain performance. User training and IT infrastructure accounts the largest share to explain the variation of internal supply chain performance. (Panant, *et al*. (2015) conducted a study “ERP system installation in operational management case study of a logistic

trade organization in Thailand". The system implementation evaluation is regarded important for the Life Cycle of the system development to assure success in transitioning the enterprise resource planning (ERP) system from manual or conventional to electronic systems (SDLC). The purpose of this research was to investigate the ERP system assessment factors in the post implementation phase of one Thai logistics trading firm.

Factors influencing the adoption of Enterprise Resource Planning (ERP) systems in Egyptian higher education institutions were explored by (Noorliza *et al*., (2017). The major goal of this research article is to present a conceived research model that can be utilized to investigate ERP adoption in higher education institutions.

Kibebework (2015) also conducted research on the challenges and current status of ERP implementation in the cement industries of Mugher and Derba. The primary goal of this research is to evaluate the challenges and current status of ERP implementation in both companies.

Fetsum (2017) uses a regression model to discover that effective project management, change management, and training are critical factors influencing the successful implementation of an ERP. According to the study's findings, ERP implementation success at the United Nations Economic Commission for Africa was insufficient when measured against critical success factors as measured by the system's process experts in the organization. The study then concluded that businesses should identify and outline critical success factors applicable in their area of expertise for successful ERP implementation

So, this study will adopt a different dimension like research design and approach, problem and research area by focusing on studying the effects of ERP implementation on organizational performance in MIDROC GOLD MINING PLC.

2.4. Conceptual framework of the study

A conceptual framework is a collection of general concepts and principles drawn from several disciplines of study that are used to organize a future presentation. A conceptual framework for this study was constructed based on the literature review, as illustrated in the Figure1. The main goal of the research is to study the effect of the ERP system implementation on organizational performance at MIDROC GOLD MINING PLC.

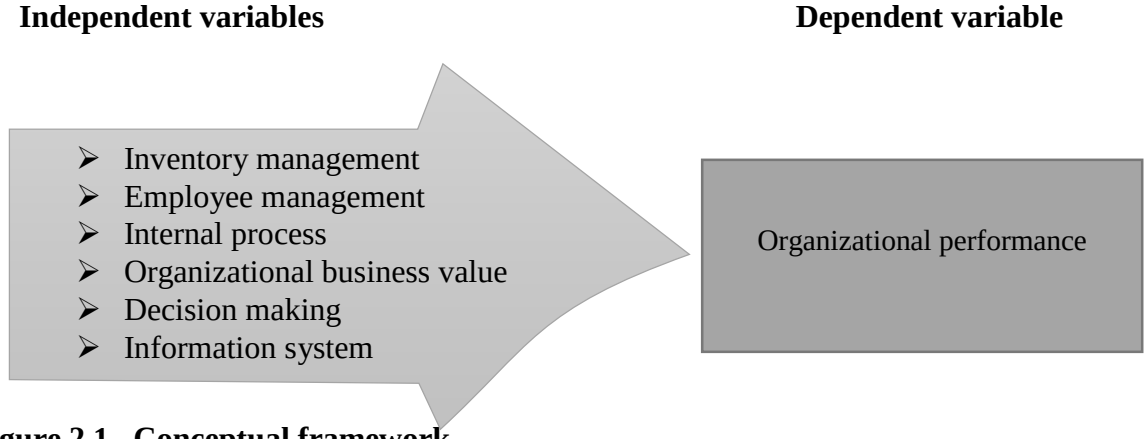


Figure 2.1. Conceptual framework

Source: self-conceptualized as guided by (Koech G. K., 2014)

The conceptual framework revealed that the six variables, Inventory management, employee management, internal process, organizational business value, decision making and information system would affect organizational performance. After the study's completion, however, the study revealed that inventory management, organizational performance, internal process, information system, employee management and decision making had shown positive relationship and significant effect on organizational performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

Research methodology is a systematic way of solving a problem. It is essentially, the procedures followed by researchers for describing, explaining and predicting phenomena. It provides the work plan of a research. This chapter mainly discusses the methods that were employed by the researcher in carrying out the study. Specifically, introduction, the research design, research approach, sampling technique, sample size, data collection, reliability and validity, ethical considerations, methods of data analysis and presentation are properly presented.

3.2. Research approach

The researcher deployed quantitative approach. Quantitative approach is predominantly used as a synonym for any data collection technique (such as a questionnaire) or data analysis procedure (such as graphs or statistics) that generates or uses numerical data. Since the aim of the study is to examine the effect of ERP system implementation on performance of organization, quantitative approach was deployed as the justification is discussed above.

3.3. Research design

An explanatory research design was adopted in this study. As Saunders, Lewis & Thornhill (2009), explanatory research is about studying a situation or a problem in order to explain the relationship between variables. It attempts to clarify how and why there is a relationship between two or more aspects of a situation or phenomenon. Hence explanatory study design was deployed to determine and explain the relationship between the dependent variable-organizational performance and independent variables- inventory management, employee management, information system, organizational business value, decision making and internal process.

3.4. Types of Sources of data

The study used the two types of sources of data which are primary and secondary sources of data

3.4.1. Primary sources of data

Primary data was collected from respondents of the study setting via questionnaire. Close and open-ended questionnaire was prepared by the researcher using a five-point Likert scale (strongly disagree, disagree, neutral, agree and strongly agree). The questionnaire was prepared after

making several reviews of related studies and the questions are standardized in line with the study problem. A questionnaire enabled the researcher in collection of enormous amount of data on all study the variables within a short period (Ponto, 2015). Another advantage of a questionnaire is that it enables in the collection of data without requiring the researcher to be physically present through the use of various methods such as online platform (Rowley, 2014). Questionnaires are also appropriate in the study because they guaranteed anonymity of the respondents, by not requiring them to meet with the researcher or to indicate their names in the questionnaire Furthermore, the survey helped in determining perspectives and opinions on the ERP implementation process.

3.4.2. Secondary data

The secondary data was collected from the organization reports on the ERP user‘s information and other available sources.

3.5. The study population

Population is the entire set of people, things or events that meets the criteria for inclusion of the study (Sekeran, 2003). In this case, employees who are working on ERP system in different departments at MIDROC Gold used as the population of the study. In the organization, there are eighty one/81 employees working in the ERP system department.

3.6. Sampling technique

From the total employees, the total population working in ERP system from of MIDROC Gold, Mechare and Kality different departments is 81. So, the researcher deployed census method in which the target population size is equal to the sampling size.

Table 3.1**:-** Sample size from each department

ERP users department	**Number of employees**
Logistic department	6
Finance department	11
Production department	8
Techniques department	9
Quality department	6
Procurement department	6
Human resource management	10
Sales department	25
Total	81

Source: HR Department (2022)

3.7. Tools of data collection

Data was collected through questionnaires designed to answer the research questions based on a review of the literature. The questionnaire was chosen because it is a quick and relatively low-cost method of gathering information and it's easier for respondents to respond. After the expected participants were informed about the purpose of the study, the questionnaires were distributed. The questionnaire was divided into two sections: Section one of the questionnaires contains instructions and respondents' personal information; section two of the questionnaires contains variables that will be measured using a Likert scale with five response categories (strongly disagree, disagree, neutral, agree, and strongly agree).

3.8. Data analysis and Interpretation

After data collection, the filled and returned questionnaires were edited for completeness, coding and entries made into Statistical package for social sciences (SPSS version 20). Coding is technical process where raw data are transformed into easily tabulated form by way of assigning symbols. The data was analyzed and presented quantitatively by using tools like percent, tables, frequency, standard deviation and mean and others to facilitate the interpretation of the results of the data. Both descriptive and inferential statistical techniques were applied to analyze the data. Descriptive statistics such as mean, frequency, percent and standard deviation was employed to present the responses which were obtained from the respondents. Statistical Package for Social Sciences version 20.0 was adopted to further analyze the data. Also tables were used for data presentation. Correlation was used to test the strength and direction of the relationship between the variables. Regression analysis was used to test the effect of the independent variables (ERP system) on dependent variable (organizational performance). It was also employed to test the hypotheses. Multiple regressions also employed to establish how well the independent variables internal process, employee management, inventory management, information system, and organizational business value and decision making predict the dependent variable - organizational performance. The researcher therefore used multiple regressions (Field, (2009)

Regression equation

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$

Where: Y = organizational Performance

α = Constant

$\beta_1 - \beta_6$ = Coefficient of Independent variables

X_1 = internal process

X_2 = inventory management

X_3 = employee management

X_4= information system

X_5= organizational business value

X_6= decision making

e =Error term (Residual)

3.9. Reliability and Validity

3.9.1. Reliability

The reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the goodness of the measure. Examining the internal consistency of the test enables the researcher to determine which items are not consistent with the test in measuring the phenomenon under investigation. The object is to remove the inconsistent items and improve the internal consistency of the test. The researcher used Cronbach's Alpha as a measure of internal consistency. Cronbach's Alpha is a reliability coefficient that indicates how well items in a set are positively correlated to one another (Sekaran, 2003). Cronbach's Alpha reliability coefficient normally ranges between 0 and 1 and he affirms that normally, reliabilities of 0.7 range is considered acceptable and over 0.8 is good. In general, the closer Cronbach's Alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. Based upon the formula $\alpha = rk/ (1 + (k - 1))$, where k is the number of items considered and r is the mean of the inter-item correlations.

