# ST. MARY'S UNIVERSITY

# SCHOOL OF GRADUATE STUDIES

## THE EFFECT OF ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM ON ORGANIZATIONAL PERFORMANCE AT SHEMU PLC.


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**ADDIS ABABA, ETHIOPIA**

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**SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF BUSINESS, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MBA IN GENERAL MANAGEMENT**

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**BY**

**SOLOMON KASAHUN**

**APPROVED BY BOARD OF EXAMINERS**

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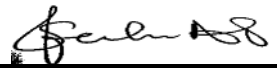
| **Tiruneh Legesse, Asst. Professor** |  |
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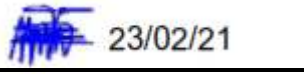
| **Mesfin Tesfaye, Phd** |  |
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## DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of the thesis advisor Tiruneh Legesse (Ass. Professor). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

| Solomon Kasahun Asfaw |  | 21/12/2020 |
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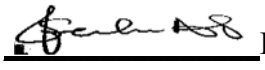
St. Mary's University, Addis Ababa

## LETTER OF CERTIFICATION

This is to certify that Solomon Kasahun has carried out the research work entitle: - The effect of enterprise resource planning (ERP) system on organizational performance at Shemu PLC Under my guidance and supervision. Accordingly, I assure that his work is appropriate and standard enough for the submission in partial fulfillment of the requirement for the award of Masters of Business Administration in general management.

Confirmed by: - Tiruneh Legesse (Ass. Professor) Signature  Date 23/02/2021

Research Advisor

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**ABSTRACT**

*The relationship between ERP system and organizational performance as well, effect of ERP system and organizational performance were not evidently identified and well recognized at SHEMU PLC. The main purpose of this study was to examine the effect of ERP system on organizational performance. The study adopted mixed research approach and from inferential research design, specifically correlational research design was employed. For this purpose, a sample of 123 employees was draw through stratified random sampling technique and 11 divisional managers and deputy CEO drawn through purposive sampling technique. Self-administer questionnaire and interview guide were used to gather data. The collected data was analyzed by using SPSS-Version 22. Both descriptive and inferential statistics was used for the data analysis. The descriptive statistics such as frequency, percent, mean and standard deviation were used for describing the demographic characteristics of respondents and the whole perception of respondents on relationship of dependent and independent variables. The inferential statistics like Pearson correlation and simple linear regression were used to show the relationship between independent and dependent variables. In addition, to determine the effect of independent variable (ERP) system on the dependent variable (OP). The findings of the study indicated that, ERP system has positively and strongly correlated and claimed statistically significant relationship in organizational learning, decision making, Supply chain management, inventory management and customer relationship management on organizational performance. finally, the study recommends that internal process, information System, organizational business value, employee's management and also, they should enhance different aspects of organizational performance. As a result, it enables to cultivate the benefits from ERP system.*

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

## ACRONYMS

| | |
|---|---|
| ANOVA | Analysis of Variance |
| ERPS | Enterprise Resource Planning System |
| CRM | Customer Relationship Management |
| SCM | Supply Chain Management |
| IT | Information system |
| SPSS | Statistical Package for Social Science |
| OP | Organizational Performance |
| VIF | Variance Inflation Factor |
| IP | Internal Process |
| IM | Inventory Management |
| MRP | Material Requirement Planning |

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Enterprise resource planning (ERP) system has suit essential strategic tools in today's aggressive business environment(Jalal, 2011). Since it enables an organization to put together all the major business processes in order to improve efficiency and maintain a competitive position(Al-Mashari, 2003;Abugabah & Sanzogni, 2009). In its basic definition, ERP is an enterprise-wide information system that integrates and controls all the business processes in the entire organization (Olson, 2004 cited by Jalal, 2011). The Enterprise Resource Planning (ERP) system is an enterprise information system designed to integrate and optimize the business processes and transactions in corporation(Huang & Palvia, 2001). Waxer, 2016 cited by Karimi J., 2017 defined ERP as a wide term for any software application that integrates all industry processes and data into a single system.

The idea of organization performance can be defined as financial gains by the organization, operational improvements for the organization or intangible gains for the organization. The focus of this study is on the operational and intangible benefits from adopting the ERP system (which will be conceptualized by many variables tested in this study). The motive is that the financial benefits have been studied several times and do not provide a direct effect of the ERP system in specific terms. For instance, a study conducted by (Hitt *et al.,* 2012 cited by Karimi J., 2017).

Empirical evidences from a survey on companies who have applied enterprise resource planning (ERP) systems shown that ERP has a massive effect on organizational performance such as recording and sharing real-time information, increase operational efficiency, high customer retention, reduce inventory shortage, enables performance monitoring of employees, integrate and coordinate resources, guide and control actions of middle managers and employees to ensure adherence to plans, increase transfer knowledge and skills between employs and increase the quality of decision made by managers(Amin et al., 2010,Gefen & Ragowsky, 2005,Porter M. E., 2010,Lindgreen A. et al., 2006; Cakici O. E. et al., 2010; Cachon & Fisher, 2000; Simoes, Gomes, & Yasin, 2001; Zollo & Winter, 2002; Zeng Y. et al., 2012 and Al-Tarawneh, 2012)

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 C. M. & Seymour L. F., 2014). Other countries such as Egypt, Kenya, Nigeria and Ghana have also proved a four significant increase in the number of organizations adopting the use of ERP systems.

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

### 1.2 Background of the Organization

The study was conduct at Shemu private limited company located at kality sub-city, Addis Ababa, Ethiopia. The Company established in 2009 with composed of Asveza PLC and other functional private limited companies with a fast growth record of accomplishment. The companies in the group engaged in manufacturing (liquid soap, bar soap, edible oil), retail service-providing, printing trading and engineering (source: company profile).

### 1.3 Statement of the Problem

Companies are under vast pressure to ensure continuity of key operations with fewer resources. Many companies look to their enterprise resource planning (ERP) systems to find efficiencies, improve processes, reduce complexity, integrate systems, and eliminate redundancy. An effective business strategy centers on an aggressive, efficient use of information technology; for

this reason the ERP systems have emerged as the core of successful information management, and the enterprise backbone of many organizations(Karimi J., 2017).

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

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

According to the preliminary survey conducted by the researcher and communicated with the deputy CEO and Human resource management development, the effect of ERP system on organizational performance and the degree of association of these two variables were not evidently identified and well recognized. This implies that, there was a knowledge gap between the effect of ERP system on organizational performance and their relationships at SHEMU PLC, Akaki Kality Sub-City, Administration. These existing problems and empirical evidences caused this research with the purpose of examining the effect of effect of ERP system on organizational performance between 123 sample respondents. Thus, this study began from the understanding of the need to effectively administer the effect of ERP system on organizational performance at SHEMU PLC, Akaki Kality Sub-City Administration, Addis Ababa, Ethiopia.

### 1.4 Research Questions

To achieve the intended objectives as well as the research problem stated above, the following questions was designed.

1. Does the organization secure expected benefit from implementing the ERP system at Shemu PLC?

2. Is there a relationship between ERP system and organization performance at Shemu PLC?
3. To what extent the ERP system influences organizational performance at Shemu PLC?

## 1.5 Hypothesis

To answer the above questions, the following alternative hypothesis were formulated:

**Hypothesis 1:** Information system have significant effect on organizational performance.

**Hypothesis 2:** Organizational business value have significant effect on organizational performance.

**Hypothesis 3:** Customer relation management have significant effect on organizational performance.

**Hypothesis 4:** Inventory management have significant effect on organizational performance.

**Hypothesis 5:** Employee management have significant effect on organizational performance.

**Hypothesis 6:** Supply Chain Management have significant effect on organizational performance.

**Hypothesis 7:** Internal process have significant effect on organizational performance.

**Hypothesis 8:** Organizational Learning have significant effect on organizational performance.

**Hypothesis 9:** Decision Making have significant effect on organizational performance.

## 1.6 Research Objectives

### 1.6.1 General Objective

The overall objective of the study is to examine the effect of ERP System on organization performance at Shemu private limited company.

### 1.6.2 Specific Objectives

The specific objectives of the study are:

- To examine the benefits from implementing ERP system at Shemu PLC.
- To show that existing relationship between ERP system and the performance of Shemu PLC.
- To determine the effects of ERP system on the performance of Shemu PLC.

## 1.7 Significance of the Study

The purpose of the study was to examine the effect of ERP system on organizational performance at Shemu PLC; and the findings produce empirical results that contribute to the private sector to show that, to what extent the ERP system affect their operation and its linkage to organizational performance. It is also useful to enhance the benefit gained by the system and

other private sector who does not adopt the system will find the results of the research as a useful device to understand and learn that the system has a contribution on organizational performance. The study will also serving as a secondary source for those who want to make further study. In general, this research is essential for any organizations as a document to enhance organizational performance.

## 1.8 Scope of the Study

The study mainly focuses on the assessment of the effect of ERP system on organizational performance of Shemu private limited company. Specially its focuses on the operational and intangible benefits from adopting the ERP system (which is conceptualize by many variables). Only nine ERP system roles are extracted from literature were considered in this study even though, there are many ERP system roles to be considered in the effect of ERP system on organizational performance.

## 1.9 Organization of the Study

This study has organized in five chapters. Chapter one is about introduction of the study which contains background of the study, back ground of the organization, statement of the problem, research questions, objective of the study, significance of the study, scope of the study, and organization of the paper. Chapter two present the review of related literature. Chapter three discuss the research design of the study comprising all methods and tools that were employ to achieve the stated objectives. Chapter four of the thesis was focus on data presentation and analysis of the study. The data that has presented statistically treated in order to cover the relationship of the variables involved in the study. Moreover, the last chapter cover conclusion, limitation of the study and recommend based on the research investigation.

# CHAPTER TWO

# LITERATURE REVIEW

In this chapter, the researcher was reviewed different sources of literature related to the effect of enterprise resource planning (ERP) system that help the researcher to understand and identify the effect being studied more appropriately. The review includes basic issues like: concepts and meaning of ERP system, Theories of ERP system, the roles of ERP system, effect of ERP system & organizational performance and finally the conceptual framework model.

## 2.1 Concept and Meaning of ERP System

ERP systems were named in a different way by different authors, a few of them are enterprise systems, integrated standard software packages enterprise business-systems, integrated vendor software, enterprise wide-systems, and enterprise application systems, but all of them are similar definition (Al-Mashari et al., 2003; R. Addo-T. P. Helo 2011). R. Addo-T. P. Helo (2011) define ERP system as an enterprise-wide information system (IS) that integrates and controls all the business processes in the entire organization. Addo-Tenkorang & Helo, 2011 have tried to summarize the above definition defined by different authors as follows; it is an enterprise-wide information system that integrates and controls all the business processes in the entire organization. The Enterprise Resource Planning (ERP) system is an enterprise information system intended to integrate and optimize the business processes and transactions in a corporation. It is an industry-driven concept and systems and is universally accepted by businesses and organizational industries as a practical solution to achieve an integrated enterprise information system solution.

