# AN INVESTIGATION OF END-USERS ACCEPTANCE OF ENTERPRISE RESOURCE PLANNING SYSTEMS AT THE POST-IMPLEMENTATION PHASE IN MID-SIZED PUBLIC ORGANISATIONS IN TANZANIA

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PROJECT MANAGEMENT OF THE OPEN UNIVERSITY OF TANZANIA**

**2014**

## CERTIFICATION

The undersigned certifies that he has read and hereby recommends for the acceptance by the Open University of Tanzania a Dissertation entitled “An Investigation of End-Users Acceptance Of Enterprise Resource Planning Systems at the Post-Implementation Phase in Mid-Sized Public Organisations In Tanzania” In Partial Fulfilment Of The Requirements For The Degree Of Masters of Project Management at The Open University of Tanzania.

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Dr. Edephonce N. Nfuka

Supervisor

Date _____

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## DECLARATION

I, Mwemezi Alphonce Ndibalema, do hereby declare that this dissertation is my own original work and it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature ----------

Date ----------

## DEDICATION

I would like to dedicate this research work to my family as well as all who will read and make future references from this work.

## ACKNOWLEDGEMENT

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## ABSTRACT

The Enterprise resource planning (ERP) systems is, described as a package business software system with a database that allows an organisation to automate and integrate its business processes, share common data and practices across its units, in a real-time environment. This study aimed at investigating factors that affect the end-users acceptance of the ERP system during post-implementation phase in Tanzania. The quantitative approach was used. Three mid-sized public organisations in Tanzania who are at the post-implementation phase of ERP systems implementation were randomly selected and the 70 end-users in these organisations were administered with a questionnaire based on the UTAUT model. The model also assisted in generating the study hypothesis from its main dimensions. The hypotheses were then tested by regression analysis of the data generated by the questionnaire and the relationships among the study variables were established. The unit of analysis was individual respondents. The results show that performance expectancy, effort expectancy, social issues and facilitating condition affect end-user acceptance of ERP systems; all had a significance of below 0.05. The major conclusion of the study is that all the four dimensions (Performance expectation, Effort expectation, Social influence and Facilitating conditions) of the UTAUT model are indeed factors that influenced in varied magnitude the end-user acceptance of ERP systems in mid-size public organisations in Tanzania, Thus it is recommended that organisations need to pay close attention to these dimensions in order to improve end-user ERP acceptance.

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## ABBREVIATIONS AND ACRONYMS

| | | |
|---|---|---|
| CSF | - | Critical Success Factors |
| ERP | - | Enterprise Resource Planning |
| IS | - | Information Systems |
| SPSS | - | Statistical Package for Social Science |
| SSRA | - | Social Security Regulatory Authority |
| SUMATRA | - | Surface and Marine Transport Authority |
| TAM | - | Technology Acceptance Model |
| TPA | - | Tanzania Ports Authority |
| TRA | - | Tanzania Revenue Authority |
| USA | - | United States of America |
| UTAUT | - | Unified Theory of User Acceptance on Use of Technology |
| URT | - | United Republic of Tanzania |
| EWURA | - | Energy Water Regulatory Authority |

# CHAPTER ONE

## 1.0 INTRODUCTION

### 1.1 Background to the Research Problem

By definition an information system (IS) is a system of communication between people and is involved in the gathering, processing, distribution and use of information and widely used in many aspects (Davies, 2002). The Enterprise Resource Planning (ERP) system is an emerging technology that belongs to the scientific discipline of information systems. ERP definition was first brought out by Gartner Group, an American consultant company in 1990 (Wylie, 1990).

The concept of an ERP system distinctly embodies an IS designed to integrate and optimize the business process and transactions as well as other organisational tools and data by means of a database in an organisation. The ERP is an industry-driven concepts and systems, and is universally accepted by the industry as a practical solution to achieve integrated enterprise information systems (Moon, 2007; Motlwalla & Thompson, 2009). It is lured with promises of improved business productivity, streamlined business operations, and increased cost savings with the fact that it can also have a tremendous impact on an organisation due to its broad scope and performance (Tilley et al., 2007; Othman & Mukhtar, 2011). A number of organisations all around the world have engaged in launching initiatives to integrate ERP systems into their existing business environments.

Kumar & Hillegersberg (2000) state that; ERP systems have now been adopted by the majority of the fortune top 500 firms, and as the high end of the market becomes

saturated, ERP systems are filtering down to medium-sized organisations, and to regions beyond those initially penetrated in Europe and North America.While there is wide adoption of ERP systems in Europe and North America, developing countries lag far behind (Huang & Pavilia, 2001; Huang et al., 2004). However due to economic growth, developing countries such as Tanzania are becoming major targets for ERP vendors (O'kane, 2002; Davison, 2002; Huang et al., 2004).

The ERP Implementation is not a forthright endeavour. Poba-Nzaou et al., (2008) lamented that in spite of all the benefits, implementing ERP can be a risky undertaking. ERP's are also known to be overly expensive but in view of the implementing organisations the cost is the price to pay for an efficient and reliable way of operations of which it's intended realizable profit should far outweigh the cost. But even with the large investments ERP implementations failures and less than satisfactory productivity improvements are common. End-users reluctance or unwillingness to adopt or use the newly implemented ERP systems is often cited as one of the main reasons for ERP failures (Nah et al., 2004).

Once the company successfully implements the ERP, the attention moves forward to the most efficient use of the system. Especially since considerable resources have been invested in the ERP implementation, the best possible utilization of the system is anticipated. Indeed, the value of an ERP system draws from its effective and efficient usage and not so much from the system itself (Moon, 2007). It has been widely stipulated that identifying challenges relevant to local organisations is one way to increase the chances of a successful local ERP implementation, thus

imperative for organisations to be aware of the challenges and experiences of others by studying their success and failure's especially due to the complex and integrated nature of ERP as well as the large investment involved (Otieno, 2008; Leopoldo & Otieno, 2005; Alshawi et al, 2004).

In consideration of the studied literature above on the ERP systems and emergence of number of public mid-sized organisations taking initiatives to implement ERP systems in Tanzania, the researcher came to the conclusion that examining factors that affect end-user's acceptance in mid-sized public organisation in Tanzania is relevant in providing much needed Information in the afore mentioned context to better equip the ever growing numbers of implementers. Currently there are a considerable number of Tanzanian public organisations which are at the post-implementation stage of ERP implementations, such as EWURA, TPA, SUMATRA, SSRA and TRA to name a few. This is an ideal context for this study. Notably each of the organisations has implemented the IFMIS (Integrated Financial Management Information System) powered by the Epicor 9 ERP system.

Henceforth this study had attempted to seek a comprehensive view on what affects end user's acceptance of the ERP system in post-implementation phase within the Tanzanian context.

To the best of the authors knowledge such study had not been conducted in this context; thus the findings of the study will be beneficial for the locality that are or will venture into ERP implementations in future.

## 1.2 Statement of the Research Problem

The Enterprise Resource Planning (ERP) system is an emerging technology that belongs to the scientific discipline of information systems which large organisations in developed countries have been using since the 1990s. Recently, middle and small organisations in developing countries such as Tanzania are increasingly using the ERP systems.

The aim of these systems is to get the advantages of ERP which include positive effects on user's efficiency and the organisation production as well as positive business changes, streamlined business operations, and increased cost savings. A number of researches in both developed and developing countries (Shang & Seddon, 2002; Motlwalla & Thompson, 2009; Gattiker & Goodhue, 2005; Kwahk & lee, 2008) have indicated however that many successfully implemented ERP systems were at the technical implementation stage but encountered problems at post-implementation phase. Hence sustainability becomes an issue. Kwahk &lee (2008) stated that ERP systems could be implemented effectively from a technical perspective, but factors affecting success also depend on end-user's behaviours and actual use of the system.

Venkatesh et al., (2003) developed the UTAUT model which identifies factors to test user acceptance of systems such as ERP, the key factors identified are Performance Expectancy, Effort Expectancy, Social Influence and Facilitating conditions. Organisation need to pay attention to those important factors in order to improve the ERP system acceptance among end–users. The question is: Are these factors

applicable in Tanzanian organisations? Using similar tools of investigation that have also been used in other studies (Venkatesh et al., 2003; Chen & Zeng 2012), this study investigated the factors that affect acceptance and behaviour of the end-users of ERP systems in three middle sized public organisations in Tanzania. These organisations have been using EPICOR 9, which is an ERP system originating from the USA and coordinated locally by Ministry of Finance and a private consultancy firm. The aim was to measure significance of factors that affect end-users' acceptance of ERP systems and in doing so recommend on how to improve post-implementation phase of ERP implementations and ensure sustainability of the organisations and the ERP systems.

### 1.3 Research Objectives

The main objective of the study was to examine the factors that affect end-user's acceptance of the ERP systems at the post-implementation phase in public organisations in Tanzania.

The specific objectives are:

1) To find out whether the performance expectation affects the acceptance of ERP systems in mid–size public organisations in Tanzania.
2) To identify whether effort expectation affects the acceptance of ERP systems in mid–size public organisations in Tanzania
3) To assess whether social influence affects the acceptance of ERP systems in mid–size public organisations in Tanzania.
4) To examine whether the facilitating conditions affects the acceptance of ERP systems in mid –size public organisations in Tanzania.

## 1.4 Hypothesis

The study tested the following hypothesis

H1: Performance expectation positively affects the behavioural intentions (proxy for acceptance of ERP) in mid–size public organisations in Tanzania.

H2: Effort expectation positively affects the behavioural intentions (proxy for acceptance of ERP) in mid–size public organisations in Tanzania.

H3: Social influence positively affects the behavioural intentions (proxy for acceptance of ERP) in mid–size public organisations in Tanzania.

H4: Facilitating conditions positively affects ERP usage behaviour in mid–size public organisations in Tanzania.

H5: Behavioural intentions positively affect ERP usage behaviour in mid–size public organisations in Tanzania.

