College of Business and Economics

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Department of Project Management

Assessment of the Prospect and Challenges for Successful Implementation of Enterprise Resource Planning in the case of Ethiopian Electric Utility, 2023, Addis Ababa.

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Abstract

This study aims to examine the feasibility and challenges of implementing an Enterprise Resource Planning (ERP) system in the Ethiopian Electric Utility (EEU). The research design used was an analytical study, and the source population was the employees of the EEU. The data was collected through a survey method and analyzed using both qualitative and quantitative measurements. The study found that while government policies and regulations may play a role in promoting ERP adoption, there are varying opinions on their effectiveness. Additionally, the organization's technical readiness for implementing the ERP system was found to be higher than the successful implementation of the ERP system in the EEU. And the respondents for the questionaries was professional whom took the training prepared by the organization. Moreover, a good result was got at the end of the analyses.

Declaration

I, Mr. Minilik Gashaw Shbabaw, Id .No. GSR/1003/14 hereby declare that this thesis entitled "AN ANALYTICAL STUDY ON THE ASSESSMENT OF THE PROSPECT AND CHALLENGES FOR SUCCESSFUL IMPLEMENTATION ENTERPRISE RESOURCE PLANNING IN ETHIOPIAN ELECTRIC UTILITY, 2023, ADDIS ABABA; evidence from Head office" submitted as partial fulfillment of the requirements for the award of the degree of MSc, in Project Management to the School of Commerce, Addis Ababa university , through the Department of Project Management is my original work and has not been presented to the award of any degree or Masters in any university. All sorts of materials used for this thesis have been dully acknowledged.

Submitted by: -

Minilik Gashaw Shbabaw,

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Approved by: -

This thesis has been submitted for examination with my approval.

Dr. Seifu Mamo,

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Approval

This is to certify that this thesis entitled "AN ANALYTICAL STUDY ON THE ASSESSMENT OF THE PROSPECT AND CHALLENGES FOR SUCCESSFUL IMPLEMENTATION ENTERPRISE RESOURCE PLANNING IN ETHIOPIAN ELECTRIC UTILITY, 2023,ADDIS ABABA:- evidence from Head office" submitted as a partial fulfillment of the requirements for the award of the degree of MSc in Project Management to the School of Commerce, Addis Ababa university, through the Department of Project Management, done by Mr. Minilik Gashaw Shbabaw, Id .No. GSR/1003/14 is an authentic work carried out by him under my guidance.

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Acronyms /Abbreviation

B&I ……... Billing and Invoicing

BW……. Business Warehouse

CRM……...……. Customer Relationship Management

DMS……Data Monitoring system

EAM……..... Enterprise Asset Management

EDM……...……. Energy Data Management

EELPA……. Ethiopian Electric Light and Power Authority

EEU ……Ethiopian Electric Utility

ERP ……. Enterprise Resource Planning

EEPCO……Ethiopian Electric Power Corporation

FICO……...……. Financial controlling module

GWH……Giga watt hours

HCM ……...……Human Capital Management

MM……..Material Management

MW……..Mega Watts

QM ……..Quality Management

SPSS……Statistical Package for the Social Sciences

Chapter one

Introduction

1.1.1 Background of the Study

Enterprise Resource Planning is a coordinate's computer program bundle comprising of a set of Standard useful modules (generation, deals, human assets, fund, etc.) created or Coordinates by the seller that can be adjusted to the particular needs of each client. ERP frameworks are computer applications with two vital characteristics information integration and back for best hone forms (Ahamed *et al.*, 2020). According to the researchers, organizations that actualize ERP anticipate that the information integration characteristic will make strides the quality of their choice making as well as increment their effectiveness. By utilizing the finest hone forms that bolster by ERP, organizations need to speed up their forms, and progress the quality of those forms.

Therefore, theoretical and practical problems encountered, a nonstop investigate require ERP implementation extend that influences the complete organization with respect to taken a toll, security, customization and execution. Especially, the analyst starts to perform this paper by centering on the examination up on the understanding of representatives, prospect and challenges whereas executing cloud-based ERP.

1.1.2 Background of the Organization

Ethiopia Electric Utility and Ethiopia Electric Power were formed out of the Ethiopian Electricity Corporation in 2013. Ethiopia Electric Utility is the subject of this research because its services benefit all customers. The utility's annual generating capacity is currently around 4200 MW, with over 3.6 million customers. Prepaid customers account for approximately 762,728 of these. Despite the fact that the utility's customer base has grown by more than 20% per year, it has yet to meet the demand for electricity. The government is working to achieve this goal by constructing large hydro, wind, and geothermal power plants across the country. With a total of 23000 permanent employees, the company accomplishes its goals (EEU, 2022).

The EEU operates in a complicated context, serving clients in cities throughout the eleven regional states. It experienced difficulties in efficiently delivering services while keeping complete visibility and accountability across all of its systems. EEU chose SAP ERP and SAP CRM to optimize processes and deliver real-time visibility. The new system also allows EEU to swiftly detect and rectify any difficulties, ensuring top-notch client service. The EEU's billing and reporting capabilities have entered a new era of efficiency and accountability. It is just another step in the Ethiopian government's ongoing efforts to improve the overall economics and service of the energy distribution industry. The industry has been conducting a comprehensive examination of its operations in order to uncover opportunities (EEU, 2018).

In 2018, EEU purchased 59 million dollars for SAP's ERP software. The system was installed by Tech Mahindra Ltd, an Indian global information technology company. The project's first phase was completed with the help of a World Bank loan of 46 million dollars. The government provided 13 million dollars in license and maintenance funding in the second phase. Implementation of SAP systems for sales, billing, finance, service management, and procurement was part of the three-year project. A total of 3,183 EEU personnel received training for the system (EEU, 2019).

The main reasons for implementing the ERP system in EEU were to facilitate client benefit; to extend effectiveness, adequacy, execution and efficiency to coordinated data in commerce forms and hones to diminish burdens for supervisors and workers to decrease fetched; to utilize way better innovation; and opportune issue fathoming. Since, the bequest framework was confronting numerous challenges and torments come about from not having ERP framework. The draw backs Accounting takes longer that deals and the client’s involvement are enduring; Trade operation are not easily encouraged due to complex and time-consuming ICT; and Organizational assets not overseen effectively and successfully.

1.1.3 Statement of the Problem

Measuring and improving Service Quality can increase organization profit and reputation. In Ethiopia there are different governmental companies mainly cause of problem like Ethiopian Electric Utility face lack of service quality. After ERP implemented most companies’ problem solved like companies who have been using manual, less technology dependent would face significant challenges in transform from their old environment to a new ERP environment. It was

new era of efficiency and accountability in the EEU's billing and reporting capability. This is another step in the Ethiopian government's ongoing efforts to improve the overall efficiency and services of the power industry. This sector has conducted an extensive review of its business to identify opportunities for improvement in areas such as billing and collection, private investment in power generation, capacity building and tariff management (EEU, 2018).

Unlike other information systems, ERP implementation issues are mostly about organizational and human issues such as resistance to change, organizational culture, and lack of user skill, incompatible business processes, project mismanagement, and top management commitment, rather than technological issues such as technological complexity, compatibility, standardization, and so on. (Goeun, 2013)

International and local studies were done related to benefit and challenges of ERP system (Goeun, 2013; Hilina ,2017) and Seble, 2021). Even though; those studies tried to assess the benefit and challenges of ERP system. They didn't emphasize analytical study of the prospects and the implementation practices of ERP System. This is critical research gap motivation to examine the analytical study on the assessment of the prospect and challenges of ERP system in the company.

After implementing ERP project, Ethiopian electric utility is facing problem in planning target is not fit as the company expected and system problem (EEU, 2020). As the company plans its target on total energy selling income highly increase after ERP project implemented but it is not fulfilling its target this is because of most company energy meters are post-paid in some customer center there is lack of ERP training to inserting reading energy meter data in ERP system so, it affects not fulfill its target income collection. And system down the company employees are back to their manual work which is more time taking and when the system recover staffs are forced to insert the data they worked manually and it creates high work burden for the staffs (EEU, 2020). As reported on continuous ERP evaluation reports the other challenge the company face after implementing ERP is that lack of skill of manpower, lack of Commitment of management, poor IT infrastructure, lack of adequate IT support and knowledge transfer from vendors' side.

Therefore, the aims of this study had been the analytical study on assessment of prospects and challenges of Enterprise resource planning implementation in Ethiopian electric utility.

1.1.4 Research Questions

1. What is the current implementation practice of ERP system in EEU?
2. What are the challenges of implementing ERP system in EEU?
3. What are the prospects of implementation ERP system in EEU?

1.2. Objectives of the Study

General Objective: -

To analyze and evaluate the prospects and challenges for successful implementation of Enterprise Resource Planning (ERP) in Ethiopian Electric Utility in 2023.

Specific Objectives: -

1. To identify the key factors that influence the implementation of ERP systems in the EEU.
2. To examine the benefits and challenges of implementing ERP systems for businesses operating in the EEU.
3. To analyze the role of government policies and regulations in the adoption of ERP systems in the EEU.
4. To develop recommendations for enhancing the successful implementation of ERP systems in the EEU.

1.3 Scope and Delimitation of the Study

Ethiopian Electric Utility have currently employed around twenty-three thousand (23,000) employees throughout the company. The project of ERP system implementation from head quarter, 11 different region office, 28 district office and 554 customer service centers with different ERP modules in different department.

The scope of this study is to evaluate the prospective benefits and challenges of implementing an ERP system in the Ethiopian Electric Utility (EEU) in 2023. The study aims to identify the factors hindering the efficient functioning of the EEU and to explore the benefits of adopting a comprehensive ERP system. The scope of the study includes analyzing the technical expertise available for the implementation, training and development programs for staff, budget allocation,

and collaboration between the government and private sector. The research also assesses the challenges and prospects for public sector employees with regards to the adoption of the ERP system. Finally, the study aims to propose a sustainable approach to ERP implementation that addresses the identified challenges and maximizes the benefits for the EEU.

1.4 Significance of the Study

The significance of this study lies in its potential to provide insights into how the EEU can improve its operations and efficiency by adopting an ERP system. The benefits of an ERP system are well-documented, and successful implementation could bring significant improvements in decision-making, cost reduction, and customer service.

Moreover, conducting this study will help identify the challenges and prospects of ERP implementation, which can assist the EEU in devising strategies to overcome them. The results of the study could be used to design training and development programs for employees, allocate budgets, and facilitate collaboration between the government and private sectors.