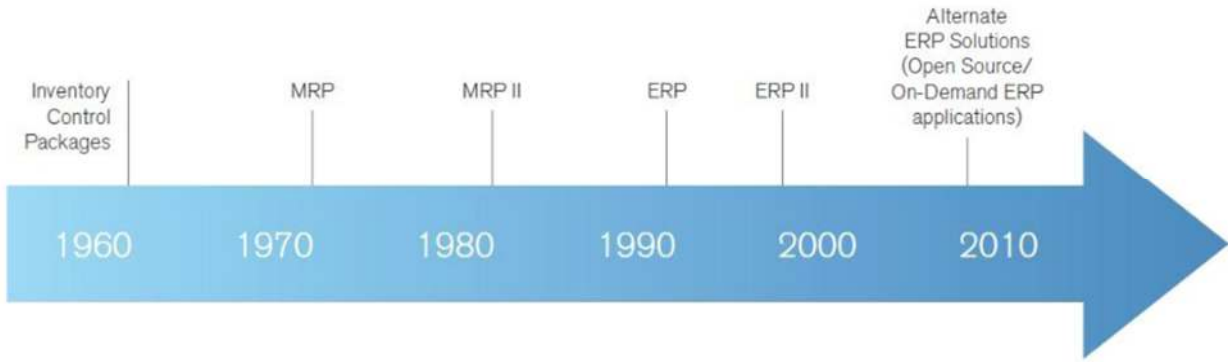
## 2.2 Evolution of ERP System

The evolution of an ERP framework began in the mid-1960$^{th}$. At that time the main source of competitiveness was cost. Because of this, firms paying attention on high-volume production, cost minimization, and managing large inventories efficiently (Umble et al., 2003 cited in Basoglu N. et al., 2007). A computer program was designed to forecast inventory needs for companies. The inadequacy of this program is that it did not consider in customer demand for products. On the other hand, the beginning of a computerized reorder point system (ROP) was sufficient to suit essential manufacturing planning and control. Material Requirements Planning (MRP) the forerunner of Manufacturing Resource Planning (MRP II) and ERP was introduce in

the late 1960s. The MRP system was prepared to plan and schedule materials for difficult manufacturing processes. MRP was planning the element requirements for products according to the master production schedule (MPS)(Rashid et al., 2002). Bill of material record srecognized the specific materials needed to produce each finished item, sustaining a master production schedule. In the first time in manufacturing, there was a proper mechanism to maintain priorities without delay in a manufacturing environment (Ptak and Schragenheim, 2000 cited in Basoglu N. et al., 2007). MRP systems in shape the implementation of target-market strategies with an importance on better production integration and planning in a better way because of the integration between forecasting, master production scheduling, procurement, and shop floor control. MRP was vital for adopting the materials planning concept in production management and control(Jacobs F. R. & Weston Jr., 2007). Around 1980s, the MRP system evolved from easy MRP tool to become standard manufacturing resource planning (MRPII)(Basoglu N. et al., 2007). MRP II emphasizes optimizing manufacturing processes by synchronizing equipment through production requirements. Through the change in the scope of computer programs, there came a change in manufacturing theory. Competitive companies in progress focus more on quality. As a result the appearance of the quality gurus such as Deming and Juran(Jacobs F. R. & Weston Jr., 2007). Manufacturing strategy begin to focus on process control, closed-loop scheduling, reduced overhead costs, enhanced shop floor reporting, and detailed cost reporting(Robert Jacobs & 'Ted' Weston, 2007). MRP II systems included the financial accounting and management systems alongside the manufacturing and materials management systems(Umble et al., 2003 cited in Basoglu N. et al., 2007). However, MRP II had imperfection in managing a production facility 's orders, production plans, and inventories. It has a few intrinsic drawbacks such as limited focus to manufacturing activities, forecasting of mass production needs, and poor budgetary controls. The drawbacks of MRP II give on to the development of a totally integrated solution called Enterprise Resource Planning (ERP). In the late 1990s, the term Enterprise Resource Planning (ERP) was originally adopted by the Gartner Group. This system integrated all departments in a company. Definitely, a key issue in the growth of ERP systems was the year 2000 (Y2K) problem. Small-to medium-sized enterprises (SMEs) as well as huge companies were to implement ERP systems to deal with required fixes to legacy systems that were not Y2K compliant. but Y2K was the sole incident that enabled the ERP industry to become mature and ERP vendors to be consolidated. ERP is a modernized MRP II system that adds relational database management, graphical user interface, and client-server

architecture(Basoglu N. et al., 2007). As well, ERP systems are helpful to incorporate inventory data with financial, sales, and human resource data. They allow organizations to set prices on their products and produce financial reports. They also facilitate companies to effectively manage their resources in areas such as HR, finance and materials(Markus et al., 2000 cited in Basoglu N. et al., 2007). ERP systems developed by companies such as SAP gained new interest in the market for the reason that they enabled companies to upgrade their capabilities and to enhance their business processes and procedures. In aggressive business environment, a company desires to make right and timely decisions. ERP systems enabled companies to achieve competitive advantages through integrating and optimizing business processes(Davenport, 1998 cited in Pacheco-Comer A. et al., 2011). Thus, ERP has gained significance in the business strategy ground. Originally, ERP systems paying attention on back office functions, but front office functions such as customer relationship management (CRM), e-business systems, or supplier relationship management (SRM), became incorporated by using Electronic Data Interchange (EDI) systems. "ERP II", web-based software, was employed in the early 2000s. In cooperation employees and partners, such as suppliers and customers were permitted real-time access to the system. In general, the present ERP systems are highly incorporated solutions. They integrate the manufacturing process with the supply chain process across the organization. It was developed to integrate the organization‘s business processes to create a flawless information flow starting with suppliers, going through the manufacturing process, and ending with the customer(Sumner M., 2014). Figure 2.2.1 shows the historical in detail.

**Figure 2. 1 Evolution of ERP (Jacobs F. R., 2014)**



### 2.3 The Roles of ERP System

#### 2.3.1 The Roles of ERP in Information System

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

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

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

### 2.3.2 The Roles of ERPS in Organizational Business Value

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

**Table 2.1 Breakdown of IT Business Objectives**

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

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

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

### 2.3.3 The Roles of ERPS in Customer Relationship Management (CRM)

Superior customer satisfaction is vital for organizations give the impression of being to survive a competitive global manufacturing environment. in reality, CRM has been increasingly considered as a heart business strategy (Lindgreen A. et al., 2006). The business value of having loyal customers and the cost of replacing former ones emphasizes the importance of minimizing

defections as research shows high customer retention achieves above-average profits and higher growth in market share (Reichheld F. F. & W. Earl Sasser J., 1990). Customer service, product quality, and on-time delivery, are quite a few aspects of business that influence the level of satisfaction. In terms of customer service, online stages can improve client relations by giving simple and prompt access to data from any area inside or outside of the office.

Customers, and other stakeholders provided with security clearance are capable to access preferred information as they needed. Also, ERPs manage the cost of adaptability in reactions to client data demands. The benefits of speeding up communication and transaction times with customers can shorten product cycles (Lederer et al., 2001). Kumar M. & Antony J., (2008)directed a study and played out a relative examination of lean, Six Sigma, and ISO guaranteed firms to catch the assessments and voice of assembling clients in the U.K. The outcomes distinguished the three most significant models to win customer loyalty as manufacturing quality, product reliability, and on-time delivery of the final product. In spite of increments in CRM speculation by organizations, the achievement rate for executions is below 30%(Rigby et al., 2002). Thus there is room for improvement in this area.

### 2.3.4 The Roles of ERPS in Inventory Management

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

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

### 2.3.5 The Roles of ERPS in Employee Management

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

Though further research is needed to provide evidence, Anand G. et al., (2009) noted the possibility in that ERPs can successfully fulfill continuous integration (CI) requirements and

capture employee tacit knowledge and make easy bottom-up process enhancement ideas. Pearlson K. & Saunders C. S., 2001 declared that business entity only stay competitive advantage arises from the knowledge and experience of employees who are able to direct that knowledge to business problems. Furthermore, Barney, (1991) recognized human capital as a critical resource due to its impact on strategic decision-making by managers.

### 2.3.6 The Roles of ERPS in Supply Chain Management

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

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

Zeng, et al., (2012) have contended that ERP systems do enhance efficiency of organizational processes and lead to cost cut. Spano and Bello (2010) argue that ERP are able to balance and enhancement organizational processes since they are designed to do just that. Bosilj-Vuksic and Spremic (2004) explain that ERP systems are usually shaped to supplement business functions including manufacturing, processing and distribution.

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

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

### 2.3.7 The Roles of ERPS in Internal process

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### 2.3.8 The Roles of ERPS in Organizational Learning

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

Based on that ERP system is valuable when it effectively enhances business information processing and provides the advantageous information enabling firm to achieve business planning, decision making, and business objectives (Hsu, 2013). Masquefa, (2008) contends that ERP is systematically generated around the best practices within firm and embedded business routines. Therefore, it is difficult to imitate and transfer. Moreover, e-business is an information system based on internet technology such as extranet, EDI communication, and e-commerce that links organization's enterprise systems and information systems of business partners. Also,

previous research found that integration of ERP and e-business has a positive impact on business value (Hsu, 2013). The speed of accumulation and assimilation of resources is the key to firm growth, as are opportunities arising from underutilization of its resources. Firms continually search for new ways to increase productivity and efficiency. New knowledge yields new ways of using existing resources or new ways of combining sets of resources (Gorla, *et al.,* 2010).

### 2.3.9 The Roles of ERPS in Decision Making

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

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

ERP also increases the availability of information helping the companies to have information in real time to make intelligent decisions and precise prognostics regarding the organization. Ucakturk A. & Villard M., (2013) contend that the key function of information systems (IS) is the ability to have crucial information for product and service development, and supporting key business strategies including decision-making. In a study, Kelton A. S. et al., (2010) found that the implementation of ERP systems affects decision-making processes in various contexts.

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

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

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

### 2.4 Organizational Performance

Organizational performance is the most important construct in management research. The definitions of organization performance define by different authors and researchers. For instance Lebans & Euske 2006: p. 71 cited in Gavrea C. et al., 2011 provide a set of definitions to illustrate the concept of organizational performance:

- Performance is a set of financial and nonfinancial indicators which offer information on the degree of achievement of objectives and results
- Performance is dynamic, requiring judgment and interpretation.
- Performance may be illustrated by using a causal model that describes how current actions may affect future results.
- Performance may be understood differently depending on the person involved in the assessment of the organizational performance (e.g. Performance can be understood differently from a person within the organization compared to one from outside).

- To define the concept of performance is necessary to know its elements characteristic to each area of responsibility.
- To report an organization's performance level, it is necessary to be able to quantify the results.

And also another authors Richard illustrated that organizational performance comprise three specific areas of firm outcomes: financial performance (return on investment, Profits, return on assets, etc.); product market performance (sales, market share, etc.); and shareholder return (economic value added, total shareholder return, etc.) in another way, firm performance can be measured using achieved performance approach (also referred to as subjective performance measure) where Likert-like scaling is used to measure firm performance from the top management perspectives(Selvarajan et al., 2007). Likert-like is a question that uses a five-point scale, sometimes referred to as a satisfaction scale, which ranges from one extreme attitude to another. Typically, interviews question includes a moderate or neutral option in its size.

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

Financial measures of performance are criticize for missing impartiality (Emmanuel et al., 1990); and support short-termism(Harris et al., 1994). Most management practices built more or less financial measures allow little relation to a company’s improvement in achieving long term objectives. And also it criticizes for lacking sense of balance because they more of concerned with physical assets and ignore, for instance, perspectives of customers, and internal business processes. All these perspectives are necessary under the circumstances where companies transform themselves for competition based on information. Under the circumstances, non-

financial measures of performance have also been used to measure the performance of a firm (Kaplan, 2009). Some studies Youndt M. A. et al., (2004) suggest giving a way for managers to assess their own firm's performance relative to others in the same industry or sector. They suggest the use of multiple items and multiple respondents to assess performance. This study opts to use non-financial in order to assess the performance of the organization under study. The items are non-cost oriented including Operational Efficiency, quality of product, Profitability, efficiency and effectiveness.

### 2.4.1 Operational Efficiency

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

### 2.4.2 Quality of Product

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

### 2.4.3 Profitability

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

### 2.4.4 Efficiency and Effectiveness

The words efficiency and effectiveness are often considered synonyms, along with the term like competency, productivity and proficiency however in more formal management discussion the word efficiency and effectiveness take on very different meanings. In the context of process, reengineering Lon Roberts (1994) define efficiency as to the degree of economy with which the process consumes resource especially time and money while he distinguishes effectiveness as

how well the process actually accomplishes its intended purpose. Another way to the customer point of view efficiency is doing things right and effectiveness is doing the right thing.