## 1.5 Significance of the Research

Several literature and views on ERP indicate the significance of this study. It has been observed for example that ERP implementation is a first wave called “go live” stage and post-implementation ERP is the second wave called “post go-live” stage (Yu, 2005). After reviewing the literature however, firstly it is evident that the dominant literatures focus on implementation and a dire need is growing for research on post-implementation phase (“post go-live” stage).

Secondly it has also been contended (Boersma & Kingma, 2005) that despite the promises and the continued popularity of ERP Systems, evidence is accumulating to demonstrate that obtaining benefits from an ERP is not as straightforward as those

selling and promoting such systems would like us to believe. Knowledge on factors that influence end-users acceptance of ERP highlights how to support the implementation in order to realize intended benefits.

Thirdly, although a number of challenges of ERP systems adoption and use have been identified, they are mainly experiences of companies in the developed countries. There is very limited empirical research on ERP implementation focused on developing countries including Tanzania. This study has contributed towards filling this gap.

Fourthly, there is no study in researcher's knowledge that has been carried out in Tanzania on the end user acceptance of ERP systems in the post-implementation phase. Therefore, the findings of this study add to the literature that researchers in the field of Information Systems in Tanzania can use.

Fifthly, the findings of this study will also aid the management teams of the public organisations in Tanzania that are implementing ERP systems to gain a better understanding of the likely challenges they may face due to the manner the end users accept the ERP systems and to enable them to put in place appropriate measures to mitigate the risk of end-user’s non-acceptance.

## 1.6 Organisation of the Dissertation

In this introductory chapter, the background to the overall context of the study of ERP systems, the trend of moving from western and large organisations to other

parts of the globe and mid-sized organisations in developing countries such as the United Republic of Tanzania is presented. This is followed by the statement of the problem, then the purpose of the study, the objectives, research hypothesis and the significance of this research to researchers, organisations and leaders of organisations that are implementing or intend to implement ERP systems.

Chapter 2 presents a review of the relevant literature. We highlight the development of the research model as well as the adopted research framework. The inter-relations between the subject areas, related studies and their implications for the study are also discussed as well as identifying the research gap which this study serve to bridge.

In Chapter 3, the research methodology is presented. The research design is a case study of mid-sized organisations in Tanzania that are implementing ERP systems. It also presents the approach to the study which is a quantitative approach and the data collection technique which is the questionnaires technique. It also highlights on the linear regression statistics which was used in analysis of the data.

Chapter 4 presents data analysis, presentation and discussion. The findings are presented according to the objectives of the study.

Chapter 5 consists of the summary of the study, conclusions and recommendations based on the findings.

# CHAPTER TWO

# 2.0 LITERATURE REVIEW

## 2.1 Overview

This chapter reviews literature published on Enterprise Resource planning (ERP) systems relevant to the focus of this research. The chapter is organized in the following manner, firstly will look at the conceptual definitions of the key terms to enable the reader to understand exactly what is meant by the different keywords of the research such as ERP and "User Acceptance". It will also review theoretical literature, empirical literature as well as establish the research gap that this study intended to fill. Finally the conceptual framework that guided this study is presented.

## 2.2 Conceptual Definitions

### 2.2.1 Enterprise Resource Planning

Klaus et al. (2000) and Al-Mashari et al (2003) assert that ERP systems are not easy to define, more so if the stakeholders points of view are to be taken seriously. Their assertion is supported by Boersma & Kingma (2005) who argue that there is no universally accepted definition of ERP. Different stakeholders of ERP will, depending on their position in the organisation, have quite different views of and experiences with ERP (Markus & Tanis, 2000). Therefore, individuals or group definitions vary according to their "awareness context".

Davenport (1998) defines an ERP system as "a packaged software product that can be bought "off-the-shelf" by an organisation in order to integrate and share its information and related business processes within and across functional areas". His

definition emphasizes the integration laid by ERP between various organisational networks; in particular functional divisions within organisations like finance, marketing, procurement, inventory, sales and distribution, human resources planning and payroll. However it downplays the implicit side of the ERP systems, for example business processes embedded in the ERP.

Deloitte Consulting ERP Second Wave report published in 1998 provides a useful starting point. According to Deloitte (1998) an ERP system is a package business software system that allows a company to:

i. Automate and integrate the majority of its business processes,
ii. Share common data and practices across the entire enterprise, and produce and access information in a real-time environment.

### 2.2.2 ERP Implementation Life Cycle

ERP Implementation is a cycle as Motlwalla (2009) points out that ERP implementation cannot be finished within one-time; it involves a continuous cycle of product release and support. As it is shown in figure 2.1, there are three typical phases of ERP implementation lifecycle: pre-implementation (pre-selection), implementation and post-implementation phase.

The (figure 2.1) which shows the implementation life cycle of ERP systems. Indicates that in the pre-implementation phase, organisations select the ERP vendors and evaluate the package they purchased, after-wards, project planning is necessary for specific ERP software implementation in the organisation. For the

implementation phase, organisations will mainly perform 6 activities in the middle of the figure, including training, re-engineering, and gap analysis and so on. Eventually, the organisation comes to post-implementation phase, as a going live step, it is very critical for the success of ERP implementation (Chen & Zeng 2012). This study has focused on the post implementation phase.

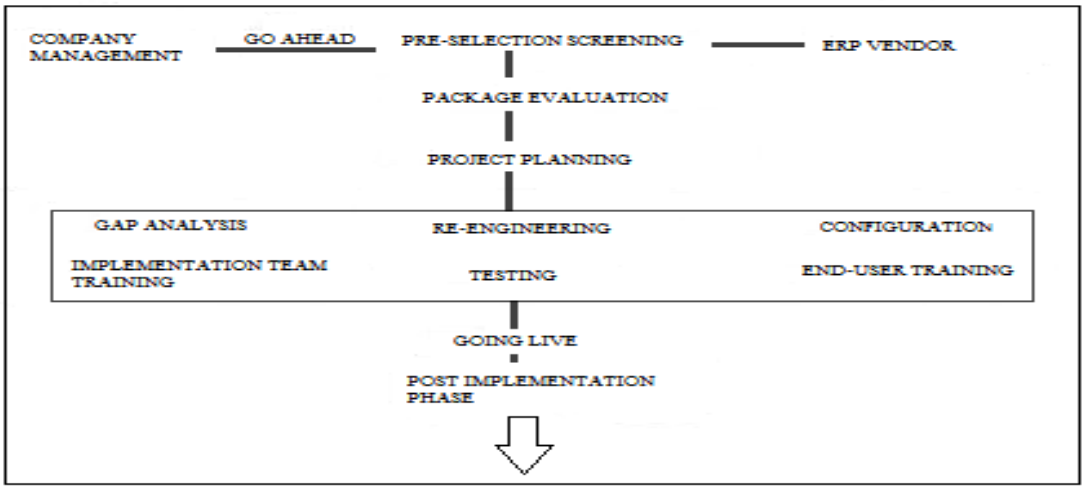


**Figure 2.1 ERP Implementation life cycle (Monk, Ellen & Brett, 2009)**

### 2.2.2.1 Operation and Post-Implementation Phase

ERP post-implementation phase is the period beginning with the “go live” in the lifecycle of an ERP system (Markus & Tanis, 2000; Ha & Ahn, 2013). After the Go-live stage, from a technical view, the ERP implementation might be successful, but success also depends on ERP end-user’s attitudes toward the system and actual use of the system (Boudreau, 2002; Kwahk & Lee, 2008).It has been argued that Only when employees are pleased with their direct system interaction can the full potential of the system be exploited (DeLone & McLean, 1992; Bhattacherjee, 2001; Au &Ngai et al., 2008). Similarly, organisations gain advantage from ERP system only to the extent that users accept and utilize them regularly and comprehensively. As

observed by Chen & Zeng (2012) this indicates that in order to improve efficiency and effectiveness of ERP systems in the post-implementation phase, factors that impact user satisfaction need to be researched by organisations.

### 2.2.3 User Acceptance

User acceptance can be defined as the demonstrable willingness within a user group to employ information technology for the tasks it is designed to support. Kwahk & lee,(2008) stated that ERP systems could be implemented effectively from a technical perspective, but factors affecting success also depends on end-user's behaviour's and actual use of the system. End-users reluctance or unwillingness to adopt or use the newly implemented ERP systems is often cited as one of the main reasons for ERP failures (Nah et al., 2004).

## 2.3 Theoretical Literature Review

In this part, different theories applied in user acceptance study in ERP system are reviewed.

### 2.3.1 Unified Theory of Acceptance and Use of Technology

Early studies that had been conducted on users regarding their technology acceptance behaviour were based on the model of information system, psychology and sociology. This often rendered researchers with the model selection problem and model construction problem, which made them add new construct or combine to a new model to perform related research. The combination however, inherently has the disadvantage of poor explanatory capacity (Venkatesh et al., 2003; Amoako

Gyampah & Salam, 2004). Therefore, Venkatesh et al. (2003) developed a unified theory of acceptance and use of technology (UTAUT), in order to help future research in the field of information technology acceptance behaviour. Based on this integrated model, researchers are able to find out more factors that influence user behaviour, and this model has further improved the explanatory capability and understanding of users.

Venkatesh et al, (2003) reviewed the past related research and found that the proven models in the past have different features, and those models were also confirmed in various fields, so they integrated eight models from the past literature. These models including technology acceptance model (TAM), Model of PC utilization (MPCU), theory of reasoned action (TRA), social cognitive theory (SCT), Motivation model (MM), theory of planned behaviour (TPB), a Combined theory of planned behaviour/technology acceptance model (C-TAM-TPB) and diffusion of innovations theory (IDT) (Chen & Zeng 2012). Out of these models they developed a new model known as UTAUT.

The new framework integrated the previous eight models and related concepts into four main dimensions for UTAUT: performance expectancy, effort expectancy, social influence and facilitating conditions; as well as four control variables: gender, age, experience, voluntariness of use.

Venkatesh et al. (2003) believes that the UTAUT model can be regarded as useful tool for managers, when managers are trying to bring in new technology. UTAUT

can be used to measure the newly introduced technology and can predict and explain the behaviour of users on information technology acceptance. The empirical results show that the explanatory capability of UTAUT on the user behaviour is higher than any of those models in the past (Venkatesh et al., 2003). In fact, ERP system is an application of information technology, this study will use the UTAUT model to explore the behaviour of users on ERP acceptance, and together investigate the impact of the variables on the behaviour of users' ERP acceptance.