Below:-Table 3.1 is a summary of the reliability test based on the Cronbach alpha coefficient for the five scales items in the survey instrument. The Cronbach alpha value was found to be 0.798 and is thus regarded as a good tool to measure the intended issue.

Table 3.2: Summary of Reliability Test from Employee Responses on Scale Items.

No.	Variables	No. of items	Cronbach‘s alpha
1	Internal process	5	.798
2	Inventory management	5	.816
3	Information system	6	.756
4	Decision making	5	.813
5	Employee management	6	.808
6	Organizational business value	5	.794
7	ERP and Organizational performance	6	.799
	Total	38	.798

Source: survey data, 2022

The tool was pilot tested on 15 employees who are working on ERP system in different departments at MIDROC Gold.

The responses of respondents were scored and the reliability of the tool was determined using Cronbach’s Alpha. The questionnaire consists of a total of 38 questions as shown in the above table. The result indicated that the value of Cronbach’s alpha equals to 0.798 proving that the tool is indeed reliable (Sekaran, 2003). Thus, it is considered as good.

3.9.2. Validity

Validity on the other hand is aimed at whether the tools are truly measuring what they intended to measure (Kothari, 2007). Most relevantly, the validity of the tool was evaluated by the researcher’s advisor. Faux (2010) asserts that an effective and practical approach to pretesting questionnaire instruments is to ensure that the questionnaire is understood by participants. Pilot study was done to test whether the tools truly measure what they intended to measure (Kothari, 2007). Validity of the tool was made by piloting the questionnaires before a comprehensive exercise of data collection to see if the tool can measure what it is supposed to measure from different respondents by distributing 15 questionnaires to the sample of the study. So it was found to obtain that the questionnaire measured what it was intended to measure. Furthermore validity of the study was measured by the researcher’s advisor.

3.10. Ethical considerations

The study was conducted by considering ethical responsibility. The respondents were assured that the response they provided will remain confidential and will be used only for academic/research purpose. Furthermore, the study was in line with the organizations policy in relation to any intellectual propertyrights of the organization. Concerning references, all the materials and sources are properly acknowledged**.**

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

This chapter presents the results of the study based on the data collected. Among the topics discussed are the response rate of the respondents, the socio-demographic characteristics of the respondents, the selected Enterprise resource planning (ERP) system practices and organizational performance. Finally the result of multiple regression models presented which was used to test the hypotheses of the research.

4.2. Analysis of response rate and descriptive statistics.

4.2.1. Response rate

Eighty one (81) respondents were targeted for the survey and hence the same number of questionnaires was distributed. However, out of this number, 67 questionnaires were received. Out of which 7 were carelessly or inappropriately filled and were therefore not used in the analysis making a response rate of 74%. The remaining 14 questionnaires were not returned back at all because of some reasons like some employees weren't in their respective offices to have annual leave some days after receiving the questionnaire and others with different reasons.

4.3. Demographic Characteristics of Respondents.

This section presents the findings of the general information of the respondents. The general information sought was in terms of respondent's gender, age, length of service, education level, position, income, marital status.

Table 4.1.Respondents' demographic characteristics

Gender		Frequency	Percent	Valid Percent	
Valid	Male	28	46.7	46.7	
	Female	32	53.3	53.3	
	Total	60	100.0	100.0	
	Age				Cumulative percent
	≤25	5	8.3	8.3	8.3
	26-35	10	16.7	16.7	25
	36-40	22	6.7	36.7	61.7
	41year & above	23	38.3	38.3	100.0
	Total	60	100.0	100.0	100.0
	Level of education				
	Diploma	5	8.3	8.3	8.3
	Degree	47	78.3	78.3	86.6
	Master's degree	8	13.3	13.3	100.0
	Total	60	100.0	100.0	
	Service year				
	≤5 years	5	8.3	8.3	8.3
	6-10 years	13	21.7	21.7	30
	11-15 years	17	28.3	28.3	58.3
	16-20 years	15	25	25	83.3
	21 years and above	10	16.7	16.7	100.0
	Total	60	100.0	100.0	
	Position				
	Finance	15	25	25	25
	HR	10	16.7	16.7	41.7
	Logistic	9	15	15	56.7
	Procurement	10	16.7	16.7	73.4
	Technical	2	3.3	3.3	76.7
	Quality	3	5	5	81.7
	Production	5	8.3	8.3	90
	Sales	3	5	5	95
	Other	3	5	5	100

Source: survey data, 2022

As depicted in table 4.1, a relatively similar composition of male and female employees of the organization was represented in the study which enabled the researcher to understand female employees are competing as much as male employees

As shows in the age category of respondents the composition of employees in the organization shows that all age groups are included and most of which are experienced which in turn enable the organization makes successful in implementation of the enterprise resource planning system adoption.

The data exhibited in the table above regarding the education level of the respondents, shows that 78.3%, 13.3%, and 8.3% represented those who are first degree holders, qualified with second degree, and diploma respectively representing the overall demographic characteristics of the employees in the organization. The highest proportion (91.7%) in educational status covers first degree and masters who help the respective mining company (MIDROC Gold) improve organizational performance up on adopting the enterprise resource planning (ERP) system.

Regarding respondents with an experience of eleven to twenty years account for the highest percentage (53.3%). Employees with such experiences have made significant contributions to the implementation and success of the ERP system in MIDROC Gold.

The least percentage (8.3%) is covers the service year having below five years. This proportion indicates that the organization contains younger employees who are getting relevant experiences from their senior staff of the department in the organization who can then succeed them in the near future and can sustain the ERP implementation of MIDROC Gold.

The company accommodates various and important number of employees for the successful implementation of ERP system although in some areas/positions the proportion looks unfair but it is based the relevance of the personnel each department requires.

4.4. ERP system and Organizational Performance

In this section, perception of respondents on each items of the relationship between ERP system & organizational performance was discussed. To do so, respondents were asked to indicate the degree to which they agreed to statements relating to the roles of ERP system and organizational performance undertaken by the company on five-point Likert scale (1=Strongly disagree – 5=

Strongly agree) a mean of above 3 is regarded to measure satisfaction and a mean of below 3 is to measure dissatisfaction at the test variables. Standard deviation was used to indicate the variation or dispersion from the average (mean). This is well explained in the tables and narratives below.

4.4.1. The Roles of ERP system in Inventory Management

One of the research variables was inventory management. In this section the role of enterprise resource planning in inventory management was discussed. Respondents were asked to indicate the extent to which they agree with relevant questions with respect to inventory management using a five-point Likert scale; strongly disagree, disagree, neither agree nor disagree(neutral), agree, strongly agree. A detailed descriptive of the assessment is indicated in table belo

Table 4.2**.** Mean and standard deviation of inventory management

The table shows the perceptions of respondents on roles of ERP system in inventory management.

Statements/items	N=60	frequency	Percent	Mean	Std. Deviation
ERP system minimizes labor intensive system at MIDROC	SDA	3	5	3.78	0.52
	DA	5	8.3		
	NEU	18	30		
	AG	23	38.3		
	SA	11	18.3		
ERP system can save time and cost in MIDROC Gold	SDA	2	3.3	3.85	0.43
	DA	3	5		
	NEU	20	33.7		
	AG	30	50		
	SA	5	8.3		
ERP helps inventory planning and scheduling in MIDROC GOLD	SDA			3.83	0.41
	DA	5	8.3		
	NEU	22	36.7		
	AG	28	46.7		
	SA	5	8.3		
ERP helps in Real-time access to inventory turnover in MIDROC Gold	SDA	2	3.3	3.75	0.61
	DA	5	8.3		
	NEU	18	30		
	AG	25	41.7		
	SA	10	16.7		
Inventory management helps in effective stores management of MIDROC GOLD	SDA			3.79	0.42
	DA	4	8.3		
	NEU	21	35		
	AG	30	50		
	SA	5	8.3		
Overall mean and SD.				**3.8**	**0.48**

Source: survey data, 2022

Items have measured in terms of frequency distribution, percent, mean and standard deviation. Based on the results, each item has been explained as depicted below:

As explained in table 4.2, for the statement of ERP helps inventory planning and scheduling in MIDROC Gold, 28(46.7%) of the respondents agreed on the question followed by 22(36.7%) of them replied neutral. 5(8.3%) among 60 respondents fall in to the scale disagree. Thus, the result showed 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.

As described in table 4.6, the respondents were agreed on the statement "ERP system minimizes labour intensive system at MIDROC Gold" (mean=3.78 and SD=0.52). This indicates that majority of the respondents regarding this statement have a good perception on the roles of ERP system on inventory management in minimizing labour intensive system in the company which in turn can have an effect on organizational performance which will be discussed latter.

Likewise, as per the table 4.2 the statement ''ERP system can save time and cost in MIDROC Gold'' scored the highest mean (Mean=3.85 and SD=0.43). This implies that enterprise resource planning (ERP) has a great role on inventory management especially in minimizing cost and saving time in the organization being studied.