### 2.5 Relationship of ERPS and Organizational Performance

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

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

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

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

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

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

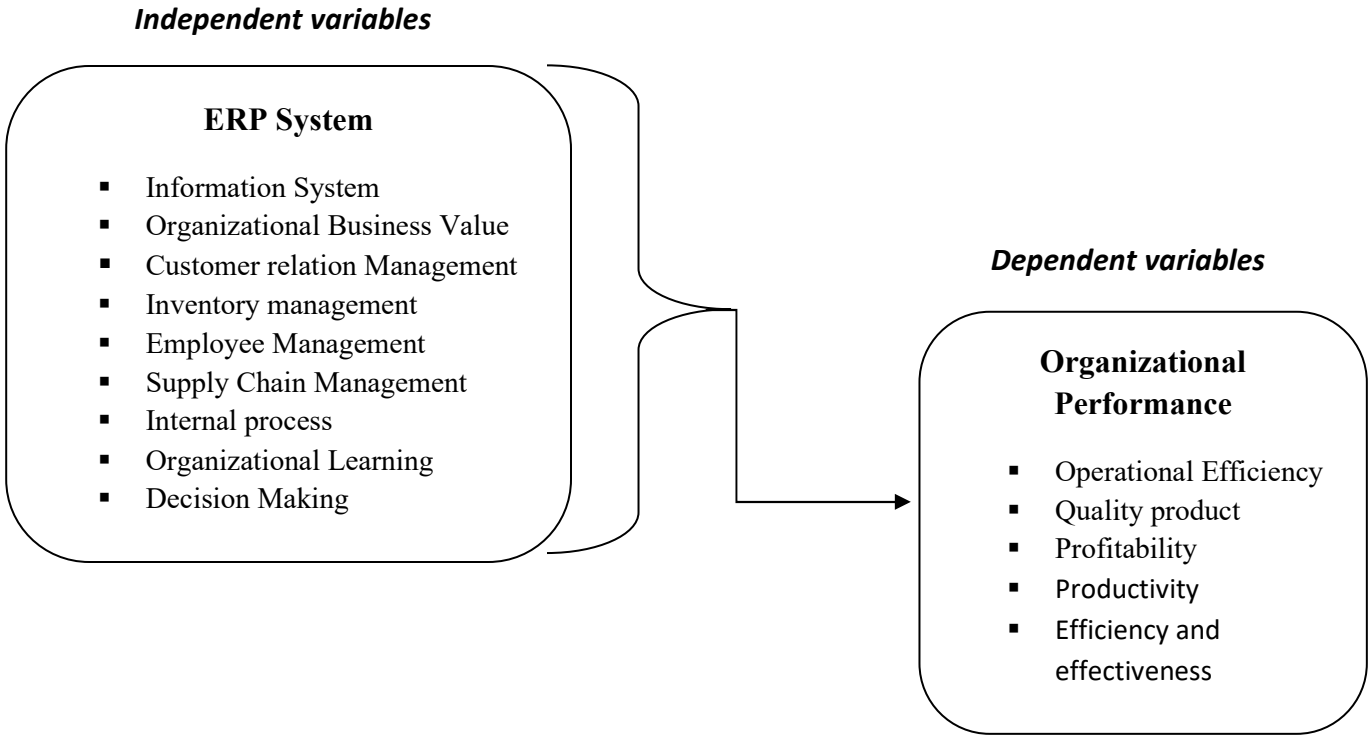
Given the significant investment of time, money and resources in ERP projects, the authors have looked at the performance impacts of ERP in a post adoption scenario. conduct a survey of Hong Kong based firms, Law C. & Law E., 2007 discover that user satisfaction of ERP and business process development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

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

**2.6 Conceptual Framework**

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

**Figure 2. 2 Conceptual framework model (Koech G. K., 2014)**



# CHAPTER THREE

# RESEARCH METHODOLOGY

In this chapter, the type of research design and approach, population of the study, sample size and sampling techniques, sources\types of data, data collection tools, data collection procedures, data analysis method, validity and reliability analysis and ethical consideration that were applied on the study are explained.

## 3.1 Research design

The main objective of this study was to examine the effect of ERP system on organizational performance at Shemu PLC. This research was employed mixed research approach; because using mixed research method could offset the biasness of any single quantitative data (Creswell, 2009). From inferential research design, specifically correlations have applied since it enhances the research to show the relationship between ERP system and organizational performance at Shemu PLC. Thus, the selected method is appropriate for this study.

## 3.2 Population of the Study

Population defined as the whole group of people, events or things of interest that the researcher needs to study (Garson, 2012). To perform this study, the first step was to get the total number of population. Currently, there were 205 total populations that have been currently working in the ERP system (192 employees and 11 division manager and 1 deputy COE) found in Shemu PLC as June 2012 E.C. The target population has applied in each individual working in different work teams of Shemu Office. The study was undertaken so that the researcher had drawn the sample from this total population.

## 3.3 Sample Size and Sampling Techniques

### 3.3.1 Sample Size

Garson (2012), defined sample size as a sub set of the populations drawn to represent the entire population. This is because of the fact that studying a subset of the population is manageable size relative to study the entire population due to time, cost and accessibility. Thus, the sample size was determined to represent the whole population. In this study, the sample size was extracted through the use of Yamane's (1967) statistical formula illustrated as:

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

Where N = Population of study

n = sample size

e = degree of error expected, it is significance or margin of tolerable error that the researcher was considered 5% level of significance or margin of tolerable error and the confidential level is 95%. By computing the sample size of the population using the above formula, the sample size for both who receives questionnaires and conduct an interview to the study were 136, which illustrates as follows:

$$=205/1+ 205(0.05)^2= 136//$$

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

X= n (p) / N

Where X = sample size in each department

n = total sample size of the study who receives questionnaires

P = population size of the department in each stratum excluding the division manager and deputy CEO.

N = total population of the study excluding the division manager, CEO and deputy CEO.

**Table 3. 1 Sample size distribution**

| No | Name of Departments | P | N | N | X=n (p) /N | X |
|---|---|---|---|---|---|---|
| 1 | CEO Office | 8 | 123 | 192 | X=(95x8)/192 | 5 |
| 2 | Deputy CEO office | 5 | 123 | 192 | X=(95x5)/192 | 3 |
| 2 | HRM | 6 | 123 | 192 | X=(95x6)/192 | 4 |
| 3 | Manufacturing | 63 | 123 | 192 | X=(95x63)/192 | 40 |
| 4 | Production | 16 | 123 | 192 | X=(95x16)/192 | 10 |
| 5 | Finance | 15 | 123 | 192 | X=(95x15)/192 | 10 |
| 6 | Internal Audit | 4 | 123 | 192 | X=(95x4)/192 | 3 |
| 7 | Sales | 28 | 123 | 192 | X=(95x28)/192 | 18 |
| 8 | Marketing | 18 | 123 | 192 | X=(95x18)/192 | 12 |
| 9 | Local purchase | 8 | 123 | 192 | X=(95x8)/192 | 5 |
| 10 | Foreign purchase | 6 | 123 | 192 | X=(95x6)/192 | 4 |
| 11 | General Service | 5 | 123 | 192 | X=(95x5)/192 | 3 |
| 12 | Quality control | 6 | 123 | 192 | X=(95x6)/192 | 4 |
| 13 | IT | 4 | 123 | 192 | X=(95x4)/192 | 3 |
| | **Total** | 192 | 1,599 | 2,496 | X=(1235x192)/2496 | 123 |

Source: Own survey (2020)

### 3.3.2 Sampling Technique

The population in the above strata is relatively homogenous for the issue that the researcher was to study. Then the study participants were selected using stratified random sampling techniques

after using the payroll as a sampling frame. By using the strata table, draw a sample from the sampling frame until the researcher finishes drawing “n” size of the population. As well, 11 Division managers, CEO and deputy CEO were selected by the researcher using purposive sampling to conduct an interview. The sample chosen based on their work experience on the ERP system from the company’s employee attendance list. This criterion may help the selected respondents answer the survey questionnaire appropriately based on their knowledge experiences about the system.

### 3.4 Sources /Types of Data

The study was conduct based on the collection of primary data. Primary data was collected through the use of well-structured and self-administered questionnaire that contains relevant questions regarding effect of ERP system on organizational performance. The questionnaire was used to allow the response of the respondents in a standard and direct way, unbiased approach and objective oriented. In the meantime, face-to-face interview was also undertaken with divisional managers and CEO to get their perceptions about ERP system.

### 3.5 Data Collection Tools

#### 3.5.1 Questionnaire

Data were collected through self-administered questionnaires that were prepared based on literature review to address the research questions. The reason why self-administered questionnaire was used, because, it helps as a swift and relatively low-cost strategy for obtaining information and easier to answer for the respondents. The questionnaires were distributed after the expected participants selected and informed about the purpose of the research. The questionnaire was involved three parts: section one of the questionnaires contains instruction and respondents' personal information; section two of the questionnaire includes variables, which would be measured using a Likert scale with five response categories (strongly disagree, disagree, neutral, agree, and strongly agree). The last section of the questionnaire was an open-ended questions which is reserved for respondents to write their feelings in the space provided.

#### 3.5.2 Interview

In addition to collecting the data through questionnaires, qualitative data collection technique, involving one-to-one interview with 13 divisional manager of the office who were selected based on purposive sampling was conducted; hence, to supplement and strengthen the information obtained from questionnaires. Before the interview, brief explanation was offered based on the

purpose of the interview to the interviewees and confidentiality of the provided information. At the time of interview, the researcher took notes quickly and used easily accessibly recording tools like mobile for sure what the interviewees all talk about. Moreover, the researcher was used some useful techniques of interview which include:

- Using good opening remark: - The researcher should briefly give an introduction and state the purpose of the interview describing
- Establishing Rapport: - The researcher must be sensitive to the respondent's status, level of education and understanding
- Being neutral: - The researcher should remain completely neutral during the interview; i.e. Respondents should be told that there is no right or wrong answer and their responses are the only correct ones.
- Good closing: - This is giving explicit recognition for their work: Thank them for their help, appreciate their work in spite of their being busy and that their work will contribute a great deal to the success of the research.

### 3.6 Data Collection Procedures

To get full support in overseeing and collecting the data, first contact was made. Following this, respondents who filled out the questionnaire were identified. Then, the respondents were informed about the purpose of the study and how to complete the questionnaire. In addition, during the administration of the questionnaire a clarification for some questions was explained to the respondents to avoid doubts and confusions. Then the questionnaires were distribute (drop-off method) to the respondents. The filled out questionnaires will collect (pick-up method) and systematically organized; the same is true the interview responses. Finally, the collected data were edited through data cleaning, coding & data verification and analyzed quantitatively and qualitatively.

### 3.7 Data Analysis Method

Githinji Angela, (2014), as cited Mebit,(2020) described data analysis as the process of editing and reducing comprehensive data to a convenient size, developing summaries, looking for patterns and using statistical methods. In order to ensure completeness and logical consistency of responses, data editing was carried out each day by the researcher. Identified mistakes and data gaps were corrected as soon as possible. Once editing the data, the data were analyzed using quantitative techniques. The data that are collected by the researcher were analyzed with the help

of the Statistical Package for Social Sciences (SPSS) version 22 and then the researcher produced descriptive statistics such as frequency distribution, percent, mean and standard deviation. The analyses of the study were also use inferential statistics like Pearson's correlation and simple linear regression. The correlation analysis was employed to found out the strength of a relationship between two variables; ERP system and organizational performance. Moreover, the regression analysis will use to establish the effect of ERP system on organizational Performance. The data that is collected through interview and open ended questionnaire were analyzed qualitatively and logically interpreted by the researcher in a way to solve the research problem.

### 3.8 Validity

According to the common knowledge of research principles, a research instrument is valid, if it measures what it is intended to measure and accurately achieves the purpose for which it was design. In this study, validity was taken into consideration. Because, this study used adopted questionnaires based on the literature review past studies on relevant themes, which dealt with effect of ERP system on organizational performance. Another validity test to be used in this study, the questionnaire was modified with necessary recommendations of the thesis advisor.

### 3.9 Reliability

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

According to Joseph and Rosemary (2003) as cited Adane A., 2017 Cronbach's alpha reliability coefficient (a) normally ranges between 0 and 1. According to these authors, there is a greater internal consistency of the items if the Cronbach's alpha coefficient closes to 1.0. Based on the following rule of thumb of (George and Mallery, 2003, p. 231), if "a > 0.9 – 'Excellent', a >0.8 – 'Good', a >0.7 'Acceptable', a >0.6 – 'Questionable', a >0.5 – 'Poor', and a <0.5 – 'Unacceptable'." The pilot test was done on 10 respondents from the study population who were then excluded from the final study to get rid of biasness. Accordingly, reliability analysis was run to check the reliability of the instrument employed in this research and the result presents as follows.