### 2.3.2 Factors that Influence ERP Acceptance

Researchers have different views on the factors that affect the ERP system acceptance. It is said that a better understanding of these factors would enable more effective organisational interventions that lead to increased acceptance and use of systems (Venkatesh & Davis, 2000). So we have also reviewed a number of existing literatures that explains factor of influence on ERP acceptance.

Agarwal and Prasad (1999) and Rogers (2003) proposed a factor called Technological innovativeness; it describes the extent to which a person is willing to try a new information technology (Agarwal & Prasad, 1999). There is another factor that was proposed in 2001, named User manual helpfulness, it explains the extent to which a person believes that lacking of user manuals is the reason that lead to the failure of ERP performance (Kelley, 2001). In 2004, a new factor called "adapt to the business processes" appeared, it illustrates that to adapt the business processes from an end-user's perspective depends on the extent to which the end-users' or organisations' requirement are fulfilled by the ERP system (Nah, Tan & Teh, 2004).

Recently, Bobekand Sternad (2010) have proposed “ERP training” as a factor that affect users ERP acceptance, it indicates whether the amount of formal and in-formal training a user think he or she has received is enough. Additionally, Gattiker and Goodhue (2005) has pointed out that “system data quality” also is an influencing factor. , It is important to achieve accurate data in order to improve the task efficiency (Gattiker & Goodhue, 2005). Regarding the support provided by ERP system, Boudreau (2002) has concluded a factor based on ERP support, which shows the amount of ERP support as perceived by users is critical to users’ successful ERP usage (Boudreau, 2002).

## 2.4 Empirical Literature Review

In the empirical literature available end-user reluctance or unwillingness to adopt or use the newly implemented ERP system is often cited as one of the main reasons for ERP failures. (Umble, 2003) observes that Enterprise resource planning (ERP) systems are highly complex information systems. The implementation of these systems is a difficult and high cost proposition that places tremendous demands on corporate time and resources. However Many ERP implementations have been classified as failures because they did not achieve predetermined corporate goals

The study of Nah et al. (2004) conducted in the USA stated that despite the huge investments by organisations in ERP implementation, maintenance and user training, ERP implementations failures and less-than-satisfactory productivity improvements are common. Their study used four cognitive constructs: perceived usefulness, perceived ease of use, perceived compatibility and perceived fit; the same were hypothesized as the antecedents. They came to the conclusion that all the factors had

effects on user acceptance. Also that user acceptance of ERP systems remains a complex and important phenomenon of which future research is needed to investigate other factors that contribute to ERP user acceptance and to study the importance and consequences of end-user acceptance in the ERP context. Nah et al. (2004) formed one of the bases for this current study since the researcher wanted to fill the void which their study indicated existed on the subject.

Chen & Zeng (2012) study in large companies in china used the UTAUT Model and applied the Regression Analysis techniques arriving to the conclusion that all dimensions of UTAUT affected user acceptance with the two of Performance Expectation and Effort Expectation having the greater effects. Another aspect of their findings was that a greater number of users were female to the effect of 81.48%.This study is based on Chen & Zeng (2012) study, the difference being the size of the organisations and Tanzanian context.

## 2.5 Research Gap

Most of the existing literature focused on either evaluating the appropriateness of the ERP system software, vendors selection, consultants, or identifying critical successful factors (CSFs) affecting ERP selection and implementation

Regarding research studies, most focused on the selection and implementation phases. Investigation on the factors of end-users acceptance of ERP system such as the study on post-implementation phase in china (Chen & Zeng 2012) are rare. There are no studies on the ERP end-user acceptance in developing countries like Tanzania.

This study intended to fill the following gaps.

i. Lack of literature on end-user acceptance of ERP in Tanzania by investigating the End users acceptance of ERP systems at the post implementation phase in mid-sized public organisations in Tanzania.

ii. Assessing whether the UTAUT model dimensions of end-user acceptance can apply in different context, by testing the application of UTAUT on the End-user acceptance of ERP within the context of mid-sized public organisation in Tanzania.

## 2.6 Conceptual Framework

This research adapted the unified theory of acceptance and use of technology (UTAUT) model. The UTAUT model is a conceptual framework that was developed by Venkatesh et al. (2003). The UTAUT was selected because empirical results show that its explanatory capability on the user behaviour is higher than any of those models used in the past (Chen & Zeng 2012).

According to (Venkatesh et al., 2003) the main dimensions and control variables of UTAUT model include the following:

1. Performance Expectancy

It is defined as the extent to which a person feels that using the system will be helpful for work, including five sub-dimensions: perceived usefulness (TAM/TAM2), job-fit (MPCU), extrinsic motivation (MM), relative advantage (IDT) and outcome expectation (SCT).

2. Effort Expectancy

It is defined as the extent of the ease of use when a person uses the system, including three sub-dimensions: perceived ease of use (TAM/TAM2), ease of use (IDT) and complexity (MPCU).

3. Social Influence

It is defined as the extent to which an individual feels the influence by the people around, including three sub-dimensions: social factors (MPCU), subjective norm (TRA, TAM2, TPB) and image (IDT).

4. Facilitating Conditions

It is defined as the extent to which an individual feels the support on the system use by the organisation in related technology, equipment perspective, including three sub-dimensions: compatibility (IDT), facilitating conditions (MPCU) and perceived behavioural control (TPB).

Note that the Performance Expectancy, Effort Expectancy and Social Influence affect behaviour intentions which in turn affect user behaviour; while facilitating conditions directly affect user behaviour. Besides the four main dimensions above, there are also four variables that affect the user behaviour indirectly. They include age, gender, experience and voluntariness of use. For the purpose of this study, the voluntariness of use has been omitted because of the scope and time required to research aspects of voluntariness. Figure 2.2 shows the modified model of UTAUT.

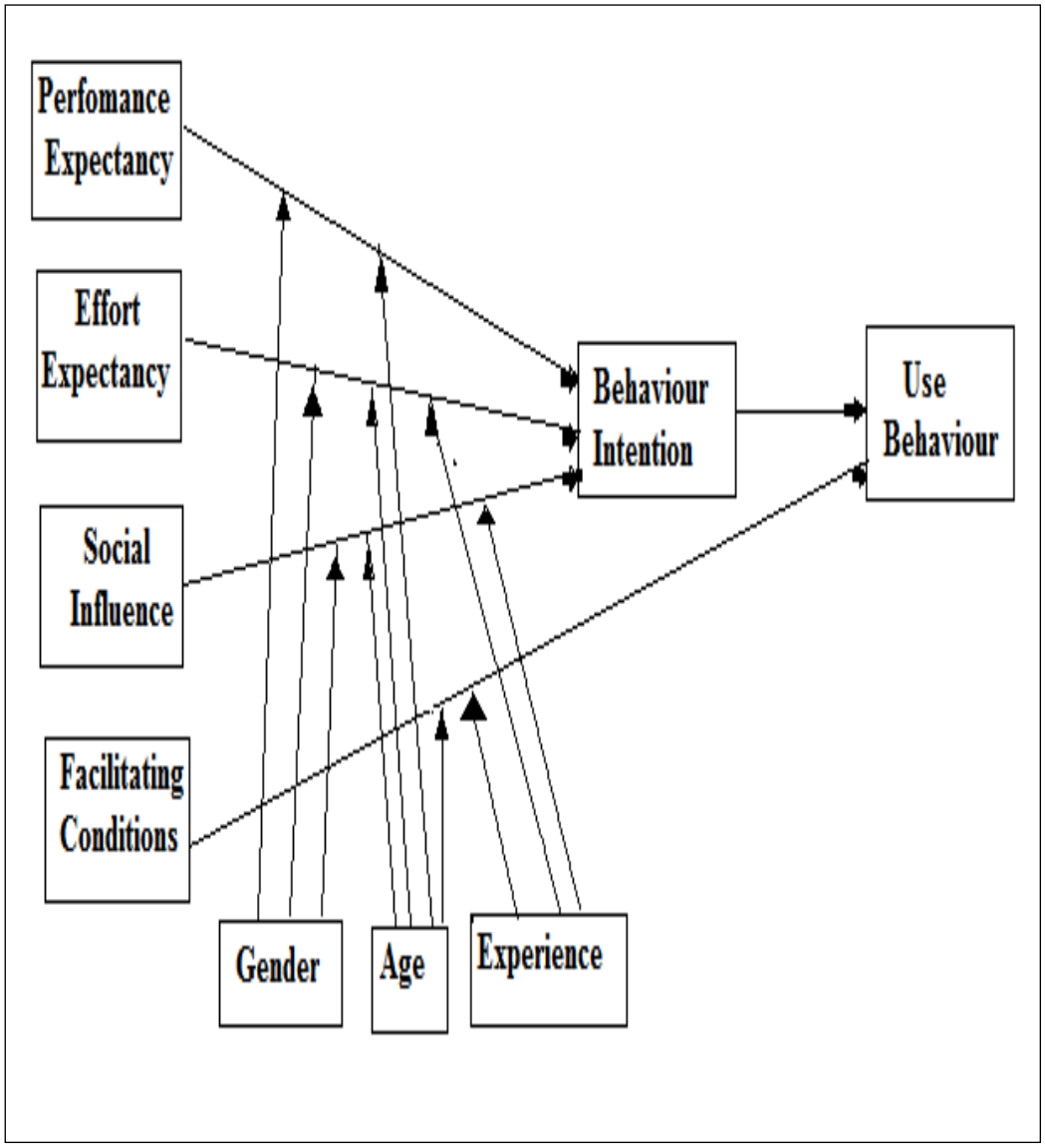


**Figure 2.1 Modified UTAUT Model adapted from Venkatesh et al., (2003)**

# CHAPTER THREE

# 3.0 RESEARCH METHODOLOGY

## 3.1 Overview

The aim of this chapter is to provide the skeleton through which the objectives of this study are achieved. We discuss the research design, research approach, choice of strategies, data collection techniques that were used and how the researcher has managed the empirical data.