The other important question provided to the respondents under inventory management was ''enterprise resource planning (ERP) system helps inventory planning and scheduling in MIDROC GOLD''. For this question, majority of the respondents (Mean=3.83 and SD=0.41) agreed that enterprise resource planning (ERP) plays an important role on inventory management in inventory planning and scheduling in the organization which could also play an instrumental role on the performance of MIDROC GOLD.

As demonstrated in table 4.2., for the statement ''ERP helps in real-time access to inventory turnover in MIDROC Gold'', many of the respondents replied this variable is an important variable in improving organizational performance. Relatively, this statement scored the least mean (Mean=3.75 and SD=0.61). But still many of the respondents agreed that enterprise resource planning (ERP) system plays an prominent role on inventory management ;specifically it helps to realize real-time access to inventory turnover in MIDROC Gold''.

To summarize, the roles of enterprise resource planning (ERP) system, the above table enabled the researcher to understand/conclude enterprise resource planning (ERP) system plays substantial role in inventory management by minimizing labour intensive system, by minimizing cost and saving time, by helping inventory planning and scheduling, in helping in real-time access to

inventory turnover and in effective stores management in MIDROC GOLD as 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 *et al*., 2010). Furthermore, 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.

4.4.2. The Roles of ERP system in internal process

Internal process was one of the study variables under investigation. Accordingly, in this section the role of enterprise resource planning system in internal process was discussed. The study samples were asked to indicate the extent to which the respondents agree with relevant questions with respect to inventory management using a five-point Likert scale; strongly disagree, disagree, neutral, agree and strongly agree. A detailed analysis of the assessment is indicated in table below:

Table 4.3. Mean and standard deviation of internal process

Statements/items	N=60	frequency	Percent	Mean	Std. Deviation
ERP system facilitates the integration among business units of MIDROC Gold.	SDA	2	3.3	3.43	0.83
	DA	3	5		
	NEU	24	40		
	AG	25	41.7		
	SA	6	10		
ERP implementation facilitates internal process in MIDROC Gold	SDA		0	3.45	0.79
	DA	3	5		
	NEU	28	46.7		
	AG	24	40		
	SA	5	8.3		
ERP implementation has positive effect on internal communication process in MIDROC Gold	SDA	2	3.3	3.65	0. 73
	DA		0		
	NEU	23	38.3		
	AG	29	48.3		
	SA	6	10		
ERP system reduces complexity of reports at MIDROC Gold	SDA	2	3.3	3.51	0.74
	DA	3	5		
	NEU	24	40		
	AG	25	41.7		
	SA	6	10		
ERP automate and simplify processes across the organization	SDA			3.60	0.70
	DA				
	NEU	23			
	AG	29			
	SA	8			
Overall mean and SD.				**3.53**	**0.76**

Source: survey data, 2022

Table 4.3 presents the perceptions of respondents on ERP system facilitates the integration among business units of MIDROC Gold as 25(41.7%) respondents are agreed on the mentioned questioned. Among 60 respondents 24(40%) of them replied that they are neutral. The least number of respondents on this issue replied strongly disagree, 2(3). In general, the result enabled

the researcher to conclude this variable (internal Processes) is lead indicators where management intervention is possible to affect customer and financial outcomes (Bosilj &Spremic 2004).

As shown in table 4.3, respondents reacted differently to the questions provided to them regarding the variable under investigation (internal process). Five questions were set under this particular variable and interpreted and discussed as follows. Among the five questions, the one which scores the highest mean was the statement ‘’ERP implementation has positive effect on internal communication process in MIDROC Gold ‘’ (Mean=3.65 and SD=0.70). This implies that the role of enterprise resource planning system has important significance on internal process in the organization/MIDROC Gold in improving internal communication process.

Likewise, as per the table above, the statement ‘‘ERP implementation facilitates internal process in MIDROC ;(Mean=3.45 and SD=0.79). This indicates that enterprise resource planning (ERP) system has a great role on internal process especially in facilitating internal process in the organization.

The other important question raised to the respondents was to explain the extent to which “ERP automate and simplify processes across the organization”. As the above table shows enterprise resource planning system has an appreciable contribution to internal process in the organization in simplifying and automating processes across the organization and hence optimizing the organizational performance.

“ERP system facilitates the integration among business units of MIDROC Gold’’ was another question set under this variable and was exposed to the study sample. In this regard, many respondents (mean=3.43 and 0.83) agreed that enterprise resource planning system facilitates the integration among business units of the organization. Consequently, it is possible to deduce that the role of ERP system on internal process can lead to productivity of the organization. To summarize the study variable internal process; ERP system has essential roles in internal process in simplifying and automating processes across the organization, in facilitating internal process, improving internal communication process in the organization and hence optimizing the organizational performance. This finding is supported by different literatures; according to Gartner (2010), ERP systems provide firms with the ability to enhance internal process through the integration of all the activities and function areas of a company.

According to Bosilj &Spremic (2004), internal processes are all the activities and key processes required in order for the company to excel at providing the value expected by the customers.

Internal Processes are lead indicators where management intervention is possible to affect customer and financial outcomes.

4.4.3. The Roles of ERP system in Employee Management

In this section, perception of respondents on each items of the relationship between ERP system & employee management and organizational performance was discussed. Consequently, the respondents were questioned to show the extent to which they agreed to statements relating to the roles of ERP system and organizational performance undertaken by the company on five-point Likert scale (1=Strongly disagree – 5= Strongly agree) a mean of above 3 is regarded to measure satisfaction and a mean of below 3 is to measure dissatisfaction at the test variables.

Table 4.4. Mean and standard deviation of employee management

Statements/items	N=60	frequency	Percent	Mean	Std. Deviation
ERP system helps the managers to control the day to day activities of the employees in MIDROC Gold.	SDA			3.70	0.68
	DA	4	6.7		
	NEU	22	36.7		
	AG	29	48.3		
	SA	5	8.3		
ERP system helps the managers to identify employees' performance in MIDROC Gold.	SDA	6	10	2.91	1.01
	DA	8	13.3		
	NEU	30	50		
	AG	14	23.3		
	SA	2	3.3		
ERP system produces accurate appraisal documentation to protect both the employee and employer.	SDA	4	6.7	2.78	1.32
	DA	8	13.3		
	NEU	34	56.7		
	AG	21	35		
	SA	3	5		
ERP system provides clear disciplinary performance procedures and feedback guidelines.	SDA	4	6.7	2.77	1.13
	DA	8	13.3		
	NEU	34	56.7		
	AG	21	35		
	SA	3	5		
ERP helps in making the time management and leave administration simple and easily manageable.	SDA	6	10	3.01	0.98
	DA	8	13.3		
	NEU	30	50		
	AG	14	23.3		
	SA	2	3.3		
ERP system standardizes evaluation forms in line with clear performance measures in MIDROC Gold	SDA	7	11.7	2.6	1.39
	DA	10	16.7		
	NEU	38	63.3		
	AG	5	8.3		
	SA				
Overall mean and SD.				**2.90**	**1.09**

Source: survey data, 2022

From the table above (table4.4), among the six questions forwarded to the study respondents, 29(48.3%) 0f 60 them on the statement "ERP system helps the managers to control the day to day activities of the employees in MIDROC Gold". On the other hand, the least percentage was given to the statement "ERP helps in making the time management and leave administration simple and easily manageable" ;which means only 2(3.3%) of among sixty respondents strongly disagreed

that ERP helps in making the time management and leave administration simple and easily manageable.

As presented in table 4.4, majority of the respondents were agreed on the statement "ERP system helps the managers to control the day to day activities of the employees in MIDROC Gold" (mean=3.70 and SD=0.68). This shows that many of the respondents regarding this statement have a good perception on the roles of ERP system on employee management in enabling the managers to control the day to day activities of the employees in the company which in turn can affect organizational performance of the company.

Likewise, the descriptive analysis of the statement '' ERP system helps the managers to identify employees' performance in MIDROC Gold''with a mean score of 2.91 shows that enterprise resource planning system has no significant role on employee management in MIDROC gold as the mean value is found to be below the average.

The other important question forwarded to the respondents was "ERP helps in making the time management and leave administration simple and easily manageable". In this case, the mean score value 3.01 shows that the respondents either have little information or unsure whether ERP system helps in making the time management and leave administration simple and easily manageable. Furthermore, the statement "ERP system provides clear disciplinary performance procedures and feedback guidelines" was asked to the sample of the study resulting in a mean of 2.77 and a standard deviation of 1.13. The result implies that the role of enterprise resource planning is not substantial factor in employee management and hence in improving organizational performance in MIDROC Gold as the mean score value is found to be below the average. According to the result obtained above, the statement ''ERP system standardizes evaluation forms in line with clear performance measures in MIDROC Gold'' recorded the lowest mean score showing that enterprise resource planning system has no an effect on employee management and hence organizational performance in standardizing evaluation forms in line with clear performance measures in MIDROC Gold.

To wind up the study variable employee management, according to the data analysis ,enterprise resource planning system has no significant role on employee management and organizational performance as the overall mean score of this variable (employee management) is found to record below the average (mean=2.90 and SD=1.09). However, the result opposes the literatures which

consolidate the effect/role of enterprise resource planning system on employee management, although this study is carried out in a different research setting, as discussed below.