This study could also have broader implications for other developing countries that face similar challenges in implementing ERP systems, as it could provide insights into how to overcome common challenges and maximize the benefits of the technology. This research could contribute to the existing literature on ERP implementation in developing countries and help policymakers make informed decisions about the adoption of ERP systems. Ultimately, this study could have practical implications for improving the functioning of the EEU and help enhance the quality of life for the population supported by the utility.

1.5 Definition of Terms

- **Enterprise Resource Planning (ERP)** – the concepts and techniques of integrated management of business or management of business as a whole with the objective of efficient and effective use of management resources and to improve the efficiency of enterprise management.
- **Successful implementation of ERP –**one that goes live with the features that were expected, in the anticipated timeframe.

- **Module** – Different type of functional business departments in an organization such as Finance, Human Resource, Procurement, and Customer Service.
- **Energy Data Management (EDM)** Module -Energy Data Management is a solution that fulfills requirements by offering interval reading, settlement of energy quantities, scheduling, and billing of interval energy consumption.
- **Financial controlling module (FICO) Module -** FI stands for Financial Accounting, while CO represents for Controlling, in SAP ERP's Finance and Cost Controlling module.
- **Device Management (DM) Module** - Technical data, installations, meter readings, and device inspection are all managed by this component.
- **Customer Relationship Management (CRM) Module**- application offers customer service organizations robust call center functionality and a highly customizable design.
- **Billing and Invoicing (B&I) Module**- This component is used to bill for a utility company's supply and services.
- **Human Capital Management (HCM) Module**- Solution provides a comprehensive and integrated set of solutions to assist you in managing your people successfully.

1.6 Organization of the Study

This research paper includes five chapters. Accordingly, chapter one includes the introductory part and contains: background of the study, background of the organization, statement of the problem, research questions, objectives of the study, scope of the study and significance of the study; whereas chapter two includes: related literature review and then chapter three includes: research methodology; then chapter four includes: main part of the paper and in this section data presentation, analysis and interpretation are conducted. Finally, in chapter five summaries of findings, conclusion and recommendation will present.

Chapter Two

Literature Review

2.1 Introduction

ERP stands for enterprise resource planning, and it refers to the processes and software systems that provide the tools needed to run a firm in the areas of financial management, logistics, manufacturing, human resources, and extended supply chain activities. ERP systems have become essential in the modern business environment, providing a means for organizations to integrate their various functions and processes into a single comprehensive system. However, the successful implementation of these systems is not without challenges, particularly in developing countries such as Ethiopia. This literature review examines the prospect and challenges for successful implementation of ERP in the Ethiopian Electric Utility (EEU).

The word ERP initially referred to how a large company planned to use its resources as a whole. ERP systems were once only employed in larger, more industrial businesses. However, the definition of ERP has evolved and is now incredibly broad; today, the phrase can relate to any type of business, regardless of industry. ERP systems are utilized in practically all types of businesses, large and small (Crawford, 2019).

Today's ERP systems can handle a wide range of tasks and integrate them into a single database. Human Resources, Supply Chain Management, Customer Relations Management, Financials, Manufacturing functions, and Warehouse Management functions, for example, were originally separate software systems with their own database and network but can now be grouped together (Moon, 2007).

This will result in cross-functional synergy, allowing firms to maintain highly effective procedures and achieve long-term success. Only by developing a thorough grasp of this philosophy can you be confident in achieving the best results, as well as being prepared to face and overcome any roadblocks you may encounter.

The study by Berhe (2019) explored the challenges facing ERP implementation in EEU by examining the factors that hinder the efficiency of the system. The study identified a lack of technical expertise, inadequate training and support, and insufficient preparation as potential challenges for ERP implementation in the EEU. The research recommended that there should be a focus on a sustainable approach to ERP implementation that involves a continuous training and development program for staff, an adequate budget allocation, and a collaborative approach between the government and the private sector.

Another study by Fasil and Kassa (2019) investigated the prospects of ERP implementation in the EEU, with a particular focus on the benefits of adopting the system. The study identified the benefits of ERP implementation, such as improved decision-making, cost reduction, increased efficiency, and enhanced customer service. However, the research also identified challenges such as resistance to change by employees and integration difficulties with existing systems as roadblocks to successful implementation.

The work of Ali and Belay (2020) provided further insights into the challenges and prospects for ERP implementation in Ethiopia, with a specific focus on the public sector. The study identified the need for comprehensive training and development programs for public sector employees to improve their skills and knowledge of ERP systems. The research also emphasized the need for the deployment of local technical experts to support ERP implementation by localizing and customizing the technical aspects of the system.

In conclusion, the literature review shows that there is a need for a comprehensive approach to ERP implementation in the Ethiopian Electric Utility. The studies highlight the importance of adequate training and support for employees, collaboration between the public and private sectors, and a sustainable approach to ERP implementation. Despite the challenges, the studies indicate that there is potential for ERP implementation to bring significant benefits to the EEU, such as improved decision-making, cost reduction, and enhanced customer service.

2.2 Theoretical literature

The Enterprise Resource Planning system is a business information system that integrates and optimizes a corporation's business processes and transactions. ERP is a set of industry-driven concepts and systems that has gained widespread acceptance as a feasible option for achieving integrated business information systems (Meroka, 2015).

The purpose of this paper is to accomplish three objectives. For starters, it will be valuable to academics who want to know what kind of questions have been addressed in the field of ERP. Second, the article will serve as a useful tool for locating study subjects. Finally, it will serve as a full bibliography of articles published during the time period.

2.2.1 ERP Modules and Functions

The author addresses the following 13 major ERP modules (McCue, 2021).

1. Finance: One of the most significant ERP modules is finance and accounting, which allows businesses to comprehend their current and future financial conditions. It also creates and preserves key financial records including balance sheets, payment receipts, and tax returns. (McCue, 2021).
2. Procurement: Organizations utilize the procurement module, also known as the purchasing module, to secure the materials and products they need to make and/or sell things. Companies can use this module to keep track of their permitted vendors and link them to certain items. The module can automate quote requests before tracking and analyzing the responses (McCue, 2021).
3. Manufacturing: The manufacturing module assists firms in planning production and determining whether they have all they need for scheduled production runs, such as raw materials and machinery capacity. It can assist organizations track actual output against predicted production and capture real-time information on items throughout the manufacturing process. (McCue, 2021).

4. Inventory Management: Inventory control is aided by the inventory management module, which tracks item quantities and position in relation to individual Stock Keeping Unit. It assists in inventory cost management, handling sufficient stock, weighing sales patterns against available product, and preventing stock outs and delays (McCue, 2021).
5. Order Management: Orders are tracked from receipt to delivery using an order management module. After customers submit orders, it sends them to a warehouse, distribution center, or retail store, where they're processed, fulfilled, and shipped to the customer. This module prevents items from going missing and boosts on-time delivery rates, ensuring customer happiness while avoiding excessive shipping costs (McCue, 2021).
6. Warehouse Management: A warehouse management module can competently guide warehouse staff through all warehouse procedures, from put away when items arrive to picking, packaging, and shipping, based on the configuration of the facility. Depending on which picking strategy is most effective for a certain firm, the warehouse management module can provide several picking methods such as batch picking, wave picking, and zone picking, and some modules can recommend the most effective pick path to staff (McCue, 2021).
7. Supply Chain Management: From sub-suppliers to suppliers to manufacturers to distributors to retailers or customers, a supply chain management module captures each step in the movement of supplies and items throughout the supply chain. Procurement, inventory management, production, order management, and warehouse management are just few of the modules that supply chain management might include. (McCue, 2021).
8. Customer Relationship Management: It keeps track of all customer and prospect data. This includes a person's purchase history as well as the company's communication history with them—for example, the date and time of calls and emails. When engaging with a customer, a CRM improves customer service by allowing personnel to quickly access all of the information they require. (McCue, 2021).
9. Professional Service Automation (Service Resource Management): It enables a business to plan and manage projects. This module is frequently used by service-based businesses. The application keeps track of project status, allows managers to approve expenses and timesheets, and manages human and capital resources during the project (McCue, 2021).
10. Workforce Management: It's similar to a human resource management module, except it's tailored for businesses with more hourly workers than paid workers. It can track staff

attendance and hours, as well as employee productivity and absenteeism. This module could also incorporate payroll (McCue, 2021).

11. Human Resource Management: A human resource management or human capital management module usually contains all of the functions of a workforce management application and adds new ones. This widely used module keeps extensive records on all employees and maintains documents like as performance appraisals, job descriptions, and offer letters. It keeps track of not only hours worked but also paid time off , sick days, and perks (McCue, 2021).
12. Ecommerce: For firms that want to sell online, some ERP suppliers include an ecommerce module. This module assists businesses in promoting a business-to-business or business-to-consumer ecommerce website quickly. All payments, orders, and inventory information from the ecommerce module are registered into the shared database if the ecommerce application is linked with other ERP modules (McCue, 2021).
13. Marketing Automation: A marketing automation module has been developed by some software suppliers. Marketing activities are managed by a marketing module across digital channels such as email, online, social media, and SMS. It provides advanced client segmentation tools and can automate email sends based on promotion rules, ensuring that customers only receive relevant information (McCue, 2021).

2.2.2 ERP vendors

ERP software is built to help a company succeed, there are different ERP vendors that can help ensure investment pays dividends. These companies are chosen due to number of available solutions, their market presence and the number of users. Some of ERP vendors SAP, Microsoft Oracle, Sage and son on.

SAP has been a leader in business software. Today, the company serves over 425,000 consumers in more than 180 countries and employs over 100,000 employees throughout the world. They provide a plethora of ERP options for businesses of all sizes and industries. SAP ERP systems provide your company with tools to help you streamline your operations and create a competitive advantage. Integrated financial management, supply chain management, and CRM solutions are used to accomplish this. The majority of SAP ERP software is scalable, which means you may tailor it to your specific requirements (Russ, 2021).

Microsoft's Dynamics product offerings have been a market leader in the ERP software market. These ERP systems provided a completely integrated tool for financials, supply chain, operations, and reporting, as well as manufacturing and human resource functions (Russ, 2021).

Oracle is a global software company that sells database software and technology, cloud-engineered solutions, and business software. They're well recognized for their ERP, human capital management, customer relationship management, and supply chain management systems. Oracle Cloud Applications are based on machine learning and feature a modern user interface and a customer-centric approach, allowing for quick innovation (Russ, 2021).