## 3.2 Research Approach, Strategies and Time Line

The Quantitative approach was adopted for this research. This approach involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion (Kothari, 2004).

This study which investigated factors affecting end-users' acceptance of ERP systems at the post-implementation phase in mid-sized public organisations in Tanzania; involved testing the factors which have been outlined in UTAUT model. These factors include: Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions. Through the deduction approach we deduced the hypotheses based on those factors.

To test these hypotheses the author utilized the characteristics in deductive research, the collection of quantitative data and generalization (Saunders et al., 2007). Data was collected from ERP end-users at 3 mid-sized public organisations in Tanzania. According to Saunders et al. (2007) deductive research can be used to select samples

of sufficient numerical size, in order to be able to generalize statistically about regularities in human social behaviour.

The Cross Sectional study time line was used due to the relatively short time which was available to conduct the research (Saunders et al., 2007). The whole research activity took a total of 22 Weeks.

## 3.3 Research Area

The research studied three public organisations in Dar es Salaam city, Tanzania. These three organisations are all public authorities of Tanzania, which have implemented an ERP system namely EPICOR 9 in recent years and are all in the post-implementation phase. The city of Dar es Salaam is the home to each of the organisation's Headquarter where all the different end-users are stationed. The selected research area fits the criteria of being mid-sized public organisations that have implemented ERP systems and best poised to allow the researcher to study the end-user acceptance of the ERP systems. In this final report we have given pseudonym names to the participating organisations as: 1. ALPHA; 2.SIGMA and 3.OMEGA to adhere to one ethical condition of anonymity.

## 3.4 Sampling Design and Procedures

### 3.4.1 Population Sample

The population sample of this study was all end-users of ERP at each organisation in the study. Through sampling procedure (below) the sample ended up consisting of 1. ALPHA (34), 2.SIGMA (21), and 3.OMEGA (23); were totalling to 78.

### 3.4.2 Sampling Procedure

A number of sampling procedures were employed to get the population sample. Random sampling was used to select three organisations out of seven mid-sized public organisations in Tanzania that are at the post-implementation phase of Epicor 9 ERP systems implementation. Seven names of organisations were written on 7 pieces of paper which were placed in a small box and three were randomly picked. The 3 picked names formed the sample. Cluster sampling was employed to get respondents. Through this cluster sampling all end users from the three participating organisations were selected. Therefore 34 respondents were from ALPHA organisation; 21 from SIGMA and 23 from OMEGA. All 78 end-users of the three public organisations were sampled to participate in this research study.

## 3.5 Unit of Analysis

The population for this research includes the Individual end-users of ERP systems in mid-sized public organisations in Tanzania. Tanzania is experiencing a growing number of different public organisations implementing ERP systems making them account for a lot of ERP system end-users in Tanzania.

## 3.6 Methods of Data Collection

### 3.6.1 Questionnaires

A self-completion questionnaire was administered to the respondents in the organisations under study. A self-completion questionnaire is the one where the respondents are asked to fill in their responses on the specific questions. The questionnaire included closed ended questions and was the source of primary data for

the study that enabled quantitative analysis to be conducted (Appendix 2).

### 3.7 Data Processing and Analysis

The study used a quantitative approach whereby the data collected is statistically analysed to meet the study objectives. Using the Statistical Package for Social Science (SPSS), the study hypotheses were tested through simple linear regression analysis.

Regression analysis is basically a statistical procedure for estimating relationships among variables. The nature of the study hypotheses prompts the use of simple linear regression analysis, this is because there is a dependent variable i.e. behavioural intention being evaluated by a single independent variable at a time i.e. performance expectance, effort expectance and social influence. Furthermore we had usage behaviour as a dependent variable evaluated by facilitating conditions and behavioural intentions as independent variables each separately. Age, Gender and Experience these items are used as control variables in the study. Prior to conducting regression analysis, the data was tested for “Outliers” using cooks distance (should be less than 1); “Multicollinearity” using Variance Inflation Factor (VIF) (Should be less than 2.5) and “heteroscedasticity” by examining a scatterplot of the residual plotted against the predicted values and results of which are presented later in the chapter .

### 3.8 Validity and Reliability

The study tested for both validity and reliability

### 3.8.1 Reliability

In testing for reliability of the instruments the Cronbach's Alpha of the scales of the dependent and independent variables of the study were computed and the summary of results are in Table 3.1.Cronbach's Alpha <).35 means low reliability, 0.35< Cronbach's Alpha < 0.7 means acceptable, if Cronbach's Alpha > 0.7, it shows highly reliability.

**Table 3.1 Reliability analysis (n = 70)**

| Indicators in UTAUT Constructs | Cronbach's Alpha | Number of Items |
|---|---|---|
| Performance Expectancy | 0.726 | 4 |
| Effort Expectancy | 0.739 | 4 |
| Social Influence | 0.624 | 4 |
| Facilitating Conditions | 0.771 | 4 |
| Behaviour Intention | 0.761 | 3 |

Source: Field Data (2014)

As shown in table 3.1, most of the indicators in the UTAUT construct show good reliability as the Cronbach's Alpha statistic for each of them is higher than 0.7, although one of the indicators i.e. Social Influence statistic is lower than 0.7, but it is still between 0.35 and 0.7, which means it is still acceptable. Hence there exists high internal consistency among different indicators in the UTAUT model, and construct of the UTAUT model is suitable for testing the user acceptance of ERP systems in the 3 mid-sized public organisations in Tanzania.

### 3.9 Validity

A panel of experts from Soft Tech consultancy was consulted to determine the validity of the study instruments; the experts included the manager of ERP Technical support implementation, the manager of ERP Application Support and the manager of Software Development. The study instruments were therefore in line with the expert's views.

### 3.10 Check Assumptions for Regression Analysis

In order to accurately predict results from the regression analysis various assumptions must be met by the collected data, the study therefore tested for

"Outliers"-Using the cooks distance, it was determined that the study data was not in any way influenced by outliers. The minimum and maximum values of cook distances did not exceed one. The values were 0.000 and 0.223 respectively.

"Multicollinearity"- in order to determine whether multicollinearlity influenced the data collected, a collinieality diagnostic was selected on the SPSS. The Variance Inflation factor (VIF) was used as a means of determining the potential effects of multicollinerality. The results indicated that there were no collineality problems with the study variables as the VIF of the study variables were less than 2.5. I.e. Performance Expectancy = -2.313, Effort expectancy =1.8393 and Social Influence was = 2.285 and Facilitating Condition = 1.216 for more details see (Appendix 1)

Furthermore "heteroscedasticity" was tested and was not apparent this was done by examining a scatterplot of the residual plotted against the predicted values giving a normal curve (Appendix 1).

# CHAPTER FOUR

## 4.0 RESEARCH FINDINGS, ANALYSIS AND PRESENTATION

### 4.1 Overview

In this Chapter, the data which was collected from the field is presented, analysed and discussed. The study intended to investigate the factors affecting end-user's acceptance of the ERP systems at the post-implementation phase in mid-sized public organisations in Tanzania.

The Chapter deals with the characteristics of End-users of the ERP systems from the sample frame. Frequency distribution was used to organize data, to give meaning to the response rate and facilitate insight.

The data was analysed using Statistical Package for Social Science (SPSS), which made cross tabulation of variables easy. The Microsoft Excel 2010 has been used to generate tables, graphs and charts.

Descriptive explanations have been undertaken where the reasons or justification has been cross checked with the rich bodies of knowledge in place.

### 4.2 Characteristics of Respondents

In this study, the sample characteristics are the characteristics of the end-users of ERP systems in three mid-sized public organisations. The characteristics observed included age, gender, and the level of experience of the respondents in terms of working at the organisation, using computers as well as usage of the ERP systems.

The reviews of these characteristics provide insight to why the answers of the respondents may vary. A sample size of 70 end-users who responded to the survey out of 78 who had originally being administered with the research questionnaire was taken and the following characteristics were observed.

### 4.2.1 The Age of Respondents

The age range for the majority of the respondents was between 25 and 39 years. This age category had a total of 38 respondents, making up 54.3% of the total respondents. The second frequent occurring age group was that of the ages between 40 and 54 years; they were 20 respondents. This group constituted 28.6% of the sample. The third frequent age group was that of less than 25 years which had 9 respondents (12.9%). The minority group of the respondents was in the ages above 54 years. The age structure shows that the end-users of ERP systems constitute a mixture of the different age groups.

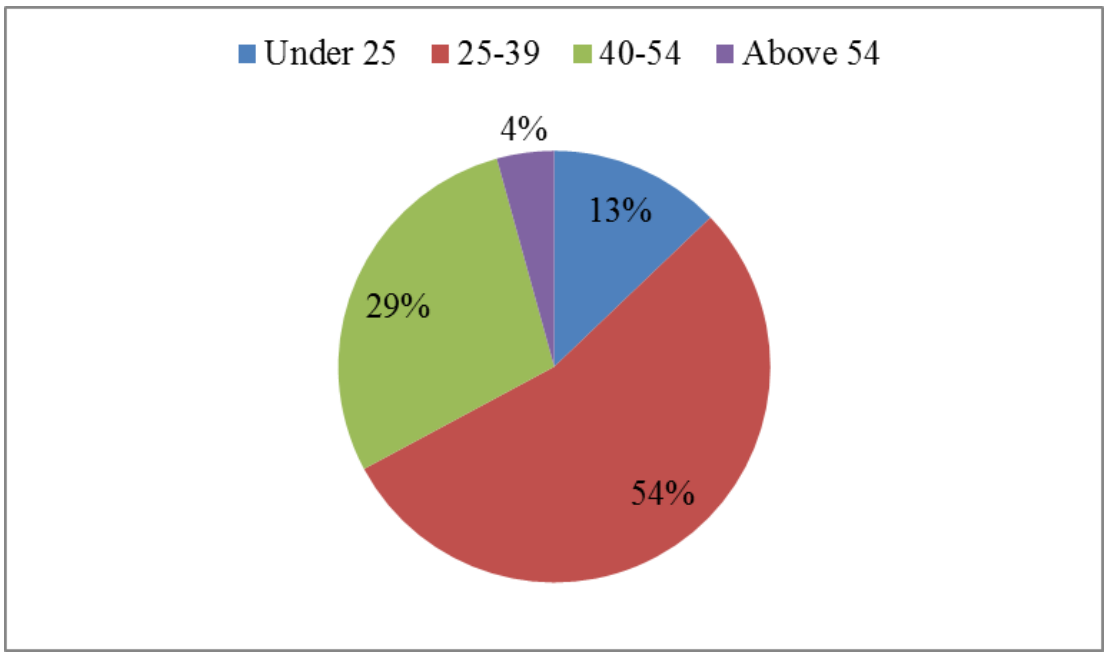


**Figure 4.1 Pie Chart Showing Age of Respondents**

It was found out that a majority of the End-users to be of middle age with those pertaining to the two categories catering for a larger frequency of the respondents. The summary of these findings are shown in the pie chart above (Figure 4.1).