Performance monitoring of staff is another advantage of ERP system. 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 & Saunders, 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

4.4.4. The Roles of ERP system in Decision Making

Regarding decision making, like the other variables discussed above, perception of respondents on each items of the relationship between ERP system & decision making and organizational performance was discussed. Subsequently, the respondents were asked to reply the extent to which they agreed to statements/questions relating to the roles of ERP system on decision making resulting in organizational performance. The analysis and interpretation is discussed below:

Table 4.5. Mean and standard deviation of decision making

Statements/items	N=60	frequency	Percent	Mean	Std. Deviation
ERP system enhances the quality of managerial decision-making process in MIDROC Gold	SDA			3.85	0.52
	DA				
	NEU	25	41.7		
	AG	31	51.7		
	SA	4	6.7		
ERP system improves decision making processes in MIDROC Gold MINE business units	SDA			3.46	0.94
	DA				
	NEU	23	38.3		
	AG	35	58.3		
	SA	2	3.3		
ERP a wide range of analytical and reporting tools can help gain insight into business performance.	SDA		0	3.57	0.77
	DA	2	3.3		
	NEU	28	46.7		
	AG	24	40		
	SA	6	10		
ERP easy-to-use tools to enable to work quickly and make smart, proactive decisions in MIDROC Gold.	SDA	1	1.7	3.75	0.63
	DA	1	1.7		
	NEU	29	48.3		
	AG	23	38.3		
	SA	6	10		
ERP help to make the right decision and achieving organizational goals in MIDROC Gold MINE.	SDA		0	3.81	0.55
	DA		0		
	NEU	34	56.7		
	AG	24	40		
	SA	2	3.3		
Overall mean and SD.				**3.67**	**0.57**

Source: survey data, 2022

Table 4.5 shows the perceptions of respondents on roles of ERP system in decision making. Items have measured in terms of frequency distribution, percent, mean and standard deviation. Based on the results, some of the items are explained as depicted below:

As explained in table 4.9, for the statement of ERP system enhances the quality of managerial decision-making process in MIDROC Gold, 31(51.7%) of the respondents agreed on the question followed by 25(41.7%) of them replied neutral. 4(6.7%) among 60 respondents fall in to the scale strongly agree.

Table 4.5. Illustrates the perception of respondents on roles of ERP system in decision making

As depicted in table 4.5, majority of the respondents agreed on the statement “ERP system enhances the quality of managerial decision-making process in MIDROC Gold” (mean=3.85 and

SD=0.52). This indicates that majority of the respondents regarding this statement have a good perception on the roles of ERP system on decision making in enhancing the quality of managerial decision making process in the company which in turn can have an effect on organizational performance.

Similarly, as per table 4.5, the statement ‘’ERP helps to make the right decision and achieving organizational goals in MIDROC Gold’’scored the second highest mean (Mean=3.81 and SD=0.55). This implies that enterprise resource planning system (ERP) has a role on decision making particularly in making the right decision and in achieving organizational goals in MIDROC Gold.

The other question raised to the respondents was ‘ERP easy-to-use tools to enable to work quickly and make smart, proactive decisions in MIDROC Gold’’. For this question, many of the respondents (Mean=3.75 and SD=0.63) agreed that enterprise resource planning (ERP) plays a significant role on decision making in the manner that it enables to work quickly and make smart and proactive decisions in the organization.

As it is presented in table 4.5., the statement ‘‘ERP a wide range of analytical and reporting tools can help gain insight into business performance’’ rated high by the respondents scoring a mean of 3.57. In this case, many of the respondents agreed that enterprise resource planning (ERP) system plays an important role on decision making ;explicitly it helps to gain insight in to business performance as ERP has a wide range of analytical reporting tools in MIDROC Gold’’. To conclude this part, the roles of enterprise resource planning (ERP) system in decision making in MIDROC Gold.

Table 4.5 enabled the researcher to understand/conclude enterprise resource planning (ERP) system plays considerable role in decision making by enabling to work quickly and make smart and proactive decisions in the organization, by making the right decision and in achieving organizational goals and by enhancing the quality of managerial decision making process in MIDROC GOLD. Various studies support these findings. Kelton *et al*., (2010) found that the implementation of ERP systems affects decision-making processes in various contexts.

In addition, decision-making is an 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 & Villard , 2013). 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).

4.4.5. The Roles of ERP system in organizational business value

Table 4.6 Mean and standard deviation of organizational business value

Statements/items	N=60	frequency	Percent	Mean	Std. Deviation
ERP helps in reduction of operational and administrative cost at MIDROC Gold	SDA			3.56	1.32
	DA				
	NEU	30	50		
	AG	25	41.7		
	SA	5	8.3		
ERP enables control of financial flows in the organization	SDA			2.94	1.41
	DA				
	NEU	32	53.3		
	AG	24	40		
	SA	4	6.7		
ERP system can enhance responsiveness at MIDROC Gold	SDA			2.78	1.54
	DA		0		
	NEU	24	40		
	AG	27	45		
	SA	9	15		
ERP system creates competitive advantage at MIDROC Gold	SDA	1	1.7	2.98	1.37
	DA	2	3.3		
	NEU	28	46.7		
	AG	27	45		
	SA	2	3.3		
ERP provides clear financial information to external parties	SDA			2.71	1.57
	DA		0		
	NEU	38	63.3		
	AG	18	30		
	SA	4	6.7		
Overall mean and SD.				**2.99**	**1.44**

Source: survey data, 2022

From the table above (table 4.6), among the questions forwarded to the study respondents, 27(45%) of them are agreed on the statement "ERP system creates competitive advantage at MIDROC Gold". On the other hand, the least percentage was given to the statement "ERP provides clear financial information to external parties and ERP enables control of financial flows in the organization" ;which means only 4(6.7%) of among sixty respondents are strongly disagreed that

ERP helps in making the time management and leave administration simple and easily manageable.

Regarding the role of enterprise resource planning system on organizational business value, five questions were provided to respondents and reacted differently to the questions. Relative to the above four variables, the role of enterprise resource planning system on organizational business value recorded low mean scores. Among the five questions the highest mean was recorded by'' ERP helps in reduction of operational and administrative cost at MIDROC Gold'' (Mean=3.56 and SD=1.32). This means that ERP system helps an organization by reducing operational and administrative costs. In other sense, organizational business value is affected positively by the adoption of enterprise resource planning system in MIDROC Gold.

As it is shown from the above table, the mean for the statement ''ERP system creates competitive advantage at MIDROC Gold'' indicates respondents are disagreed with it (M=2.98, SD=1.37).

The other question forwarded to the respondents 'ERP enables control of financial flows in the organization'' scores a mean value of 2.94 (M=2.94 SD=1.41). This indicates that the company has to do a lot on organizational business value as the low mean score value signifies this practice requires some improvements. Furthermore, the respondents are not satisfied with the role of enterprise resource planning system on organizational business value in enhancing responsiveness at MIDROC Gold (M=2.78, SD=1.54). Additionally, respondents have disagreed with the statement "ERP provides clear financial information to external parties" (M=2.71, SD=1.57). As depicted this statement recorded the lowest mean value. From this figure it is possible to deduce that respondents believe the organization to provide clear financial information to external parties.

In general, according to the data analysis report (table 4.6) the role of enterprise resource planning system on organizational business value doesn't have substantial role in MIDROC Gold. The result somewhat opposes literatures. 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 & Kordysh, 2007).

4.4.6. The Roles of ERP system in information system

In this section, perception of respondents on each items of the relationship between ERP system & information system and organizational performance was discussed. Subsequently, the

respondents were asked to show the degree to which they agreed to statements regarding the roles of ERP system and organizational performance carried out by the company on five-point Likert scale (1=Strongly disagree – 5= Strongly agree) a mean of above 3 is regarded to measure satisfaction and a mean of below 3 is to measure dissatisfaction at the test variables

Table 4.7 Mean and standard deviation of information system

Statements/items	N=60	frequency	Percent	Mean	Std. Deviation
ERP system provides real time information in MIDROC Gold	SDA			3.69	0.68
	DA	10	16.7		
	NEU	20	33.3		
	AG	28	46.7		
	SA	2	3.3		
ERP system provides accurate information in MIDROC Gold	SDA		0	3.71	0.67
	DA	5	8.3		
	NEU	18	30		
	AG	30	50		
	SA	7	11.7		
ERP system provides reliable information in MIDROC Gold	SDA	8	13.3	3.65	0.74
	DA	34	56.7		
	NEU	21	35		
	AG	3	5		
	SA	4	6.7		
ERP system provides timely information in MIDROC Gold	SDA		0	3.66	0.72
	DA	2	3.3		
	NEU	29	48.3		
	AG	11	18.3		
	SA	7	11.7		
The ERP system facilities quick information retrieval and easily identify problems in MIDROC Gold	SDA	2	3.3	3.68	0.70
	DA	7	11.7		
	NEU	26	43.3		
	AG	17	28.3		
	SA	8	13.3		
ERP helps the performance of the organization by providing streamlined information sharing between different functional units /departments of the organization	SDA	10	16.7	3.57	0.76
	DA	5	8.3		
	NEU	30	50		
	AG	10	16.7		
	SA	5	8.3		
Overall mean and SD.				**3.66**	**0.71**

Source: survey data, 2022

Among the statements forwarded to the respondents, ERP system provides accurate information in MIDROC Gold has the highest percentage of agreement from the respondents taking 30

respondents agreed on the issue which covers 50% of the total respondent's size. In other sense, ERP system provides accurate information in MIDROC Gold plays a great importance in realizing information system in the company.