**Table 3. 2 Coefficient of reliability**

| Alpha value | Number of Items |
|---|---|
| 0.895 | 28 |

Source: Own survey (2020)

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

**Table 3. 3 Coefficient of reliability for each item**

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

Source: Own survey (2020)

### 3.10 Ethical Consideration

While conducting the study, ethical considerations was taken into account. Adequate care were taken to select the appropriate time to distribute questionnaires and to conduct interviews. As much as possible, it avoids circumstances, such as busy and high peak office task hours and

respondents were encouraged to give answers to the questions in a relaxed manner. Maximum efforts were made so that respondents feel secured and confidentiality. In addition to that, the research entailed the analysis and review of scholarly literature, such as books, theses, dissertations, and journal articles was acknowledged properly.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

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

Presentation of findings in each section was according to the order of the basic research questions of the thesis. Descriptive and inferential analyses of the study were presented respectively. The data for this study were collected using a self-administered questionnaire and semi-structured interview guide to identified sample respondents of the total 123 questionnaires distributed, 102 were collected that accounts 82.93% response rate. This response rate was adequate to safely conclude on the effect of ERP system on organizational performance. Accordingly, the analysis of this study was based on 102 respondents only.

## 4.1 Descriptive Statistics

Descriptive statistics were computed in the form of frequency distribution, percentage, mean and standard deviation for all variables and responses of all respondents. Computed frequency distribution and percent were used to determine the proportion of respondents choosing the various responses. Likewise, computed mean is used to measure the central tendency on each dimension in the questionnaire which implies that the levels of agreeableness and disagreeableness or perceptions of the respondents on various dimensions in the questionnaires. And the value of standard deviation indicates that how much variation a value deviates from the mean.

### 4.1.1 Demographic Profile of the Respondents

The first part of the questionnaire consists of four items about demographic data of the respondents such as: sex group of respondents, age group of respondents, academic qualification of respondents and work experience of the respondents; this helped the researcher to understand the characteristics of respondents with in different categories and the following table summarized the demographic data of the respondents.

**Table 4. 1 Demographic profile of the respondents**

| No | Items | N=102 | Frequency | Percent % | Rank |
|---|---|---|---|---|---|
| 1 | Sex of the respondents | Male | 55 | 53.9 | 1 |
| | | female | 47 | 46.1 | 2 |
| 2 | Age of the respondents | 18-25 | 13 | 12.7 | 3 |
| | | 26-33 | 46 | 45.1 | 1 |
| | | 31-41 | 43 | 42.2 | 2 |
| 3 | Academic qualification of the respondents | Level IV | 43 | 42.2 | 2 |
| | | First degree | 52 | 51.0 | 1 |
| | | Second degree and above | 7 | 6.9 | 3 |
| 4 | Work Experience of the respondents | 1-5 years | 55 | 53.9 | 1 |
| | | 6-10 years | 41 | 40.2 | 2 |
| | | 11 and above | 6 | 5.9 | 3 |

Source: Own survey (2020)

As shown in Table 4.1, more than half 55 (53.9) of the respondents were male and the remaining 47(46.1) of the respondents were female. Even though, representation of female respondents was found to be less as compared to male respondents, this gender mix was rational to realize about the effect of ERP system at Shemu plc.

Regarding the age group of respondents, the first group 46 (45.1 %) of respondents were within the age category of 26-33 years of age. The second group had 43 (42.2%) within the age category of 31-41 years. And the third group were 13(12.7%) within the age category of 18-25 years. respectively. In sum, the majority 59(57.8%) of the respondents were within the age category of 18-33 years; which implies that the majority of the respondents were young and at the dynamic age level, this implies that it is easy to collect data about ERP system.

With regard to academic qualification of the respondents, the majority 52(51.0%) of the respondents were first degree holders. The second group 43(42.2%) of the respondents were holders of Level IV diploma. And the rest 7(6.9%) of the respondents were Second Degree and Above. This shows that, the majority 57(57.9%) of the respondents were first and above degree holders this were convenient to collate data related to ERP system.

Regarding the work experience of the respondents, the first group of respondents 55(53.9%) had a working experience 1-5 years, 41(40.2%) of respondents had served in the organization between 6-10 years. And the rest 6(5.9%) of respondents had served in the organization between 1-5 years. in total, as a result all 100 (100%) of the respondents had served in Shemu PLC. This result implies that, the selected respondents where appropriate to respond the survey appropriately based on their working experience before and after the adoption of ERP system at Shemu plc.

### 4.1.2 Perception of Respondents on Each Items of the Relationship Between ERPS & OP

#### 4.1.2.1 Roles of ERPS in Information System

**Table 4. 2 Perception of respondents on roles of ERP in Information System**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system provides real time information. | SDA | | | 3.91 | 0.55 |
| | | DA | | | | |
| | | N | 20 | 19.6 | | |
| | | A | 71 | 69.6 | | |
| | | SA | 11 | 10.8 | | |
| 2 | ERP system provides accurate information. | SDA | | | 3.59 | 0.51 |
| | | DA | | | | |
| | | N | 43 | 42.2 | | |
| | | A | 58 | 56.9 | | |
| | | SA | 1 | 1.0 | | |
| 3 | ERP system provides reliable information. | SDA | | | 3.57 | 0.52 |
| | | DA | | | | |
| | | N | 45 | 44.1 | | |
| | | A | 56 | 54.9 | | |
| | | SA | 1 | 1.0 | | |
| 4 | ERP system provides timely information. | SDA | | | 3.74 | 0.47 |
| | | DA | 1 | 1.0 | | |
| | | N | 25 | 24.5 | | |
| | | A | 76 | 74.5 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | SA | | | | |
| 5 | ERP system Improved decision making. | SDA | | | 3.41 | 0.59 |
| | | DA | | | | |
| | | N | 65 | 63.7 | | |
| | | A | 32 | 31.4 | | |
| | | SA | 5 | 4.9 | | |
| | Over all Role of ERP in information system | | | | 3.64 | 0.28 |

Source: Own survey (2020)

Table 4.2 presents the perceptions of respondents on Roles of ERP system in Information System. Items were measured in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each item has discussed in detail as follows.

As indicated in Table 4.2, for ERP system provide real time information system, the majority 82(80.4%) of the respondents agreed and the rest 20 (19.6%) of the respondents neither agree nor disagree. As well, the mean (± SD) of ERP system provide real time information system was 3.91 (±0.55). This result implies that ERP system provide real time information system to its users.

As shown in Table 4.2, for ERP system provides accurate information, more than half of the respondent 59(57.9%) of the respondents agreed and the rest 43 (42.2%) of respondents answer neither agree nor disagree that ERP system provide accurate information. In addition, the mean (± SD) of ERP system provides accurate information was 3.59 (±0.51). From this result, the researcher understood that the ERP system provide accurate information.

As pointed out in Table 4.2, for the ERP system provides reliable information, 56 (54.9%) of the respondents answered agreed, and the rest 45 (44.1%) & 1(1%) of the respondents chose neither agree nor disagree and strongly agree respectively. Also, the mean (± SD) of ERP system provides reliable information was 3.57 (±0.52). This finding implies that ERP system has a roles in provide reliable information.

As presented in Table 4.2, for ERP system provides timely information, 76 (63.7%) of the respondents agreed. The rest 25 (24.5%) and 1(1%) of the respondents chose neither agree nor disagree and strongly agree respectively. Additionally, the mean (± SD) of ERP system provides timely information was 3.74 (±0.47). This finding suggests that ERP system provide timely information as needed.

As we saw in Tabel 4.2, for ERP system Improved decision making, the majority of the respondents rate 65(63.7%) neither agree nor disagree. the rest 32 (31.4%) & (1%) of the respondents choose agree and disagree. In addition, the mean (±SD) of ERP system Improved decision-making was 3.41 (±0.59). The majority 65(63.7) of the respondents were chose neutral. This finding shows that ERP system has less role in decision making. Even if the majority of the respondent neither agree nor disagree a study conducted by Lecic and Kupusinac (2013) support that the ERP systems act as vital decision support system, which integrates memory and processes to perform simulations such as "what if" simulation. The ability of the ERP systems to support the decision making process is because as Ucakturk and Villard (2013) contend they provide crucial information for product and service development, and supporting the making of vital business strategies.

In sum, as illustrated in Table 4.2, all role of ERP system in information system was 3.64 (±0.28). This finding shows that, ERP system has huge role in information system. The interview results also confirm the finding of the quantitative data, that ERP system has a great role in information system especially in decision making process. Correspondingly the interview result of the divisional manager conforms that "The current ERP system version is called Michrosoft Dynamic Nav it is latest so that it easy to store and retrieve real time information especially for those which need quantitative decision". This finding fit with AlTarawne, 2012; Nooriae, 2012 study, that the ERP systems harmony managers access to accurate, timely and complete information to support their decision-making competencies

#### 4.1.2.2 Roles of ERPS in Organizational Business Value

**Table 4. 3 Perception of respondents on roles of ERPS in OBV**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system can reduce operating cost | SDA | | | 3.64 | 0.63 |
| | | DA | | | | |
| | | N | 45 | 44.1 | | |
| | | A | 49 | 48.0 | | |
| | | SA | 8 | 7.8 | | |
| 2 | ERP system can improve productivity. | SDA | | | 3.63 | 0.66 |
| | | DA | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | N | 48 | 47.1 | | |
| | | A | 44 | 43.1 | | |
| | | SA | 10 | 9.8 | | |
| 3 | ERP system can enhance responsiveness. | SDA | | | 3.69 | 0.77 |
| | | DA | | | | |
| | | N | 51 | 50 | | |
| | | A | 32 | 31.4 | | |
| | | SA | 19 | 18.6 | | |
| 4 | ERP system increase customer access. | SDA | | | 3.63 | 0.67 |
| | | DA | | | | |
| | | N | 49 | 48 | | |
| | | A | 42 | 41.2 | | |
| | | SA | 11 | 10.8 | | |
| 5 | ERP system creates competitive advantage. | SDA | | | 3.63 | 0.74 |
| | | DA | 1 | 1 | | |
| | | N | 51 | 50 | | |
| | | A | 35 | 34.3 | | |
| | | SA | 15 | 14.7 | | |
| | Over all Role of ERP in organizational business value | | | | 3.64 | 0.40 |

Source: Own survey (2020)

Table 4.3 presents the perceptions of respondents on Roles of ERP system on organizational business value. Items were measured in terms of frequency, percent, mean and standard deviation. Based on the results, each item has discussed in detail as follows.

As shown in Table 4.3, for the statement of ERP system can reduce operating cost, the majority 57(55.8%) of the respondents answered agreed & the rest 45(44.1%) of respondents where neither agree nor disagree, In addition, the mean (± SD) of ERP system can reduce operating cost was 3.64 (±0.63). This result shows that ERP system helps in reduce operating cost. this finding also in line with Huang, et al., (2009) study. They assess the impact of ERP on operating costs of firms determined that the systems led to the reduction of operation costs for the adopting firms. Another scholars Kang, Park and Yang (2008) argued that ERP systems led to the reduction of

operational costs through facilitation of businesses processes including information exchange and decision making.

As indicated from Table 4.3, for ERP system can improve productivity, 48(47.1%) of the respondents chose neutral followed by the response rate 44 (43.1%) the respondents chose agree. The rest 10(9.8%) strongly agreed. The majority 54(52.9) of the respondents respond agree. As well, the mean (± SD) of ERP system can improve productivity was 3.63 (±0.66).This finding indicates that ERP system has a great role in improving productivity.

As noted from Table 4.3, for the statement of ERP system can enhance responsiveness, 51 (50%) of the respondents answered neutral which followed by 32.4(31.4%) response rate of the respondents chose agree. In addition, with the response rate 19(18.6%) of the respondents said strongly agree. and the mean (± SD) of ERP system can enhance responsiveness was 3.69 (±0.77). From this finding, the researcher understood that Shemu plc has improved its responsiveness to user and customers after adopting the ERP system.

As shown from Table 4.3, for the statement of ERP system creates competitive advantage, more than half of the respondents 49(48%) chose neutral which followed by the response rate 42(41.2%) of the respondents said agree. The rest 11(10.8%) of the respondents chose strongly agree. As well, the mean (± SD) of ERP system increase customer access was 3.63 (±0.67). This result indicates that at Shemu plc improved customer access after adopting ERP system.
As presented in Table 4.3, for the statement of ERP system creates competitive advantage, 51 (50%) of the respondents neutral. And with the response rate 35(34.3%) & 15(14.7) of the respondents said agree and strongly agree respectively. Additionally, the mean (± SD) of ERP system creates competitive advantage was 3.63 (±0.74). This finding suggests that ERP system creates competitive advantage at Shemu plc.