2.2.3 Practice models for ERP Implementation

Practice of ERP implementation required in making the appropriate decision. Practices of ERP implementations presented in this section include; gaining internal support and commitment, Selection of the right software, developing a plan with clear goals and objectives, change management and allocation of sufficient resources (Mutuku, M. 2020)

Develop a Plan with Clear Goals and Objectives

ERP software is a strong tool for streamlining corporate operations, increasing overall visibility, lowering expenses, and entirely changing the way a company does business. ERP solutions are made up of a number of complicated front and back-office systems that must be integrated to provide users with a consistent experience. The decision to deploy, upgrades, or integrate an ERP system is influenced by a number of factors, including the organization's growth strategy and existing information technology strategies. The need to review existing organizational information technology policies, business portfolios, cost-cutting strategies, as well as the elimination of old packages, custom-developed extensions, and reliance on third-party software, all contribute to the choice to deploy an ERP system (Mutuku, M. 2020).

Gain Internal Support and Commitment

Implementing an ERP system necessitates cooperation and support from all departments and operations inside a company. Many firms that attempted to implement ERP systems have failed due to a lack of internal support. The disappointing results were observed not only due to technical aspects of the implementation, such as insufficient definition of functional requirements or inability to choose the right ERP system, but also due to organizational aspects, such as top management's lack of commitment, lack of involvement, and end users' resistance to change (Mutuku, M. 2020).

Select the Right Software

Implementing an ERP system necessitates cooperation and support from all departments and operations inside a company. Many firms that attempted to implement ERP systems have failed due to a lack of internal support. The disappointing results were observed not only due to technical aspects of the implementation, such as insufficient definition of functional requirements or inability to choose the right ERP system, but also due to organizational aspects, such as top management's lack of commitment, lack of involvement, and end users' resistance to change (Mutuku, M. 2020).

Allocate Sufficient Resources

ERP system implementation is a big financial expenditure. As a result, businesses must set aside the necessary financial resources for software as well as high-quality training. Establish an ERP implementation project manager to oversee the ERP system's planning, implementation, and management, and ensure that this individual understands the business and commands respect from all ERP team members (Mutuku, M. 2020).

Invest in Training and Change Management

Change management is a method of implementing change inside an organization that is carefully planned. It is vital to provide structure for the ERP system's human workforce transition and acceptance. One of the most common blunders companies make is believing that change management is simply user training (Mutuku, M. 2020).

2.2.4 Challenges of ERP system

ERP vendors always know that they may need to integrate with other applications; therefore, they have incorporated this as part of their ERP application. ERP applications have some feature call interface tables, which provides any other application to use these tables to integrate the data transfer. These tables provide all the necessary validations, integrity checking, etc. However, the custom application vendors use outdated technologies provide cost effective solutions and they have limited human resources who knows those technologies very well (Mohamed. YJ Ahamed, 2020).

The challenges during implementation of ERP includes employee orientation employees sometimes does not accept changes. Working culture affects the acceptance of the implementation of new system in an organization. Security concerns another challenge system or technique designed for one country may not be effective in other country (Kipyegon *et al*., 2018). Cost factor is an important factor to be taken into consideration before implementation of the ERP system. Training and Learning process of training and adaptation to the ERP system be a cumbersome and time-consuming process. The challenge technical limitation in organization cannot depend on technological websites or software completely to handle every issue related to HR.

2.2.5 Prospect of ERP system

Optimizing efficiency

Enterprise Resource Planning solutions are used to automate a range of business operations that would otherwise require a long time and effort to do manually. Businesses can now automate repetitive processes such as inventory tracking, task assignment, monitoring working hours, salary distribution, and financial report generation (Kipyegon *et al*., 2018). Your staff can focus more on

their main deliverables without bothering each other by automating difficult operations. For example, the marketing team can generate daily web traffic data without requesting it from the IT department, and the accounting department can develop sales-related reports without relying.

Increasing team collaboration

Cross-departmental collaboration is an important and frequently required aspect of every business. The ERP system of a firm removes barriers between departments (Mahraz, 2018). If the data is held in centralized and consistent ERP software, a department can access data from other departments. Cloud-based ERP can extend existing inter-team collaboration across multiple offices in diverse countries via the internet.

Reducing operating costs

ERP systems can also help organizations cut their operating costs. Many disruptions, delays, and faults may be expected in advance because the majority of operating operations are automated. All of the difficult work might be completed more quickly, resulting in a shorter lead time. By automating a variety of day-to-day procedures, ERP solutions can also help firms save money.

Improving Data Security

To avoid data breaches, ERP solutions have firewalls and restriction controls. The system concentrates all of the data in one location so that the access points can readily monitor it. Employees with limited access permissions might be granted by administrators who are in charge of the company's data (Mahraz, 2018). HR managers, for example, can keep some sensitive information private and only share it with key stakeholders, while allowing employees to see their financial information.

Admins can also rapidly deactivate laid-off employees' access and grant it to new hires. ERP systems also display user behaviours, allowing administrators to quickly spot unlawful or suspect activity patterns in the system.

Making Realistic, Accurate Forecasts

The capacity to produce accurate forecasts is one of the most important aspects of corporate growth. Stakeholders rely on reports to generate forecasts, which in turn influence their decisions. As a result, getting real-time, complete, and consistent reports is critical for organizations. All of this can be made easier using ERP.

ERP reporting tools employ advanced filters and analytics to eliminate data discrepancies. Additionally, the technology ensures that the data obtained is generated in real time. Accurate business reports will assist stakeholders in making the best business decisions possible.

2.2.6 ERP Systems in Ethiopian Electric Utility

Ethiopian Electric Utility has been purchased SAP's ERP software for 59 million dollars in 2018. Tech Mahindra Ltd, an Indian global information technology firm, installed the system. The main reasons for implementing the ERP system in EEU were to facilitate client benefit; to extend effectiveness, adequacy, execution and efficiency to coordinated data in commerce forms and hones to diminish burdens for supervisors and workers to decrease fetched; to utilize way better innovation; and opportunists.

Different ERP Modules that implemented in Ethiopian Electric Utility such as Energy Data Management Module, Financial controlling module, Device Management Module, Meter Data Acquisition system module, Project Management module, Customer Relationship Management Module, Billing and Invoicing Module, Human Capital Management Module, Material Management Module, Quality Management Module, Business Warehouse, Enterprise Asset Management Module and Data Monitoring System Module (EEU,2019).

2.3 Empirical literature

This section comprises the study's reviewed literature. Various study papers and essays have been written about this topic. On the other side, the researcher is looking for some that are more pertinent to the subject.

According to Goeun (2013) Unlike other information systems, ERP implementation issues are mostly about organizational and human issues such as resistance to change, organizational culture, and lack of user skill, incompatible business processes, project mismanagement, and top management commitment, rather than technological issues such as technological complexity, compatibility, standardization, and so on.

According to Eldabi, T. and Naseer,A.(2016), the main reason top management pursues ERP systems is for efficiency and cost reduction so that a corporation may remain competitive in the marketplace, according to an investigation into elements that contribute to the successful adoption of ERP systems. According to the results of the survey, the definition of goals and objectives, user education and training, communication between departments, evaluation, change, and user involvement in execution are the most important success factors. Internal integration issues, business impact and lack of understanding of requirements, lack of change management, poor data quality and IT and business inconsistencies, hidden costs, limited training, lack of support from top management All have been identified as key factors in ERP failure implementation.

According to Manoj (2013) in his research of Omani companies about their ERP implementation, has found and recommended that: To reap the full benefits of the ERP system, it is very important that the system should get enterprise-wide acceptance. There should be enough employees who are trained to handle the technical problems as and when required. The system must be upgraded when new versions or new technologies are introduced. The post-ERP organization will need a different set of roles and skills than those with less integrated kinds of systems.

Elsa (2015) on ERP post implementation management framework on Ethiopian Airlines. The Main objective of the study was to investigate technical, organizational, and operational issues of ERP post-implementation success in the context of Ethiopian airlines. The study had indicated a high-level ERP post implementation management framework.

According to Desalegn (2021) a study conducted on Benefits and Challenges of Cloud-Based ERP project implementation answers the case study questions based on the findings of the research. Accordingly, the study has conducted with interview discussions, survey questionnaire, observations and documents review and finally identified eleven insight factors important for the

success of Cloud-Based ERP project implementation. From those eleven factors, only on two factors, most of participants said they are aware of cloud computing and cloud-based ERP. From the interviews conducted most of interviewees which are director and managers had a good knowledge about cloud computing, Cloud-Based ERP and other issues related to them, whereas from questionnaires distributed the majority of respondents, which were professionals assigned in the project and users of the system, replied they had moderate knowledge and even less aware of those factors.

According to Sable (2021) a study conducted on assessment of the practices and challenges of Enterprise resource planning implementation in Ethio telecom. Concerning the benefits realized by the company, the top benefits are as follows: cycle time reduction, centralized control of operation, better resource management, improved decision making, productivity improvement, quality improvement, quickened information response time, improved cash management, reduced paper work, support organizational change, improved order management/ order cycle and better planning. Related with the potential challenges, difficulties in changing to new from old systems, network problem, lack of commitment from top management, resistance to accept the system. Miscarriage to get user support, inadequate training, inadequate ongoing Support and problem of compatibility with ERP module were the top perceived challenges and organizational culture affected ERP implementation, high cost of implementation, unclear strategic direction and vision for the use of ERP, poor reporting procedure, ineffective communication with other, lack of flexibility, problem in user's adaptability were also least challenges.

In summary, international and local studies have been reviewed. Even though; those studies tried to assess the benefit and challenges of ERP system. They didn't emphasize the prospect and implementation practices of ERP System. This is critical research gap motivation to examine prospect and challenges of ERP system in the company.