As depicted in table 4.7, majority of the respondents were agreed on the statement "ERP system provides accurate information in MIDROC Gold" (mean=3.71 and SD=0.67). This shows that many of the respondents concerning this statement have a good perception on the roles of ERP system on information system in the company which in turn can affect organizational performance of MIDROC Gold.

Correspondingly, the descriptive analysis of the statement with the second highest mean score ''ERP system provides real time information in MIDROC Gold'' (mean=3.69 SD=0.68) shows that enterprise resource planning has an impact on information system in different conditions such as in providing real time information in the company.

The other one forwarded to the respondents was "The ERP system facilities quick information retrieval and easily identify problems in MIDROC Gold". The data analysis showed that majority of the respondents agreed on the statement that enterprise resource planning plays an important role in the organization in facilitating quick information retrieval and easily identifying problems (Mean=3.68 and SD=0.70). So, it is possible to narrate that the role of enterprise resource planning system on employee information system which in turn can enhance the performance of the organization/MIDROC Gold.

Moreover, the statement "ERP system provides timely information in MIDROC Gold" was asked to the target group resulting in a mean value of 3.66 and a standard deviation of 0.72. The result shows that the role of enterprise resource planning system is important in information system in the case organization and thus improving organizational performance in MIDROC Gold. As table 4.7 suggests ERP system has an effect on information system and hence organizational performance in providing timely information in the organization as the mean value of 3.65 reveals that majority of the respondents were agreed on the statement "ERP system provides reliable information in MIDROC Gold".

To recapitulate information system, enterprise resource planning system has an important role on information system and organizational performance in many aspects like providing accurate information, providing real time information, facilitating quick information retrieval and easily identifying problems, providing timely information and providing streamlined information sharing

between different functional units /departments of the organization as the overall mean(Mean=3.66 and SD= 0.71) reveals majority of the study sample agreed that ERP plays an instrumental role on employee management which can also help the company to improve its organizational performance up on the adoption of enterprise resource planning system. The result of this variable is supported by different literatures as discussed herewith. In the view of (Iiavari 1991) an Information System is a collection of subsystems defined by either functional or organizational parameters that support decision making and control the organization.(Lucas 1981) highlights the fact that information technology is used to capture, transmit, store, retrieve, manipulate, or display information

The role of IS in an organization are increasing and encompassing all the various activities and the developments approaches have to take these growing considerations into account. According to Chang& King (2005), the Information Systems can be defined as an integration of hardware, software, human skills and management processes that enhance IS performance to maximize the returns on investment. Furthermore, Information systems combine people, hardware, software, data and networks to perform input, processing, output and control activates (O'Brien, 2004).

4.5. ERP and Organizational performance

In this section of descriptive analysis the result of the relationship between enterprise resource planning and organizational performance is interpreted accordingly and discussed as it has been done as follows.

Table:-4.8 Mean and Standard deviation of organizational performance

Statements/items	N=60	frequency	Percent	Mean	Std. Deviation
MIDROC Gold gives quality service after adopting the ERP system.	SDA	3	5	3.82	.66
	DA	2	3.3		
	NEU	29	48.3		
	AG	24	40		
	SA	2	3.3		
MIDROC Gold increases productivity after adopting the ERP system.	SDA	1	1.6	3.75	.99
	DA	2	3.3		
	NEU	14	23.3		
	AG	34	56.7		
	SA	6	10		
MIDROC Gold increase profitability after adopting the ERP system.	SDA	8	13.3	3.64	.92
	DA	34	56.7		
	NEU	21	35		
	AG	3	5		
	SA	4	6.7		
MIDROC Gold has taken the competitive advantage over its counter parts.	SDA	4	6.7	3.21	1.01
	DA	4	6.7		
	NEU	38	63.3		
	AG	12	20		
	SA	2	3.3		
ERP enables organizations to restructure business processes for accelerated organizations performance.	SDA		0	3.65 .91	0.91
	DA		0		
	NEU	26	43.3		
	AG	33	55		
	SA	1	1.7		
ERP implementation has realized the expected goal and o bjective	SDA	10	16.7	3.90	.55
	DA	30	50		
	NEU	5	8.3		
	AG	4	6.7		
	SA	3	5		
Overall				3.67	.82

Source: survey data, 2022

To gain a better understanding of the survey data concerning ERP systems and organizational performance, respondents were asked to rate various enterprise resource planning practices related to organizational performance. From the results in table 4.8, they agreed that ERP implementation has realized the expected goal and objective (M=3.90, SD=.55). The other highest score recorded from the survey data is about whether MIDROC Gold gives quality service after adopting the ERP system (M=3.82, SD=.66). The analysis indicates that most of the target groups agreed that MIDROC Gold increases productivity after adopting the ERP system (M= 3.75, SD=.72). Regarding whether ERP enables the organization to restructure business processes for accelerated organizations performance, the analysis indicates that most of them agree with the factor (M=3.65 SD=.91). The other important question forwarded to the target group was 'MIDROC Gold increase profitability after adopting the ERP system''. As it has been depicted in the table, most of the respondents replied that they have never caused their boss any inconveniences (M=3.64, SD=.92). Furthermore, respondents moderately agree with the statement "MIDROC Gold has taken the competitive advantage over its counter parts." (M=3.21, SD=1.01).

To recapitulate the relationship between enterprise resource planning and organizational performance, it possible to say that ERP system has an effect on organizational performance of MIDROC Gold. Table 4.8enabled the researcher to conclude enterprise resource planning (ERP) system plays significant role in organizational performance by realizing the expected goal and objective, increasing productivity after adopting the ERP system, increasing profitability after adopting the ERP system, attempting to take competitive advantage over its counter parts, enabling organizations to restructure business processes for accelerated organizations performance and giving quality service in the mining company.

From the overall mean and standard deviation it is possible to deduce that the results are consistent with the finding of different researches as justified as follows. Implementation of the ERP system has led to better outcomes (Chung *et al*., 2007). These systems have provided organizations with tremendous benefits, such as increased productivity, enhanced access to accurate and timely information, improved workflow, decreased paper dependence, shared knowledge, tight control (Bhamangol *et al*., 2011), and automated business processes by organizing and integrating departmental information (Monk, 2009).

The successful implementation of ERP systems would lead to lower inventories, reduce product growth time, improve customer service, increase production (productivity), increase profitability and improve efficiency through better customer services (Beheshti & Beheshti, 2010).

4.6. Inferential analysis

4.6.1. Correlations

To explore the relationship between enterprise resource planning (ERP) and organizational performance, the Pearson correlation coefficients are used. Pearson correlation is a statistical test that assesses the strength of the relationship between two numerical data variables (Saunders *et al.*, 2009). Field (2009) also states that the output of correlation matrix can be the correlation coefficient that lies between -1 and +1. Within this framework, a correlation coefficient of +1 indicates a perfect positive relationship, and a correlation coefficient of -1 indicates a perfect negative relationship; whereas a coefficient of 0 indicates no linear relationship. Therefore, the relationship of independent variables and dependent variable is measured via Pearson Correlation. The significance level is 0.05 in the Pearson Correlation test, which means there is 95% of confidence level. Therefore, the hypotheses can only be accepted if the significant p-value is less than 0.05. The correlation coefficient was made to measure the strength and direction of relationship between two groups of variables: the six enterprise resource planning system practices and organizational performance of MIDROC Gold.

Table:-4.9 Pearson's correlation analysis

		Employee management	Organizational business value	Internal process	Information system	Decision making	Inventory management	Organizational Performance
Employee management	Pearson Correlation	1						
	Sig. (2-tailed)	0.000						
	N	60						
Organizational business value	Pearson Correlation	.780**	1					
	Sig. (2-tailed)	.000						
	N	60	60					
Internal process	Pearson Correlation	.772**	.784**	1				
	Sig. (2-tailed)	0.000	0.000					
	N	60	60	60				
Information system	Pearson Correlation	.682**	.759**	.623**	1			
	Sig. (2-tailed)	.000	.000	.000				
	N	60	60	60	60			
Decision making	Pearson Correlation	.507**	.723**	.748**	.728**	1		
	Sig. (2-tailed)	.000	.000	.000	0.000			
	N	60	60	60	60	60		
Inventory management	Pearson Correlation	0.745**	0.689**	0.694**	0.781**	0.742*	1	
	Sig. (2-tailed)	.000	.000	.000	0.000	0.000		
	N	60	60	60	60	60	60	
Organizational Performance	Pearson Correlation	0.481**	0.541**	0.691**	0.749**	0.765*	0.769**	1
	Sig. (2-tailed)	.000	.000	.000	0.000	.000	.000	
	N	60	60	60	60	60	60	60

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

Source: survey data, 2022

As we have seen from the correlation matrix in table 4.9, there were 60 cases that had scores on both of the scales used in this analysis and had no any missing information on either of these variables that excluded from the analysis and the six independent variables had a positive values & significant relationship with the dependent variable. To see each variable:

Inventory management was positively and significantly related to organizational performance (r= 0.769, p< 0.01). A positive correlation indicates that if the organization works better on inventory management, the performance of the organization will be enhanced in the same condition or if inventory management increases, organizational performance also increases in the same directions.

