



SCHOOL OF COMMERCE DEPARTMENT OF BUSINESS LEADERSHIP

Assessment of Enterprise Resource planning /ERP/ implementation Paybacks at the United Nations Economic commission for Africa -UNECA

A Thesis submitted to school of Commerce, Addis Ababa University in partial fulfillment

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SCHOOL OF COMMERCE DEPARTMENT OF BUSINESS LEADERSHIP

ASSESSMENT OF ENTERPRISE RESOURSE PLANING /ERP/ IMPLEMENTATION PAYBACKS AT THE UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA - UNECA

BY MESERET WORKU

A THESIS SUBMITTED TO SCHOOL OF COMMERCE, DEPARTMENT OF BUSINESS LEADERSHIO IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR AWARD OF THE DEGREE OF MASTERS OF ART IN BUSINESS LEADERSHIP

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Statement of Declaration

I, Meseret Worku Bedada, declare that the thesis entitled "Assessment of ERP implementation Paybacks at the United Nations Economic commission for Africa -UNECA" is my original work. I have carried out the present study independently with the guidance and support of my research advisor, Bantie Workie (PhD). Also, this study has not been researched for any other program or university and that all sources of materials used have been acknowledged accordingly.

Declared by: Meseret Worku Bedada _____ Date & signature

This is to certify that Meseret Worku has carried out his research work on the topic "Assessment of ERP implementation Paybacks at the United Nations Economic commission for Africa -UNECA". The work is original and is suitable for submission for the award of Master of Arts in Business leadership

Advisor: Bantie Workie (PhD) _____ Date & Signature

ASSESSMENT OF ERP IMPLEMENTATION PAYBACKS AT THE UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA -UNECA

BY: MESERET WORKU

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ABSTRACT

Enterprise Resource Planning (ERP) is vital to operate more effectively and improving performance of organization by integrating and streamlining business processes. The main objective of this study is to examine the benefits of adoption of ERP at the United Nations Economic commission for Africa. The study used both descriptive and explanatory research designs. The study used quantitative research approaches. The total sample size engaged for this study is 132. Regression, correlation and other statistical measures were used to analyze the quantitative data obtained through questionnaire.

The findings of the study indicate Post ERP implementation success when evaluated against key factors conveying the ERP benefits was reasonably acceptable as measured by ERP users in UNECA. The study then concluded that organizations should retain and construct the best practices witnessed and utilize these benefits to the maximum. The organization should keep on enhancing activities recognized in the research in contributing to the organizational performance and efficiency. UNEAC being non-profit organization should strengthen use of ERP in satisfying the needs of the stakeholders especially member states.

This research recommended more emphasis to bringing post ERP adoption synergy between departments and employee satisfaction. UNECA is also required to work to strengthening cohesive ways of satisfying stakeholders and member state needs.

Key works: ***Stakeholders & member states, Integrated business reporting. Enterprise Resource Planning (ERP).***

CHAPTER ONE

1. Introduction

Chapter one is aimed at providing background info on the Enterprise Resource Planning system. In this chapter introductory section about ERP at United Nations and the UNECA is presented. The chapter also contains statement of the problem, research questions, general and specific objectives of the study. This chapter further presents the significance, scope, delimitation, limitation, organization of the study.

1.1 Background

Enterprise Resource Planning (ERP)

Enterprise Resource Planning (ERP) is a suite of software applications supporting process areas such as Finance, operations, HR, manufacturing, distribution, logistics, and supply chain. Successful ERP results in greater enterprise efficiency and effectiveness, and like other large-scale IT projects, require focus, discipline, and patience (Gartner techno, 2020). Organizations deploy ERP targeting one or most of these critical areas, like improved inventory turns, lower distribution and logistics costs, more streamlined costing, prompt delivery of results by IT team. Because ERP integrates with the customer relationship management tool buyers could evaluate solutions with a track record of integration, end-user support, and financial viability.

ERP is computer software designed to help an entire organization enrich its business and management reporting. Such programs enable manufacturers to solve enterprise-wide problems, rather than a departmental problem (Oracles Netsuit 2020). They can boost a business's productivity and efficiency by helping organizations display, manage, and store large amounts of often complex data and aid organizations process that data to their advantage. (Ian MCcue, 2022)The data integration with ERP rouses efficiency and permit organization relies on one shared source of data. (Ian MCcue, 2022)

ERP runs on computer software, cloud-based software, or both. Some ERPs are designed fully for medium to large business, where others work for smaller businesses. Choosing the best ERP depends on company need and preferences. Some of the best ERP systems are Acumatica cloud ERP, Oracle ERP cloud, Unit4ERP and SAGEX3 (Tima Reitsma 2022). ERP has more than a dozen most popular ERP Systems some are Sage100clude, Epicor Kinetic, SAP S/4HANA, Microsoft Dynamics 365, Oracle Netsuite, SAP Business One and more (Bradley Johnson 2021).

An Enterprise Resource Planning system for a non-profit guarantee accurate financial information and it also ensures the processes runs in a smooth way (Mandy Richardson 2020). ERP for nonprofit organizations provides applications to manage Funds, Grants , commitments and budget , Fundraising , Membership tracing , Donor Voluntary contract relations, human resources and employee portal , bill collection in relation to funding agreements, marketing project and events management

ERP in the United Nations

The United nations has adopted new system known as Enterprise Resource Planning /ERP / in its General Assembly resolution of December 2012. This UN reform is intended to help the UN operate more effectively by integrating and streamlining business processes that manage financial, human and physical resources within a single global solution for the entire UN Secretariat. (https://www.unumoja.net). The ERP is known by the name UMOJA at the United Nations. UMOJA, means Unity in Kiswahili language. UMOJA is an enabling environment which gives meaning to becoming global and having standardized business processes replacing the over 400 legacy systems that were in use in different offices of the organization. (https://www.unumoja.net).

Deployment of UMOJA to all UN Secretariat offices around the world was administered in five clusters with different time schedule. UNECA deployed UMOJA in October 2015 under cluster four with other secretariat offices scheduled to go live that time.

ERP was deployed to whole UN Secretariat in three phases foundation, Extension one and Extension two, the later was completed in 2020. (UN general

assembly 55th session 2020). This study was performed to assess the benefits of implementing ERP like synergy between departments, availability of real time data. The study also analyzed the existence of post ERP adoption employee and stakeholders' satisfaction.

1.2 Statement of the problem

- The aim of this study is to provide rich insight into the various benefits of ERP implementation after go -live on how it is contributing to UNECA's performance and efficiency. UNECA adopted ERP as part of the UN administrative reform initiative, which included re-work of the way the organization manages its administration in both business processes and Information technology solution. The main objective is to asses if departmental integration exists as a result of adoption of ERP. Has the adoption of ERP brought effectiveness and efficiency to UNECA? Does the adoption of ERP enable management to report business data to member state more effectively?

This study has assessed contribution of the recently employed ERP, if it has enabled UNECA to fulfill the planned changes and improvements. The study found out how employment of ERP has changed the way management make decisions, if automated financial and budgetary data had improved the reporting of information. ERP must have brought efficiency by automating all administrative works like procurement, travel, human resources management, finance and budget. The research gap is that ERP is mostly considered application for manufacturing and business organization therefore there are few researches on ERP post implementation benefit to nonprofit businesses. I would like to conduct the study to assess ERP's post implementation impact on UNECA's organizational performance and efficiently.

1.3 Research question

The goals of an Enterprise Resource Planning system is to modernize and integrate business processes and systems

1. Following adoption of ERP at the UNECA are departments integrated?
2. Do ERP systems, after implementation, have a favorable impact on organizational performance and efficiency?

3. Does the adoption of ERP enable management to report business data to member state more effectively?

4. Is adoption of ERP providing quick data and information access to departments of UNECA and its member states or donors?

5. Is the ERP providing business intelligent /BI/and analytics to enhance planning and decision-making?

1.4 Research objectives

1.4.1 General objectives

The primary objectives of this study are to assess benefits of adoption of ERP at the United Nations Economic commission for Africa.

1.4.2 Specific objective

1. To assess the role of ERP to UNECA's departmental integration.
2. To evaluate the outcome of ERP implementation in effective resource utilization and cost reduction.
3. To value Benefit of ERP in terms of running up-to-date financial, and improving planning and decision-making and inform stakeholders.
4. To assess ERP benefits after implementation towards employee and stakeholders satisfaction

1.4 Hypothesis

1. ERP adoption in view of effective resource utilization and cost reduction is positively and significantly related to ERP implementation paybacks,
2. Top management commitments and supports on use and adoption of ERP are positively and significantly related to maintaining organizational efficiency.
3. Top management involvement has a positive and significant effect on post ERP implementation success.
4. Data entry without error and real time information resources positively and significantly increased organizational performance and leads to efficiency.

5. ERPs timely and organized reporting to donors or member states or better service to stakeholders is positively and significantly to ERP implementation paybacks
6. Application of ERP enables business consolidated and produce accurate real time data which positively and significantly contributes to effective decision making.
7. ERP Post implementation employee learning and training positively and significantly contribute to ERP implementation paybacks.
8. Post ERP implantation synergies between departments, or a better awareness of the importance of their work for other parts positively and significantly increases to ERP implementation paybacks.

1.6 Significant of the study

This study provided deep understanding for the UNECA as well as the employees about the post implementation benefits of ERP system functionality to sustaining efficiency and performance. Asses how ERP has contributed towards improved reporting capabilities, quality of financial and managerial performance in the UNECA. This study is also beneficial in understanding the level of departmental collaboration existed and how use ERP application has improved decision making following the collaboration. Additionally, this study provides slight insight to the work of other researchers who would like to peruse study on related topic.

1.7 Scope/Delimitation of the study

This research intends to find out post ERP implementation benefits at the UNECA. The study identified what ERP has contributed to the UNECA performance and efficiency after it is fully implemented and became operational. This study assessed the paybacks involving efficiency of the management in the area of streamlining activities, cost reduction, up-to-date report, organized operations and proper management of Grant or funds.