2.4 Conceptual frameworks

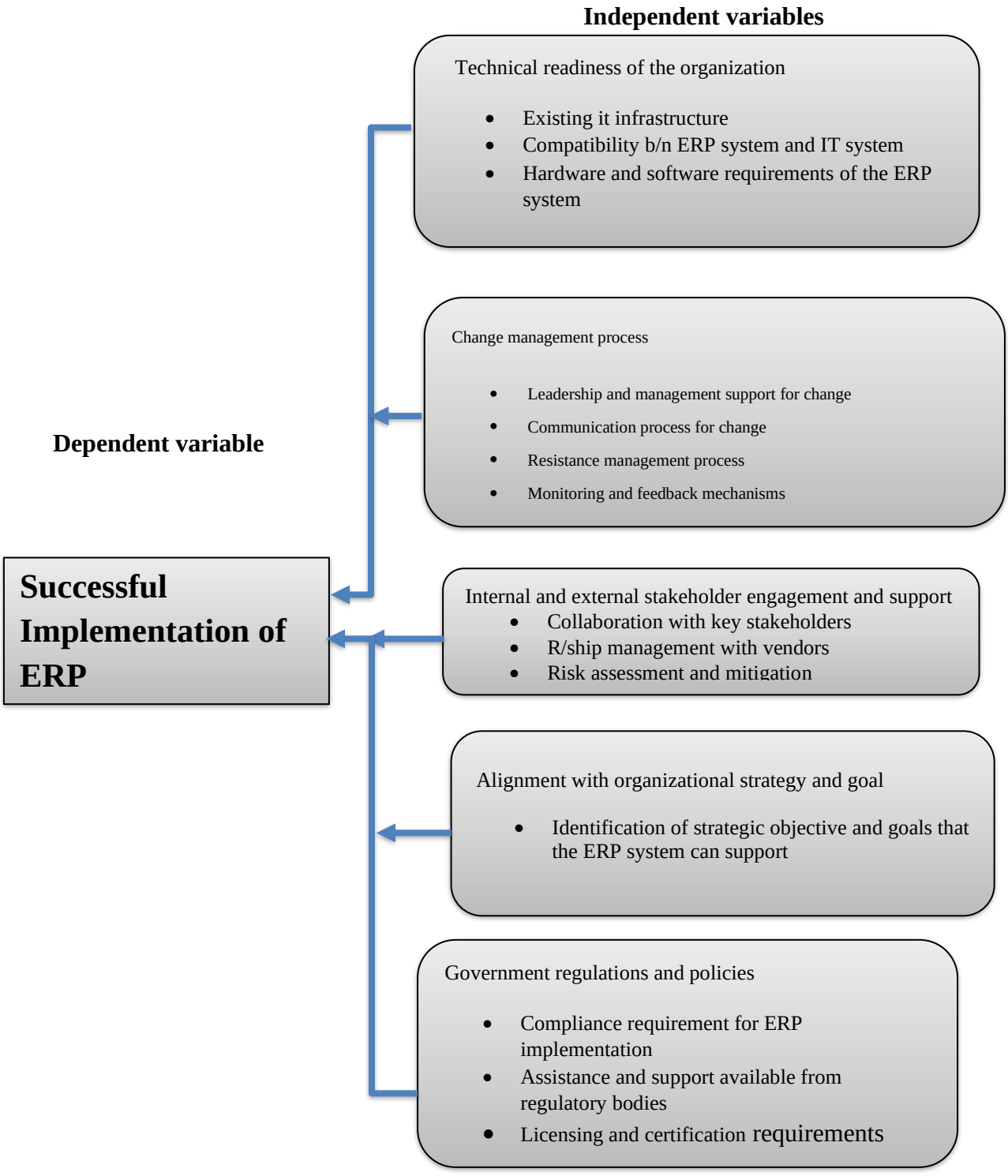

Figure 2. 1 Conceptual framework: - Source- own developed (2023)

Chapter three

Research Methodology

3.1 Introduction

This chapter explains how the research was conducted. It includes background of the study area, research design, research approach, target population, data source and type, Sampling techniques and Sample Size determination, methods of data collection and data analysis. It also includes validity, reliability and ethical issues to ensure the quality standard of the research.

3.2 Research Design

The research design used in the study was a cross sectional analytic study design. Analytic cross-sectional study used to answer how or why a certain outcome might occur so it allows that how the EEU can practice a successful ERP and also allows to make certain predictions when narrating data and characteristics of the target population.

3.3 Research Approach

As mentioned in the research objectives this study was tried to analyze and evaluate the prospects and challenges for successful implementation of Enterprise Resource Planning (ERP) in Ethiopian Electric Utility. The research approach used qualitative and quantitative or mixed approach. The mixed approach method includes both collecting and analyzing qualitative and quantitative data.

3.4 Data types and source

The researcher uses both quantitative and qualitative type of data. Data gathered from both primary and secondary data sources. The primary data collected through questionnaire, observation and interview. Secondary data had been gathered through organizational reports such as the EEU ERP implementation project charter, system reports, processes, and employee records, as well as feedback gathered during the training delivery period.

Questionnaires, observation and interviews has been used to gather the primary data. The questionnaires had been delivered to the employees of four departments who has been involve in the ERP system. Questioner provided an efficient way of collecting responses from a large sample. The questioner adapted from Beadles and adapted with modification (Singla, 2008). The researcher tweaked it because it pertains to a different business, but the goal is nearly identical. Questionnaire consisted of scale questions to collect opinions. Likert-style rating scale with five points (1: strongly disagree, 2: disagree, 3: neutral, 4: agree, 5: strongly agree) used when designing the questionnaire.

And the researcher had use observation in order to reduce biases.

Semi-structured interviews were areas of interest predetermined and the important questions to have been asked or information to be acquired was known before the interview conducted. Automation and energy technology department managers and system administrator was interviewed.

3.5 Population and Sample

3.5.1 Research population

Ethiopian Electric Utility has currently employed around twenty-three thousand (23000) employees throughout the company. The project of ERP system implementation from head quarter, 11 different region office, 28 district office and 554 customer service centers with different ERP modules in different department. In order to examine analysis of the prospect and challenges of implementing ERP system in Ethiopian Electric Utility 757 employees in head office has been purposely selected with the assumption of representing the remaining regions and its most familiarity to the application of ERP system.

3.5.2 Sampling Techniques

The total population of project target group had been 757 members, which is divided departmentally participated in Finance and Investment, Distribution System, Automation and Technology Energy Management and Human Resource Administration and Development. Sample size was determined by considering the size of population variance, budgetary constraint and time given to conduct the study, so that the researcher used a proportionate stratified sampling from probability sampling technique to get a representative sampling and the sample size has determined.

3.5.3 Sample size determination

The total population of project target group had been 757 members, which is divided departmentally participated in Finance and Investment, Distribution System, Automation and Technology Energy Management and Human Resource Administration and Development. Sample size was determined by considering the size of population, budgetary constraint and time given to conduct the study. So, to adjust it, the researcher was select the sample members using purposive. In order to ensure an acceptable standard, the sample size was determined by (Yamane, 1967) would be applied.

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

Where:

- n= is the sample size,
- N = is the population size, and
- e = is the level of precision or sampling error = (0.05)

$$\mathrm{n} = \frac{757}{1 + 757(0.05)^2}$$

$$\mathrm{n} = 262$$

Hence, the total sample size is 262. Since the number of people in each department is not the same, the number of samples for each department was calculated by the following formula:

$$n_1 = \frac{nN_1}{N}$$

Where:

- n= total number of samples
- N= total number of populations
- N_1= total number of populations in each department
- n_1= number of samples in each department

Table 3. 1 Samples Taken from Each Department

Department	**Number of employee**	**Number of Sample** $(\boldsymbol{n_1 = \frac{nN_1}{N}})$
Finance and Investment	89	31
Distribution System	420	145
Automation and Technology Energy Management	162	56
HR Administration and Development	86	30
Total	**757**	**262**

3.6 Methods of data collection

For this research, the data collection technique taken place was survey method. It is one of the most common methods for gathering information from a large number of people. The primary data was collected from the different level of ERP Project team members. Primary data consists of interviews, observations, questionnaires Secondary data had been gathered through organizational reports such as the EEU ERP implementation project charter, system reports, processes, and employee records, as well as feedback gathered during the training delivery period. The

quantitative data in this study has come from closed-ended questionnaires on employee, whereas the qualitative data came from semi-structured interviews on employee.

The questionnaire's item was primarily based on the study's aims and research questions. The questionnaire has contained three types, Part I contains demography of the respondents, Part 2-Part 5 contains questionnaires on a 5- point Likert scale aimed to collect respondent's and part 6 interview opinion on the extent to examine successful implementation practice, challenges and prospect of ERP system. Questionnaires had been prepared in hard copies and distributed to the respondents directly.

3.7 Methods of data analysis

Once the data was obtained using qualitative and quantitative measurements, it is clearly presented using tables, with quantitative measurements provided in the form of frequency, percentage, and mean. This is for the open-ended interview, surveys, and direct observations with document review data organization, analysis, interpretation, and presentation. Automation and energy technology department managers and system administrator was interviewed. Using the SPSS application, the descriptive analysis technique (percentage, mean, and standard deviation) was used to edit the organized data.

After the data had been entered into the computer, numerous statistical analysis tools were used. The data was interpreted using descriptive statistics and frequencies and percentages to quantify demographic characteristics and system information. They're provided in tabular format, and the

items established to analyze the company's opportunities and difficulties had been measured with descriptive statistics and frequencies. The data was interpreted using the percentage mean and standard deviation. The majority of the information had presented in a tabular format.

3.8 Reliability and Validity

When producing a report, two crucial principles to bear in mind are validity and reliability. Meaningful data interpretations are aided by the validity and reliability of instrument scores, as well as other criteria for generating knowledge claims.

3.8.1 Validity

The validity of the questionnaires generated for this study had been evaluated beforehand by the researcher's friends and supervisor, and 12 questionnaires had been piloted with workers to ensure validity, but the researcher was not utilized them again while distributing the instrument. A one-to-one relationship between interview questions asked and underlying competency was required to assure the legitimacy of the interviewee.

3.8.2 Reliability

Cronbach's alpha had been used for reliability analysis, and a Cronbach's alpha of 0.7 is considered adequate for the internal consistency of data gathered from respondents. It is expressed as a number between 0 and 1, with the higher the Cronbach alpha score, the more consistent the scale is, and the closer the alpha coefficient is to 1.0, the more consistent the scale is, and vice versa. As a result, the data processing tool had been used to test the reliability (SPSS). All interviewers used interview questions created by the researcher to ensure interviewee dependability.

3.9 Ethical Considerations

The study had been conducted in accordance with the organization's policy regarding intellectual property rights. As a result, respondents was given more time (one to three days) to complete the questionnaire at home or over their lunch break. For both the participants (the data that they provide based instruments) and the company, all of the obtained data had been kept confidential (some confidential document). Every participant's agreement and willingness was considered throughout the process.