### 4.2.2 Sex of Respondents

The sex of the respondents was not taken into consideration on acquiring the sample rather the sample was selected on the merit of respondents being end-users of the ERP systems in the studied organisations, hence the classification of gender serves to show the frequency of usage among men and women.

It was found that 40 of the respondents were of the male gender accounting for 57.1% of the total number and 30 were Female accounting for 42.9 % which shows that in ERP usage in this studies sample the number of Male is slightly higher than that of Female (Figure 4.2).The summary of these findings are shown in the pie chart below:

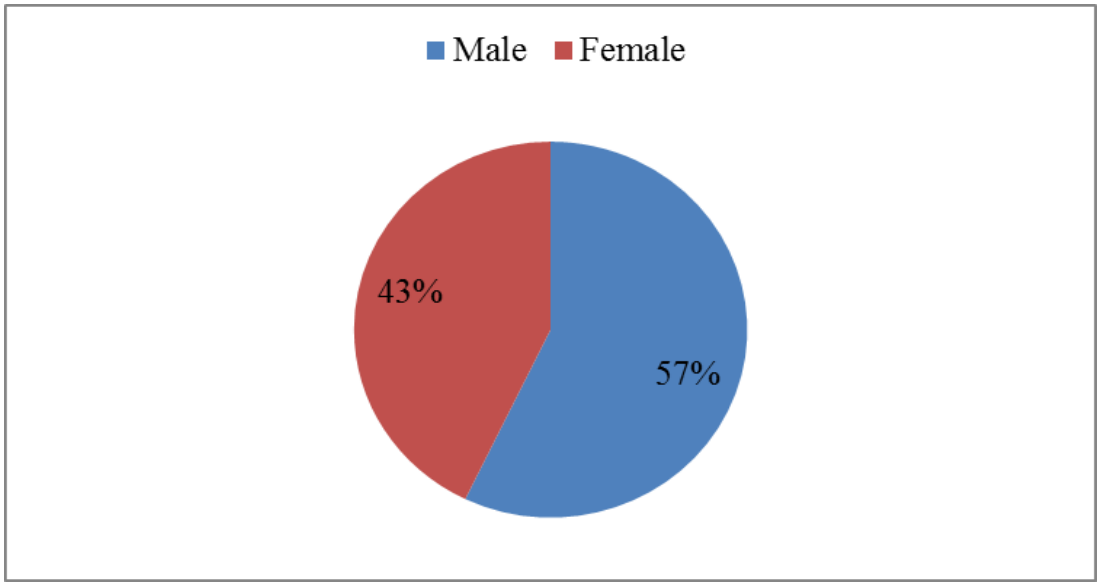


**Figure 4.2 Pie Chart showing the Sex of Respondents**

### 4.2.3 Experience with the Organisation

The experience in which each respondent had within their particular organisations was taken in an attempt to gauge whether that also plays a part in affecting the acceptance level of the respondents.

The data shows that majority of the end-users of ERP systems in our study were relatively new to the organisations with the group of 4-8 years constituting to 40% of the overall data and that of 1-3 years taking 37.1 %. The third group with a large frequency of respondents was 9-12 years having 12.9 %. This followed by13-20 years and 21 years or more groups having 7.1% and 2.9% respectively. The pie chart below is a representation of the same data (Figure 4.3).

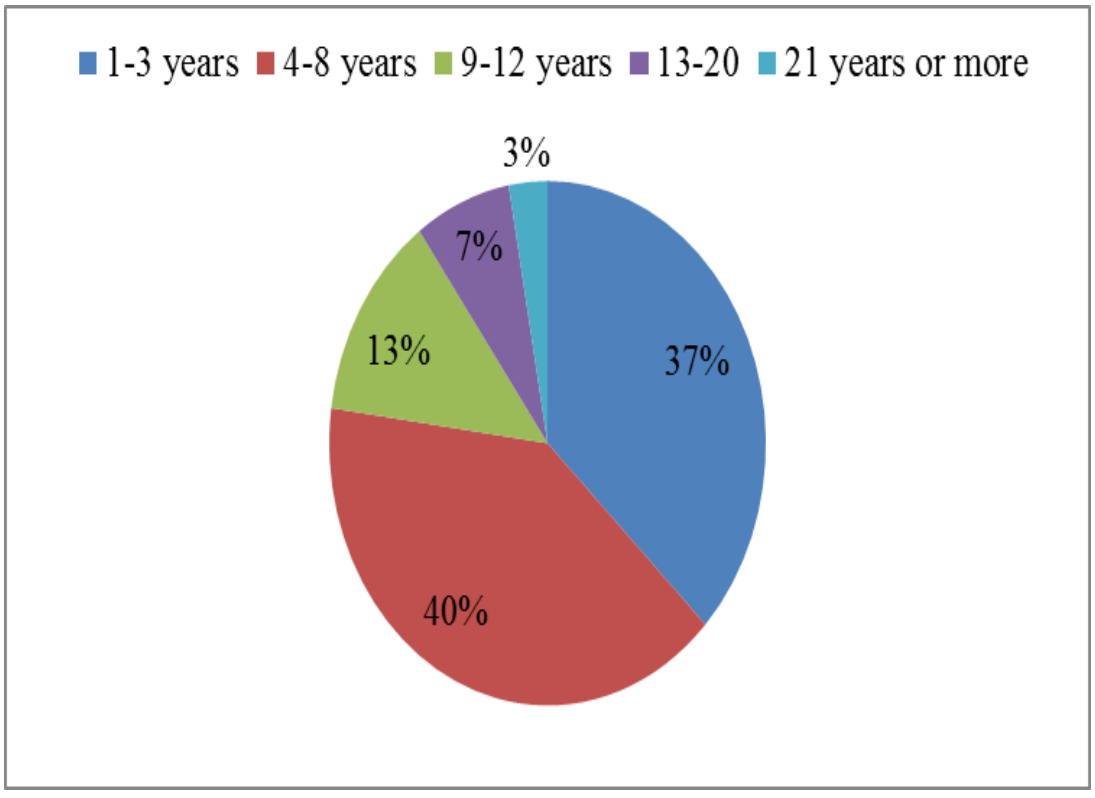


**Figure 4.3 Pie Chart showing Respondents Experience within their Organisations**

The above results (Figure 4.3) shows that the end-users of ERP systems from our study are mainly consisting those who are relatively new to the organisations this could simply mean that with introduction of ERP brings about the need for recruitment to satisfy the new demands placed on the individual in operating them; hence the higher frequency in users with less experience within the organisation.

### 4.2.4 Experience with Using Computer

The experience of the respondents on using a computer was also taken into consideration in the studied demographics. Below is the pie chart (Figure 4.4) displaying and depicting the results of the respondents experiences in using computers, the results show that the majority of the respondents have 4-8 years' experience with computers accounting to 40% of all the sample population, those having more than 8 years had the second highest frequency of 36% and 1-3 years as well as less than 1year having 21% and 3 % respectively indicating the end users of the ERP are mainly those who have a strong base on computer usage

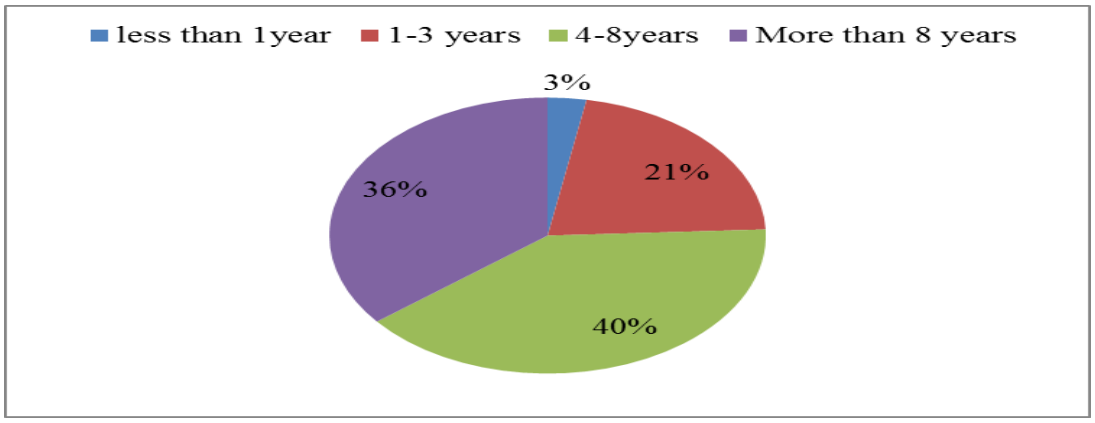


**Figure 4.4 Pie Chart Displaying the Respondents Experience on Using Computer**

### 4.2.5 Experience with Use of Enterprise Resource Planning Systems

We also looked at the experience of the Respondents on using ERP systems up to the time that this study was taking place in an attempt to grasp better the different dimensions of our respondents