In total, as illustrated in Table 4.3, role of ERP in organizational business value was 3.64 (±0.40). This finding shows that, ERP system enhance Shemu's organizational business value by reduce its operating cost, improve productivity, enhance responsiveness, increase customer access and creates competitive advantage. As well, interview result conforms the finding of quantitative data. "ERP system has a huge role in Shemus organizational business value, for instance it helps in facilitating real-time information on production schedules, showing detail information of product and raw materials available at warehouse, reports on sales of product,

commission of agents, accounting information like financial statement and it also shows what planned and what has actually done. So that it enhances the organization responsiveness by giving such information to the concerned body, as well it has a vital role in reducing the operating cost of production".

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

**Table 4. 4 Perception of respondents on roles of ERPS in CRM**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system helps the organization to develop the loyal customers. | SDA | | | 3.70 | 0.95 |
| | | DA | 11 | 10.8 | | |
| | | N | 33 | 32.4 | | |
| | | A | 34 | 33.3 | | |
| | | SA | 24 | 23.5 | | |
| 2 | ERP system enhances quality services at Shemu PLC. | SDA | | | 3.73 | 0.60 |
| | | DA | 4 | 3.9 | | |
| | | N | 23 | 22.5 | | |
| | | A | 71 | 69.6 | | |
| | | SA | 4 | 3.9 | | |
| 3 | ERP system can shorten the product life cycle at Shemu PLC. | SDA | | | 3.91 | 0.63 |
| | | DA | 1 | 1 | | |
| | | N | 22 | 21.6 | | |
| | | A | 64 | 62.7 | | |
| | | SA | 15 | 14.7 | | |
| 4 | ERP system attracts new customer. | SDA | | | 3.66 | 0.71 |
| | | DA | | | | |
| | | N | 49 | 48 | | |
| | | A | 39 | 38.2 | | |
| | | SA | 14 | 13.7 | | |
| | Over all Role of ERP system in CRM | | | | 3.75 | 0.40 |

Source: Own survey (2020)

Table 4.4 presents the perceptions of respondents on role of ERP system in customer relation management. Items were measured in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each item has discussed in detail as follows.

As illustrated in Table 4.4, for the statement of ERP system helps the organization to develop the loyal customers, 34(32.4%) of the respondents agree followed by 33(33.3%) of the respondents neither agree nor disagree. The rest 24(23.5%) & 11(10.8%) of the respondents were strongly agreed and disagreed respectively. The majority of the respondents 58(56.8%) were in the position of agree. In addition, the mean (± SD) of ERP system helps the organization to develop the loyal customers was 3.70(±0.95). This finding indicates that ERP system help Shemus' to develop loyal customers.

As shown in Table 4.4, for the statement of ERP system enhances quality services at Shemu PLC, more than half 71(69.6%) of the respondents agreed. The rest 23 (22.5%), 4(3.9) & 4(3.9) of the respondents said neither agree nor disagree, disagree and strongly agree. More than half of the respondents 75(73.5%) answered agree. Moreover, the mean (± SD) of the methods of ERP system enhances quality services at Shemu PLC was 3.73(±0.60). This implies that ERP system help Shemu to enhance its service quality.

As presented in Table 4.4, for the statement of ERP system can shorten the product life cycle at Shemu PLC, 64(62.7%) of the respondents supposed agreed that followed by 22(21.6%) response rate of the respondents chose neutral. The rest respondents with response rate 15(14.7%) & 1(1%) were decide strongly agree and disagree. Furthermore, the mean (± SD) of ERP system can shorten the product life cycle at Shemu PLC was 3.66(±0.71). From this finding, the researcher determined that ERP system help Shemu in shorten the product life cycle as compared with before the adoption of ERP system.

As pointed out in Table 4.4, for the statement of ERP system attracts new customer, 49 (48%) of the respondents neutral which followed by the response rate 39 (38.2%) of the respondents chose agree and similarly, another 14(13.7%) of the respondents said strongly agree. In sum, 53(51.9%) of the respondents were agreed. Likewise, the mean (± SD) of ERP system attracts new customer was 3.66(±0.71). This finding indicates that ERP system attract new customer at Shemu plc.

To sum up, from Table 4.4, role of ERP system in customer relation management was 3.75(0.40%). These findings show that ERP system has a major role in customer relation management at Shemu plc.

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

#### 4.1.2.4 Roles of ERPS in Inventory management

**Table 4. 5 Perception of respondents on roles of ERPS in IM**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system minimizes labor intensive system at Shemu PLC. | SDA | | | 3.75 | 0.80 |
| | | DA | | | | |
| | | N | 48 | 47.1 | | |
| | | A | 31 | 30.4 | | |
| | | SA | 23 | 22.5 | | |
| 2 | ERP system can save time and cost. | SDA | | | 3.75 | 0.71 |
| | | DA | | | | |
| | | N | 42 | 42.2 | | |
| | | A | 44 | 43.1 | | |
| | | SA | 16 | 15.7 | | |
| 3 | ERP system avoids cycle inventory counting system. | SDA | | | 3.83 | 0.58 |
| | | DA | | | | |
| | | N | 27 | 26.5 | | |
| | | A | 65 | 63.7 | | |
| | | SA | 10 | 9.8 | | |
| | Over all Role of ERP system in inventory management | | | | 3.78 | 0.42 |

Source: Own survey (2020)

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

As explained in table 4.5, for the statement of ERP system minimizes labor intensive system at Shemu PLC, 48(47.1%) of the respondents neutral followed by 31(30.4%) of the respondents strongly agreed. The rest 23(22.5) of the respondents decided on strongly agree. The majority response rate of the respondents 54(52.9%) were in the position of agree. As well, the mean (± SD) of ERP system minimizes labor intensive system at Shemu PLC was 3.75(±0.80). From this result, the researcher understood that ERP system has a major role in minimizing labor intensive system.

As shown in table 4.5, for the statement of ERP system can save time and cost, 44(43.1%) of the respondents selected agree followed by 42(42.2%) of the respondents believed neither neutral nor disagree. The rest 16(15.7%) of the respondents decided on strongly agree. More than half of the respondents 60(58.8%) were in the position of agree. Additionally, the mean (± SD) of ERP system can save time and cost was 3.75(±0.71). This finding implies that ERP system can save time and cost.

As illustrated in table 4.5, for the statement of ERP system avoids cycle inventory counting system, more than half 65(63.7%) of the respondents chose agree followed by 27(26.5%) response rate of the respondents replied neither agree nor disagree. The rest response rate 10(9.8%) of the respondents decided on strongly agree. The majority of the respondents 75(73.5%) were in the position of agree. Moreover, the mean (± SD) of system avoids cycle inventory counting system was 3.83(±0.58).This finding indicates that adoption of ERP system help in avoiding cycle inventory counting system.

To sum up, in table 4.5 shown that, ERP system has an important role in inventory management by minimizing labor intensive system, by minimizing time and cost and by eliminating cycle inventory system at Shemu plc. The mean score was 3.78(±0.42).

#### 4.1.2.5 Roles of ERPS in Employees Management

**Table 4. 6 Perception of respondents on roles of ERPS in EM**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system helps the managers to control the day to day activities of the employees | SDA | | | 3.60 | 0.63 |
| | | DA | 1 | 1 | | |
| | | N | 46 | 45.1 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | A | 48 | 47.1 | | |
| | | SA | 7 | 6.9 | | |
| 2 | ERP system helps the managers to identify employees' performance. | SDA | | | 3.68 | 0.55 |
| | | DA | | | | |
| | | N | 37 | 36.3 | | |
| | | A | 61 | 59.8 | | |
| | | SA | 4 | 3.9 | | |
| 3 | ERP system can help the managers to measure employees' productivity. | SDA | | | 3.60 | 0.58 |
| | | DA | | | | |
| | | N | 46 | 45.1 | | |
| | | A | 51 | 50 | | |
| | | SA | 5 | 4.9 | | |
| | Over all Role of ERP system in employees management | | | | 3.62 | 0.44 |

Source: Own survey (2020)

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

As explained in table 4.6, for the statement of ERP system helps the managers to control the day to day activities of the employees, 48(47.1%) of the respondents agree followed by 56(31.4%) of the respondents believed neither agree nor disagree. The rest response rate 7(6.9) of the respondents decided on agree. In addition, the mean (± SD) of ERP system helps the managers to control the day to day activities of the employees was 3.60(±0.63). From this finding, the researcher understood that adoption of ERP system help shemus's managers to control their employees day-to-day activates of the work.

As shown in table 4.6, for the statement of ERP system helps the managers to identify employees' performance, more than half 61(59.8%) of the respondents confirmed their agreement followed by 37(36.3%) of the respondents assured neutral. The rest response rate 4(3.9%), of the respondents decided on strongly agree. In total More than half of the respondents 65(63.7%) were in the position of agree. Moreover, the mean (± SD) of ERP system helps the

managers to identify employees' performance was 3.68(±0.55). This finding implies that ERP system help shemu's managers to identify employees' performance at Shemu plc.

As illustrated in table 4.6, for the statement of ERP system can help the managers to measure employees' productivity, more than half 51(50%) of the respondents agreed that followed by 46(45.1%) of the respondents replied neither agree nor disagree. The rest response rate 5(4.9%) of the respondents strongly agree. Also, the mean (± SD) of ERP system can help the managers to measure employees' productivity was 3.60(±0.58). From this finding, the researcher understands that ERP system has a roles for manager in measuring employees productivity.

In sum, in table 4.6 revealed that, the roles of ERP system in employees management has an effect and the group mean of with its significance score was 3.62 (±0.44). This also indicate that ERP system have a well-known contribution in employees management by controleing the day to day activities of employees, by identifying their performance and by measuring their productivity. Correspondingly, the interview results of division managers confirmed that ERP system has crucial roles in employee management. By showing a report of time spend that each employee for the job they assign. So that it possible to measure their performance as a result promotion and other benefit can easily undertake.

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

**Table 4. 7 Perception of respondents on roles of ERPS in SCM**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system shortens ***lead time*** (the time taken between the customer order up to the customer receive his/her order). | SDA | | | 3.76 | 0.53 |
| | | DA | | | | |
| | | N | 29 | 28.4 | | |
| | | A | 68 | 66.7 | | |
| | | SA | 5 | 4.9 | | |
| 2 | ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers. | SDA | | | 3.83 | 0.55 |
| | | DA | | | | |
| | | N | 25 | 24.5 | | |
| | | A | 69 | 67.6 | | |
| | | SA | 8 | 7.8 | | |

| | | | |
|---|---|---|---|
| | Over all Role of ERP system in supply chain management | 3.80 | 0.44 |

Source: Own survey (2020)

Table 4.7 presents the perceptions of respondents on role of ERP system in supply chain management. Statements were measure in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each statement has discussed in detail, as follows.

As described in table 4.7, ERP system shortens ***lead time*** (the time taken between the customer order up to the customer receive his/her order), more than half of the response rate 68(66.7%) of the respondents agreed followed by 29(28.4%) of the respondents believed neither agree nor disagree. The rest 5(4.9%) of the respondents decided on strongly agree. The majority of the respondents are in the position of agree. As well, the mean (± SD) of ERP system shortens ***lead-time*** was 3.76(±0.53). From this finding, the researcher suggested that ERP system has an effect on minimizing the time taken between the customer orders up to the customer receive his/her order.

As shown in table 4.7, for the statement of ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers, again more than half of the response rate 77(75.4%) of the respondents agree and the rest 25(24.5%) of the respondents decide neither agree nor disagree. In addition, the mean (± SD) of ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers was 3.83(±0.55). These results show that ERP has a positive outcome in minimizing risk associated with forecasting due to the sharing of production schedules.

To sum up, in table 4.7 shown that, role of ERP system in supply chain management group mean of the overall benefits score was 3.80 (±0.44). This result suggests that ERP system has a well-known contribution in supply chain management activities of Shemu plc. in minimizing lead time and minimizing risk associated with the sharing of production schedules. Likewise, the interview result of divisional managers confirmed that ERP system has a vital role in Shemu's supply chain activity by providing web page information so that customer can easily access information whatever they are and easily order what they need to purchase.