Chapter Four

Data Analysis and Discussion

4.1 Introduction

This chapter discusses the main findings from the analytic analysis on prospects and challenges for successful implementation Enterprise resource planning in Ethiopian electric utility other important variables using a data collected from respondents. The information captured using the questionnaires, interviews which covered demographic data, the successful implementation practices, and Technical readiness of the organization, government regulation and policies and internal, external stakeholder engagement and support prospects and other 10 interview questions to assess change management process and Alignment with organizational strategy and goal of successful implementation ERP system.

4.2 Response Rate

Regarding the response rate, in order to get the primary data, questionnaires each contained 31 variables or questions were distributed to 262 individuals for quantitative data analysis. Consequently, the given questionnaires have been collected back from 262 respondents out of 262 sample respondent 100% response rate could properly be completed and returned. According to (Mugenda *et al.*, 2003) a 50% response rate is adequate, 60% good and above 70% rated very well. Moreover, to make the study more reliable, semi structure interview questions that consisted 10 significant inquiry items have been interviewed the higher position managers and experts by which qualitative data analysis has been done. Here the researcher was selected 6 candidates only from managerial and Expert position for an interview. 4 mangers from each department ERP modules that have been implemented and 13 experts from automation and distribution system department. As a result, their proper responses have also been taking in to consideration for data presentation, analysis and interpretation.

4.3 Reliability Test

The reliability test ensures the internal consistency of data collection instruments that were used for the collection of data from selected respondents of Ethiopian electric utility head office employee in Addis Ababa.

In order to test the consistency of instrument, reliability analysis has been undertaken and found that the items used in the data collection instrument were reliable to collect consistent information from selected respondents. In this regard, table 4.1 summarizes the result of reliability analysis as follows:

Table 4. 1 Reliability Test

Objectives	**Cronbach's alpha coefficient**	**Number of items**
Successful implementation of ERP	0.842	10
Technical readiness of the organization	0.994	10
Internal and external stakeholders engagement	0.915	5
Government regulation and policies	0.954	7
Reliability total scale	**0.902**	**32**

Source: own Survey 2023, using spss25

Table 4.1 indicates that the Cronbach's Alpha value for all 32 items used in the data collection instrument is 90.2 percent which is found to be acceptable for the collection of consistent data. The reliability analysis result for 10 items used in the Successful implementation of ERP system shows 84.2 percent. 10 items for the Technical readiness of the organization accounts 99.4 percent. 5 items of Internal and external stakeholder's engagement to 91.5 percent.7 items to assess Government regulation and policies accounts 95.4 percent. The analysis of reliability test, in general, assures that data surveys are collected from all respondents so that discussions made regarding the issue under the investigation are based on the consistent views of respondents.

4.4 Demographic Characteristics of Respondents

The study examined the background of participant employees in terms of their gender, educational status, age, department, experience and position. In this regard, Tables 4.2 present the background characteristic of participant employees.

Table 4. 2 Demographic characteristics of Employees

Variable	Category	Frequency	Percent (%)
Gender	Female	139	53.1
	Male	123	46.1
Age	18-25	23	8.8
	26-30	97	37.0
	31-40	112	42.7
	Above 41	30	11.5
Department	Finance and Investment	31	11.8
	Distribution System	145	55.3
	Automation and Technology Energy Management	55	21.4
	Human Resource Administration and Development	30	11.5
Experience	Less than 5 years	39	14.9
	5- 10 years	121	46.2
	11 – 15 years	65	24.8
	Above 15 years	37	11.5

Education	Diploma	30	11.3
	Bachelor degree	168	64.1
	Master's degree	61	23.3
	Above	3	1.1
Position	Manager	4	1.5
	Supervisor	27	10.3
	Staff	218	83.2
	Expert	13	5.0
Total		**262**	**100**

Source: own Survey 2023, using spss25

4.4.1 Gender composition

The demographic statistics shown in the table 4.2 above shows the distribution of respondents by gender. Participants were asked to indicate their gender by selecting the appropriate option provided (male or female). In line with this, the majority of the participants 53.1 percent are female and the remaining 46.9 percent are male participant which assure that the study considered both sex categories.

4.4.2 Age

In regard to the age category, 42.7 percent of the participants are within the age category of 31-40 years, followed by 37.0 percent of above 26-30 years old. The remaining 11.50 percent and 8.8 percent are in the age category of above 41 years and 18-25 years respectively. This confirms that most of the respondents are matured enough to answer the questions administered to them by linking with their experience in relation to the case under investigation.

4.4.3 Experience

The study chose to consider respondent's level of experience in the Working area, which is vital towards knowledge of ERP system. Only 14.9 percent of the respondents have less than 5 years' work experiences, 46.2 percent have between 5-10 years, 24.8 percent have between 11-15 years and 14.1 percent of them have 15 above years of experiences. This profile shows that more experienced employee has in the organization.

4.4.4 Department

As it is already explained in the research design and methodology part, the researcher has focused on four departments considering ERP implementation, and these departments are considered as strata. Accordingly, out of the 262 employees all individuals who returned the questionnaire composed from all project working division. Hence, the highest Number of respondents who counted as 55.3 % of the total respondents belongs to Distribution System department while Automation and Technology Energy Management department covers 21.4 %.

Furthermore, 11.8 % of the respondents from Finance and Investment department and the other 11.5 % the respondents are from Human Resource Administration and Development department. This is, therefore, we can conclude that from areas of working divisions, the highest and majorities of the respondents were from Distribution System.

4.4.5 Educational status

The study also assessed the education background of the participants with a belief that their educational status matters for the proper understanding of questions to give genuine responses that can enhance accuracy. Accordingly, most of the respondents, about 64.1 percent have First degree and above level of education which assures that the participants qualify to give accurate information that can make the result more accurate.

4.4.6 Position

Position of respondents is summarized and most of respondents in this quantitative analysis 83.2 % of respondents are staff, 27% of respondents are supervisor, 5.0% of respondents are Expert and the rest 1.5% of respondents are under managerial position.

4.5 Analytical Analysis

This section presents the data analysis, presentation and interpretation of the findings on successful implementation of Enterprise resource planning in EEU. The data collected and reports produced in the form of tables.

Assessment of successful Implementation ERP

Table 4. 3 Assessment of successful implementation of ERP

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
To what extent do you believe that implementing an ERP system will benefit Ethiopian Electric Utility's operations and performance?	11.1%	19.5%	8.4%	45.8 %	15.3%	3.347	1.26
How much of a challenge or barrier do you think technology and infrastructure limitations will present in the successful implementation of an ERP system in Ethiopian Electric Utility?	5.3%	10.7%	8%	30.5%	45.4%	4.0	1.289
On a scale of 1 to 5, how much organizational and cultural changes do you	48.5%	27.9%	6.5%	8.8%	8.4%	2.0	1.28

think are necessary for Ethiopian Electric Utility to successfully implement an ERP system?							
To what extent are you confident that Ethiopian Electric Utility can manage the potential risks and challenges associated with data security and privacy in the implementation of an ERP system?	9.9%	10.3%	10.3%	25.2%	44.3%	3.83	1.353
On a scale of 1 to 5, how much do you think adopting an ERP system will change Ethiopian Electric Utility's relationships with customers, suppliers, and other stakeholders?	11.1%	19.8%	8.0%	45.8%	15.3%	3.34	1.26
How important do you think it is to minimize the costs associated with implementing an ERP system in Ethiopian Electric Utility	7.3%	21.0%	15.6%	36.6%	19.5%	3.4	1.22

To what extent do you believe there is support from relevant stakeholders for the successful implementation of an ERP system in Ethiopian Electric Utility?	6.1%	18.3%	13.4%	45.4%	16.8%	3.48	1.25
To what extent do you think the successful implementation of an ERP system in Ethiopian Electric Utility depends on progress being measured against key milestones and success factors?	8.8%	18.3%	11.1%	44.7%	17.2%	3.4	1.21
On a scale of 1 to 5, how much of an impact do you think the implementation of an ERP system will have on Ethiopian Electric Utility's overall performance?	11.1%	19.8%	7.6%	46.2%	15.3%	3.34	1.26
To what extent do you agree that the main challenges in implementing an ERP	11.1%	19.5%	8.0%	46.2%	15.3%	3.35	1.26

system in Ethiopian Electric Utility can be overcome?							
Average Mean and standard Deviation						**3.348**	**1.246**
Total Observation	**262**						

Note: The mean is derived from the scale of 1=strongly disagree to 5=strongly agree
Source: own Survey 2023, using spss25

For this part of the study objective, which is the Assessment of successful implementation of ERP system there were many fundamental variables related with this subject and here ten major variables have been identified and they were distributed on survey questionnaires. The researcher needed to know the employees understanding of ERP current successful implementation practice. The respondent's response is summarized in table by considering their percentage, mean and standard deviation value.

The survey results show that the overall score for prospect and challenges of implementing ERP system is an average mean of 3.348, which indicates an average level of implementation practice with a significant variance of 1.246. This shows that some of the implementation practice has been recognized and that the ideology that is defined moderately used in current successful practice.

For the question asked to what extent do you believe that implementing an ERP system will benefit Ethiopian Electric Utility's operations and performance, the majority 45.8% of the respondents agree that the ERP successful implementation has a benefit for the company. Other 11.1% are strongly disagree. While there are some respondents who count 19.5% disagree and 15.3% responds are strongly agree that implementing an ERP system will benefit Ethiopian Electric Utility's operations and performance. Plus 8.4% are responded as uncertain that whether the system benefit the company or not.

Regarding the question, the technology and infrastructure limitations will present in the successful implementation of an ERP system in EEU only 5.3% respondent is strongly disagreed and also 10.7% of respondents disagreed with this factor and they considered it there is no a technology

and infrastructure limitation. Whereas almost 8.0% of respondents said that they are uncertain about it. However, 30.5% of the respondents were argued and 45.4 strongly agree that by technology and infrastructure limitations are the main barrier to the successful implementation of an ERP system in Ethiopian Electric Utility in this regard we can conclude that technology and infrastructure is a barrier to successful implementation of ERP system in EEU.