1.8 Limitation of study

Previous studies found are more on ERP benefits to profit making organization and resources on its benefit to nonprofit organizations especially United nations are not found much . Documents found written by researchers from the UN itself did the study to present the payback and challenges to the member states or general assembly. These documents are meant for UN office use only.

1.9 Organization of the study

This study is organized in to five chapters. Chapter one contains Introduction, background, statement of the problem, research questions, objectives, sits significance, scope, delimitations, limitation. Chapter two is on literature review. Chapter three presents Research methodologies, Population size, information type and sources, methods to be used in data collection, sampling and analysis. Chapter four is on data collection and analysis of the data. Chapter five presents conclusion and recommendations. Finally list of references, sample questionnaire and other annexes is attached

CHAPTER TWO

Literature Review

2.1 The history of ERP

Enterprise Resource Planning (ERP) organizations use today is dated back to the time when Materials Requirement Planning (MRP) and Manufacturing Resource Planning MRPII) systems evolved (Joseph R. Muscatello, Michael H. Small, Injazz J. Chen ,2003).

The Gartner Group is credited for inventing the term "Enterprise Resource Planning", for a concept they developed in the 1990s for the next generation Manufacturing Resource Planning (MRPII) systems (Dahlen & Elfsson, Keller, 1999).

Enterprise Resource Planning encompasses all integrated information systems and offer many potential benefits to any organizations (Bernroider, Edward and Koch, Stefan 1999). ERP enables organizations to integrate data and business processes under a unified information system sharing a common set of data, while their modular design allows the selection of specific functional applications , such as finance and accounting, human resources management and supply chain management , most relevant to the needs of an organization source.(Weinrich & Ahmad (2009). These applications can then help organizations to automate and integrate business processes, and people to produce, share and access real-time information (Joel Nielsen and Mads Svendsen ,2017).

ERP Benefit realization

Benefits realization management is an important approach to ensure that projects and programs deliver what they promise. This model provides focus, demonstrates value for money, reduces the risk of failure and maximizes benefits achieved.

(Shang, S. and Seddon, P. (2000) ERP is a global and integrated system with latest technology and functionality that provides Operational, Managerial, strategic, infrastructural and organizational benefits.

Nonprofit organizations benefit from ERP in three ways (Elizabeth Quirk 2017) these are minimizes Error and data Redundancy, Keeps records and data in Order, Better financial management . Non-profit organizations are usually required to maintain transparency with financial records and daily operations. Because they run on donations, they need proof of where and how they are spending the funds they make.

Implementing an ERP for nonprofit organizations is a great way to allow nonprofits to utilize all of their resources and employees for their expertise rather than trying to navigate data management (Mandy Richardson 2020).

ERP software can help a nonprofit to manage multiple funds and ensure that reporting guidelines are adhering to. Having ERP implemented by nonprofit organizations allows virtuous grant management tool. The system can also assist nonprofit organizations in fundraising by maintaining connection with donors to understand how and what is donated over time with its cost history.

2.2 Theoretical Framework

Business Process reengineering

Business process reengineering helps a company reduce costs and cycle times. They are also used to improve quality, gain faster processing time.

ERP adopted by organizations with the main value of opportunity to streamline and improve operations of the entire office through process reengineering, sharing common data and implementation of best practice and standards. ERP a global integrated system with latest technology and functionality provides Operational, Managerial, strategic, infrastructural and organizational benefits.

Hammer, M. and Champy, J. (1993) reengineering of business process activities focuses the firm on identifying and improving the efficiency of critical operations,

restructuring important non-value-adding operations and eliminating inefficient processes.

Reengineering should be undertaken to insure that the strategic objectives mentioned earlier are feasible. The reengineering effort should create a uniform response from all aspects of the business. When goals are common, improvement becomes a shared task (Hill, Suzette., 2000).

Using reengineering techniques to develop a homogeneous vision depicting the company's processes after the ERP implementation, a firm is more likely to minimize uncertainty and achieve success.

Researchers have found a strong correlation between the attention paid to business process improvement and the likelihood of ERP success (JR Muscatello 2003; Motwani, Subramanian, & Gopalakrishna, 2002; Carton and Adams 2003; Millman, 2004; Olson et al., 2005).

Systems management theory

According Systems management theory, the success of an organization depends on several key elements: synergy, interdependence, and interrelations between various subsystems.

ERP systems promise integration of business processes and access to integrated data across the entire enterprise (Davenport 1998).

Companies that implement the systems have the opportunity to redesign their business practices using templates imbedded in the software ,often called best practices (Scheer and Habermann 2000).

ERP system investments is strategic in nature or source, that itis transaction processing. ERP systems enhance inter-organization communication and collaboration between different functions and locations for the integrated decision-making process. (Singletary les, Susanne D. Pawlowski, Ed Watson (2003)

The value of an ERP system is that it is totally integrated; and the downside of an ERP system is that it is totally integrated (Strong et al. citing Filipczak 1997.

The meaning of integration a simplified view Practitioners' comments reflected a relatively simplified view of what integration means. While most of those interviewed agreed that integration means working together, their verbalized conceptualizations seldom elaborated beyond this basic idea.

ERP is a computer system that keeps managers informed about what is happening in real-time throughout a corporation and its global connections (Jacobs and Whybark, 2000)

Standardization of the processes across the unit's works in favor of collaboration as it reduces the number of conflicts between the processes. The single database system encourages communication across locations and functional units through sharing the information.

With ERP systems companies are using the same database, which can be accessed on-line, in real-time and simultaneously by many users. Since, virtually all users have access to the same information it improves companies planning and control practices

Stakeholders Theory

Stakeholder theory refers to the ethical concept that addresses the outcome of business decisions, trends, profits, etc., and its collective impact on all stakeholders, including the shareholders, employees, financers, government, customers, suppliers, etc. (Ratnesh, Sharm and Dheeraj Vaidya

Lyytinen et al (1998) describe stakeholders as actors that can set forward claims or benefit from IT systems development issues. (Singletary et al , 2003) identified stakeholders as managers, IT professionals, and end users. Thus stakeholders theory describes that ERP implantation success is to be discussed from the point of view of various organizational stakeholders group. This theory looks closer to organizational performance. Where organizational effectiveness and efficiency is evaluated on how they perform. Nonprofit organization are usually funded by donors, or members who provide funds for the operations of such businesses. So the way they utilize funds are examined by stakeholders. ERP helps non profit organizations in generating a timely and accurate reports . The

stakeholders theory considers two perspectives which are inside –in (employees, managements)and inside-out (other shareholders , partners. ETC) (Pouloudi and Whitley 1997) (Pouloudi and Whitley 1997). This theory considers two perspectives: inside-in (employees, managers) and inside-out (others: shareholders, partners, etc.).

Critical Success Factors Post ERP Implementation

The post implementation phase of ERP involves running and maintain the ERP system on a daily bases (Capaldo and Rippa, 2009). The post implantation stage comprises various processes that are critical to a system's success and the anticipated benefits (P.F. Hsu, K.L. Kraemer, D. Dunkle,(2004), Andreas I. Nicolaou, Lawrence H. Bajor 2006. Post go live stage is when the system is available to staff member and all users in the organization for regular and routine activities (Motiwalla and Thompson,2011). A process oriented approach was adopted to understand the learning Requirements post ERP implementation and how it impact employees learning (Mehmood Chadhar & Farhad Daneshgar, 2018)

The article on International Journal of Economics proposed list of twenty-six implementation critical success factors and analyzed them if they contribute to implementation success and post implementation performance critical success factors for consideration in ERP implementation success (Jiwat Ram, David Corkindale Ming-LuWu 2013) From review of various studies which attempted to investigate the effect of critical success factors on performance improvements (Jiwat Ram et al 2013)considered four CSFs consistent. Implementation quality and organizational readiness lead to post-implementation success(Zhuetal.,2010; Motwanietal., 2002). These Critical Success Factors have been considered central to implementation success were factors are project management (PM), training and education, business process re-engineering (BPR), and system integration (Jiwat Ram et al 2013).

Critical success factors selected for this study are Top Management Support and Communication (Dezdar and Sulaiman (2009) , data analysis conversion and integrity (Finney and Corbett(2007), Somers and Nelson (2004) Enterprise wide communication (Dezdar andSulaiman(2009), System integration , User

involvement Al-Mashari etal.(2003), Bingi etal.(1999), participation and support (Dezdar and Sulaiman (2009) and employee training or learning(Mehmood C.,Farhad D. (2018) . These critical success factors incorporate a number of dimensions under their purview. The critical success factors were selected because the organizations UNECA's post implantation success are gaged towards these above critical success factors.

2.3 ERP Post implementation benefit

According to (Zhu Yan, Li Yan, Wang Weiquan, Chen Jian, 2010) the quality of implementation and organizational readiness influence post-implementation success. ERP provides improved coordination either between departments, also within a single department, there may exist a great many different work situations each of them calling for one or more particular direction solutions.(Eric Alsene 2007). Operational performance and continuous learning leading to continuous improvements in performance (Cotteleer and Bendoly, 2006);

A positive effect on the accounting process through increased flexibility in information generation, increased integration of accounting application, improved quality of reports and decision making on timely and reliable accounting information (Charalambos Spathis, Sylvia Constantinides,2004).