#### 4.1.2.7 Roles of ERPS in Internal Process (IP)

**Table 4. 8 Perception of respondents on roles of ERPS in IP**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system facilitates the integration of business units of Shemu plc. | SDA | | | 3.70 | 0.66 |
| | | DA | | | | |
| | | N | 42 | 41.2 | | |
| | | A | 49 | 48 | | |
| | | SA | 11 | 10.8 | | |
| 2 | ERP system improves decision making processes in Shemu plc business units. | SDA | | | 3.70 | 0.67 |
| | | DA | | | | |
| | | N | 42 | 41.2 | | |
| | | A | 48 | 47.1 | | |
| | | SA | 12 | 11.8 | | |
| | Over all Role of ERP system in internal process | | | | 3.70 | 0.59 |

Source: Own survey (2020)

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

As described in table 4.8 for the statement of ERP system facilitates the integration of business units of Shemu plc. The majority of the response rate 60(58.8%) of the respondents agree and the rest respondent followed by 42(41.2%) of the respondents neither agree nor disagree. As well, the mean (± SD) of ERP system facilitates the integration of business units of Shemu plc was 3.70(±0.66). From this finding, the researcher suggested that ERP system has a great role in integrating the business unites of Shemu plc.

As shown in table 4.8, for the statement of ERP system improves decision making processes in Shemu plc business units, 48(47.1%) of the respondents agree and followed by the response rate 42(41.2%) of the respondents neither agree nor disagree. The rest 12(11.8%) response rate of the respondent decided on strongly agree. The majority of the response rate 60(58.9%) of the respondent agree. In addition, the mean (± SD) of ERP system improves decision making

processes in Shemu plc business units was 3.70(±0.67). These results implies that ERP system improves decision across the business unites of Shemu plc.

To sum up, in table 4.8 shown that, role of ERP system in internal process of Shemu plc group mean of the overall benefits score was 3.70 (±0.59). This result suggests that ERP system has a great role in internal process of Shemu plc in facilitating integration across shemu business unites and improving the managerial decisional roles.

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

#### 4.1.2.8 Roles of ERPS in Organizational Learning (OL)

**Table 4. 9 Perception of respondents on roles of ERPS in OL**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system generates best practice within the organization. | SDA | | | 3.91 | 0.60 |
| | | DA | | | | |
| | | N | 23 | 22.5 | | |
| | | A | 65 | 63.7 | | |
| | | SA | 14 | 13.7 | | |
| 2 | ERP system supports electronic data interchange (EDI) with in organizations & stake holders. | SDA | | | 3.92 | 0.59 |
| | | DA | | | | |
| | | N | 22 | 21.6 | | |
| | | A | 66 | 64.7 | | |
| | | SA | 14 | 13.7 | | |
| | Over all Role of ERP system in Organizational Learning | | | | 3.92 | 0.53 |

Source: Own survey (2020)

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

As described in table 4.9 for the statement of ERP system generates best practice within the organization. 65(63.7%) of the respondents agree followed by 23(22.5%) of the respondents believed on neither agree nor disagree. The rest 14(13.7%) of the respondents decided on strongly agree. More than half 79(77.4%) of the respondents are in the position of agree. As well, the mean (± SD) of ERP system generates best practice within the organization was 3.91(±0.60). From this finding, the result shows as that ERP system has generate best practices at Shemu plc.

As shown in table 4.9, for the statement of ERP system supports electronic data interchange (EDI) with in organizations & stake holders, more than half of the response rate 80(78.4%) of the respondents agree. The rest 22(21.6%) response rate of the respondents decided strongly neither agree nor disagree. In addition, the mean (± SD) of ERP system supports electronic data interchange (EDI) with in organizations & stakeholders was 3.92(±0.59). This result implies that ERP system support electronic data interchange with in shemu plc and its stake holders.

To sum up, in table 4.9 shown that, role of ERP system in organizational learning group mean of the overall benefits score was 3.63 (±0.64). This result implies that ERP system has a main role in Shemu organizational learning by generating best practices and by having electronic data interchange (EDI) to facilitate Shemu business.

#### 4.1.2.9 Roles of ERPS in Decision Making (DM)

**Table 4. 10 Perception of respondents on roles of ERPS in DM**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | ERP system can identify the performing units from non performing units. | SDA | | | 3.85 | 0.65 |
| | | DA | | | | |
| | | N | 30 | 29.4 | | |
| | | A | 57 | 55.9 | | |
| | | SA | 15 | 14.7 | | |
| 2 | ERP system enhances the quality of managerial decision making process. | SDA | | | 3.87 | 0.62 |
| | | DA | | | | |
| | | N | 27 | 26.5 | | |
| | | A | 61 | 59.8 | | |
| | | SA | 14 | 13.7 | | |
| | Over all Role of ERP system in decision making | | | | 3.86 | 0.54 |

Source: Own survey (2020)

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

As shown in table 4.10, for the statement of ERP system can identify the performing units from non performing units, 57(55.9%) of the respondents agree followed by 30(29.4%) of the respondents believed neither agree nor disagree. The rest 15(14.7) response rate of the respondents decided on strongly agree. In addition, the mean (± SD) of ERP system can identify the performing units from non-performing units was 3.85(±0.65). From this finding, the researcher understood that ERP system helps to identify performing unit from non performing units (department) of Shemu plc.

As shown in table 4.10, for the statement of ERP system enhances the quality of managerial decision-making process, more than half 75(73.5%) of the respondents confirmed their agreement. The rest response rate 25(24.5%) of the respondents assured neither agree nor disagree. furthermore, the mean (± SD) of ERP system enhances the quality of managerial decision making process was 3.87(±0.62). This finding implies that ERP system improve the quality of decision making process at Shemu plc.

In sum, in table 4.10 revealed that, the roles of ERP system in decision making group mean of the overall benefit score was 3.86(±0. 0.54). This intends that ERP system has a higher significance in decision making process of Shemu plc by identifying performing units from non performing unites therefore it enhance the quality of the decision making process.

### 4.1.3 Effect of ERPS on OP

**Table 4. 11 Perception of respondents on relationship of ERPS & OP**

| No. | Items | N=102 | Frequency | Percent % | Mean | SD. |
|---|---|---|---|---|---|---|
| 1 | Shemu PLC gives quality service after adopting the ERP system. | SDA | | | 4.14 | 0.67 |
| | | DA | | | | |
| | | N | 16 | 15.7 | | |
| | | A | 55 | 53.9 | | |
| | | SA | 31 | 30.4 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | Shemu PLC increase productivity after adopting the ERP system. | SDA | | | 4.16 | 0.68 |
| | | DA | 1 | 1 | | |
| | | N | 13 | 12.7 | | |
| | | A | 56 | 54.9 | | |
| | | SA | 32 | 31.4 | | |
| 3 | Shemu PLC increase quality product after adopting the ERP system. | SDA | | | 4.11 | 0.60 |
| | | DA | | | | |
| | | N | 13 | 12.7 | | |
| | | A | 65 | 63.7 | | |
| | | SA | 24 | 23.5 | | |
| 4 | Shemu PLC increase efficiency and effectiveness (Doing things right & doing the right thing) of production after adopting the ERP system. | SDA | | | 3.95 | 0.59 |
| | | DA | 1 | 1 | | |
| | | N | 17 | 16.7 | | |
| | | A | 70 | 68.6 | | |
| | | SA | 14 | 13.7 | | |
| 5 | Shemu PLC increase profitability after adopting the ERP system. | SDA | | | 4.11 | 0.60 |
| | | DA | | | | |
| | | N | 13 | 12.7 | | |
| | | A | 64 | 62.7 | | |
| | | SA | 25 | 24.5 | | |
| 6 | Shemu plc has taken the competitive advantage over its counter parts. | SDA | | | 4.01 | 0.63 |
| | | DA | | | | |
| | | N | 17 | 16.7 | | |
| | | A | 61 | 59.8 | | |
| | | SA | 24 | 23.5 | | |
| | Over all relationship of ERP system and organizational performance | | | | 4.09 | 0.33 |

Source: Own survey (2020)

Table 4.11 presents the perceptions of the relationship of ERP system and organizational performance. Statements were measure in terms of the calculation of their frequency distribution, percent, mean and standard deviation. Based on the results, each statement has discussed in detail, as follows.

As described in table 4.11 for the statement Shemu PLC gives quality service after adopting ERP system. 55(53.9%) of the respondents agree followed by 31(30.4%) of the respondents believed strongly disagree. The rest 16(15.7%) of the respondents decided neither agree nor disagree. More than half 86(84.3%) of the respondents are in the position of agree. As well, the mean (± SD) of Shemu PLC gives quality service after adopting the ERP system was 4.14(±0.67). From this finding, the result shows as that Shemu's give quality service after adopting the ERP system. As shown in table 4.11, for the statement of Shemu PLC increase productivity after adopting the ERP system, more than half of the response rate 88(86.3%) of the respondents agree. The rest 13(12.7%) & 1(1%) response rate of the respondents decided neither agree nor disagree and disagree. In addition, the mean (± SD) of Shemu PLC increase productivity after adopting the ERP system was 4.16(±0.68). This result implies that Shemu plc increase on productivity after adopting ERP system.

similar observation noting that. without ERP systems firms experience low employee productivity levels as employees are forced to accomplish several tasks resulting in poor performance, reduced motivation and employee fatigues Exact Max (2014). Panorama Consulting Solutions (2013) observes that a recent poll revealed that organizations world over are adopting ERP systems to reduce the workload for their employees and to ensure their optimum productivity.

As described in table 4.11 for the statement of Shemu PLC increase quality product after adopting the ERP system. The majority of the response rate 89(87.2%) of the respondents agree and the rest respondent followed by 13(12.7%) of the respondents neither agree nor disagree. As well, the mean (± SD) of Shemu PLC increase quality product after adopting the ERP system was 4.11(±0.60). From this finding, the researcher suggested that shemu plc increase in producing quality product after ERP system adoption.

As shown in table 4.11, for the statement of Shemu PLC increase efficiency and effectiveness (Doing things right & doing the right thing) of production after adopting ERP system, 70(68.6%) of the respondents agree and followed by the response rate 17(16.7%) of the respondents neither agree nor disagree. The rest 14(13.7%) & 1(1%) response rate of the respondent decided on strongly agree and disagree. The majority of the response rate 84(82.3%) of the respondent agree. In addition, the mean (± SD) of Shemu PLC increase efficiency and effectiveness of

production after adopting ERP system was 3.95(±0.59). These results imply that Shemu increase onb efficiency and effectiveness after adopting ERP system.

As shown in table 4.11, for the statement of Shemu PLC increase profitability after adopting the ERP system, 64(62.7%) of the respondents agree followed by 25(24.5%) of the respondents believed strongly agree. The rest 13(12.7) response rate of the respondents decided on neither agree nor disagree. In addition, the mean (± SD) of Shemu PLC increase profitability after adopting the ERP system was 4.11(±0.60). From this finding, the researcher understood that Shemu plc increase on profitability after adopting the system.

As shown in table 4.11, for the statement of Shemu plc has taken the competitive advantage over its counter parts, more than half 85(83.3%) of the respondents confirmed their agreement. The rest response rate 17(16.7%) of the respondents assured neither agree nor disagree. furthermore, the mean (± SD) of Shemu plc has taken the competitive advantage over its counter parts was 4.01(±0.63). This finding implies that Shemu plc has taken competitive advantage over its compotator after adopting the system.

In sum, in table 4.11, revealed that, relationship of ERP system and organizational performance group mean of the overall benefit score was 4.09(±0.33). This intends that after adopting ERP system Shemu's has enhanced its performance. The interview result of divisional managers confirmed that Shemu's performance has enhanced as compared with before the adoption of ERP system. By enhancing the product quality, by reducing its production cost effectively. as result new customers have been increased, even product sales price has less than as of their competitors in the market.

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

## 4.2 Results of Inferential Statistics

### 4.2.1 Correlation Analysis

Correlation was used to find out the relationship between the independent variable (Information System, Organizational Business Value, Customer Relationship Management, Inventory Management, Employees Management, Supply Chain management, Internal Process,

Organizational Learning and Decision Making) and the dependent variable (organizational performance) as conceptualized in the framework. A correlation coefficient expresses quantitatively the magnitude and direction of the linear relationship between variables, Pearson correlation coefficient reveal magnitude and direction of (either positive or negative) and the intensity of the relationship (-1 to +1). The researcher used one of the most commonly used types of correlation coefficient, which is a Pearson correlation coefficient method because of the statistical accuracy that usually results from this method. The strength of correlation interpreted by Evans (1996) as shown in the following pattern.