For the question asked about how much organizational and cultural changes do you think are necessary for Ethiopian Electric Utility to successfully implement an ERP system, the 48.5% of the respondents strongly disagree and 27.9% disagree that organizational and cultural changes is not necessary for EEU. While there are some respondents who count 8.8% agree and 8.4% responds are strongly agree. Plus 6.5% are responded as uncertain that whether the organizational and cultural changes is necessary or not.

One of the questions asked about, To what extent are you confident that Ethiopian Electric Utility can manage the potential risks and challenges associated with data security and privacy in the implementation of an ERP system, 9.9% respondents strongly disagree and 10.3 disagree that EEU can manage the potential risks an challenges but the majority of respondent which is 44.3% strongly agree and 25.2%agree that EEU can manage those risks while 10.3% respondents replied that they are uncertain .The result showed that Ethiopian Electric Utility can manage the potential risks and challenges associated with data security and privacy in the implementation of an ERP system.

For the question asked about adopting an ERP system will change Ethiopian Electric Utility's relationships with customers, suppliers, and other stakeholders, the 11.4% of the respondents strongly disagree and 19.8% disagree that ERP system will change EEU's relationship with customers, suppliers and other stakeholders. While their respondents who count 45.8% agree and 15.3% responds are strongly agree. Plus 8.0% are responded as uncertain that whether employee work process will change the relationships or not.

Regarding to the costs associated with implementing an ERP system in Ethiopian Electric Utility, especially whether to know if it is important to minimize the cost or not, 262 respondents have been asked. As result, the total summation of 45.4% agreed participants and 16.8% strongly agreed. This is, therefore, excluding almost 6.1% strongly disagree, 18.3% disagree respondents

and 16.5% uncertain respondent's contradictory response, significantly minimize the costs associated with implementing an ERP system in Ethiopian Electric Utility.

Similarly, 44.7% and 17.2% respondents also reflected the same view point about the support from relevant stakeholders for the successful implementation of an ERP system in Ethiopian Electric Utility so they were agreed and even strongly agreed. However, except 11.1% uncertain participants, the other 18.3% disagree and 8.8% strongly disagreed about it. Therefore, many of the respondents believe there is support from relevant stakeholders for the successful implementation of an ERP system in Ethiopian Electric Utility.

For the question which asked participants regarding to successful implementation of an ERP system in Ethiopian Electric Utility depends on progress being measured against key milestones and success factor, 8.8% respondents who are strongly disagree and 18.3% disagreed with this question. 11.1% respondents who are uncertain, the rest all 85.1% of the respondents agreed and successful implementation of an ERP system in Ethiopian Electric Utility depends on progress being measured against key milestones and success factors.

For the question asked about how much of an impact do you think the implementation of an ERP system will have on Ethiopian Electric Utility's overall performance, the majority 61.5% of the respondents believe that the ERP implementation has no impact While there are some respondents who count 30.9% disagree Plus 4.4% are responded as uncertain that whether employee Implementation of ERP has impact or not at all levels of the organization.

From the interview result analysis also, we are able to know the implementation of the ERP system will not affect the management process in Ethiopian electric utility practice of the main benefits brought to the company because the interviewee said successful implementation of ERP System made all the departments and the functions in the company have integrated and linked to one single database. It can then, be accessed by different departments according to their needs. ERP has expressed that as the different parts of the organization are connected with each other; people have faster access to information and require less time to do their tasks so that it helped to improve the time and resources for decision- making. As a result, ERP brought an improved Job Time and it made Employee work process effectiveness. The overall progress of ERP system, it clearly brought

additional benefits such as the Ease of use, Easy information sharing, rapid performing and update, increase core competencies, improved accessibility, mobility, and usability, security standard etc. And finally, employees have also argued that both Cost efficiency in operations and efficient business practice are the other major benefits. They are different sides of the same coin to bring efficiency as the company needed. In order to assess the successful implementation of ERP system strength of the relationship between the variable (successful Implementation of ERP at all levels of the organization) and other ten variables Pearson correlation is used. The correlation the current implementation practices ERP system is -0.225which implies that there is less correlation with Develop a Plan with Clear Goals and Objectives. A strong relationship is observed between the successful implementation practices ERP system and technology and infrastructure limitation of EEU (0.453).

Assessing Technical Readiness of the Organization

Table 4. 4 Assessment of Technical Readiness of the Organization

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
To what extent do you agree or disagree that the Ethiopian electric utility has the necessary technical infrastructure to support the ERP system?	5%	10.7%	8.8%	30.2%	45.4%	4.004	1.19224
To what extent do you agree or disagree that the Ethiopian electric utility has sufficient resources for maintaining and updating the ERP system?	4.2%	11.1%	12 6%	31.3%	40.8%	3.93	1.16
To what extent do you agree or disagree that the ERP	3.8%	14.5%	9.9%	27.9%	43.9%	3.93	1.209

system is compatible with the existing technology and software used by the Ethiopian electric utility?							
To what extent do you agree or disagree that the ERP system has been implemented with minimal disruption to the existing systems and processes of the Ethiopian electric utility	5%	10.3%	8.8%	30.2%	45.8%	4.015	1.18
To what extent do you agree or disagree that the Ethiopian electric utility has sufficient cyber security measures in place to protect the ERP system and its data?	5%	11.1%	8.0%	30.5%	45.4%	4.003	1.195
To what extent do you agree or disagree that the Ethiopian electric utility has a comprehensive disaster recovery plan in case of unexpected downtime or system failure of the ERP system?	5%	10.3%	9.2%	29.8%	45.8%	4.0115	1.18897
To what extent do you agree or disagree that the Ethiopian electric utility has sufficient technical expertise	5%	10.7%	8.4%	30.5%	45.4%	4.0076	1.190

in-house to manage and maintain the ERP system							
To what extent do you agree or disagree that the ERP system is responsive and reliable in delivering accurate and real-time data to support decision-making processes in the Ethiopian electric utility	5%	10.7%	8.0%	30.2%	46.2%	4.0191	1.1954
To what extent do you agree or disagree that the Ethiopian electric utility has established effective measures for monitoring and measuring the performance and efficiency of the ERP system?	5.3%	10.3%	9.2%	29.8%	45.4%	3.9962	1.2018
To what extent do you agree or disagree that the Ethiopian electric utility regularly conducts risk assessments and audits to identify potential vulnerabilities and enhance the security and reliability of the ERP system	5%	10.7%	8.0%	30.9%	45.4%	4.0115	1.18897
Average Mean and standard Deviation						**3.99279**	**1.235**
Total Observation **262**							

Note: The mean is derived from the scale of 1=strongly disagree to 5=strongly agree
Source: own Survey 2023, using spss25

Technical Infrastructure: The majority of stakeholders, 76%, agree that the EEU has the necessary technical infrastructure to support the ERP system, indicating that the technical elements of the ERP system are compatible with the existing architecture of EEU. This implies that the ERP system does not need further modifications as it is compatible with the organization's internal systems and technology.

Resources for Maintaining and Updating: Only 72.1% of stakeholders agree that the EEU has sufficient resources to maintain and update the system, which does not imply much confidence that EEU has enough resources to keep the system running effectively. This suggests a need for the EEU to allocate more resources, be it funding, time, or expertise to maintain and update the ERP system to keep it running smoothly.

Compatibility with Existing Technology and Software: 28.1% of stakeholders either disagreed or were neutral regarding the compatibility of the ERP system with pre-existing technology, indicating either a lack of understanding or incompatibility with current legacy systems. As such, EEU might need to re-evaluate its pre-existing technology and systems to ensure that the ERP system is compatible with them.

Implementation without System Disruption: 22% of the stakeholders, either disagreed or were neutral, regarding the ERP system's implementation with minimal disruption to existing systems and processes of the EEU. This implies that some stakeholders experienced difficulties adjusting to the new system, and the EEU may need to devote more resources to support, and ensure a seamless transition to the ERP system.

Cyber Security Measures: A total of 24.1% of stakeholders disagree or are neutral about the effectiveness of the EEU’s cyber security measures to protect the ERP system and data. This signals a possible security vulnerability to cybercriminals and requires the EEU to make cyber security measures more effective.

Disaster Recovery Plan: Only 25% of stakeholders either disagreed or were neutral about the EEU's comprehensive disaster recovery plan in case of unexpected downtime or system failure, indicating inadequacy in the organization's disaster management plan. This indicates a possible need for EEU to establish and put into effect a more comprehensive disaster recovery plan.

Technical Expertise in-house: 24.1% of stakeholders disagree or are neutral about the EEU's in-house technical expertise to manage and maintain the ERP system effectively. This raises some concerns that EEU may not be able to manage and maintain such a critical system effectively and need to invest more in capacity building in the area of ERP management.

Reliability in Delivering Accurate and Real-time Data: A total of 23.7% of stakeholders either disagreed or were neutral about the reliability of the ERP system in delivering accurate and real-time data to support decision-making processes of the EEU. This signals that the ERP system may have data quality problems and the EEU to improve the quality of its data to ensure the effectiveness of its decision-making.

Monitoring and Measuring Performance and Efficiency: 24.8% of stakeholders disagree or are neutral about the EEU's effective measures for monitoring and measuring the performance and efficiency of the ERP system. This implies that EEU needs to invest more in measuring and monitoring the effectiveness of the system and hence improve its operations.

Regular Conduct of Risk Assessments and Audits: 23.7% of stakeholders disagree or are neutral about EEU's regular conduct of risk assessments and audits to identify potential vulnerabilities and enhance the security and reliability of the ERP system. This might indicate that the EEU has overlooked potential vulnerabilities, and there is need for more regular implementation of risk assessments and audits to improve the system's security and reliability.

Assessing Government Regulations and Policies

Table 4. 5 Assessing Government Regulations and Policies

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
How important is government funding and support in the successful adoption of ERP systems in the EEU of ERP systems in the EEU?	7.3%	10.7%	16%	28.2%	37.8%	3.786	1.2561
How effective are current government policies and regulations in promoting the adoption of ERP systems in the EEU?	9.2%	9.5%	10.3%	23.7%	47.3%	3.9046	1.3342
To what extent do government policies and regulations play a role in fostering the adoption	38.2%	35.8%	10.3%	8.8%	6.5%	2.519	2.8496
To what extent do government policies and regulations address cross-border interoperability issues related to the adoption of ERP systems in the EEU?	1.2%	4.8%	8.5%	42.7%	42.7%	3.8130	1.25615

To what extent do government policies and regulations address the need for training and technical assistance to successfully adopt ERP systems in the EEU?	8.4%	8.8%	21.4%	27.5%	34.0%	2.2519	2.849
How important is collaboration between government agencies and ERP system providers in the successful adoption of ERP systems in the EEU?	4%	13.7%	9.3%	37.5%	35.5%	4.0115	1.18897
To what extent do government policies and regulations incentivize the adoption of ERP systems among stakeholders in the public sector?	6.5%	9.9%	20.6%	22.1%	40.5%	2.2519	1.25
Average Mean and standard Deviation						**3.2197**	**1.712002**
Total Observation	**262**						

Note: The mean is derived from the scale of 1=strongly disagree to 5=strongly agree

Source: own Survey 2023, using spss25

Government regulation: There appears to be some level of disagreement among respondents about the role of government policies and regulations in fostering the adoption of ERP systems in the EEU. In particular, there is some disagreement about the effectiveness of current policies and

regulations in promoting adoption, as well as whether government funding and support are important for successful adoption.