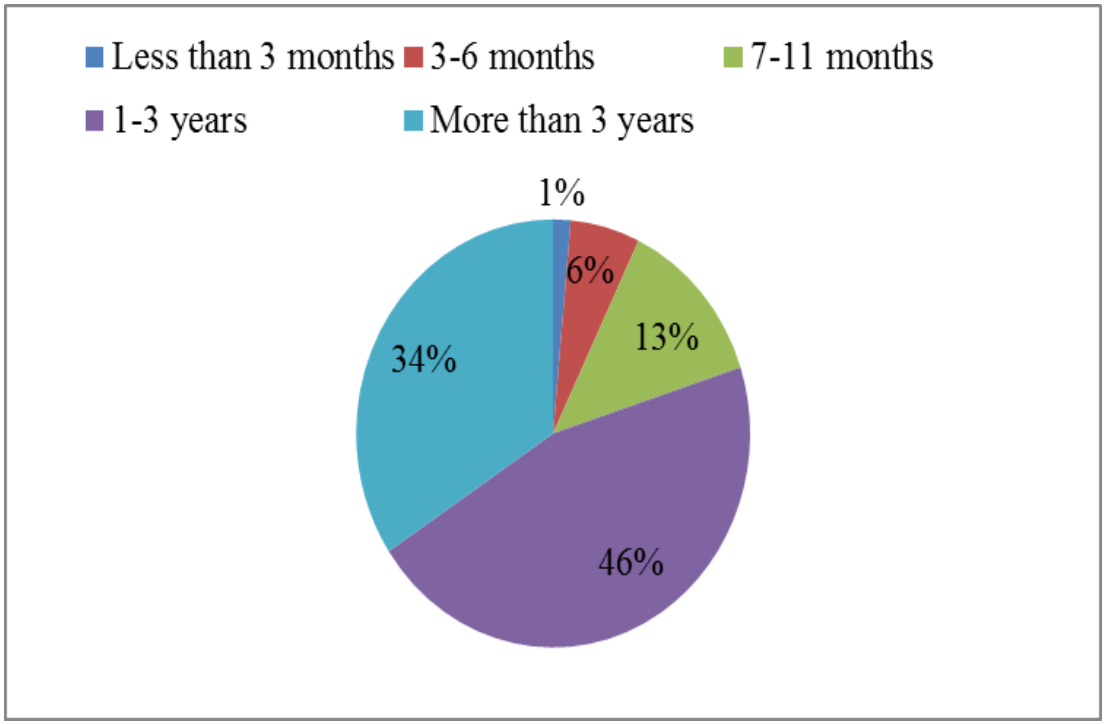


**Figure 4.5 Pie Chart showing the Respondents Experience with ERP**

The above pie chart (Figure 4.5) show the different experience the respondents have with using ERP systems, with a large group of the respondents falling on the 1-3 years category which accounts to 47% of all of our respondents., The other group is that of 3years and more having 34% where as 7-11 months,3-6 months and less than 3 months form 13%, 6% and 1% respectively.

## 4.3 Presentation of Findings

The results from the simple linear regression analysis are presented here; In order to test the five hypotheses, which we derived from the four dimensions in UTAUT

model (Performance Expectancy, Effort Expectancy, Facilitating Conditions and Social Issues) in relation to behavioural Intention and use behaviour were analysed by using simple linear regression analysis. The basic procedure of simple linear regression analysis could be determined into two aspects: used in regression analysis and guarantees that the "best" straight-line slope and intercept will be calculated (Wiley, 2003).

### 4.3.1 H1. ERP Performance Expectancy Positively Affects Behavioural Intention

Data collected indicates that the independent variable is performance expectancy which corresponded to the dependent variable (Behaviour Intention). The B coefficient for performance expectancy is 0.514. The ERP performance expectancy is positive to behavioural intention. Taking into account the inclusion of the influences of Age and Gender of the respondents the regression model explained 36.6% variability in dependent variable (Behaviour Intention).

The value of standardized beta coefficient is 0.563. The Sig. value is smaller than 0.05, so the model could significantly predict behaviour Intention. The effects of age and Gender were controlled during the regression analysis of which the presence of our predictor variable Performance Expectancy improved the influence on the Behaviour intention by 29.9% i.e. change in R squared is equal to 0.229.Furthermore the F value significantly improved from 3.647 to 8.974 Based on this analysis the H1 is accepted. The results are displayed in table 4.1.

**Table 4.1 ERP Performance Expectancy Positively Affects Behavioural Intention**

| Construct (Hypothesis) | Beta | Standardised beta | Adjusted R square | Change in R square | Significance |
|---|---|---|---|---|---|
| H1 | 0.514 | 0.563 | 0.366 | 0.229 | 0.000 |

Source: Field Data (2014)

### 4.3.2 H2. ERP Effort Expectancy Affects Behavioural Intention

Based on the survey, the independent variable is effort expectancy which corresponds to the dependent variable (Behaviour Intention). The B coefficient for effort expectancy is 0.352; which means ERP effort expectancy is positive to behavioural intention. Taken into account the inclusion of the influences of Age, Gender and Experience of the respondents in the organisation, with computers as well as with use of the ERP system the regression model explained 63% variability in dependent variable (Behaviour Intention). The value of standardized beta coefficient is 0.424. The Sig. value is smaller than 0.05, so the model could significantly predict behaviour Intention. The effects of age , Gender and Experience were controlled during the regression analysis of which the presence of our predictor variable Effort Expectancy improved the influence on the Behaviour intention by 9.5% i.e. change in R squared is equal to 0.095.Furthermore the F value significantly improved from 5.889 to 8.342 . Based on this analysis the H2 is accepted. The results are displayed in table 4.2 below.

**Table 4.2 Effort Expectancy Affects Behavioural Intentions**

| Construct (Hypothesis) | Beta | Standardised beta | Adjusted R square | Change in R square | Significance |
|---|---|---|---|---|---|
| H2 | 0.352 | 0.424 | 0.630 | 0.095 | 0.000 |

Source: Field Data (2014)

### 4.3.3 H3. ERP Social Influence Affects Behavioural Intention

Based on the survey, the independent variable is social influence which corresponds to the dependent variable (Behaviour Intention). The B coefficient for social influence is 0.324 which indicates that the ERP social influence positively affects behavioural intention. Taking into account the inclusion of the influences of Age, Gender and Experience of the respondents in the organisation, Experience with computers as well as Experience with use of the ERP system the regression model explained 58% variability in dependent variable (Behaviour Intention). The value of standardized beta coefficient is 0.366. The Sig. value is smaller than 0.05, so the model significantly predicts behaviour Intention. The effects of age , Gender and Experience were controlled during the regression analysis of which the presence of our predictor variable social Influence improved the influence on the Behaviour intention by 5.9% i.e. change in R squared is equal to 0.059.Furthermore the F value improved from 5.889 to 7.013 . Based on this analysis the H3 is accepted. The results are displayed in Table 4.3 below

**Table 4.3 ERP Social Influence Affects Behavioural Intention**

| Construct (Hypothesis) | Beta | Standardised beta | Adjusted R square | Change in R square | Significance |
|---|---|---|---|---|---|
| H3 | 0.324 | 0.366 | 0.582 | 0.059 | 0.003 |

Source: Field Data (2014)

### 4.3.4 H4. ERP Facilitating Conditions Affects User Behaviour

Based on the survey, the independent variable is facilitating conditions which correspond to the dependent variable (User Behavioural). The B coefficient for facilitating conditions is 0.283 which indicates that the ERP facilitating conditions is

positive to user behaviour. Taken into account the inclusion of the influences of Age and Experience of the respondents in the organisation, Experience with computers as well as Experience with use of the ERP systems the regression model explained 38% variability in dependent variable (User Behaviour). The value of standardized beta coefficient is 0.230. The Sig. value is smaller than 0.05, so the model could significantly predict user behaviour.

The effects of age and Experience were controlled during the regression analysis of which the presence of our predictor variable Facilitating conditions improved the influence on the User Behaviour by 3.2% i.e. change in R squared is equal to 0.032.Furthermore the F value improved from 3.678 to 3.825 . Based on this analysis the H4 is accepted. The results are displayed in Table 4.4 below

**Table 4.4 ERP Facilitating Conditions Affect User Behaviour**

| Construct (Hypothesis) | Beta | Standardised beta | Adjusted R square | Change in R square | Significance |
|---|---|---|---|---|---|
| H4 | 0.283 | 0.230 | 0.380 | 0.032 | 0.006 |

Source: Field Data (2014)

### 4.3.5 H5. Behavioural Intention Affects User Behaviour

Based on the survey, the independent variable is behavioural intention which corresponds to the dependent variable (User Behaviour). The B coefficient for behavioural intention is 0.915 which incites that Behavioural intention is positive to user behaviour. It explains 52.2% variability in dependent variable (User Behaviour). The value of standardized beta coefficient is 0.727. The Sig. value is smaller than 0.05, so the model significantly predicts user behaviour. There is no presence of

control variables I.e. change in R squared is equal to 0.522 equal to 52.2% .Furthermore the F value was 76.384 . Based on this analysis the H5 is accepted. The results are displayed in Table 4.5 below.

**Table 4.5 ERP Behavioural Intention Affects User Behaviour**

| Construct (Hypothesis) | Beta | Standardised beta | Adjusted R square | Change in R square | Significance |
|---|---|---|---|---|---|
| H5 | 0.915 | 0.727 | 0.522 | 0.522 | 0.000 |

Source: Field Data (2014)

The revelations of the study have corresponded with the findings that exist in studies (e.g. Chen & Zeng 2012) conducted in other countries.

## 4.4 The Discussion on Findings

The discussion of findings is organised according to the specific objectives of the study. The general objective of the study was to examine the factors that affect end-users acceptance of the ERP systems at the post-implementation phase in public organizations in Tanzania.

### 4.4.1 The Performance Expectancy Affects the Acceptance of ERP System in Mid–size Public Organisations in Tanzania.

Specific objective one of this study wanted to find out whether the Performance expectation affects the end-user acceptance of ERP systems in mid-sized public organisations in Tanzania. This specific objective contributes to the general objective in the fact that it provides one of the dimensions of the factors that influence the End-user's acceptance of the ERP systems. The findings showed that the End-users of ERP systems in Tanzania were affected by the performance expectation of the ERP

in their acceptance to use it. This was derived from the combination of results of hypothesis H1 (with control variables of gender and age influencing it) and hypothesis H5 as shown in (Figure 4.6) below. Generally, the first objective was met.