Based on Shang and Seddon (2000), ERP systems have several benefits, which can be attained by organization. These benefits are differed into five major benefits, include operational benefit, managerial benefit; strategic benefit, IT infrastructure, and organizational benefit. The research contribution from Shang and Seddon is comparable to Garg, V.K., Venkitakrishnan, N.K (2014), who identified the intangible benefits of ERP system implementation, include better customer satisfaction, improve vendor performance, increase flexibility, reduce quality costs, improve resource utility, improve information accuracy, and improved decision-making capability. Olhager and Selldin (2007) identified tangible benefits of ERP system, include reduction of lead-time, on-time shipments, double business, increase of inventory turns to over, cycle time, and

work in progress. Previous researches defined and categorized the ERP benefits, but there is still less research that categorizes these benefits into each of business functions and these ERP benefits did not focus on particular industry. Samira Sadrzadehrafieia, Abdoulmohammad Gholamzadeh Chofrehb, Negin Karimi Hosseinia, Riza Sulaimana (2013)

Various studies classify ERP implementation in to three stages Atif Ali Gill, Arfan Shahzad, Subramaniam Sri Ramalu (2019). The first stage is the pre-implementation phase, the second phase is known as During-Implementation phase. While the last stage is called the post-implementation phase. Many studies have focused on the Pre and During implementation phase while fewer studies done at Post implementation phase. (Atif Ali et al 2019) It is believed this phase is more crucial from the organizational performance perspective because at this stage, the higher management is keen to get desired results after billion of investment in ERP implementation and in case of failure organizational may collapse sometimes. Shang, S. and P.B. Seddon (2002) , Esteves, J., A(2009)

This study focuses on the post-implementation phase which is very critical as per organizational main interest. Post-implementation success to non profit organizations could be measured in multiple aspects like operational efficiency, better decision making, strategic advantages, IT infrastructure enhancement, creditability or access to grants, funds in the case of non –profit organization.

A business and strategic perspective to implementing ERP is seen as way to improve corporation's effectiveness and efficiency, reduce their operating, personnel, inventory and IT costs, and improve overall quality (Samira Sadrzadehrafiei 2013)

2.4 Conceptual Framework

ERP projects are an investment of time and money. Successfully implemented ERP helps users navigate complex processes, avoid data reentry, and improves production, ordering delivery and other functions. ERP increased efficiency and productivity by streamlining processes through an organization

Organizational performance and efficiency

ERP system provides a number of advantages for firms to improve the organization performance. Based on information perspective, ERP system adoption can improve the interaction between the business functions and the information is more reachable. (Atif Ali et al 2019)

ERP systems have more advantages in information quality and the integration of business processes and operations, but it does not decrease the information technology costs. (Samira et al, 2013) According to Adler,P. ,Goldoftas B. abd Levib,D. (1999) standardized procedures for changing existing routines and or creating new ones are vital for enhancing the efficiency of non-routine operations. S. Newell, J.C. Huang, R.D. Galliers. S.L.Pan(2003) ERP adoption by a company is to maximize organizational efficiency at the cost of flexibility and innovation commitments to the further applied in different tasks. (S.Newell et al 2003) ERP emphasizes the improvement organizations' information processing efficiency. (S.Newell et al 2003)

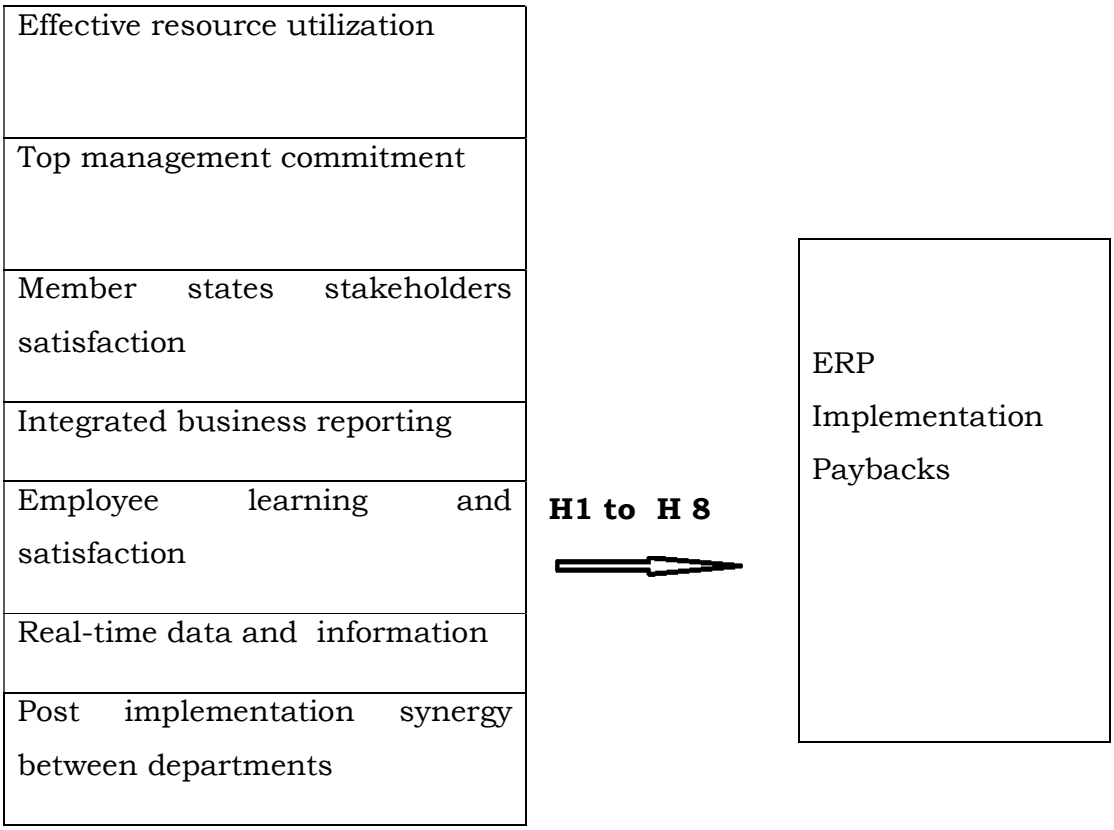


Figure 1.1 dependent and independent variables **Source: (Researcher 2022)**

Gaps and reason for the study

Knowing if an investment paid off or if it pays off in the future is key to ERP adopters (Markus M.L,PauleC. Van Fenema and Cornelis Tanis 2000). ERP is implemented by organization in the aim of gaining various benefits. Various studies are done to evaluate ERP implementation phase. Various literature found are on ERP benefits to business organization. However, the post implementation benefits to nonprofit is not done mostly. ERP by its nature is seen as successful IT system by its own. Therefore, this study is to assess the post ERP implementation paybacks aiming to review if the planned initial benefits have been realized after go live at the UNECA.

This study is to contribute to the literature on ERP post implementation benefits and key factors contributing to it bringing organizational performance and efficiency. This study related to post implementation benefits of ERP of nonprofit organizations

CHAPTER THREE

RESEARCH METHODOLOGY

The purpose of this chapter is to explain the research methodology briefly. This part described the methods that be used to collect and analyze data in order to accomplish the study objective. The research methods include research design, data collection instruments, data collection procedures and population and sampling method.

3.1 Research Approach.

The three research approaches are Qualitative, Quantitative and Mixed approaches. Qualitative do not attempt to quantify their results through statistical summary or analysis. In this approach data is presented in the form of description rather that numbers , Quantitative is used to determine the relationship between variables , its objective is to develop and employ mathematical models, theories and hypotheses and it demands objectivity. The mixed method involves the use of both approaches in cycle so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell & PlanoClark, 2007).

This study employed the quantitative research approach since the paper is more concerned with the relationships between the variables and analysis their connection. The reason for choosing the quantitative method was because it allows gathering and then analyzing large amount of data statistically.

3.2 Research Design

Research design approaches are Description, Experimental, correlational, Diagnostic and Explanatory. The descriptive is to explore about two or more variables where the researchers does theoretical base data collection over the variables. Experimental type is the study is carried out applying a scientific approach and two sets of variables. Correlational design tells the scale and/or direction of a link between two (or more) variables. Diagnostic research design is a type of research design that investigate the fundamental cause of a certain

condition or occurrences. Explanatory research is a method established to explore phenomena that have not before been researched.

This research has chosen to use the descriptive design as it allows detailed view of the variable that is being studied. This design allows generation of specific and general questions to analyses the variables and see results with hypothesis developed. The study used descriptive and explanatory research design to demonstrate findings and analysis. In addition to these, this thesis research findings with theories and hypothesis and answer the how question as per the descriptive researches requirement

3.3 Population and Sampling

The total population of 775 existing staff members of United Nations Economic Commission for Africa. ERP user list shows that only 322 of all population using the system more often. The ERP /UMOJA/ is not used by all employees on a daily bases. Most staff members utilize the ERP only for Employee Self Service portal, to record occasional work life events like recording of new family member and official travel processing. Considering that the above total population is not be able to provide the necessary information to address the research questions, therefore target population of 225 is considered. A sampling frame is used to pin down the sample frame 132 by selecting day to day users of the ERP system in the area of administrative, HR, financial and operational.

Cochran's sample size calculator is deployed to determine sample size to be 132, with 95% confidences and 5% error

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

$$\frac{225}{1+\frac{(225-1)}{322}}$$

Equals 132.7433

Cochran's sample formula

N is the population

n_o target population

3.4 Information type and sources

Data was collected from both primary and secondary data sources. The primary source of the information to be gathered from UNECA Addis Ababa.

3.5 Data Collection Method

The primary data was collected through questionnaire from UNECA Addis Ababa. Questionnaire with dichotomous which have yes /no answerers and scale questions with ranking orders options of strongly agree, agree, neutral, disagree and strongly disagree was be distributed to the sample size. Meanwhile, the secondary data collected from e-Books, Journals and articles on ERP, UN manuals , guidelines and other internal documents,

3.6 Data Sampling Method

UNECA has about 225 management and administrative staff who use ERP daily. From this population sample size of 132 is reached according to Cochran's formula questionnaire was be distributed to these 132 staff members. Direct contact was be applied in case of non-responses.

3.7 Data Analysis Method

Since, the research approach of the study is using questionnaire the data collected was concentrate on measuring and analyze the data using descriptive and regression statistical analysis under SPSS.