However, there is also some agreement on the importance of addressing cross-border interoperability issues and the need for training and technical assistance in the adoption process. Collaboration between government agencies and ERP system providers is also seen as important by a majority of respondent.

Assessment of Internal and external stakeholder engagement and support

Table 4. 6 Assessment of Internal and external stakeholder engagement and support

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
To what extent do you agree or disagree that the Ethiopian electric utility adequately involved internal stakeholders (employees, managers, etc.) in the planning and implementation of the ERP system?	48.1%	27.9%	6.5%	8.8%	8.8%	2.0229	1.30114
To what extent do you agree or disagree that the Ethiopian electric utility provided sufficient training and support to internal stakeholders for effectively using the ERP system?	43.9%	26.3%	10.3%	11.5%	8.0%	2.1336	1.30769

To what extent do you agree or disagree that the Ethiopian electric utility has effectively communicated the benefits of the ERP system to external stakeholders (customers, vendors, etc.)?	43.9%	23.3%	7.6%	13.7%	0.4%	2.2863	1.47720
To what extent do you agree or disagree that the Ethiopian electric utility has actively sought feedback from external stakeholders on the use and impact of the ERP system?	42.4%	22.1%	8.8%	11.8%	14.9%	2.3473	1.48736
To what extent do you agree or disagree that the Ethiopian electric utility has demonstrated a commitment to continuous improvement and development of the ERP system in response to stakeholder feedback?	43.1%	23.7%	6.5%	11.8%	14.9%	2.3168	1.48905
						2.213	**1.4122**
Total Observation	**262**						

Note: The mean is derived from the scale of 1=strongly disagree to 5=strongly agree

Source: own Survey 2023, using spss25

From the analysis of the feedback from stakeholders on the EEU's ERP system, there is an evident need for EEU to invest more resources in maintaining and updating the system, improving technical expertise in-house, cyber security measures, and disaster recovery plans. Effective monitoring and measuring of performance and risk assessment and audits will also be helpful in enhancing the system's security and reliability.

Overall, it seems that while government policies and regulations may play a role in promoting the adoption of ERP systems in the EEU, there are varying opinions on their effectiveness and importance. More research may be needed to better understand the impact of these policies and regulations on the adoption process, and to identify areas where improvements can be made

Chapter Five

Summary, Conclusion and Recommendation

5.1 Introduction

This section describes the significance of the findings by triangulating both the quantitative and qualitative results in light of the literature review. It has been revealed findings from the analytic analysis on prospects and challenges for successful implementation Enterprise resource planning in Ethiopian electric utility and identify difficulties.

5.2 Summary of Major Findings

It can be said that the organization has moderate technical readiness and average success in implementing ERP. However, it is important to note that these findings need to be interpreted within the context of the organization's specific goals and objectives. Additionally, further analysis should be conducted to identify specific areas of improvement for both technical readiness and ERP implementation success. Only then can targeted strategies be developed to address any identified gaps or challenges.

Based on the average mean and standard deviation for the assessment of successful implementation of ERP in EEU and the assessment of technical readiness of ERP, it can be concluded that the EEU has made significant progress in implementing ERP. The high average mean and low standard deviation for both assessments suggest that the organization has achieved a high level of success in ERP implementation and has a high level of technical readiness.

However, it is important to note that the standard deviation values are still above 1, indicating some level of variation in the success and readiness assessments. This suggests that there may be some areas where improvements can still be made to enhance the success and readiness of ERP implementation.

The study evaluates the level of engagement and support from internal and external stakeholders for the implementation of ERP in Ethiopian Electric Utility (EEU). The findings reveal a mean score of 2.313 and a standard deviation of 1.4122, indicating a moderate level of engagement and

support from stakeholders for the ERP system. It suggests that EEU needs to focus on improving its stakeholder engagement strategies to ensure successful implementation of the ERP.

Moreover, the study also assesses the impact of government regulations and policies on the ERP system in EEU. The findings show a mean score of 3.219 and a standard deviation of 1.712002, indicating a moderate level of impact. The results imply that the government's regulations and policies need to be more supportive of the adoption and implementation of ERP in EEU.

5.3 Conclusions

IT can be concluded that the organization's technical readiness for implementing the ERP system is higher than the successful implementation of the ERP system in Ethiopian Electric utility. The mean score of technical readiness is significantly higher than the mean score of successful implementations. However, it is important to note that both mean scores are relatively close to each other, indicating that there is room for improvement in both areas. The standard deviation for both assessments is also similar, suggesting that the responses from the participants were evenly distributed around the mean scores. Overall, these findings suggest that the organization has a solid foundation for implementing the ERP system, but further improvements are needed to ensure a successful implementation.

For the Government and policy support and stakeholder engagement It can be concluded that there is a significant gap in the implementation of ERP in EEU. The findings suggest that stakeholders are not fully engaged and supportive in the process of adopting ERP, while government policies and regulations are not adequately supportive of the system.

5.4 Recommendation

Based on these findings, I recommend that Ethiopian Electric Utility (EEU) take the following steps to improve its technical readiness and successfully implement an ERP system:

1. Improve technical readiness: The mean score of 3.99 indicates that EEU has moderate technical readiness for implementing an ERP system. To improve this, EEU should invest in staff training and development in ERP-related skills. Additionally, EEU should work on improving its IT infrastructure and ensuring that it has the necessary hardware and software to support an ERP system.

2. Enhance stakeholder engagement and support: The mean score of 2.313 indicates that EEU's stakeholders are not fully engaged and supportive of the ERP implementation process. Therefore, EEU should develop a comprehensive stakeholder engagement plan that includes frequent communication and consultation with internal and external stakeholders. Also, EEU should engage with stakeholders proactively to ensure that they understand the benefits of the ERP system.

3. Address government regulations and policies: The mean score of 3.219 indicates that EEU has adequate awareness of the regulatory environment for ERP implementation. Nevertheless, EEU should continue to monitor changes in government policies that may impact the ERP implementation process. EEU should also ensure that it has all the necessary approvals and permits before implementing the ERP system.

4. Address barriers to successful implementation: The mean score of 3.348 suggests that EEU faces some challenges in implementing the ERP system successfully. To overcome these challenges, EEU should establish a project management office (PMO) to oversee the implementation process. The PMO should develop a comprehensive project plan that includes all the necessary tasks and timelines for the implementation. Additionally, EEU should carry out a risk assessment and develop a mitigation plan to address potential risks and challenges.

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Annex A: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	**N of Items**
0.902	**32**

Annex B: Assessment of successful Implementation ERP

Analytical Statistics			
	N	**Mean**	**Std. Deviation**
To what extent do you believe that implementing an ERP system will benefit Ethiopian Electric Utility's operations and performance?	**262**	3.347	1.26
How much of a challenge or barrier do you think technology and infrastructure limitations will present in the successful implementation of an ERP system in Ethiopian Electric Utility?	**262**	4.0	1.289
On a scale of 1 to 5, how much organizational and cultural changes do you think are necessary for Ethiopian Electric Utility to successfully implement an ERP system?	**262**	2.0	1.28

To what extent are you confident that Ethiopian Electric Utility can manage the potential risks and challenges associated with data security and privacy in the implementation of an ERP system?	**262**	3.83	1.353
On a scale of 1 to 5, how much do you think adopting an ERP system will change Ethiopian Electric Utility's relationships with customers, suppliers, and other stakeholders?	**262**	3.34	1.26
How important do you think it is to minimize the costs associated with implementing an ERP system in Ethiopian Electric Utility	**262**	3.4	1.22
To what extent do you believe there is support from relevant stakeholders for the successful implementation of an ERP system in Ethiopian Electric Utility?	**262**	3.48	1.25
To what extent do you think the successful implementation of an ERP system in Ethiopian Electric Utility depends on progress being measured against key milestones and success factors?	**262**	3.4	1.21
Valid N (listwise)	**262**		

Annex C: Assessment Technical readiness of the organization

Analytical Statistics			
	N	**Mean**	**Std. Deviation**
To what extent do you agree or disagree that the Ethiopian electric utility has the necessary technical infrastructure to support the ERP system?	262	4.004	1.19224
To what extent do you agree or disagree the Ethiopian electric utility has sufficient resources for maintaining and updating the ERP system?	262	3.93	1.16
To what extent do you agree or disagree that the ERP system is compatible with the existing technology and software used by the Ethiopian electric utility?	262	3.93	1.209
To what extent do you agree or disagree that the ERP system has been implemented with minimal disruption to the existing systems and processes of the Ethiopian electric utility	262	4.015	1.18
To what extent do you agree or disagree that the Ethiopian electric utility has sufficient cyber security measures in place to protect the ERP system and its data?	262	4.003	1.195

To what extent do you agree or disagree that the Ethiopian electric utility has a comprehensive disaster recovery plan in case of unexpected downtime or system failure of the ERP system?	262	4.0115	1.18897
To what extent do you agree or disagree that the Ethiopian electric utility has sufficient technical expertise in-house to manage and maintain the ERP system	262	4.0076	1.190
To what extent do you agree or disagree that the ERP system is responsive and reliable in delivering accurate and real-time data to support decision-making processes in the Ethiopian electric utility	262	4.0191	1.1954
To what extent do you agree or disagree that the Ethiopian electric utility has established effective measures for monitoring and measuring the performance and efficiency of the ERP system?	262	3.9962	1.2018
To what extent do you agree or disagree that the Ethiopian electric utility regularly conducts risk assessments and audits to identify potential vulnerabilities and enhance the security and reliability of the ERP system	262	4.0115	1.18897