0.00 - 0.19 very weak

0.2 - 0.39 weak

0.4 - 0.59 Moderate

0.6 - 0.79 strong

0.8 -1.0 very strong.

**Table 4. 12 Pearson's correlation analysis**

Source: Own survey (2020)

**Correlations**

| | | Information System | Organizational Business Value | Customer Relationship Management (CRM) | Inventory Management | Employees Management | Supply Chain management | Internal Process | Organizational Learning | Decision Making | ERP system | Organizational Performance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Information System | Pearson Correlation | 1 | .692** | .498** | .236* | .370** | .119 | .162 | .299** | .228* | .570** | .330** |
| | Sig. (2-tailed) | | .000 | .000 | .017 | .000 | .235 | .103 | .002 | .021 | .000 | .001 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Organizational Business Value | Pearson Correlation | .692** | 1 | .497** | .355** | .310** | .014 | -.023 | .276** | .123 | .505** | .239* |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .002 | .891 | .819 | .005 | .218 | .000 | .016 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Customer Relationship Management (CRM) | Pearson Correlation | .498** | .497** | 1 | .590** | .357** | .083 | .180 | .260** | .331** | .632** | .373** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 | .408 | .070 | .008 | .001 | .000 | .000 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Inventory Management | Pearson Correlation | .236* | .355** | .590** | 1 | .285** | -.030 | -.005 | .156 | .201* | .458** | .274** |
| | Sig. (2-tailed) | .017 | .000 | .000 | | .004 | .762 | .963 | .118 | .043 | .000 | .005 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Employees Management | Pearson Correlation | .370** | .310** | .357** | .285** | 1 | .464** | .241* | .402** | .271** | .644** | .377** |
| | Sig. (2-tailed) | .000 | .002 | .000 | .004 | | .000 | .015 | .000 | .006 | .000 | .000 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Supply Chain management | Pearson Correlation | .119 | .014 | .083 | -.030 | .464** | 1 | .471** | .407** | .298** | .536** | .320** |
| | Sig. (2-tailed) | .235 | .891 | .408 | .762 | .000 | | .000 | .000 | .002 | .000 | .001 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Internal Process | Pearson Correlation | .162 | -.023 | .180 | -.005 | .241* | .471** | 1 | .596** | .715** | .675** | .575** |
| | Sig. (2-tailed) | .103 | .819 | .070 | .963 | .015 | .000 | | .000 | .000 | .000 | .000 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Organizational Learning | Pearson Correlation | .299** | .276** | .260** | .156 | .402** | .407** | .596** | 1 | .663** | .772** | .518** |
| | Sig. (2-tailed) | .002 | .005 | .008 | .118 | .000 | .000 | .000 | | .000 | .000 | .000 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Decision Making | Pearson Correlation | .228* | .123 | .331** | .201* | .271** | .298** | .715** | .663** | 1 | .746** | .643** |
| | Sig. (2-tailed) | .021 | .218 | .001 | .043 | .006 | .002 | .000 | .000 | | .000 | .000 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| ERP system | Pearson Correlation | .570** | .505** | .632** | .458** | .644** | .536** | .675** | .772** | .746** | 1 | .678** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | | .000 |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |
| Organizational Performance | Pearson Correlation | .330** | .239* | .373** | .274** | .377** | .320** | .575** | .518** | .643** | .678** | 1 |
| | Sig. (2-tailed) | .001 | .016 | .000 | .005 | .000 | .001 | .000 | .000 | .000 | .000 | |
| | N | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 | 102 |

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

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

As described in Table 4.12, the results revealed that, a strong and positive linear correlation exists between ERP system and Organizational performance (r=0.678, p = .000 < .01), which is significant. This means ERP system has positive effect on organizational performance. This finding is in line with the study result of Almgren & Bach, (2014), Constantinos et al., (2014), Gefen & Ragowsky, (2005), Harris S., (2017) and Karimi J., (2017) who found significant and positive association between ERP system and organizational performance.

### 4.2.2 Regression Analysis

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

**Assumption 1: Multicollinearity Test**

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

**Table 4. 13 Multicollinarity test result**

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

a. Dependent variable: Organizational performance

Source- Own survey (2020)

**Assumption 2: Normality Distribution Test**

Regression analyses need the independent variables to be normally distributed. Skewness and Kurtosis are statistical tools, which can enable to check if the data is normally distributed or not. According to Smith and Wells (2006), Kurtosis defined as property of a distribution that describes the thickness of the tails. The thickness of the tail comes from the amount of scores falling at the extremes relative to the normal distribution. Skewness is a measure of symmetry/balance. A distribution or data set is symmetric if it looks the same to the left and right of the center point. For this study, the skewness and kurtosis test results are within the acceptable range (-1.0 to +1.0) and it can be concluded that the data for all variable are normally distributed.

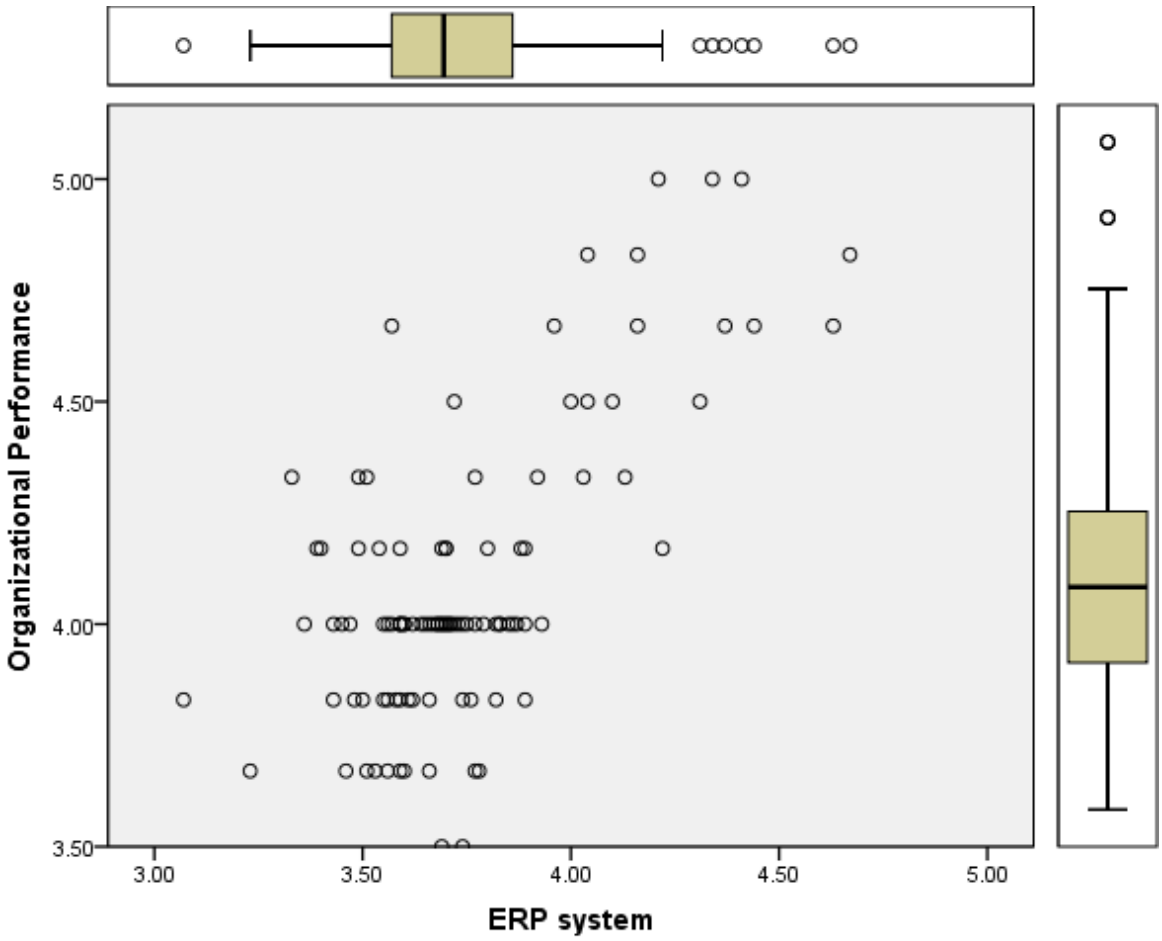
**Table 4. 14 Normality test result**

| | N-valid | Skewness | | Kurtosis | |
|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| Information System | 102 | -.087 | .239 | -.756 | .474 |
| Organizational Business Value | 102 | .438 | .239 | .552 | .474 |
| Customer Relationship Management (CRM) | 102 | .210 | .239 | .263 | .474 |
| Inventory Management | 102 | .272 | .239 | .223 | .474 |
| Employees Management | 102 | .312 | .239 | -.090 | .474 |
| Supply Chain management | 102 | -.172 | .239 | .202 | .474 |
| Internal Process | 102 | .461 | .239 | -.585 | .474 |
| Organizational Learning | 102 | .082 | .239 | .134 | .474 |
| Decision Making | 102 | .570 | .239 | .082 | .474 |

Source: own survey (2020)

**Assumption 3: Linearity of the relationship test**

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




Source: Own survey (2020)

**Table 4. 15 Analysis model summary of R and R2**

**Model summary**

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .718[a] | .515 | .467 | .24363 |

a. Predictors: (Constant), ERP system
b. Dependent Variable: Organizational Performance

Source: SPSS outputs (2020)

From the above model summary in Table 4.15, it can be seen that R is .718 and $R^2$ is 0.515. This indicates about 51.5% of the variance of Organizational performance (dependent variable) can be explained by overall roles of ERP system (independent variable), the remaining 48.5% of the variance is explained by other variables which are not included in this study.

**Table 4. 16 (ANOVA) ERPS as predictor to OP**

**ANOVA[a]**

| Model | | Sum of squares | Df | Mean square | F | Sig |
|---|---|---|---|---|---|---|
| 1 | Regression | 5.794 | 9 | .644 | 10.847 | .000[b] |
| | Residual | 5.461 | 92 | .059 | | |
| | Total | 11.255 | 101 | | | |

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), ERP system

Source: Own survey (2020)

From the ANOVA Table 4.16, the F- test result and the P Value tests whether the overall regression model is good predictor and the probability of this result is occurred by chance or not. In this regard, the F- test result is 10.847 with a significance of less than .000. This means, the probability of those results occurs by chance is < 0.01. This implies, 99 times out of 100, the estimate will reflect the true population characteristic. And it can be concluded as the overall regression model is significant, F (9, 92) =10.847, P<0.01, $R^2$= 51.5% (the regression model is a good to fit the data). Therefore, significant amount of organizational performance is influenced by overall role of ERP system. In other words, independent variable (ERP system) significantly predict the dependent variable (OP). This implies that, the overall roles of ERP system at Shemu plc, affect organizational performance significantly. This result is also in line with the study finding of Almgren & Bach, (2014), Constantinos et al., (2014) and Gefen & Ragowsky, (2005) who found that organizational performance is predicted by ERP system.

**Table 4. 17 (Coefficient) ERPS as predictor to OP**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.344 | .398 | | 3.375 | .001 |
| | Information System =$X_1$ | .097 | .129 | .082 | .755 | .452 |
| | O. Business Value=$X_2$ | .043 | .093 | .051 | .458 | .648 |
| | CRM=$X_3$ | .024 | .086 | .029 | .279 | .001 |
| | Inventory Management=$X_4$ | .094 | .076 | .117 | 1.235 | .001 |
| | Employees Management=$X_5$ | .085 | .071 | .112 | 1.204 | .232 |
| | Supply Chain management=$X_6$ | .020 | .071 | .027 | .288 | .001 |
| | Internal Process=$X_7$ | .147 | .067 | .260 | 2.180 | .032 |
| | Organizational Learning=$X_8$ | .004 | .070 | .007 | .062 | .001 |
| | Decision Making=$X_9$ | .219 | .074 | .356 | 2.952 | .000 |

a. Dependent Variable: Organizational Performance
Source: Own survey (2020)

From the above coefficient table 4.17, Beta value indicated that there is a positive relationship exists between ERP system and organizational performance. And this result is significant as p value is equal to .001 < 0.01, which means changes in the predictor value is related to changes in the response variable; i.e. organizational learning, decision making, supply chain management, inventory management and customer relationship management are significant effect on organizational performance of Shemu plc but not others.