SPSS is a statistical software suite developed by IBM for data management, advanced analytics, multivariate analysis, business intelligence, and other investigations (Norman H. Nie, Dale H. Bent, C. Hadlai Hull (1968)

Validity

According to Kothari (2004), validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. Validity is the level to which difference found with a measuring instrument reflects true differences among those being test. Validity refers to the degree to which scales truly measure the constructs which they are intended to measure. (Barbara B. Flynn,Roger G. Schroeder,Sadao Sakakibara 1994). The coefficient alpha is interpreted as the degree to which all of the items measure

a common construct. Cochran's alpha says a≥0.90 is excellent internal consistency and 0.9>a>.08 is good, 0.8 > a≥0.70 is acceptable and 0.70> a ≥ 0.06 is questionable.

Reliability

The test of data reliability is key to test of rigorous measurement, Emishaw Lakew (2017). A measuring reliable if it provides consistent result (Kothari, 2004). In this study the researcher used post ERP implementation benefits with the dependent and independent variable identified to evaluate results. Statistical software SPSS was utilized to analyze data gathered through questionnaire. Cochran's formula with 95% confidences and 5% error.

3.8 Ethical Consideration

The research considered ethical issues like confidentiality and privacy. According to Cooper (2003), ethics is the norms or standards of behavior that guide moral choices about our behavior and our relationships with others. In addition, the goal of ethics in research is to ensure that no one is harmed or suffer adverse consequence from this research activity. Participants and respondents gave full information on the purpose and objective of the study in order for them to make informed decisions.

The researcher intently informs and upholds the respondents' right to informed of the components of the research as well as the right to not participate. The researcher also upholds respondents' choice of anonymity and associated privacy and security concerns. The researcher used the blind study and blind analysis style to avoid personal opinion or confirmation biases. Additionally, all information gathered and used for the sole purpose of this research study.

CHAPTER FOUR

4. RESULT AND INTERPRETATION

4.1 Introduction

The aim of this chapter is to present the results of the data analysis. And also this chapter consists of presentation, analysis and interpretation of data collected through questionnaire and interview.

Response rate

Out of 132 questionnaires distributed to all target population 116 questionnaires were returned and analyzed, this figure is 87.87% response rate. According to Mugenda, O.M. and Mugenda, A.G. (2003) considers 70% response rate as very well , 60% good and above 50% response rate as adequate.

4.2 Demographic Information of the Respondents

Table 1 and 2 below describe the category of respondents by gender and age. From the 116 respondents 34.5 % are Female and 65.5% are Male. From the 116 respondents 50.9% of them are in the age group of 40-50; 31% are from age group 50-60 , 15.5% are from age group 30-40 and 2.6 % of them are from age group 20-30. This shows that most respondents are male in gender.

Demographic data of the respondent

Table 1: Gender of the respondents (Source: (Own survey result, 2022)

Gender	Frequency	Percentage
Female	40	34.50
Male	76	65.50

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
20-30	3	2.6	2.6	2.6
30-40	18	15.5	15.5	18.1
40-50	59	50.9	50.9	69.0
50-60	36	31.0	31.0	100.0
Total	116	100.0	100.0	

Table 2: Age group of the respondents (Source: (Own survey result , 2022)

With regards to number of years of experience 6% of them have been in UNECA for 0 to 5 years and over 30 years of experience. The majority of the respondents which counts 43% are with work experience of 20-30 years ,28% of the respondents work experience reads 10-15. The rest two groups are 22% whose years of experience reads 5-10 and 11% counts for 15-20 years of experience. This shows that most of them have been working in UNECA for years.

Table 3: Respondents years of experience (Source: (Own survey result , 2022)

Years of experience	*Frequency*	Percent	Valid Percent	Cumulative Percent
0-5	6	5.2	5.2	5.2
5-10	22	19.0	19.0	24.1
10-15	28	24.1	24.1	48.3
15-20	11	9.5	9.5	57.8
20-30	43	37.1	37.1	94.8
Over 30 yrs	6	5.2	5.2	100.0
Total	116	100.0	100.0	

Review of the respondents' educational level under table 4 shows that 62.1% of them holding degree, 8 % diploma 28.4 % Masters and 3% PHD.

Table 4: Respondents education level (Source: (Own survey result , 2022)

Educational level	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma	8	6.9	6.9	6.9
Degree	72	62.1	62.1	69.0
Masters	33	28.4	28.4	97.4
PHD	3	2.6	2.6	100.0
Total	116	100.0	100.0	

In table 5 respondents unit or section analysis shows that 23.3% of them are from Administration sections , 2.6% from ITUSS, 17.7 from procurement , 12.90 from Grants and trust fund unit, 5.2 from treasury , 7.8 from budget and 15.5% from HRSS 15.0% are from Accounts , payroll and payments.

This implies that 74.1% of the respondents are from admin and finance area which makes the respondents more well informed about ERP/UMOJA/ and its contribution to organizational efficiency

Table 5: Section or units in which the respondents work (Source: (Own survey result , 2022)

Section /units or divisions	*Frequency*	Percent	Valid Percent	Cumulative Percent
HRSS	18	15.5	15.5	15.5
Grants and Trust	15	12.9	12.9	28.4
Procurement	20	17.2	17.2	45.7
Treasury	6	5.2	5.2	50.9
Accounts unit	13	11.2	11.2	62.1
Payroll and payments	5	4.3	4.3	66.4
Budget unit	9	7.8	7.8	74.1
ITUSS	3	2.6	2.6	76.7
Administration	27	23.3	23.3	100.0
Total	116	100.0	100.0	

4.3 Descriptive Statistics

Reliability refers to how consistently a method measures something. Measurement is taken to be reliable on condition that the same result can be regularly achieved by using the same methods under the same situations, the measurement is reflected reliable (Fiona Middleton ,2019).

Tables below, shows mean value for the dependent and independent variables considered for the assessment of ERP implementation paybacks at UNECA. A

total of 8 inputs or variables are evaluated with sub-inputs under each to briefly see related concepts.

All of the 116 respondents have responded to the detailed questions under the each variable or category.

Table 6 below shows the mean and standard deviation to the variable Effective resource utilization and cost reduction. The value of the mean 4.0536 represents that the respondents agree to the presence Effective resource utilization and cost reduction and its significance to the organizational performance and efficiency. The standard deviation .51512 shows moderate outliers, and no extreme observation. The mean and standard deviation indicates that most respondents agreed to the importance of this variable to organizational efficiency

Table 6 Descriptive statistics: Effective resource utilization and cost reduction (Source: (Own survey result , 2022)

Statement	Number	Mean	Std. Deviation
Effective resource utilization and cost reduction	116	4.0536	.51512

Effective resource utilization and cost reduction		Strongly agree / SA/	Agree /A/	Neutral	Disagree/D/	Strongly disagree/SD	% SA + Agree	% SD disagree
After UMOJA implementation UNECA saved costs in its regular activities.	**Freq**	**29**	**51**	**30**	**6**	**0**	**110**	**6**
	%	**24.8**	**43.6**	**25.6**	**5.1**	**0.0**	**99**	**5**
ERP/UMOJA/ reduced or eliminated paper works and manual processes	**Freq**	**48**	**66**	**2**			**116**	**0**
	%	**41.0**	**56.4**	**1.7**			**97.4**	**0**
ERP/UMOJA/ facilitates quick information responded time	**Freq**	**40**	**72**	**4**			**112**	**0**
	%	**34.2**	**61.5**	**3.4**			**95.7**	**0**
There is reduction in time while performing day to day operations with UMOJA	**Freq**	**25**	**77**	**8**	**6**		**102**	**4**
	%	**21.4**	**65.8**	**6.8**	**5.1**		**87.2**	**5.1**
ERP/UMOJA/ is understandable, reliable /no fear of data loss	**Freq**	**29**	**67**	**17**	**3**		**96**	**3**
	%	**24.8**	**57.3**	**14.5**	**2.6**		**82.1**	**2.6**
ERP/UMOJA/ has reduced steps or processed to complete a transaction	**Freq**	**25**	**57**	**25**	**9**		**82**	**9**
	%	**21.4**	**48.7**	**21.4**	**7.7**		**70.1**	**7.6**
After ERP/UMOJA/ time taking to complete recording transactions has been minimized	**Freq**	**25**	**64**	**21**	**6**		**89**	**6**
	%	**21.4**	**54.7**	**17.9**	**5.1**		**76.1**	**5.1**
After UMOJA number of people involved in a transaction has reduced	**Freq**	**28**	**57**	**28**	**3**		**85**	**3**
Mean and SD	**%**	**23.9**	**48.7**	**23.9**	**2.6**		**72.6**	**2.5**

Table 6 above indicates that 29(24.8%) and 51(43.6%) of respondents strongly agree and agreed that after UMOJA implementation UNECA has saved costs in

its regular activities which contributed to effective resource utilization. However 6(5.1%) disagree to this fact . Furthermore, 114(97.4%) strongly agrees and agree that ERP agree that ERP eliminated paper works and , 112(95.7)strongly agree and agree that Post ERP quick data is accessible. And 102(87.5%) and 89(76.1%) strongly agree and agree that ERP enabled less time taken to record day to day transactions. Additionally, 96(82.2%) of the respondents agree that ERP is reliable, 82 (70.1%) agree ERP reduced steps for transaction, to ERP and 85(72.6 %) agree that ERP has reduced number of people involved.

This implies that effective resource utilization and cost reduction significantly marks organizational efficiency and benefiting from use of ERP.

Table 7 below shows the mean and standard deviation to the variable Top management commitment. The value of the mean 3.7914 represents that the respondents agree to the presence the variable Top management commitment and its significance to the organizational performance and efficiency. Table 7 below also shows that 10 (8.5%), respondents strongly agree that UNECA management is aware of ERP benefits and use it to reduce cost 67(57.3%) and 51(43.6) also agree to this. However, 7(6%) disagrees to the fact that UNECA management's awareness of ERP benefit and its use to cost reduction. 17(14.5%) and 51(43.6%) of the respondents strongly agree and agree that ERP helps management's fast response to new opportunities but 12(10.3%) disagree to this point. Further 34(29.10%) and 24(20.5%) strongly agree that ERP reports enable streamlined month end closing and view organizational performance ,61(52.1%) of the respondents also agree. However,3(2.6%) disagree that ERP reports enable streamlined month end closing and view organizational performance.