Valid N (listwise)	**262**		

Annex D: Assessment Government regulations and policies

Analytical Statistics			
	N	**Mean**	**Std. Deviation**
How important is government funding and support in the successful adoption of ERP systems in the EEUof ERP systems in the EEU?	**262**	3.786	1.2561
How effective are current government policies and regulations in promoting the adoption of ERP systems in the EEU?	**262**	3.9046	1.3342
To what extent do government policies and regulations play a role in fostering the adoption	**262**	2.519	2.8496
To what extent do government policies and regulations address cross-border interoperability issues related to the adoption of ERP systems in the EEU?	**262**	3.8130	1.25615
To what extent do government policies and regulations address the need for training and technical assistance to successfully adopt ERP systems in the EEU?	**262**	2.2519	2.849
How important is collaboration between government agencies and ERP system providers in the successful adoption of ERP systems in the EEU?	**262**	4.0115	1.18897

To what extent do government policies and regulations incentivize the adoption of ERP systems among stakeholders in the public sector?	**262**	2.2519	1.25
Valid N (listwise)	**262**		

Annex E: Assessment Internal and external stakeholder engagement and support

Analytical Statistics			
	N	**Mean**	**Std. Deviation**
To what extent do you agree or disagree that the Ethiopian electric utility adequately involved internal stakeholders (employees, managers, etc.) in the planning and implementation of the ERP system?	**262**	2.0229	1.30114
To what extent do you agree or disagree that the Ethiopian electric utility provided sufficient training and support to internal stakeholders for effectively using the ERP system?	**262**	2.1336	1.30769
To what extent do you agree or disagree that the Ethiopian electric utility has effectively communicated the benefits of the ERP system to external stakeholders (customers, vendors, etc.)?	**262**	2.2863	1.47720

To what extent do you agree or disagree that the Ethiopian electric utility has actively sought feedback from external stakeholders on the use and impact of the ERP system?	**262**	2.3473	1.48736
To what extent do you agree or disagree that the Ethiopian electric utility has demonstrated a commitment to continuous improvement and development of the ERP system in response to stakeholder feedback?	**262**	2.3168	1.48905
To what extent do you agree or disagree that the Ethiopian electric utility adequately involved internal stakeholders (employees, managers, etc.) in the planning and implementation of the ERP system?	**262**	2.0229	1.30114
To what extent do you agree or disagree that the Ethiopian electric utility provided sufficient training and support to internal stakeholders for effectively using the ERP system?	**262**	2.1336	1.30769
Valid N (listwise)	**262**		

Annex F Questionnaires

ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

Department of Project Management

Questionnaire

Dear Respondent's,

This is a survey questionnaire which is aimed at identifying and collecting data about the problems, concerns and issues of MSc thesis research which is entitled on "An analytical study on the assessment of the prospect and challenges for successful implementation enterprise resource planning in Ethiopian electric utility 2023." The study is being conducted in a partial fulfillment of the requirements of MSc in Project management and your response used for academic purposes. I kindly request your assistance in completing this questionnaire based on completely voluntary so that it is highly appreciated. Please give your thoughtful and honest answers as your response have been kept confidential.

Contact Address If you have any query, please do not hesitate to contact me and I am available as per your convenience at (Mobile: 09 24-37-26-46 or E-mail: mini.gcsm@gmail.com).

Thank you in advance for your unreserved co-operation

Instruction: -

Please tick (√) in the space provides that best reflects your answer for each question.

In order to ensure confidentiality do not put down your name on the questionnaire.

Part I Demographic Information

1. Gender

Male ☐ Female ☐

2. Age

18-25 ☐ 26-30 ☐ 31-40 ☐ Above 41 ☐

3. Department

Finance and Investment ☐ Automation and Technology ☐
Energy Management ☐
Distribution System Development ☐ Human Resource Administration and ☐

4. Experience

Less than five 5-10 10-15 15 above

5. Educational status

Diploma ☐ Bachelor degree ☐ Master's degree ☐ above ☐

6. Position

Manager ☐ Supervisor ☐ Staff ☐ Expert ☐

Part II Questioner to assess successful Implementation ERP

Please read each statements in the first column carefully and show the extent of your agreement on the statements by choosing the numbers listed in the answers row.

No	Statements	Answers
1	To what extent do you believe that implementing an ERP system will benefit Ethiopian Electric Utility's operations and performance?	1. Very low 2. Low 3. Moderate 4. High 5. Very high
2	How much of a challenge or barrier do you think technology and infrastructure limitations will present in the successful implementation of an ERP system in Ethiopian Electric Utility?	1. Very low 2. Low 3. Moderate 4. High 5. Very high
3	On a scale of 1 to 5, how much organizational and cultural changes do you think are necessary for Ethiopian Electric Utility to successfully implement an ERP system?	1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree
4	To what extent are you confident that Ethiopian Electric Utility can manage the potential risks and challenges associated with data security and privacy in the implementation of an ERP system?	1. Very low 2. Low 3. Moderate 4. High 5. Very high
5	On a scale of 1 to 5, how much do you think adopting an ERP system will change Ethiopian Electric Utility's relationships	1. Strongly Disagree 2. Disagree 3. Neutral

	with customers, suppliers, and other stakeholders?	4. Agree 5. Strongly Agree
6	How important do you think it is to minimize the costs associated with implementing an ERP system in Ethiopian Electric Utility?	1. Very low 2. Low 3. Moderate 4. High 5. Very high
7	To what extent do you believe there is support from relevant stakeholders for the successful implementation of an ERP system in Ethiopian Electric Utility?	1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree
8	To what extent do you think the successful implementation of an ERP system in Ethiopian Electric Utility depends on progress being measured against key milestones and success factors?	1. Very low 2. Low 3. Moderate 4. High 5. Very high
9	On a scale of 1 to 5, how much of an impact do you think the implementation of an ERP system will have on Ethiopian Electric Utility's overall performance?	1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree
10	To what extent do you agree that the main challenges in implementing an ERP system in Ethiopian Electric Utility can be overcome?	1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Part 3 Questioner to assess Technical readiness of the organization

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate is - 1 = Strongly Disagree, 2 = Disagree; 3 =Neutral, 4 = Agree, 5 = Strongly Agree.

No	Parameter	1	2	3	4	5
1	To what extent do you agree or disagree that the Ethiopian electric utility has the necessary technical infrastructure to support the ERP system?					
2	To what extent do you agree or disagree that the Ethiopian electric utility has sufficient resources for maintaining and updating the ERP system?					
3	To what extent do you agree or disagree that the ERP system is compatible with the existing technology and software used by the Ethiopian electric utility?					
4	To what extent do you agree or disagree that the ERP system has been implemented with minimal disruption to the existing systems and processes of the Ethiopian electric utility?					
5	To what extent do you agree or disagree that the Ethiopian electric utility has sufficient cyber security measures in place to protect the ERP system and its data?					
6	To what extent do you agree or disagree that the Ethiopian electric utility has a comprehensive disaster recovery plan in case of unexpected downtime or system failure of the ERP system?					
7	To what extent do you agree or disagree that the Ethiopian electric utility has sufficient technical expertise in-house to manage and maintain the ERP system?					
8	To what extent do you agree or disagree that the ERP system is responsive and reliable in delivering accurate and real-time					

	data to support decision-making processes in the Ethiopian electric utility?					
9	To what extent do you agree or disagree that the Ethiopian electric utility has established effective measures for monitoring and measuring the performance and efficiency of the ERP system?					
10	To what extent do you agree or disagree that the Ethiopian electric utility regularly conducts risk assessments and audits to identify potential vulnerabilities and enhance the security and reliability of the ERP system?					

Part 4 Questioner to assess Government regulations and policies

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate is - 1 = Strongly Disagree, 2 = Disagree; 3 =Neutral, 4 = Agree, 5 = Strongly Agree.

No	Parameter	1	2	3	4	5
1	To what extent do government policies and regulations play a role in fostering the adoption of ERP systems in the EEU?					
2	How effective are current government policies and regulations in promoting the adoption of ERP systems in the EEU?					
3	How important is government funding and support in the successful adoption of ERP systems in the EEU					
4	To what extent do government policies and regulations address cross-border interoperability issues related to the adoption of ERP systems in the EEU?					
5	To what extent do government policies and regulations address the need for training and technical assistance to successfully adopt ERP systems in the EEU?					

6 How important is collaboration between government agencies and ERP system providers in the successful adoption of ERP systems in the EEU?

7 To what extent do government policies and regulations incentivize the adoption of ERP systems among stakeholders in the public sector?

Part 5. Questioner to assess Internal and external stakeholder engagement and support

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) the in the next column using the following rating scale (Likert Scale). The rate is - 1 = Strongly Disagree, 2 = Disagree; 3 =Neutral, 4 = Agree, 5 = Strongly Agree.

No	Parameter	1	2	3	4	5
1	To what extent do you agree or disagree that the Ethiopian electric utility adequately involved internal stakeholders (employees, managers, etc.) in the planning and implementation of the ERP system?					
2	To what extent do you agree or disagree that the Ethiopian electric utility provided sufficient training and support to internal stakeholders for effectively using the ERP system?					
3	To what extent do you agree or disagree that the Ethiopian electric utility has effectively communicated the benefits of the ERP system to external stakeholders (customers, vendors, etc.)?					
4	To what extent do you agree or disagree that the Ethiopian electric utility has actively sought feedback from external stakeholders on the use and impact of the ERP system?					
5	To what extent do you agree or disagree that the Ethiopian electric utility has demonstrated a commitment to continuous					

	improvement and development of the ERP system in response to stakeholder feedback?					

Part 6. Interview Questions to assess Change management process and Alignment with organizational strategy and goal

1. What were the key reasons for implementing an ERP system in Ethiopian electric utility?
2. What were the challenges faced during the implementation phase of the ERP system?
3. How were the employees trained to use the new ERP system?
4. What are the key features of the ERP system and how do they benefit the Ethiopian electric utility?
5. What kind of support is provided to users of the ERP system?
6. How has the implementation of the ERP system affected the management process in Ethiopian electric utility?
7. Is the ERP system being used effectively and efficiently?
8. Has the implementation of the ERP system resulted in any cost savings or other benefits for Ethiopian electric utility?
9. Are there any areas that require further improvement or development in the ERP system?
10. How is the performance of the ERP system being measured and evaluated?

Thank you for your response!