Decision making was positively and significantly related to organizational performance (r=0.765, p < 0.01). A positive correlation indicates that if a good decision is reached by the organization, organizational performance will be optimized or enhanced.

There is also a positive relationship between information system and organizational performance (r=.749, P<0.01). This signifies that if the organization provides reliable, accurate and real time information, organizational performance will be enhanced.

Likewise, internal process(r=0.69, p<0.01) shows that there is a positive correlation with organizational performance.

Finally, the study revealed that the two variables organizational business value (0.541) and employee management(r=0.481) have positive but weaker relationship with organizational performance (r=0.507, P<0.01).

To generalize, there is strong, positive and significant relationship between the four independent variables (information system, decision making, internal process and inventory management) and the dependent variable (organizational performance).

Thus, it is possible to suggest that the independent variables such as inventory management, decision making, internal process and information system are very essential in enhancing organizational performance as shown by their positive and strong relationship with the dependent variable.

Therefore, from the result of the correlation matrix it can be concluded that the organizational performance of MIDROC Gold depends highly on the four practices of ERP (inventory management, decision making, internal process and information system).

4.6.2. Regression analysis

Regression analysis is a statistical measurement used for estimating the relationships among variables. It enables to determine the strength of the relationship between variables and the predictive power of the independent variables on the dependent variable. In short, regression helps a researcher understand to what extent the change of the value of the dependent variable

causes the change in the value of the independent variables, while other independent variables are held unchanged. Regression analysis is a way of statistically sorting out the variables that have indeed an impact. The regression analysis is done basically to determine the values of the model fit (ANOVA), model summary (R and R2), and the Beta coefficients. While there are many types of regression analysis, at their core they all examine the influence of one or more independent variables on a dependent variable.

4.6.2.1 Assumptions of Multiple Regressions

Before conducting a regression analysis, the basic assumption tests for the mode must be carried out. This is a compulsory precondition in explaining the relationships between dependent and explanatory variables. The major assumptions like, normality distribution test, linearity, multicolinearity, homoscedasticity and autocorrelation must be checked and proved to be met reasonably well. Each test is explained below:

4.6.2.1. 1. Normality Distribution Test

Normality focuses on the extent to which the sample data distributes according to normal distribution (Hair et al., 2010). The researcher used skewness and kurtosis to evaluate the normality of the observed items. Skewness is "a measure of the asymmetry of the probability distribution of a real-valued random variable". On the other hand, kurtosis refers to "the peaked or flatness of the distribution compared to the normal distribution" (Landau and Everitt, 2003). Values of skewness can be positive, negative, or zero. A zero, Skewness value, indicates a perfectly symmetrical distribution, whilst a positive skewness value indicates that the tail on the right side is longer and a negative value refers to left- tailed. On the other hand, a kurtosis value is zero for normal distributions, whilst it is negative for flat distributions (low kurtosis) and a positive value for peaked distributions (high Kurtosis). Finally, to assure the accuracy of the normality test findings, tests of skeweness and Kurtosis were conducted. These two tests were conducted in accordance with previous studies (Tay, 2006) in order to calculate the normality of the raw data. Additionally, the recommendations of Hair et al (1998) were that Skewness and Kurtosis values should range between 2.00 and 7.00, and the recommendations of Kline (2010) were that the Skewness and Kurtosis values should range between +/- 3.0 and +/- 10.0. The data of the present study was regarded as normally distributed based on Kline's (2010)

recommendations of since the Skewness and Kurtosis of the current data ranged between -1.31 and 4.88 (see Table 4.10)

Table:-4.10 Normality of Data Distribution

	N	skewness		Kurtosis	
	stat	Statistics	Std.Er	statistics	Std. Error
Organizational Performance	60	-1.316	.128	1.982	.254
Organizational business value	60	1.497	.128	4.862	.254
Internal process	60	.063	.128	-.456	.254
Information system	60	-1.162	.128	1.282	.254
Decision making	60	.998	.128	.899	.254
Inventory management	60	-1.506	.128	3.691	.254
Employee management	60	.918	.128	.517	.254

Source: survey data, 2022

4.6.2.1.2. Multicolinearity test

Multicollinearity exists when there is strong correlation between two or more predictors in a regression model (Saunders, Lewis, & Thornhill 2007). There should be no perfect linear relationship between two or more of the predictors. If there is a high degree of correlation between independent variables, we have a problem of what is commonly described as the problem of multicollinearity (Kothari, 2004; Field, 2006).

Collinearity diagnostics on the variables as part of the multiple regression procedure is done using variance inflation factor (VIF) and tolerance statistics. Tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model. If this value is very small (less than 0.10), it indicates that the multiple correlation with other variables is high, suggesting that the possibility of multicollinearity (Pallant, 2010). Furthermore, the other value given is the VIF, which is just the inverse of the tolerance value (1 divided by tolerance). According to Pallant, (2010), VIF values above 10 would be a concern, indicating multicollinearity. In this study the tolerance value for each independent variable was not less than 0.10, showing that the assumption of multicollinearity was not violated (see Table 4.11). Variance-inflation factor (VIF) has also been checked and values are found smaller, which is well below the cut-off 10, as shown in the table below. The VIF value also supported that multicollinearity is not a problem. In general, the two tests

indicated that the predictors don't significantly correlate each other and hence, the assumption has been met.

Table:-4.11 Collinearity Test

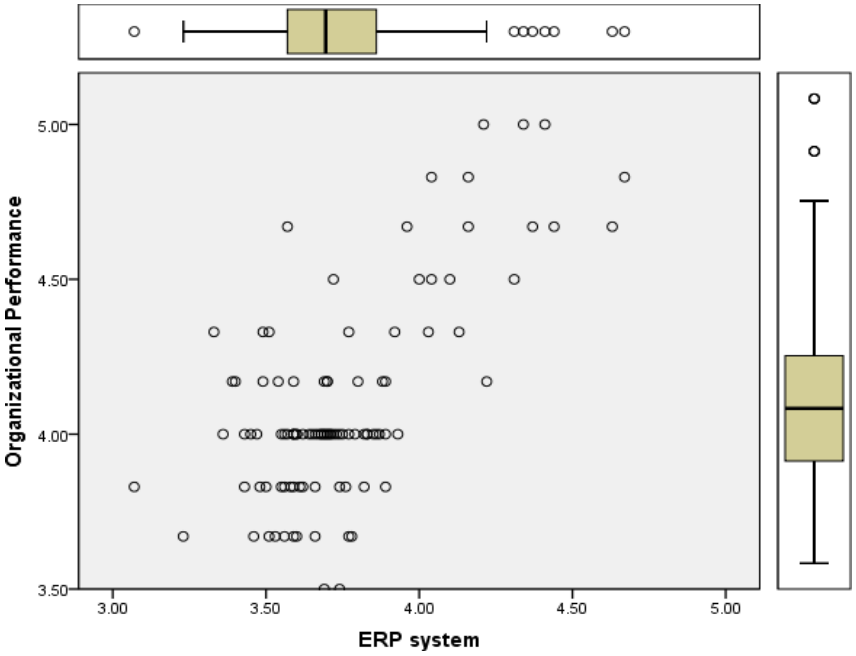
		Collinearity Statistics	
Model		Tolerance	VIF
1	(Constant)		
	Org anizational business value	.597	2.011
	Internal process	.676	1.736
	Information system	.778	1.731
	Decision making	.691	1.610
	Inventory management	.746	1.831
	Employee management	.608	1.646

Source: survey data, 2022

4.6.2.1.3. Homoscedasticity

The assumption of homoscedasticity refers to equal variance of errors across all levels of the independent variables (Osborne & Waters, 2002). This implies it requires even distribution of residual terms or homogeneity of error terms throughout the data. Homoscedasticity can be checked by visual examination of a plot of the standardized residuals by the regression standardized predicted value (Osborne & Waters, 2002). If the error terms are distributed randomly with no certain pattern, the problem is not detrimental for analysis. The scatterplot in Fig 4.2 shows that the standardized residuals in this research are distributed evenly which shows that no violation of homoscedasticity.

Fig 2: Scatterplot of standardized residuals



Source: survey data, 2022

4.6.2.1.4. Auto-correlation

Autocorrelation or independence of errors refers to the assumption that errors are independent of one another, implying that subjects are responding independently Stevens (2009). Durbin-Watson statistic can be used to test the assumption that our residuals are independent (or uncorrelated). This statistic can vary from 0 to 4. For this assumption to be met, the Durbin-Watson value needs to be close to 2 (Field, 2006). Values below 1 andabove 3 are problematic and causes for concern. To check this assumption we need to look at the Model Summary box presented below.

Table 4.12: Durbin Watson statistics

Model Summary[a]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.869a	.756	.748	.63875	2.044

a. Predictors: (Constant), organizational business value, inventory management, internal process, decision making, employee management and information system.

Source: survey data, 2022

Table 4.16 above reveals that errors are responding independently, and autocorrelation is not a concern with Durbin-Watson value of 2.044. Therefore, it is possible to say the auto-correlation test has been met.