This infers that most respondents agree on the contribution of the top management commitment ad involvement organizational efficiency. It also shows that Top management involvement has helped realize benefits of ERP adoption .

Table 7. Descriptive statistics: Top management commitment (Source: (Own survey result , 2022)

S/N 2	Top management commitment	Sstrongly agree /SA		Agree /A		%A (%SA +%A)	Neutral		Disagree D		Strongly disagree DS		%D (%SD + %D)
2.1	UNECA management is aware of the goals, objectives and benefits of ERP/UMOJA/	Fre	%	Fre	%	%	fre	%	Fre	%	Fre	%	
		10	8.5	67	57.3	65.8%	39	33.3					33.3%
2.2	UNECA Management is able to reduce operating cost because of ERP/UMOJA/ adoption	10	8.5	51.0	43.6	52.1%	48	41	7	6			6%
2.3	ERP/UMOJA/ helps management's fast response to new opportunities	17	14.5	51	43.6	52.1%	36	30.8	12	10.3			10.3%
2.4	UNECA management is able to get ERP/UMOJA/ financial reports to see the organization's performance	34	29.1	61	52.1	81.2%	21	17.9					
2.5	With ERP/UMOJA/ UNECA management is able to streamline month end closing and reporting	24	20.5	61	52.1	71.7%	28	23.9	3	2.6			2.6%

Statement	Number	Mean	Std. Deviation
Top management commitment	116	3.7914	.53756

Table 8 below shows the mean and standard deviation to the variable Top management commitment. The value of the mean 4.0043 represents that the respondents highly agree to the presence the variable Organizational Efficiency. The standard deviation .52749 shows minimum outliers, and no extreme observation. Table 8 below also shows that 24 (20.5%) , 60(59%) strongly agree and agree that UNECA management uses ERP/UMOJA/ as a tool to monitor performance and guide all system users contributes to organizational efficiency Further, 20(17.1%, 68(58.1% and 83(70.9%) strongly agree and 28(23.90%) and 63(53.8%) on the other hand 2(2.6%) and 8(6.8%) disagree that UNECA management use of ERP as monitoring tool and its assistance in making proactive designs. This indicates that most of the respondents agree on worth of organizational efficiency.

Table 8 Descriptive statistics: Organizational Efficiency (Source: (Own survey result , 2022)

S.NO	Organizational Efficiency	Sstrongly agree /SA		Agree /A		%A (%SA +%A)	Neutral		Disagree D		Strongly disagree DS		%D (%SD + %D)
	UNECA management uses ERP/UMOJA/ as a	Fre	%	Fre	%	%	%		Fre	%	Fre	%	
3.1	tool to monitor performance and guide all system users	24	20.5	60	59	79.5%	20	17.1	3	2.6			2.6%
3.2	ERP/UMOJA/ provides inputs to enable UNECA staff and management make the right decision	20	17.1	68	58.1	75.2%	28	23.9					0%
3.3	ERPs/UMOJA/ analytical reporting can assist gain insight to better business performance	25	21.4	83	70.9	92.3%	8	6.8					0.3%
3.4	ERP/UMOJA/ assists to work quickly and make smart and proactive decisions	28	23.9	63	53.8	77.7%	17	14.5	8	6.8			

Statement	Number	Mean	Std. Deviation
Organizational Efficiency	116	4.0043	52749

Table 9 below indicates that 17(14.5%) strongly agree and 72(61.5%) and 58(49.6% of the respondents agree on ERP's contribution to departmental communication, or smooth flow of information among UNECA departments. Additionally, 25 (21.4%) strongly agree and 77(65.8%) agree that ERP helps as one source of data. Furthermore,16(13.7 %) and 20(17.1%) strongly agree that ERPs build in report and unified database increase UNECA's reporting capacity. Moreover, 89(76.1%) and 80(68.4%) of the respondents agree to the presence of integration which is the key ERP benefit.

Table 9 Descriptive statistics: Integrated business reporting (Source: (Own survey result , 2022)

Statement	Number	Mean	Std. Deviation
Integrated business reporting	116	4.0121	.46385

S.NO 5	**Integrated business reporting**	**Strongly agree /SA**		**Agree /A**		**%A (%SA +%A)**	**Neutral**		**Disagree D**		**Strongly disagree DS**		**%D (%SD + %D)**
	ERP/UMOJA/	**Fre**	**%**	**Fre**	**%**	**%**	**Fre**	**%**	**Fre**	**%**	**Fre**	**%**	
5.1	**contributes to UNECA departmental communications**	**17**	**14.5**	**72**	**61.5**	**76.0%**	**27**	**23.1**					**0%**
5.2	**ERP/UMOJA/ enabled smooth flow of information through UNECA departments**	**17**	**14.5**	**58**	**49.6**	**64.1%**	**41**	**35**					**0%**
5.3	**ERP/UMOJA/ helped as one source of data or information**	**25**	**21.4**	**77**	**65.8**	**87.2%**	**14**	**12**					**0 %**
5.4	**ERPs/UMOJA/ built – in-reports modernizes UNECA reporting capacity**	**16**	**13.7**	**89**	**76.1**	**89.8%**	**11**	**9.4**					**0 %**
5.5	**Having unified database for UNECA enhanced reliability**	**20**	**17.1**	**80**	**68.4**	**85.5**	**16**	**13.7**					**0 %**

Table 10 below shows that 14(12%) and 75(64.1%) strongly agree and agree that and 14(12%) and 21(17.9%) respondents strongly agree and 75(64.1%) and 74(63.2%) agree that ERP enables submission of accurate reports to stake holders ,it further allows automated reports on funds and grants . 18(15.4%) and 13(11.1%) of the respondents strongly agree and 62(53%)and 50(42.1%) agree that after ERP interaction with stakeholders'. This indicates that use of ERP to satisfy member states and shareholders required greatest attention. Table 10 also indicates the mean of 3.8517 and standard deviation of 0 .47264 to the variable Member states stakeholders' satisfaction this value represents need for more improvement in this area to gain advantage of ERP adoption.

Table 10 Descriptive statistics: Member states Stakeholders satisfaction (Source: (Own survey result , 2022)

S.NO 4	Member states stakeholders satisfaction	Strongly agree /SA		Agree /A		%A (%SA +%A)	Neutral		Disagree D		Strongly disagree DS		%D (%SD + %D)
		Fre	%	Fre	%	Fre	%		Fre	%	Fre	%	
4.1	UNECA is providing quality service to stakeholders because of ERP/UMOJA/ adoption.	14	12	75	64.1	76.1%	27	23.1					0%
4.2	ERP/UMOJA/ has enabled UNECA submit timely and accurate reports to stakeholders and member states	14	12	74	63.2	75.2%	26	22.2					0%
4.3	After implementing ERP/UMOJA/ UNECA management is able to automate fund and grant related information	21	17.9	74	63.2	81.1%	18	15.4					0 %
4.4	ERP/UMOJA/ has made support to stake holders and stakeholders easy	18	15.4	62	53.0	68.4%	36	30.8					0 %
4.5	UNECA improved its interaction with members states after implementing ERP/UMOJA/	13	11.1	50	42.7	53.8	53	45.3					0 %

Statement	Numbers	Mean	Std. Deviation
Member states stakeholders' satisfaction	116	3.8517	.47264

Table 11 below indicates that 37(31.6%), 26(22.2%) strongly agree to the use of employee satisfaction to ERP post implementation success. on the other hand 31(26.5%), 23(19.7%) and 28(23.9%) disagree to post ERP implementation benefit to employee satisfaction . This implies minimal or no consequence of employee satisfaction with ERP and less contributes to organizational efficiency

Table 11 Descriptive statistics: Employee learning and satisfaction (Source: (Own survey result , 2022)

S/N 6	Employee learning and satisfaction	Strongly agree /SA		Agree /A		%A (%SA +%A)	Neutral		Disagree D		Strongly disagree DS		%D (%SD + %D)
		Fre	%	Fre	%	%	%		Fre	%	Fre	%	
6.1	ERP/UMOJA/ provides very good employees self-service environment	37	31.6	67	88.9	76.0%	12	10.3					0%
6.2	UNECA employees are proven that ERP/UMOJA/ made their life easy.	26	22.2	53	45.3	67.5%	37	31.6					0%
6.3	UNECA staff members are provided with adequate training on ERP/UMOJA/			65	55.6	55.6	20	17.1	31	26.5			26.5 %
6.4	Trainings on ERP/UMOJA/ modules ensured employees positive contribution	4	3.4	69	59.0	62.4%	20	17.1	23	19.7			19.7 %
6.5	Are you, as Employee of UNECA, satisfied with the training provided to optimized use of ERP/UMOJA/.	16	13.7	61	52.1	65.8	11	9.4	28	23.9			23.9 %

Statement	Number	Mean	Std. Deviation
Employee learning and satisfaction	116	3.6879	0.60046

Table 11 above shows the mean and standard deviation to the variable integrated Business reporting. The value of the mean 3.6879 represents that the respondents agree to the presence the variable or that employee satisfaction minimal effect on Organizational Efficiency. The standard deviation 0 .60046

shows minimum outliers, and no extreme observation. The mean and standard deviation indicates that some respondents disagreed to the existence of this variable to organizational efficiency.

Table 12 below reads that 29 (24.8%), 18(15.4%), 20(17.1%), 29(24.8%) and 25(21.4%) strongly agrees that data entry without error and automated ERP system helps in efficiency. Similarly 81(69.2%), 74(63.2%) and 75(64.1%) agrees to the fact that timely entry of ERP data highly contributes to organizations Efficiency .