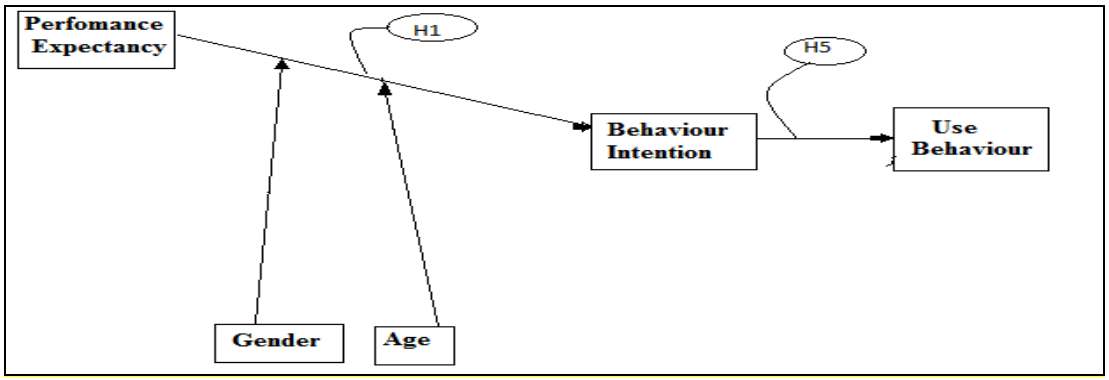


**Figure 4.6 Extract from UTAUT Model showing the Relationship of Performance Expectancy and Use Behaviour**

### 4.4.2 Effort Expectancy Affects the Acceptance of ERP System in Mid–size Public Organisations in Tanzania.

The second specific objective of this research was to identify whether effort expectation affects the acceptance of ERP systems in mid-sized public organisations in Tanzania. This objective contributes to the general objective in the fact that it provides one of the dimensions of the factors that influence the End-user's acceptance of the ERP systems. The findings showed that the acceptance of ERP by End-users is also influenced by the effort expectation. The significance test using simple linear regression technique showed that there is relationship between the end-users effort expectations being met and the behaviour intention and in turn there is relationship between behaviour intention and user behaviour this is a combination of results of hypothesis H2 (with control variables of gender, age and experience

influencing it) and hypothesis H5 as shown in (Figure 4.7) below. The ease in which respondents found in using the ERP influenced them to better accept the ERP systems.

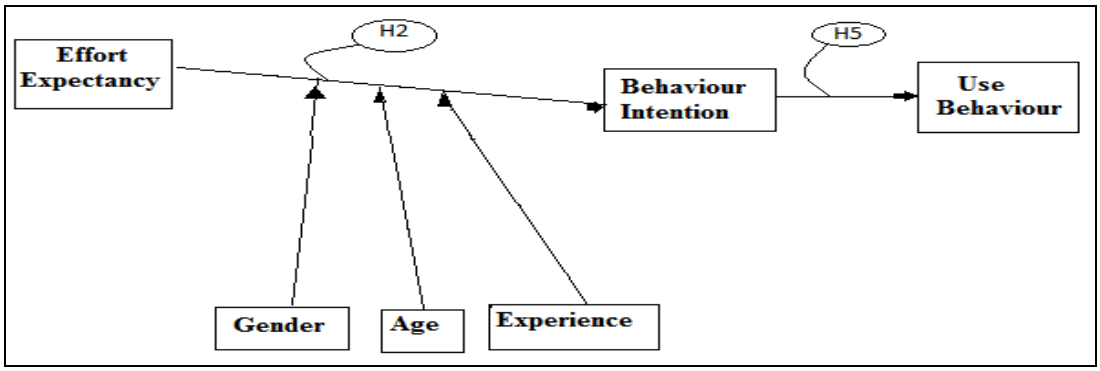


**Figure 4.7 Extract from UTAUT Model showing the Relationship of Effort Expectancy and Use Behaviour**

### 4.4.3 Social Influence Affects the Acceptance of ERP Systems in Mid–size Public Organisations in Tanzania

The third objective of this research was to assess whether the social influence affects End-user acceptance of ERP systems in mid-sized public organisations in Tanzania. The key aspect of social influence was to show if indeed the end-users irrespective of the ERP systems attributes are able to be coerced by the influences of others in determining the level of acceptance of the ERP systems. The importance of this objective to the main objective is it can show to what extent the human behaviour is attuned to external influences regardless of the characteristics of the ERP. The significance test carried out showed a relationship between the end-users level of acceptance of the ERP systems and that of the social influence albeit to a small degree compared to other dimensions. Thus, social influence is a factor but not the

strongest of factors in determining end-users usage behaviour. This was derived from the combination of results of hypothesis H3 (with control variables of gender, age and experience influencing it) and hypothesis H5 as shown in (Figure 4.8) below

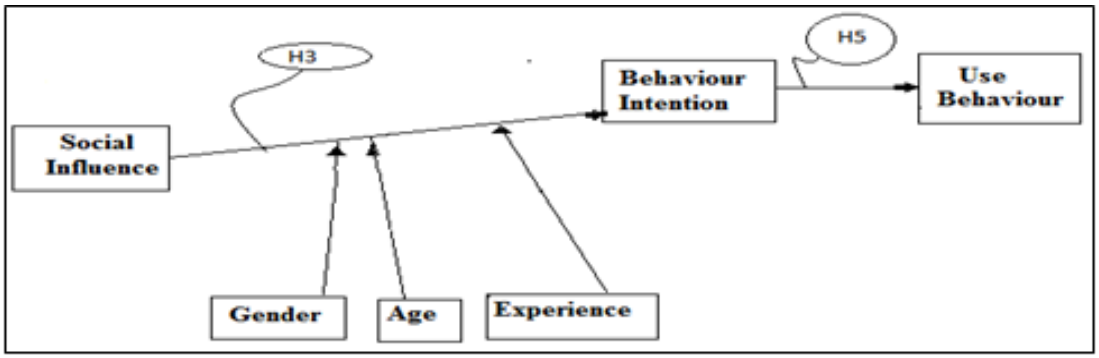


**Figure 4.8 Extract from UTAUT Model showing the Relationship of Social Influence and Use Behaviour**

### 4.4.4 Facilitating Conditions Affects the Acceptance of ERP System in Mid–size Public Organisations in Tanzania.

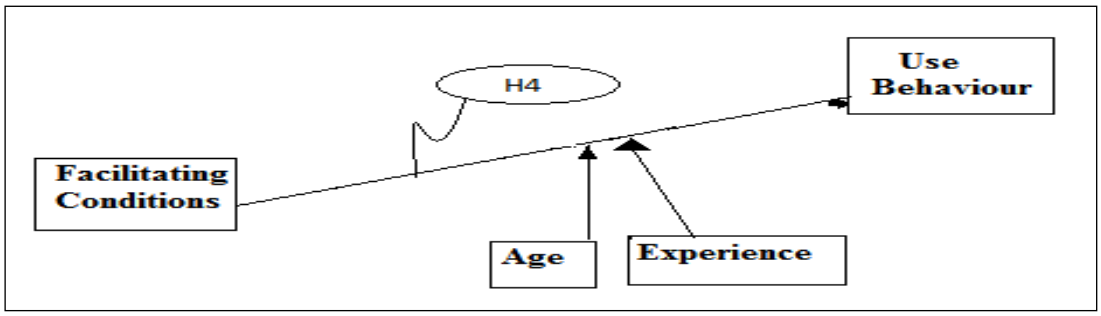


**Figure 4.9 Extract from UTAUT model showing the relationship of facilitating condition and use behaviour**

The fourth objective of this research was to examine whether the facilitating conditions affects the end-user's acceptance of ERP system in mid–size public organisations in Tanzania. This objective contributes to the general objective in the

fact that it provides one of the dimensions of the factors that influence the end-user's acceptance of the ERP systems. The findings showed that the facilitating conditions do in fact influence the end user's acceptance. This was derived from the results of hypothesis H4 (with control variables of age and experience influencing it) as shown in (Figure 4.9).

## 4.5 Chapter Summary

The data that was obtained from the field was presented, analysed and discussed. The data contained the findings from the 70 End-user respondents for this study. Through the use of Microsoft Excel and the Statistical Package for Social Science (SPSS), the researcher was able to get a clear picture from the field data. The data was analysed according to the hypothesis using linear regression analysis and the findings were presented according to the objectives of the study.

# CHAPTER FIVE

# 5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Chapter Overview

In this Chapter, the summary of the entire study is presented along with the conclusions, recommendations for practical actions and areas for further research.

## 5.2 Summary of the Study

This study had the main focus on the factors that influence end-user acceptance of ERP systems in mid-sized public organisations in Tanzania. The study looked at those aspects that are within the literatures that have been linked to acceptance of ERP systems within organisations and made use of the UTAUT model. The indicators in the UTAUT construct showed good reliability as the Cronbach's Alpha statistic for each of them was higher than 0.7, with exception of social influence, which was still in the acceptable region of between 0.35 and 0.7; hence the aspects that were tested include the Performance Expectancy, Effort Expectancy, Social influences and Facilitating conditions. The study focused on four specific objectives including:

i. To find out whether the performance expectation affects the acceptance of ERP systems in mid–size public organisations in Tanzania.
ii. To identify whether effort expectation affects the acceptance of ERP systems in mid–size public organisations in Tanzania
iii. To assess whether social influence affects the acceptance of ERP systems in mid–size public organisations in Tanzania.

iv. To examine whether the facilitating conditions affects the acceptance of ERP systems in mid –size public organisations in Tanzania.

Accordingly five hypotheses were tested. The hypotheses that were tested are:

H1: Performance expectation positively affects the behavioural intentions (proxy for acceptance of ERP) in mid–size public organisations in Tanzania.

H2: Effort expectation positively affects the behavioural intentions (proxy for acceptance of ERP) in mid–size public organisations in Tanzania.