Table 4.13 Analysis of ANOVA Results between organizational performance and predictor Variables.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.539	2	5.180	504.385	.000 b
	Residual	.657	57	.010		
	Total	16.196	59			
a. Dependent Variable: organizational performance						
b. Predictors: (Constant), organizational business value, decision making, internal process, inventory management, information system, employee management.						

Source: survey data, 2022

From the analysis, it is noted that the probability value of 0.000 ($p<0.05$) indicates that the regression relationship was highly significant in predicting how organizational business value, decision making, internal process, inventory management, information system, employee management organizational performance. Further, the findings show that the overall model was significant**.**

4.6.3.Results of Regression

According to the table shown above, the result is presented under summary of the regression model; the result suggests that the model is very good in establishing the relationship between the dependent variables (organizational performance) and independent (inventory management,

employee management, decision making, organizational business value, information system and internal process) variables. Summary of the regression correlation coefficient R=0.869 represent the correlation between organizational performance and the independent variables. R square represents the proportion of variance in the dependent variable which is explained by independent variables (0.756). Adjusted square(R=0.748) meaning that 74.8 % the variation of organizational performance is due to the predictors (inventory management, employee management, decision making, organizational business value, information system and internal process). The remaining 25.2% of variations on organizational performance are explained by other potential factors, meaning there are other variables adoption of the ERP System (may be like adaptation, customization, etc.) accounting for the variance in organizational performance which have not been included in this model.

4.6.3.1 Regression Coefficient

Table 4.14. Regression Coefficient

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1a	Inventory management	0.369	.593	25.720	1	.000	.388
	Decision making	.358	.751	12.523	1	.010	.364
	Information system	0.344	0.589	16.657	1	0.010	.331
	Internal process	0.342	0.684	15.874	1	0.011	0.321
	Constant	3.589	3.742	36.448	1	.000	.000
a. Variable(s) entered on step 1: inventory management, employee management, decision making, organizational business value, information system and internal process.							

Source: survey data, 2022

The above regression analysis model table points out the relationship between independent and dependent variables. The Wald test ("Wald" column) is used to determine statistical significance for each of the independent variables. From these results it possible to deduce that inventory management (p=.000), decision making (p =.010), employee management (p =.053), organizational business value (p=0.055), information system (P=0.010) and internal process (p =.000) added significantly to the model/prediction. This table can be used to predict the average value of the dependent variable based on a one unit change in an independent variable when all other independent variables are kept constant. Depending on this information, for example, the table shows that, organizational performance increases by 0.388 in one unit increase in inventory

management. Similarly, organizational performance increases by 0.364 in one unit change in decision making keeping the other independent variables constant. Furthermore, one unit change in information system results in increasing organizational performance by 0.331. Likewise, organizational performance increases by 0.331 in one unit increase in information system Conversely, organizational performance decreases by 0.046 in one unit increase in organizational business value and finally organizational performance changes inversely by 0.041 by one unit change in employee management.

In general a regression was performed to establish the effects of inventory management, employee management, decision making, organizational business value, information system and internal process on the performance of MIDROC Gold. The regression model was statistically significant at $p < 0.05$. The model explained 74.8% of the variance in organizational performance. Increasing inventory management, decision making, information system and internal process associated with an increased likelihood of exhibiting organizational performance, but increasing organizational business value and employee management was associated with a reduction in the likelihood of increasing organizational performance.

Based on the results of the regression model, the final multiple regression equation for organizational performance is thus presented as follows:-

$$Y = 3.589 + 0.342X_1 + 0.369X_2 + 0.344X_4 + .358X_6 + e$$

Where: Y = organizational Performance

X_1 = internal process

X_2 = inventory management

X_4= information system

X_6= decision making

e =Error term (Residual)

4.7. Testing of Hypotheses

A multiple Regression model was used to predict the effects of ERP system on organizational performance.

4.7.1. The effect of inventory management on organizational performance

H_1: *Inventory management has significant effect on organizational performance in MIDROC GOLD.*

The hypothesis which states that inventory management has a significant effect on organizational performance in MIDROC Gold is thus accepted as the p-value is found to be less than 0.05 (P<0, 05). In other sense inventory management and organizational performance have positive relationship. 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 et al., 2010). Furthermore, 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.

4.7.2. The effect of Decision making on organizational performance

H_2: *Decision making has significant effect on organizational performance in MIDROC GOLD*

Decision making was another ERP system practice that significantly influenced organizational performance (B = 0.358, expB =0.364, P<0.05). This means that a unit increase in decision making results in increase (by 0.364 times) in the likelihood of enhancing organizational performance. Thus this hypothesis is accepted. Therefore, decision making has a significant effect on organizational performance. Kelton *et al*., (2010) found that the implementation of ERP systems affects decision-making processes in various contexts.

In addition, decision-making is an 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 & Villard,2013). 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-ma king 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 . et al., 2012).

Thus, it is genuinely possible to generalize that this decision making and organizational performance are correlated positively, which means decision making affects organizational performance.

4.7.3 The effect of internal process on organizational performance

H_4: *Internal process has significant effect on organizational performance in MIDROC GOLD.*

From Table 4.15, the effect of internal process on organizational performance was significant in the model (B = 0.342, Exp (B) = 0.321, $p < 0.05$). The odds ratio of 0.321 means that units increase in internal process will lead to 0.321 times more likelihood of enhancing organizational performance. The hypothesis stating internal process has significant effect on organizational performance in MIDROC GOLD is thus accepted. This finding is supported by different literatures; according to Gartner (2010), ERP systems provide firms with the ability to enhance internal process through the integration of all the activities and function areas of a company. According to Bosilj & Spremic (2004), internal processes are all the activities and key processes required in order for the company to excel at providing the value expected by the customers. Internal Processes are lead indicators where management intervention is possible to affect customer and financial outcomes.

4.7.4. The effect of information system on organizational performance

H_5:-Information system has significant effect on organizational performance in MIDROC GOLD.

Information system was another ERP system practices that significantly affected organizational performance (B = 0.344, expB =0.331, $P<0.05$). This means that a unit increase in information system results in increase (by 0.344 times) in the likelihood of improving organizational performance. Thus this hypothesis is accepted. Therefore, information system has a significant effect on organizational performance. This result is consistent with different empirical studies :- To increase productivity, business enterprises invest in information systems, bearing in mind the benefits and functionality of these systems (Ifinedo *et al*.,2010) and converting to ERP systems and turning to ERP systems to deal with changing environment and overcome limitations of legacy

systems (Poon & Yu, 2010). Implementation of the ERP system has led to better outcomes (Chung et al., 2007). These systems have provided organizations with tremendous benefits, such as increased productivity, enhanced access to accurate and timely information, improved workflow, decreased paper dependence, shared knowledge, tight control (Bhamangol *et al*., 2011), and automated business processes by organizing and integrating departmental information (Monk, 2009). And these benefits are direct evidence; that is why these systems attract larger organizations with massive data volumes (Ullah *et al*., 2018). Literature indicates that different studies are carried out to identify critical factors influencing the performance of the implementation of the ERP system in the post implementation process, concentrating on industrial surveys, case studies and other research issues covered.

4.8. Summary.

This chapter presented all the research data that was collected from the employees of MIDROC Gold. Then the collected data was checked for completeness so that the cleanness of data was kept. Consequently, interpretation of the data collected from the questionnaires was done using descriptive and inferential statistics, and this was represented through the use of tables to represent the information one is able to understand from a glance. The next chapter will present the discussion, conclusion, recommendations of the study and suggestions for further research.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1. Introduction

This chapter presents summary of the key findings of the study (comprises of results obtained from chapter four, purpose of the study, major findings, the methodology applied and other various points are discussed), conclusion and recommendation from the researcher based on the outcome of the research.

5.2. Summary of findings

Enterprise Resource Planning (ERP) system is a computer information system that integrates all of a company's business operations and procedures. ERP systems include many of the capabilities seen in other forms of manufacturing software, such as project management, supplier management, product data management, and scheduling are all examples of management. The purpose of ERP is designed to offer continuous, real-time information to all employees (Management Encyclopedia, 2006). Organizational performance is a method of measuring the success of the organization to ensure that it achieves its goals. Organizational performance measurement plays an important role in organizational growth. Through measuring performance, a firm can identify and track progress against organizational goals, seek opportunities for improvement, and compare performance against both internal and external standards, and formulate strategic activities through reviewing its performance (Hwang, 2011). Lee, Hong, & Katerattanakul (2004) divided organizational performance into two categories financial performance and non-financial performance.

Following the accomplishment of this study, Major findings obtained in the process are discussed.

- The major purpose of this study was to investigate effects of enterprise resource planning (ERP) system on organizational performance in MIDROC Gold. In addition to the major objective; six specific objectives were also set. These are:
  - ✓ To identify if information system has an effect on organizational performance in MIDROC Gold.
  - ✓ To determine the effect of organizational business value on organizational performance in MIDROC Gold.