Table 12 Descriptive statistics: Data entry without error and Real-time information (Source: (Own survey result , 2022)

S.NO 7	**Data entry without error and real-time information**	**Strongly agree /SA**		**Agree /A**		**%A (%SA +%A)**	**Neutral**		**Disagree D**		**Strongly disagree DS**		**%D (%SD + %D)**
	ERP/UMOJA/ allows data entry under one system with various module	**Fre**	**%**	**Fre**	**%**	**%**	**%**		**Fre**	**%**	**Fre**	**%**	
7.1		**29**	**24.8**	**81**	**69.2**	**94.00%**	**6**	**5.1**					**0%**
7.2	**ERP/UMOJA/ allows visualizing data into detailed reports, charts**	**18**	**15.4**	**74**	**63.2**	**78.6**	**20**	**17.1**					**0%**
7.3	**ERP/UMOJA/ adoption by UNECA optimized automated data**	**20**	**17.1**	**74**	**63.2**	**80.3**	**22**	**18.8**					**0 %**
7.4	**ERP/UMOJA/ provides the UNECA with timely information**	**29**	**24.8**	**75**	**64.1**	**88.90**	**12**	**10.3**					**0 %**
7.5	**ERP/UMOJA/ provides UNECA with adequate information**	**25**	**21.4**	**74**	**63.2**	**84.6**	**17**	**14.5**					**0 %**

Statement	Number	Mean	Std. Deviation
Data entry without error and real-time information	116	4.0621	.46916

Table 12 above also shows the mean and standard deviation to the Data entry without error and real-time information. The value of the mean 4.0621 represents that the respondents agree to the presence the variable Data entry without error and real-time information and this variable highly affecting the Organizational Efficiency. The standard deviation 0 .46916 indicates that most respondents agreed to the significance or impact of this variable to organizational efficiency.

Table 13 Descriptive statistics: Post implementation synergy between departments (Source: (Own survey result , 2022)

S.NO 8	Post implementation Synergy between departments	Strongly agree /SA		Agree /A		%A (%SA +%A)	Neutral		Disagree D		Strongly disagree DS		%D (%SD + %D)
8.1	After ERP/UMOJA/ adoption transparency of information between departments have improved	Fre	%	Fre	%	%	%		Fre	%	Fre	%	
		22	18.8	73	62.4	82.1%	21	17.9					0%
8.2	ERP/UMOJA/ fuels departmental interaction	19	16.2	61	52.1	68.3%	36	30.8					0%
8.3	ERP/UMOJA/ has positive effect on UNECA's departmental or internal communication process	13	11.1	68	58.1	69.2%	22	18.8	13	11.1			11.1 %
8.5	ERP/UMOJA/ has improved interaction across UNECA departments	20	17.1	64	54.7	71.8	28	23.9	4	3.4			3.4 %

Statement	Number	Mean	Std. Deviation
Post implementation Synergy between departments	116	3.8672	.59032

Table 13 above shows 22(18.8%) ,19(16.2%) 13(11.1%)and 20(17.1%) of respondents strongly agree that post ERP implementation departmental synergy is important .similarly 73(62.4%) 61(52.1) agrees to this idea. However 13(11.1%) and 4(3.4%) disagrees that departmental synergy , transparency of

information between departments doesn't improve post ERP synergy between department . Most respondents agreed importance of post ERP adoption synergy to organizational efficiency. Table 13 above also shows the mean and standard deviation to the Post implementation synergy between departments. The value of the mean 3.8672 represents that the respondents agree to the presence and influence of this variable highly affecting the Organizational Efficiency. The mean and standard deviation indicates that most respondents agreed to the significance of post implementation synergy.

4.4 Reliability analysis

Alpha was developed by Lee Cronbach in 1951to provide a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1. (Mohsen Tavako & Reg Dennick ,(2011). Cronbach's Alpha is a way to measure the internal consistency of a questionnaire or survey. (Zach Bobbitt, (2021). Cronbach results between 0.8 and 0.9 are consider good and 0.7 to 0.80 are acceptable. The Cronbach's alpha for this particular study with 116 number of respondents is 0.9555 which is considered standard.

Table 14. Reliability Statistics (Source: (Own survey result 2022)

Reliability (Item-Total Statistics)

Statement	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Squared Multiple Correlation	N
Effective resources	27.4017	7.635	.986	.898	.974	116
Top Management commitment	27.5266	7.455	.787	.910	.794	116
Efficiency and decision making	27.2663	7.643	.752	.913	.769	116
Member states and stakeholders	27.3370	7.902	.772	.912	.737	116
integrated business report	27.4663	7.948	.706	.917	.726	116
Employee satisfaction	27.3422	7.875	.799	.910	.704	116
Data without error	27.6301	7.721	.591	.930	.758	116
Post implementation synergy	27.2559	8.065	.663	.920	.713	116
collective, Cronbach's Alpha				0.9240		
Cronbach's Alpha Based on Standardized Items				0.9300		

4.5 Correlation analysis

Pearson product correlation of independent variables such as effective resource utilization and cost reduction, top management commitment and involvement, member states or stakeholders satisfaction and employee learning , satisfaction, integrated business reporting and post ERP implementation synergy between departments against the dependent variable Efficiency, effective decision making was found to be highly positively, correlated with statically strong R^2 values and p<.oo1. Hence the hypothesis drawn related to these independent variables were significantly supported. This shows that an increase in these independent variables would lead to increased efficacy to the dependent variable. The correlation coefficient (ρ) is a measure that determines the degree to which the movement of two different variables is associated (Steven Nickolas,2021)

Table 15: Correlation analysis ,Source (Own survey result,2022)

	V 3	V 1	V 2	V 4	V5	V 6	V7	V8
Efficiency, effective decision making- V 3	1							
Effective resource utilization and cost reduction - V 1	.616**	1						
Top management commitment -V 2	.673**	.647**	1					
Member states stakeholders satisfaction -V 4	.547**	.650**	.690**	1				
Integrated business reporting -V 5	.517**	.685**	.659**	.573**	1			
Employee learning and satisfaction -V 6	.294**	.405**	.480**	.374**	.697**	1		
Data entry without error, Real-time information V7	.414**	.598**	.443**	.376**	.816**	.619**	1	
Post implementation synergy between departments V 8	.538**	.597**	.679**	.687**	.801**	.562**	.434**	1

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

4.6 Regression analysis

4.6.1 Assumptions of regression analysis

There are four assumptions associated with a linear regression model and these are

Linearity assumption: is accurate for linear relationships accurate for linear relationships. A preferable method of detection is to examine residual plots (plots of the standardized residuals as a function of standardized predicted values) or the assessment of the significance present in the Anova table. (Osborn & Walters, 2002)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.279	1	.279	.829	.367[b]
	Residual	16.182	48	.337		
	Total	16.461	49			

a. Dependent Variable: Dependent variable 3

b. Predictors: (Constant), Variables all (Source: (Own survey result 2022, 2022)

Normality assumption: Normality analysis is commonly estimated in terms of range of values extrapolated from the responses. The lower bound is commonly placed as 15 percent beyond the quartile's values of the response data, Visual inspection of data plots, skew, kurtosis, and P-P plots give researchers information about normality (Osborn & Walters, 2002).

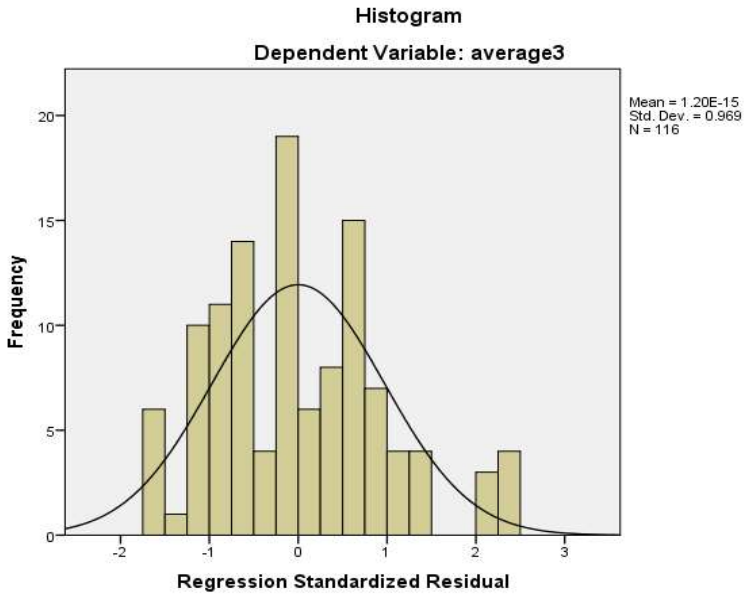
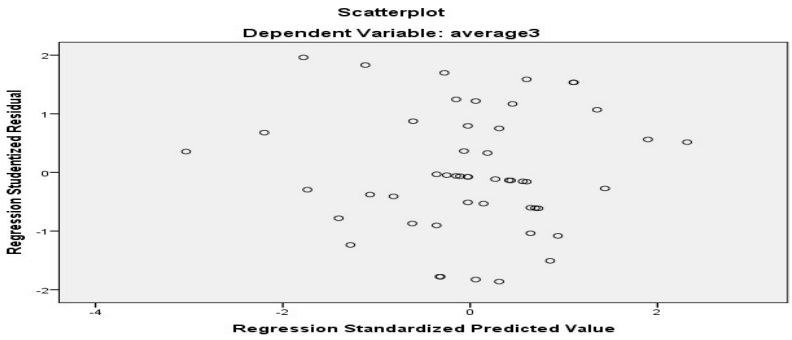


Table 25 : Histogram (Source: (Own survey result, 2022)

Homoscedasticity assumption is the assumption that the residual values of dependent variables, difference between the observed value and predicted dependent variables, are equally distributed. Open University UK, 2022). In other words, the spread of the residuals should be fairly constant at each point of the predictor variables ,or across the linear model ,should these values cluster and spread out then it is referred to as heteroscedastic. (Open University UK, 2022).



Source: (Own survey result, 2022)

Multicollinearity assumption: Multicollinearity occurs when the multiple linear regression analysis includes several variables that are significantly correlated not only with the dependent variable but also to each other (Shrestha, 2020). This is an issue because if there is high correlation

between the independent variables then this creates ambiguity in the source of change with in the regression model, making it insignificant. (Shrestha, 2020).