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

$$OP = \beta+\beta1X1+ \beta2X2+ \ldots\beta k\ Xk + et$$

$$OP =1.344+.097X1+.043X2+.024X3+.094X4+.085X5+.020X6+.147X7+.004X8+.219X9+0.733$$

These results show that from the nine proposed hypotheses five were supported. The major finding of the test of the above mentioned models were that there is a positive, significant impact of the five factors: organizational learning, decision making, supply chain management, inventory management and customer relationship managements on the effect of organizational performance. But the rest four factors: internal process, information System, organizational business value and employees management were not supported.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter delivers the findings from chapter four and it gives the conclusions and recommendations of the study based on the objective of the study. The objective of this study was to examine the effect of ERP System on organization performance at Shemu private limited company. The study has conducted based on the collection of primary data. Primary data were collected with well-structured and self-administered questionnaire that contains relevant questions regarding ERP system and organizational performance at Shemu private limited company. In addition, one-to-one interview with selected 11 divisional managers and one deputy CEO was conduct to collect qualitative data to supplement and strengthen the information obtained from questionnaires.

## 5.1 Summary of the findings

Based on the study, the following actual findings was observed;

- ERP system play vital role in information system
- ERP system enhance Shemu's organizational business value by reduce its operating cost, improve productivity, enhance responsiveness, increase customer access and creates competitive advantage
- ERP system has a major role in customer relation management at Shemu plc.
- ERP system has an important role in inventory management by minimizing labor intensive system, by minimizing time and cost and by eliminating cycle inventory system at Shemu plc.
- ERP system have a well-known contribution in employees management by controlling the day-to-day activities of employees.
- ERP system has a well-known contribution in supply chain management activates of Shemu plc. In minimizing lead-time (the time taken between the customer order up to the customer receive his/her order) and minimizing risk associated with the sharing of production schedules.
- ERP system has a great roll in internal process of Shemu plc in facilitating integration across shemu business unites and improving the managerial decisional rolls.
- ERP system has a main roll in Shemu organizational learning by generating best practices and by having, electronic data interchange (EDI) to facilitate Shemu business.

- ERP system has a higher significance in decisional making process of Shemu plc by identifying performing units from none performing unites.
- After adopting ERP system, Shemu has increase product quality, service quality, Efficiency and effectiveness.
- ERP system was relevant for Shemu to improve organizational performance
- ERP system was a key for organizational performance.
- There is a Positive and significant relationship between ERP system and Organizational performance.
- Significant amount of organizational performance had certainly increased by ERP system, which mean ERP system have positive effect on organizational performance as well, significantly predict organizational performance.

### 5.2 Conclusions

The main objective of this study was to examine the effect of ERP System on organization performance at Shemu private limited company, Addis Ababa, Ethiopia. To this end, three basic research questions were set. Accordingly, based on descriptive (frequency distribution, percent, mean & standard deviation) and inferential (Pearson's correlation and linear regression) statistics results and summary of major findings, the following conclusions were drawn.

- ERP systems present continual and accuracy of information at Shemu plc and thus augment the managerial decision-making processes so that, every person in Shemu depending on the type of information they are allowed to access is able to access the information they need to carry out their day to day tasks.
- Adopting ERP system enhance Shemu's organizational business value by reduce its operating cost, improve productivity, enhance responsiveness, increase customer access and creates competitive advantage as compared with the equivalents.
- ERP system has several roles at Shemu Plc: better customer service, product quality, and on-time delivery are quite a few aspects of business that influence the level of satisfaction. In terms of customer service, online stages can improve client relations by giving simple and prompt access to data from any area inside or outside of Shemu. Customers, and other stakeholders provided with security clearance are capable to access preferred information as they needed.
- ERP system decreases on-hand inventory needs, reduces the likelihood of having an inventory shortage, lowers the order frequency and harmonizing costs and reduces the

likelihood of having an inventory shortage at Shemu Plc. As well, ERP system evades cycle inventory counting system at the organization.

- ERP system has a performance monitoring advantage on workforces of Shemu. 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 and the staff that leads to better productivity of the organization.
- ERP system can help the managers to facilitate decision-making processes, which can lead to shorter lead times and smaller batch sizes as well, Managers can advantage from minimizing risk with forecasting in part due to the sharing of production schedules with suppliers and customers too.
- ERP system provide systematize support to wide ranging of Shemu plc business processes. as a result, it facilitates the integration of organizational processes, and enhances the standardization of processes across multiple business units with the objective of enhancing efficiency.
- After adopting ERP system Shemu plc enables speed of buildup and integration of resources to safeguard from underutilization of its resources.
- ERP system effectively enhances business information processing at Shemu plc. by generating best practice across department, customers and stakeholders through EDI (electronic data interchange). as a result, it provides valuable information to facilitating firm to achieve business planning, decision making, and business objectives.
- ERP system create an opportunity in combing managerial intellect to ensure an insight of potentially effective decisions at Shemu plc. this means that ERP system feed inputs for quality of managerial decision-making at shemu plc.
- ERP system enhances organizational performance of Shemu plc in terms of profitability, efficiency, effectiveness, competitive advantage and by giving quality service to its customers.
- The variable which has the highest aggregated value have higher effect on the performance of Shemu plc but not others. Organizational learning has highest effect on performance of Shemu plc followed by decision making, supply chain management, inventory management and customer relationship managements likewise internal process has least effect on

performance of Shemu plc followed by information system, organizational business value and employees managements.

- Adopting ERP system and organizational performance had a strong, positive and significant relationship at Shemu Plc. with Pearson correlation (r= .678).
- Significant amount of organizational performance had certainly increased by adopting ERP system. which means Shemu plc effort to utilize ERP system, as a result organizational learning, decision making, Supply chain management, inventory management and customer relationship management has been affect organizational performance significantly.

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

### 5.3 Limitation of the Study

This academic research achieved its objectives; however, some limitations were identified. The major limitation of this study was it covered only one private organization and the findings cannot generalize other government and non-government organization more updated contribution regarding to the effect of ERP system on organizational performance. The other big challenge at the time of data collection was Corona (COVID-19) hat made the respondents felt uncomfortable and others were simply bothered. However, the data collected through the distribution of questionnaires and interview guide were adequate to safely conclude about the effect of ERP system on organizational performance at Shemu Plc.

### 5.4 Recommendation

Adopting ERP system at Shemu plc has a number of advantages: organizational learning, decision making, Supply chain management, inventory management and customer relationship management. However, Shemu Plc should to rework in internal process, information System, organizational business value and employee's management. they should also enhance different aspects of organizational performance. In addition to that they should sustain the ERP system benefits to be more profitable and competent from its counter parts for a long period of time.

### 5.4.1 Further studies

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

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**APPENDIX-I**

**ST. MARY'S UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

**MASTER OF BUSINESS ADMINISTRATION PROGRAM**

## QUESTIONNAIRE

This questionnaire is prepared by Solomon Kasahun, who is Master of Business Administration (MBA) in general management student at St. Mary's University. The purpose of this questionnaire is to gather information in order to study the effect of ERP system on performance of Shemu PLC. Which is purely for academic purpose. I kindly request your cooperation by filling the questionnaire. Because, your genuine and on time response is essential for the success of my study. Your response will be kept highly confidential and used only for this research. Thus, you are requested to respond each item carefully.

No need of writing your name.

If you have any question or comment please don't hesitate to contact me with following addresses:


- Mobile: 0911 18 41 39
- Email- solomon_kasahun@yahoo.com


Thank you, in advance, for your cooperation!

## Part I

Personal information/demographic data

Please read each question carefully and tick (✓) in the box ☐ matching to the response.

1. Sex: Male ☐ Female ☐
2. Age group: 18-25 ☐ 26-33 ☐ 34-41 ☐ 42-49 ☐ 50 and above ☐
3. Academic qualification: Level IV certificate ☐ 1st Degree ☐ 2nd Degree or above ☐
4. Work Experience at the organization: 1-5 years ☐ 6-10 years ☐ 11 and above ☐

**Part II**

Put an "✓" mark to indicate your level of agreement to the following statements by using a scale of 1-5 where: strongly disagree is (SDA=1) disagree is (DA=2) neutral is (N=3) Agree is (A=4) and strongly agree is (SA=5)

| No | Description /questions | Level of Agreement | | | | |
|---|---|---|---|---|---|---|
| **A** | **Roles of ERP in Information System** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system provides real time information. | | | | | |
| 2 | ERP system provides accurate information. | | | | | |
| 3 | ERP system provides reliable information. | | | | | |
| 4 | ERP system provides timely information. | | | | | |
| 5 | ERP system Improved decision making. | | | | | |
| **B** | **Roles of ERP in Organizational Business Value** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system can reduce operating cost. | | | | | |
| 2 | ERP system can improve productivity. | | | | | |
| 3 | ERP system can enhance responsiveness. | | | | | |
| 4 | ERP system increase customer access. | | | | | |
| 5 | ERP system creates competitive advantage. | | | | | |
| **C** | **Roles of ERP in Customer Relationship Management (CRM)** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system helps the organization to develop the loyal customers. | | | | | |
| 2 | ERP system enhances quality services at Shemu PLC. | | | | | |
| 3 | ERP system can shorten the product life cycle at Shemu PLC. | | | | | |
| 4 | ERP system attracts new customer. | | | | | |
| **D** | **Roles of ERP in Inventory Management** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system minimizes labor intensive system at Shemu PLC. | | | | | |
| 2 | ERP system can save time and cost. | | | | | |
| 3 | ERP system avoids cycle inventory counting | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | system. | | | | | |
| **E** | **Roles of ERP in Employees Management** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system helps the managers to control the day to day activities of the employees | | | | | |
| 2 | ERP system helps the managers to identify employees' performance. | | | | | |
| 3 | ERP system can help the managers to measure employees' productivity. | | | | | |
| **F** | **Roles of ERP in Supply Chain management** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system shortens ***lead time*** (the time taken between the customer order up to the customer receive his/her order). | | | | | |
| 2 | ERP system can minimize risk with forecasting in part due to the sharing of production schedules with suppliers and customers. | | | | | |
| **H** | **Roles of ERP in Internal Process** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system facilitates the integration of business units of Shemu plc. | | | | | |
| 2 | ERP system improves decision making processes in Shemu plc business units. | | | | | |
| **I** | **Roles of ERP in Organizational Learning** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system generates best practice within the organization. | | | | | |
| 2 | ERP system supports electronic data interchange (EDI) with in organizations & stake holders. | | | | | |
| **J** | **Roles of ERP in Decision Making** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |
| 1 | ERP system can identify the performing units from non performing units. | | | | | |
| 2 | ERP system enhances the quality of managerial decision making process. | | | | | |
| **K** | **Relationship Between ERP System and Organizational Performance** | **SDA=1** | **DA=2** | **N=3** | **A=4** | **SA=5** |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Shemu PLC gives quality service after adopting the ERP system. | | | | | |
| 2 | Shemu PLC increase productivity after adopting the ERP system. | | | | | |
| 3 | Shemu PLC increase quality product after adopting the ERP system. | | | | | |
| 4 | Shemu PLC increase efficiency and effectiveness of production after adopting the ERP system. | | | | | |
| 5 | Shemu PLC increase profitability after adopting the ERP system. | | | | | |
| 6 | Shemu plc has taken the competitive advantage over its counter parts. | | | | | |

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

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**APPENDIX-II**

**ST. MARY'S UNIVERSITY**

**SCHOOL OF GRADUATE STUDIES**

**MASTER OF BUSINESS ADMINISTRATION PROGRAM**

## Interview guide

Thank you very much for volunteering for this interview.

This is research conducted as part of my MBA study at St. Mary's University. Your participation's very important to the research; hence you are kindly requested to respond to this interview to achieve the grand objective of the study. Your response will be kept highly confidential and used only for this research on academic purpose. I thank you very much in advance for participating in this survey and provide your thought full feedback.

1. What effects have been observed before adopting ERP system at Shemu plc?
2. What effects have been observed after adopting ERP system at Shemu plc?
3. On what way ERP system enhance the performance of Shemu plc?
4. How do you define the relationship of ERP system and performance of Shemu plc?
5. To what extent ERP system contribute to your organizational performance?