H3: Social influence positively affects the behavioural intentions (proxy for acceptance of ERP) in mid–size public organisations in Tanzania.

H4: Facilitating conditions positively affects ERP usage behaviour in mid–size public organisations in Tanzania.

H5: Behavioural intentions positively affect ERP usage behaviour in mid–size public organisations in Tanzania.

Three mid-sized public organisations in Tanzania which were at the post-implementation phase of ERP systems implementation were randomly selected and the end-users were administered with a questionnaire based on the UTAUT model of investigating user acceptance. The data that were obtained from the field analysed according to the hypothesis using linear regression analysis and the findings were presented according to the objectives of the study.

The findings though in different magnitude were that:

i. The performance expectation affects the acceptance of ERP systems in mid–size public organisations in Tanzania.

ii. Effort expectation affects the acceptance of ERP systems in mid–size public organisations in Tanzania

iii. Social influence affects the acceptance of ERP systems in mid–size public organisations in Tanzania.

iv. The facilitating conditions affects the acceptance of ERP systems in mid – size public organisations in Tanzania.

Furthermore it was found that although they (Performance expectation, Effort expectation, Social influence and Facilitating conditions) are all influencers the two aspects of Performance expectation and Effort expectation have a greater percentage of influence since they had greater change in R squared as well as standardized Beta coefficients.

## 5.3 Conclusion

From the findings of this study: we conclude that:

- All the four dimensions (Performance expectation, Effort expectation, Social influence and Facilitating conditions) of the UTAUT model are indeed factors that influenced in varied magnitude the end-user acceptance of ERP systems in mid-size public organisations in Tanzania.
- Age, gender and experience have varied impact on the dimensions of UTAUT.
- The findings of this study are similar to revelations that exist in studies (e.g. Chen & Zen 2012) conducted in other countries.

## 5.4 Recommendations

The findings of this study are imperative to the current times where we see an ever increase in ERP implementation. The findings highlight on important matters that are to be taken care of in the eyes of end-users to ensure that a better adoption takes place which will result in the organisations realising the benefits envisioned upon acquiring and implementing ERP systems. The following are recommendations of this study:

- Organisation should communicate the Performance expectation of ERP to the end users;
- Organisations need to establish the extent of effort required from the end-user to use ERP system;
- Organisation policies and management should create an environment that promotes the use of ERP system.
- Organisations should adequately facilitate the use of ERP by providing required resources including equipment, knowledge and readily available Technical support.

## 5.5 Suggestion for Further Research

This study was conducted in only 3 mid-sized public organisations due to the available resources and time. We therefore recommend that similar research be conducted in other organisations implementing ERP systems in Tanzania.

Some aspects that are related to end-user acceptance such as the voluntariness of use *(*what extent does the organisation policy play in the eventual usage of the system, is

it by choice or mandatory and how does that affect the level of acceptance of the end users in the organisations*)* have not been directly addressed by this study. Therefore research that includes the impact of the voluntariness on the factors that affect end-user acceptance is recommended.

The field of ERP is thin in literature especially within the Tanzanian context while the trend is that more organisations are implementing ERP thus further research is required in order to increase the knowledge base in the field of ERP systems.

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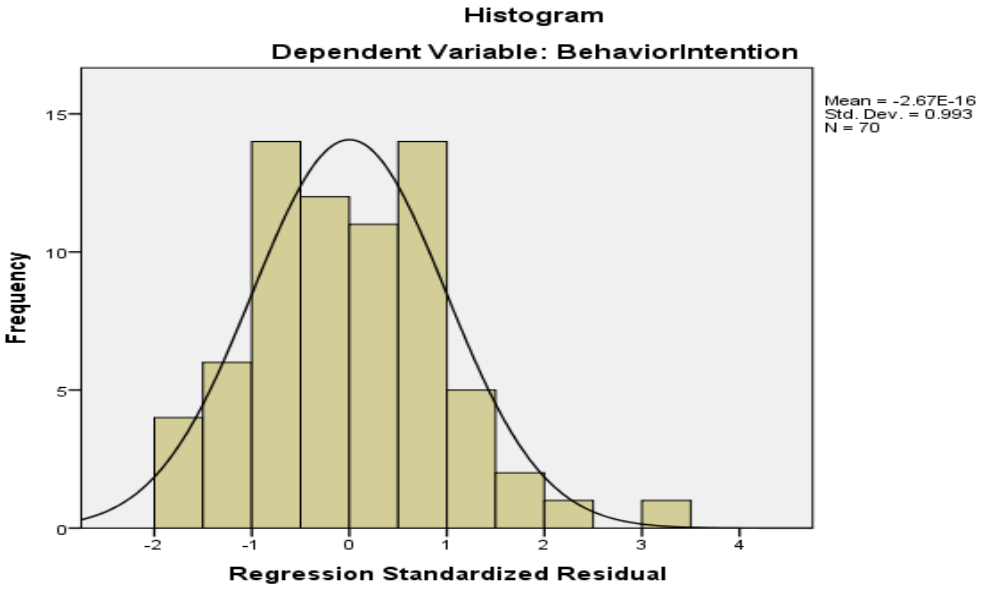
# APPENDIX 1:

## REGRESSION ANALYSIS STATISTICS

| Construct(Hypothesis) | Code | Beta | Standardised Beta | Adjusted R square | Change in R Square | Significance | VIF |
|---|---|---|---|---|---|---|---|
| ERP performance expectancy positively affects behavioural intention | PE | 0.514 | 0.563 | 0.366 | 0.229 | 0.000 | 1.387 |
| ERP effort expectancy affects behavioural intention | EE | 0.352 | 0.424 | 0.630 | 0.095 | 0.000 | 1.893 |
| . ERP social influence affects behavioural intention | SI | 0.324 | 0.366 | 0.582 | 0.059 | 0.003 | 2.285 |
| ERP facilitating conditions affects user behavioural | FC | 0.283 | 0.230 | 0.380 | 0.032 | 0.006 | 2.126 |
| Behavioural intention affects user behavioural | BI | 0.915 | 0.727 | 0.522 | 0.522 | 0.000 | 1.0 |


Histogram
Dependent Variable: BehaviorIntention
Mean = -2.67E-16
Std. Dev. = 0.993
N = 70
Frequency
15
10
5
0
-2
-1
0
1
2
3
4
Regression Standardized Residual

## APPENDIX 2:

## QUESTIONNAIRE

## COVER LETTER FOR THE QUESTIONNAIRE

Dear Sir/ Madam,

My name is Mwemezi Alphonce Ndibalema an MPM student at The Open University of Tanzania. I am currently writing my dissertation with the topic titled: **An investigation of end-user acceptance of enterprise resource planning systems at the post implementation phase in mid-sized public organisations in URT.**

I kindly ask you to answer this questionnaire so as to enable me to finish this research work. The identity the respondents of this questionnaire will remain anonymous. This research will widely contribute to the well-being of the studied organisations as well as academic research on ERP.

Your time and effort is highly appreciated, thank you very much.

Yours truly,

Mwemezi Alphonce Ndibalema

**PLEASE TICK IN THE BOX WITH THE ANSWER WHICH YOU SEE IS MOST APPROPRIATE:**

**PART ONE: THE DEMOGRAPHICS OF THE RESPONDENTS**

**Where does your age range?**

| | | |
|---|---|---|
| A. | Under 25 | |
| B | 25 – 39 | |
| C | 40 – 54 | |
| D | Above 54 | |

**Gender:**

| | | |
|---|---|---|
| A. | Male | |
| B | Female | |

**For how long have you been working for your organisation?**

| | | |
|---|---|---|
| | Less than 1 year | |
| | 1-3 years | |
| | 4-8years | |
| | 9-12years | |
| | 13-20years | |
| | 21 years or more | |

**For how long have you been using a computer?**

| | | |
|---|---|---|
| | Less than 1 year | |
| | 1-3 years | |
| | 4-8years | |
| | More than 8 years | |

**For how long have you been using the ERP (Enterprise Resource Planning system)?**

| | | |
|---|---|---|
| | Less than 3 months | |
| | 3-6 months | |
| | 7-11 months | |
| | 1-3 years | |
| | More than 3 years | |

**PART TWO: FACTORS AFFECTING ACCEPTANCE OF ERP**
**Indicate the extent to which you agree with the following statements by ticking the appropriate box below:**

| | **Strongly Agree** | **Agree** | **Slightly Agree** | **Neutral** | **Slightly Disagree** | **Disagree** | **Strongly Disagree** |
|---|---|---|---|---|---|---|---|
| **Performance expectancy** | | | | | | | |
| I find the system useful in my job | | | | | | | |
| Using the system enables me to accomplish task more quickly | | | | | | | |
| Using the system increases my productivity | | | | | | | |
| If I use the system, I will increase my chances of getting a raise | | | | | | | |
| **Effort** | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **expectancy** | | | | | | | |
| My interaction with the system is clear and understandable | | | | | | | |
| It is easy for me to become skilful at using the system | | | | | | | |
| I find the system easy to use | | | | | | | |
| Learning to operate the system was easy for me | | | | | | | |
| **Social influence** | | | | | | | |
| People who influence my behaviour think that I should the system | | | | | | | |
| People who are important to me think that I should use the system | | | | | | | |
| The senior management of this business has been helpful in the use of the system | | | | | | | |
| In general the | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| organisation has supported the use of the system | | | | | | | |
| **Facilitating conditions** | | | | | | | |
| I have the resources necessary to use the system | | | | | | | |
| I have knowledge necessary to use the system | | | | | | | |
| The system is not compatible with other systems I use | | | | | | | |
| A special person (or group) is available for assistance with system difficulties | | | | | | | |
| **Behaviour intention** | | | | | | | |
| I intend to use the system in the future | | | | | | | |
| I predict I would use the system in the near future | | | | | | | |
| I plan to use the system in the next few month | | | | | | | |

| **Usage behaviour** | | | | | | | |
|---|---|---|---|---|---|---|---|
| After the company introduced the new ERP system I have always wanted to use it. | | | | | | | |

Thank you.