Regression analysis to explore the significance of Hypothesis drawn to assess the relationship of the independent and dependent variable.

H1. ERP adoption in view of effective resource utilization and cost reduction is positively and significantly related to ERP implementation paybacks,

Hypothesis H1 tests if ERP effective resource utilization is significantly related to organizational efficiency. The dependent variable was regressed to test H1. Thus independent variable has significantly predicts the dependent variable implementation payback. The independent variable/ ERP effective resource utilization/ plays a significant role in shaping the dependent variable ERP implementation paybacks, B=.631, P<0.001. These results clearly indicates the independent variable / ERP effective resource utilization/ has positive effects on the dependent variable / organizational efficiency/. Furthermore, the R^2= .616 depicted in the model explains that 61.6 % of the variance in the dependent variable/ ERP implementation paybacks.

H2. Top management commitments and supports on use and adoption of ERP are significantly and positively related to maintaining to ERP implementation paybacks. H3. Top management involvement has a positive and significant effect on post ERP implementation success.

Hypothesis H2 & H3 tests if Top management commitments and involvement in post ERP success has positive contribution to organizational efficiency. Thus independent variable has significantly predicts the dependent variable, B=.661, P<0.001. These results clearly indicates the positive effects of the independent variable / Top management commitments and involvement in post ERP success/. Likewise, the R2=.453 depicted in the model explains, that 45.3% variance in the independent variable to the dependent variable / ERP implementation payback /.

H4. Data entry without error and real time information resources positively and significantly increased organizational performance and leads to efficiency.

H6. Application of ERP enables business consolidated and produce accurate real time data which positively and significantly contributes to effective decision making.

Hypothesis H4 and H6 exam if ERP consolidated and real time information resources is significantly related to organizational efficiency. The dependent variable was regressed on the independent ERP consolidated and real time information resources with B=.659, P<0.001 and the R^2= .308 depicted that 30.8 % of the variance in the independent variable shows very low significance on the dependent variable implementation payback

H5. ERPs timely and organized reporting to donors or member states or better service to stakeholders is positively and significant to to ERP implementation paybacks

Hypothesis H5 tests if ERPs organized report to better service stakeholders is significantly related to organizational performance and efficiency. The dependent variable ERP implementation payback was regressed on the independent to test H5. Thus independent variable has significantly predicts the dependent variable efficiency, ERP effective resource utilization plays a significant role in shaping the dependent variable implementation payback , B=.588, P<0.001. These results clearly indicates the independent variable / ERP effective resource utilization/ has moderate effects on the dependent variable implementation payback with the R= .517 depicted that 51.7 % .

H7. ERP Post implementation employee learning and training positively and significantly contribute to ERP implementation paybacks.

Hypothesis H7 tests if ERP Post implementation employee learning and training is significantly related to organizational performance and efficiency. The dependent variable was regressed on the independent variable *employee learning and training* to test H7. Thus independent variable is not significantly predicting the dependent variable, B=.588, P<0.001. Besides, the R^2= .171 depicted that 17.1 % of the variance in the independent variable not significantly related to *employee learning and training* so H7 not supported.

H8. Post ERP implantation synergies between departments significantly and positively increases ERP implementation paybacks.

Hypothesis H8 tests if Post ERP implantation synergies between departments is significantly related to organizational performance and efficiency. The dependent variable was regressed on the independent variable to test H8. Thus independent variable doesn't significantly predicts plays the dependent variable ERP implementation payback B=.588, P<0.001. These results clearly indicates the independent variable has no significance on the dependent variable Further, the R= .289 depicted that 28.9 % of the variance in the independent variable versus the dependent variable ERP implementation.

4.6.2 Summary of Hypothesis

Table 16: Regression analysis summary of hypothesis source (Own survey result,2022)

Hypothesis of the study	Reason (Beta, T and P Value)				Decision
	Beta	T-value	P-value	R^2	
Effective resource utilization and cost reduction	0.631	8.349	.0000b	0.616	This independent variable is highly impacting the dependent variable and the hypothesis is supported
Top management commitment	0.661	9.722	.0000b	0.453	This independent variable is moderately impacting the dependent variable and the hypothesis is supported
Member states stakeholders satisfaction	0.588	6.447	.0000b	0.267	This independent variable is not impacting the dependent variable and the hypothesis is not supported
Employee learning and satisfaction	0.588	6.447	.0000b	0.517	This independent variable moderately influence the dependent variable and the hypothesis is supported
Data entry without error and Real-time information	0.659	7.256	.0000b	0.555	This independent variable is significantly affect the dependent variable and the hypothesis is supported
Post implementation synergy between departments	0.588	6.447	.0000b	0.517	This independent variable is moderately impacting the dependent variable and the hypothesis is supported

Model summary

As indicated in Table 23, with R^2 of .535 for the model, the independent variables in the model (effective resource utilization and cost reduction, top management commitment and involvement, member states or stakeholders' satisfaction and employee learning and satisfaction, integrated business reporting and post ERP implementation synergy between departments) could offer about 53.5% explanation of the variance in the dependent ERP implementation paybacks. This means that deviations in independent variables bases 53.5% change in dependent variable ERP implementation paybacks with 46.5% explained by other factors.

Table 17: Model Summary(Own survey result,2022)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.732[a]	.535	.505	.37113

a. Predictors: (Constant), 7 independent variable

b. Dependent Variable: 3 ERP implementation paybacks

4.6.2 Regression coefficients

Table 24 below on regression coefficients measures the discrete influence of each independent variable to deviations to the dependent variable. This is represented by the coefficient Betas of the predictors. In this table the variable real time information show negative 0.0302 beta and post implementation synergy between departments reads negative 0.049 the latter being insignificant negative.

Table 18: Regression coefficients (Source: (Own survey result,2022)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-.233	.309		-.755	.452		
	.110	.094	.105	1.169	.245	.368	2.715
Top Management commitment	.343	.075	.337	4.583	.000	.555	1.801
Member states stakeholders	.327	.096	.287	3.403	.001	.420	2.378
Integrated business reports	.475	.220	.410	2.162	.033	.083	6.986
Employee learning and satisfaction	.124	.071	.139	1.757	.082	.481	2.080
Real time information	-.302	.148	-.264	-2.040	.044	.179	5.580
Post implementation synergy between department	-.049	.124	-.054	-.396	.693	.162	6.188

a. Dependent Variable: 3 ERP implementation paybacks

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 Introduction

The main objective of this study was to assess benefits of ERP implementation at the United Nations Economic commission for Africa.

This chapter provides a summary of the major findings of the study, the conclusions and the recommendations for stakeholders to ensure continued organizational performance and efficiency post ERP adoption.

5.2 Summary of major findings

The finding indicated significant connection between the independent and dependent variables.

The regression analysis indicated effective resource utilization and cost reduction, Top management commitment and involvement implying significant impact on the dependent variable ERP implementation paybacks. On the other hand the independent variable Member states, stakeholders satisfaction doesn't shows significant impact on the dependent variable. Additionally, the independent variable Employee learning and satisfaction signifies moderate effect on the dependent variable. Furthermore, Data entry without error and post implementation synergy shows positive relation but very minimal impact on the topic of interest, ERP implementation payback.

The findings of the data review made on SPSS and regression coefficient analysis results shows that magnitudes of factors such as and post ERP implementation synergy between departments, employee learning and satisfaction have positive but moderate impact on ERP implementation payback.

However, member states or stakeholders' satisfaction, integrated business reporting, data entry without error, have demonstrated significant influence on organizational performance and added efficiency in post ERP implementation payback. Moreover, top management involvement and Effective resource

utilization, cost reduction reviled a very high significance or impact efficiency and implementation paybacks.

5.3 Conclusions

The main objective of the research was to assess the benefits of ERP after implementation or post go-live and their influence on organizational performance and efficiency. Using descriptive and explanatory type of research design and quantitative or numeric explanation of tendencies were assessed and analyzed by SPSS v20

As a result the researcher concluded that factors that were considered vital to successful post ERP implementation benefits were found and confirmed essential. UNECA should take those factors into consideration in realizing the post ERP adoption benefits. UNECA has to keep strengthening the positively related factors and work rigorously to improve factors like employee learning and satisfaction, Post ERP adoption synergy between department which indicated minimal effect and contribution to the optimization ERP paybacks. UNECA should also give more emphasis in solidification of factors such as integrated business reporting and appropriate use of the reports to meat stakeholders need.

5.4 Recommendations

Based on the findings deliberated above the following recommendations were proposed.

- UNECA should build significant emphasis on practice and appreciation of the integrated business reporting facility ERP provides.
- UNECA should establish ways of engaging staff members to consider themselves more included in getting the best out of the new system of ERP/UMOJA/. UNECA is required gage employees' learning and satisfaction towards organizational efficiency.
- UNECA should give more prominence to bringing post ERP adoption synergy between departments. The office needs to work on removal of any

actions leading to minimized assimilation or reading towards unified way of using the system as this is vital benefit of ERP post adoption

- Furthermore, UNECA need to retain and construct the best practices witnessed and utilize these benefits to the maximum. The activities proven in the research in contributing to the organizational performance and efficiency are effective resource utilization and cost reduction, top management commitment and involvement, member states or stakeholders' satisfaction and employee learning and satisfaction. UNECA being non-profit organization satisfying the needs of the stakeholders especially member states needs and requirements is curial.

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Appendix

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONIMICS, SCHOOL OF COMMERCE

Department of Business Leadership

Dear Sir / Madam:

In partial fulfilment of the requirements for the Degree of Master of Business leadership at the Addis Ababa University, school of Commerce. I am undertaking research on **"Assessment of ERP/UMOJA/ implementation Paybacks at the United Nations Economic commission for Africa -UNECA"**

Assessment of Post-Implementation of Enterprise Resource Planning System (ERP)/UMOJA/ with effectiveness, user Satisfaction, availability of real time data, improved funds and grants management, quality financial reporting and accurate information and its overall benefit: The Objective of the survey is to Assess and investigate benefits of ERP/UMOJA/ after go live in terms of organisational performance and effectiveness. This research is believed to produce results that can gage the use of ERP/UMOJA/ to the United Nations Economic commission for Africa performance and efficiency.