- ✓ To study if employee management has an effect on organizational performance in MIDROC Gold.
- ✓ To identify if internal process has an effect on organizational performance in MIDROC Gold.
- ✓ To examine the effect of decision making on organizational performance in MIDROC Gold.
- ✓ To examine the effect of inventory management on organizational performance in MIDROC Gold

- The research followed an explanatory research design. This method was adopted in order to explain the relationship between the independent and dependent variables (effects of ERP system on organizational performance).
- Data for the study was collected through close-ended and open ended questionnaire using the five point Likert scale.
- The target population for this study consists of employees who are working on ERP system in different departments at MIDROC Gold. Eighty one (81) respondents were targeted for the survey and hence the same number of questionnaire was distributed. However, out of this number, 67 questionnaires were received. Out of which 7 (seven) were carelessly or inappropriately filled and were therefore not used in the analysis making a response rate of 74%. The remaining 14 questionnaires were not returned back at all because of some reasons like some employees weren't in their respective offices to have annual leave just three days after receiving the questionnaire and others with different reasons.
- Descriptive statistics (percent, mean and standard deviation) used to interpret data for each item of the respective ERP practices based on mean, percent and standard deviation. Consequently,
- Based on the overall mean score of the respective variable under investigation, four of the study variables (independent variables: - inventory management, information system, internal process and decision making) had shown positive- a significant effect on organizational performance.
- Inferential analysis (particularly correlation and regression analysis) was used to test the strength and direction of relationship between the independent variables and the dependent variable.

- Correlation coefficient was computed to determine the strength of the relationship that exists between the six ERP practices of the study and organizational performance. The result of the correlation tests revealed positive and significant relationship between the four independent variables of the study (inventory management, information system, internal process and decision making) and organizational performance and the remaining two negative and insignificant relationships with the dependent variable. Hence, the roles of ERP system on organizational performance in inventory management, information system, internal process and decision making have a significant role on organizational performance in MIDROC Gold.
- Regression analysis was used to test the hypotheses that were initially set by the researcher. Accordingly, four out of the six hypotheses were accepted and two were rejected as it had shown negative relationship with the dependent variable. Thus based on the results, it was recognized that inventory management, information system, internal process and decision making significantly predicted organizational performance.

5.3. Conclusion

The study explored the effects of enterprise resource planning (ERP) on organizational performance. Using both descriptive and inferential analysis, the study identified four ERP system practices that significantly affect the performance of the organizational.

The study provides evidence that inventory management has a significant effect on organizational performance in MIDROC Gold as it has a positive and strong relationship with the dependent variable. Thus, inventory management helps MIDROC Gold by minimizing labour intensive system in the company. The other important benefit of adopting ERP system in the case organization is improving decision making. ERP helps the organization by improving its decision making ability such as by making the right decisions and achieving organizational goals and by improving decision making processes. Adopting enterprise resource planning system in MIDROC Gold could also help the organization by improving its internal process. As discussed earlier one of the practices of ERP system is internal process. Internal process helps the organization by automating and simplifying processes across the organization. The importance or the role of adopting enterprise resource planning system in the case organization is not limited to the benefits obtained from the above discussed practices; it has also another importance in deploying good

information system. Accordingly, the implementation of information system helps the performance of the organization by providing streamlined information sharing between different functional units /departments, helps in providing accurate information, provides reliable and timely information ,helps MIDROC Gold by facilitating quick information retrieval and easily identify problems. The outcome of all the above-mentioned benefits getting by adopting enterprise resource planning system leads to the organizational performance of the company under investigation; in this case is MIDROC Gold.

5.4. Recommendations

From different perspectives and results of the research, the researcher has made the following recommendations.

- There is the need for MIDROC Gold to build on the enterprise resource planning system practices (internal process, inventory management, decision making and information system) which had shown positive relationship with organizational performance and found to revealed have significant effect on the case organization understudy; MIDROC Gold.
- The researcher's further recommendation is that although the four variables found to be factors of the ERP system optimizing organizational performance, the respective overall mean score indicates there is a room to improve their effect by working hard in line with the goals of the organization, MIDROC Gold.
- Most importantly, the organization is recommended to work hardly on the two variables/enterprise resource planning system practices (organizational business value and employee management) as the respective variables result showed that negative relationship with organizational performance and identified to as the roles of ERP system which don't affect organizational performance in MIDROC Gold as various empirical studies revealed that the two variables are important roles of enterprise resource planning system affecting organizational performance.
- The researcher tried to present different suggestions for further researches based on findings obtained from the study.The research focused only on MIDROC Gold. So, other researchers have to carry out a research in other organizations that deployed ERP system. Methodologically, even if there are numerous practices of enterprise resource planning (ERP) system, the research was carried out the study focusing on the six ones (inventory management, decision making, internal process and information system). Thus, further

researches should focus by incorporating other practices of ERP system. The research on ERP system and its effect on organizational performance is a very important area due to its importance to organizational goal attainment/success.

- However, in Ethiopia there are no sufficient studies carried out on this title and area .It is therefore important that more researchers especially those in Ethiopia continue to study the area empirically.

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Appendices

Appendix I: Questionnaire

ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MASTERS OF BUSINESS ADMINSTRATION

Researcher: Elizabeth Gebru

Dear respondents,

This questionnaire is designed to prepare a research title of "The Effect of Enterprise Resource Planning Implementation (ERP) system on Organizational Performance: the case of MIDROC GOLD MINE PLC." for the purpose of partial fulfillment of the requirement for the Degree of Master of Science in Business Administration. I kindly request you to take your time to complete the questionnaire to the best of your knowledge and thereafter send the same back to me. Hereby, I would like to express my gratitude for your dedicated cooperation in participating in this study. Had it not been your genuine cooperation in filling this questionnaire, it would have not been possible to conduct this thesis. All your responses are confidential and will only be used for the purposes of this research. Thank you in advance for taking the time to complete this survey.

Thank You!!

PART I: General Information (Demographic Information) - Please put (√) in the box.

1. What is your gender?

A. Male ☐ B. Female ☐

2. Age Group:

A.≤ 25 ☐ B.26 – 35 ☐ C.36 – 40 ☐ D.41 and above ☐

3. Educational Status

Diploma ☐ BA/BSC ☐ Masters ☐ above Masters ☐

Other, please specify _____

4. Your service year:

A. ≤ 5 ☐ B. 6 – 10 ☐ C.11 – 15 ☐ D.16 – 20 ☐ E.21 and above ☐

5. In which department/division are you working in?

Finance ☐ Human Resources ☐ Logistics ☒

Production ☐ Techniques ☐ Quality ☐

Procurement ☐ Sales ☐ Other ☐

6. The position you hold in the organization Staff

Supervisor ☐ Manager ☐ Officer ☒ other, please specify_____

Part II

Please rate the degree of the effect of ERP implementation that affect organizational Performance listed below by ticking (√).

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

STATEMENT	**SCALE**				
Organizational business value	**1**	**2**	**3**	**4**	**5**
ERP helps in reduction of operational and administrative cost at MIDROC Gold					
ERP enables control of financial flows in the organization					
ERP system can enhance responsiveness at MIDROC Gold					
ERP system creates competitive advantage at MIDROC Gold					
ERP provides clear financial information to external parties					

Inventory management	**1**	**2**	**3**	**4**	**5**
ERP system minimizes labor intensive system at MIDROC Gold					
ERP system can save time and cost in MIDROC Gold					
ERP helps inventory planning and scheduling in MIDROC GOLD					
ERP helps in Real-time access to inventory turnover in MIDROC Gold					
Inventory management helps in effective stores management of MIDROC GOLD					

Employee management	**1**	**2**	**3**	**4**	**5**
ERP system helps the managers to control the day to day activities of the employees in MIDROC Gold					
ERP system helps the managers to identify employees' performance in MIDROC Gold					
ERP system produces accurate appraisal documentation to protect both the employee and employer.					

ERP system provides clear disciplinary performance procedures and feedback guidelines.					
ERP helps in making the Time management and leave administration simple and easily manageable.					
ERP system standardizes evaluation forms in line with clear performance measures in MIDROC Gold					
Internal process	**1**	**2**	**3**	**4**	**5**
ERP system facilitates the integration among business units of MIDROC Gold.					
ERP implementation facilitates internal process in MIDROC Gold					
ERP implementation has positive effect on internal communication process in MIDROC Gold					
ERP system reduces complexity of reports at MIDROC Gold					
ERP automate and simplify processes across the organization					

Decision making	**1**	**2**	**3**	**4**	**5**
ERP system enhances the quality of managerial decision-making process in MIDROC Gold					
ERP system improves decision making processes in MIDROC Gold MINE business units					
ERP a wide range of analytical and reporting tools can help gain insight into business performance.					
ERP easy-to-use tools to enable to work quickly and make smart, proactive decisions in MIDROC Gold.					
ERP help to make the right decision and achieving organizational goals in MIDROC Gold MINE.					
Information system	**1**	**2**	**3**	**4**	**5**
ERP system provides real time information					
ERP system provides accurate information					
ERP system provides reliable information					

ERP system provides timely information					
The ERP system facilities quick information retrieval and easily identify problems.					
ERP helps the performance of the organization by providing streamlined information sharing between different functional units /departments of the organization					
ERP and Organizational performance	**1**	**2**	**3**	**4**	**5**
MIDROC Gold gives quality service after adopting the ERP system.					
MIDROC Gold increases productivity after adopting the ERP system.					
MIDROC Gold increase profitability after adopting the ERP system.					
MIDROC Gold has taken the competitive advantage over its counter parts.					
ERP enables organizations to restructure business processes for					
ERP implementation has realized the expected goal and objective					

Finally, I'd like to say thank you a lot for your unreserved co-operation cordially.