Your honest responses to each question and statement are extremely valuable to the outcome of this research. I would like to take this opportunity to thank you in advance for your kind participation, genuine and on time response to the questionnaire.

Thank you!

Meseret Worku

e-mail: mwmerci@gmail.com

Part I , Personal Data

Kindly circle or <u>underline</u> your choice in this part

Age

A. 20-30 B. 30-40 C. 40-50 D. 50-60

Gender A. Female B. Male

Number of years of experience

A. 0- 5 B. 5-10 C. 10-15 D. 15-20 E. 20-30 F. over 30 years

Level of Education

A. High school diploma B. Diploma C. Degree D. Masters E. PHD.

In which unit or section, you are working?

A. Accounts B. Budget C. Grants or trust D. Payments and Payroll

E. Treasury F. HRSS G. Procurement H. Logistic Finance

I. Administration J. ITUSS K. Travel L. Other please Specify

_____

Part II

Assessments of the ERP/UMOJA/ Post-Implementation benefit. Indicate whether you agree or disagree as to whether the following benefits have been achieved by your organization

Please rate degree of effects of adoption of ERP /UMOJA/ on UNECA's performance and efficiency by ticking **/√ / or putting (X)** the below choices.

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

1	**Effective resource utilization and cost reduction**	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.1	After UMOJA implementation UNECA has saved costs in its regular activities.					
1.2	ERP/UMOJA/ reduced or eliminated paper works and manual processes					
1.3	ERP/UMOJA/ facilitates quick information responded time					
1.4	There is reduction in time while performing day to day operations with UMOJA					
1.5	ERP/UMOJA/ is understandable, reliable /no fear of data loss					

1.6	ERP/UMOJA/ has reduced steps or processed to complete a transaction					
1.7	After ERP/UMOJA/ time taking to complete recording transactions has been minimized					
1.8	After UMOJA number of people involved in a transaction has reduced					
2	**Top management commitment**					
2.1	UNECA management is aware of the goals, objectives and benefits of ERP/UMOJA/					
2.2	UNECA Management is able to reduce operating cost because of ERP/UMOJA/ adoption					
2.3	ERP/UMOJA/ helps management's fast respond response to new opportunities					
2.4	UNECA management is able to get ERP/UMOJA/ financial reports to see the organizations performance					
2.5	With ERP/UMOJA/ UNECA management is able to streamline month end closing and reporting					
3	**Efficiency, effective decision making**					
3.1	UNECA management uses ERP/UMOJA/ as a tool to monitor performance and guide all system users					
3.2	ERP/UMOJA/ provides inputs to enable UNECA staff and management make the right decision					
3.3	ERPs/UMOJA/ analytical reporting can assist gain insight to better business performance					
3.4	ERP/UMOJA/ assists to work quickly and make smart and proactive decisions					

4	**Member states stakeholders satisfaction**					
4.1	UNECA is providing quality service to stakeholders because of ERP/UMOJA/ adoption.					
4.2	ERP/UMOJA/ has enabled UNECA submit timely and accurate reports to stakeholders and member states					
4.3	After implementing ERP/UMOJA/ UNECA management is able to automate fund and grant related information					
4.4	ERP/UMOJA/ has made support to stake holders and stakeholders easy					
4.5	UNECA improved its interaction with members states after implementing ERP/UMOJA/					
5	**Integrated business reporting**					
5.1	ERP/UMOJA/ contributes to UNECA departmental communications					
5.2	ERP/UMOJA/ enabled smooth flow of information through UNECA departments					
5.3	ERP/UMOJA/ helped one source of data or information					
5.4	ERPs/UMOJA/ built –in-reports modernizes UNECA reporting capacity					
5.5	Having unified database for UNECA enhanced reliability					
6	**Employee learning and satisfaction**					
6.1	ERP/UMOJA/ provides very good employees self-service environment					
6.2	UNECA employees are proven that ERP/UMOJA/ made their life easy.					
6.3	UNECA staff members are provided with adequate training on ERP/UMOJA/					

6.4	Trainings on ERP/UMOJA/ modules ensured employees positive contribution					
6.4	Are you, as Employee of UNECA, satisfied with the training provided to optimized use of ERP/UMOJA/.					
7	**Data entry without error and Real-time information**					
7.1	ERP/UMOJA/ allows data entry under one system with various module					
7.2	ERP/UMOJA/ allows visualizing data into detailed reports, charts					
7.3	ERP/UMOJA/ adoption by UNECA optimized automated data					
7.4	ERP/UMOJA/ provides the UNECA with timely information					
7.5	ERP/UMOJA/ provides UNECA with adequate information					
8	**Post implementation synergy between departments**					
8.1	After ERP/UMOJA/ adoption transparency of information between departments have improved					
8.2	ERP/UMOJA/ fuels departmental interaction					
8.3	ERP/UMOJA/ has positive effect on UNECA's departmental or internal communication process					
8.4	ERP/UMOJA/ implementation with central data location has created synergy, engaged employees for productivity					
8.5	ERP/UMOJA/ has improved interaction across UNECA departments					

Thank you

Descriptive Statistics for all variables

1	**Effective resource utilization and cost reduction**	**Number**	Mean	Std. Deviation
1.1	After UMOJA implementation UNECA has saved costs in its regular activities.	116	3.89	0.84
1.2	ERP/UMOJA/ reduced or eliminated paper works and manual processes	116	4.40	0.53
1.3	ERP/UMOJA/ facilitates quick information responded time	116	4.31	0.53
1.4	There is reduction in time while performing day to day operations with UMOJA	116	4.04	0.70
1.5	ERP/UMOJA/ is understandable, reliable /no fear of data loss	116	4.05	0.71
1.6	ERP/UMOJA/ has reduced steps or processed to complete a transaction	116	3.84	0.85
1.7	After ERP/UMOJA/ time taking to complete recording transactions has been minimized	116	3.93	0.78
1.8	After UMOJA number of people involved in a transaction has reduced	116	3.95	0.77
2	**Top management commitment**			
2.1	UNECA management is aware of the goals, objectives and benefits of ERP/UMOJA/	116	3.75	0.60
2.2	UNECA Management is able to reduce operating cost because of ERP/UMOJA/ adoption	116	3.55	0.74
2.3	ERP/UMOJA/ helps management's fast respond response to new opportunities	116	3.63	0.86
2.4	UNECA management is able to get ERP/UMOJA/ financial reports to see the organizations performance	116	4.11	0.68
2.5	With ERP/UMOJA/ UNECA management is able to streamline month end closing and reporting	116	3.91	0.74
3	**Efficiency, effective decision making**			
3.1	UNECA management uses ERP/UMOJA/ as a tool to monitor performance and guide all system users	116	3.98	0.70
3.2	ERP/UMOJA/ provides inputs to enable UNECA staff and management make the right decision	116	3.93	0.64
3.3	ERPs/UMOJA/ analytical reporting can assist gain insight to better business performance	116	4.15	0.52
3.4	ERP/UMOJA/ assists to work quickly and make smart and proactive decisions	116	3.96	0.82

4	**Member states stakeholders satisfaction**	116		
4.1	UNECA is providing quality service to stakeholders because of ERP/UMOJA/ adoption.	116	3.89	0.59
4.2	ERP/UMOJA/ has enabled UNECA submit timely and accurate reports to stakeholders and member states	116	3.90	0.58
4.3	After implementing ERP/UMOJA/ UNECA management is able to automate fund and grant related information	116	3.97	0.67
4.4	ERP/UMOJA/ has made support to stake holders and stakeholders easy	116	3.84	0.67
4.5	UNECA improved its interaction with members states after implementing ERP/UMOJA/	116	3.66	0.67
5	**Integrated business reporting**			
5.1	ERP/UMOJA/ contributes to UNECA departmental communications	116	3.91	0.61
5.2	ERP/UMOJA/ enabled smooth flow of information through UNECA departments	116	3.79	0.68
5.3	ERP/UMOJA/ helped one source of data or information	116	4.09	0.57
5.4	ERPs/UMOJA/ built –in-reports modernizes UNECA reporting capacity	116	4.04	0.48
5.5	Having unified database for UNECA enhanced reliability	116	4.03	0.56
6	**Employee learning and satisfaction**			
6.1	ERP/UMOJA/ provides very good employees self-service environment	116	4.22	0.62
6.2	UNECA employees are proven that ERP/UMOJA/ made their life easy.	116	3.91	0.73
6.3	UNECA staff members are provided with adequate training on ERP/UMOJA/	116	3.29	0.86
6.4	Trainings on ERP/UMOJA/ modules ensured employees positive contribution	116	3.47	0.85
6.4	Are you, as Employee of UNECA, satisfied with the training provided to optimized use of ERP/UMOJA/.	116	3.56	1.01
7	**Data entry without error and Real-time information**			
7.1	ERP/UMOJA/ allows data entry under one system with various module	116	4.20	0.51
7.2	ERP/UMOJA/ allows visualizing data into detailed reports, charts	116	3.91	0.68
7.3	ERP/UMOJA/ adoption by UNECA optimized automated data	116	3.98	0.60
7.4	ERP/UMOJA/ provides the UNECA with timely information	116	4.15	0.58

7.5	ERP/UMOJA/ provides UNECA with adequate information	116	4.07	0.60
8	**Post implementation synergy between departments**			
8.1	After ERP/UMOJA/ adoption transparency of information between departments have improved	116	4.01	0.61
8.2	ERP/UMOJA/ fuels departmental interaction	116	3.85	0.68
8.3	ERP/UMOJA/ has positive effect on UNECA's departmental or internal communication process	116	3.70	0.82
8.4	ERP/UMOJA/ implementation with central data location has created synergy, engaged employees for productivity	116	3.91	0.63
8.5	ERP/UMOJA/ has improved interaction across UNECA departments	116	3.86	0.73