

**THE ADOPTION OF ENTERPRISE RESOURCE PLANNING
(ERP) SYTEM AT THE KENYA CIVIL AVIATION AUTHORITY**

BY

GITAU ANNE NJERI (MBA)

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DECLARATION

This research project report is my original work and has not been submitted for examination in any other University.

Signature: Date:

GITAU ANNE NJERI D61/67422/2013

This research project has been submitted for examination with my approval as the University Supervisor.

Signature: Date:

Dr. KATE LITONDO

LECTURER DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

UNIVERSITY OF NAIROBI

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ABSTRACT

The world has experienced a proliferation in the adoption of Information Systems in the past two decades. Government Parastatals have thus adopted Information Systems among them Enterprise Resource Planning (ERP) Systems with the intent of reaping various benefits such as improved efficiency in operations, superior long term strategic positioning among competitors and effectiveness in decision making. Whereas parastatals adopt these systems, little attention is drawn on factors influencing end user optimal utilization of these systems in order for them to realize the anticipated benefits. The objectives of this Study was to determine the extent to which Enterprise Resource Planning (ERP) System is being utilized at Kenya Civil Aviation Authority (KCAA) since its adoption; To establish the effect of user characteristics and training in the adoption of ERP System in the industry and determine the challenges experienced by users in using the ERP System following adoption by KCAA.

The study therefore adopted a survey design methodology at KCAA's 3 Nairobi Stations namely: - Jomo Kenyatta International Airport (JKIA), KCAA Headquarters and East African School of Aviation (EASA). A total of 57 structured questionnaires were distributed using drop and pick later approach targeting 12.3 % representation. Out of the 57 questionnaires distributed, 54 were filled and returned denoting 94.74% response rate. Since KCAA is divided into 4 Directorates, stratified random sampling was applied in order to get a reasonable representation from the various departments within the Directorates. The research questions were derived from the objectives.

The data collected was coded and analyzed using Statistical Package for Social Sciences (SPSS) software. Descriptive statistics, multiple regression analysis and correlation were applied in drawing comparisons and conclusions.

The findings indicated that there were users who were not trained on the ERP System yet some tasks required them to use it. As a result, lack of adequate training and system documentation were a big challenge to users in the adoption process of the ERP System. The ERP System in KCAA is utilized to a large extent by employees and/or departments requiring finances to meet financial obligations such as travel and training related.

From the findings of the Study, it was recommended that KCAA, policy makers and organizations at large should ensure enough resources are allocated to user training in the adoption of Information Systems.

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CHAPTER 1: INTRODUCTION

1.1 Background

For the past two decades, the world has seen a proliferation in the adoption of Information systems in line with Moore's Law on the doubling of computing power every 18 months (K. Laudon; J. Laudon, 2010). The authors further report that between 1980 and 2007, private business investment in information technology consisting of hardware, software and communications equipment grew from 32 percent to 51 percent of all invested capital in America alone based on source data in US Department of Commerce Bureau of Economic Analysis, National Income and Product Accounts, 2008.

In Kenya, government parastatals have not been left behind in the adoption of several Information systems among them Enterprise Resource Planning (ERP) System a major type of Enterprise Information Technology application (Tian & Xu, 2015). Though they take a lot of organizational resources, time and effort, Enterprise Resource Planning (ERP) Systems have far reaching benefits that include: - higher productivity, improved revenue base and/or a superior long term revenue strategic positioning of the firm in certain markets (K. Laudon; J. Laudon, 2006) improved efficiency in operations and effectiveness through better decision making (Avison & Fitzgerald, 2008) and reduced costs.

While these systems land in the hand of users, little attention has been drawn on the factors influencing the end users optimal utilization of the systems for better and efficient performance in organizations.

1.1.1 Enterprise Resource Planning (ERP) Systems adoption

According to K. Laudon & J. Laudon, (2007) ERP systems are systems that integrate the key business processes of an entire firm into a single software system. This allows seamless flow of information throughout the organization internally but may also include external customers such as vendors and clients.

Stair and Reynolds (2008) describe an Enterprise Resource Planning (ERP) system as a system central to the organization which facilitates information sharing across all business functions and all management levels for the purpose of supporting the running of the business. This eliminates the problem of lack of information and inconsistencies caused by multiple transaction systems found in individual departments. O'Brien and Marakas (2011) further add agility and responsiveness required to succeed in a dynamic

business environment through real time cross-functional view of core business processes to the preceding definition. This minimizes the cost and inconvenience of having to manage different platforms and systems. It also overcomes the challenges associated with storing information in different databases thus saving time and effort. Nah, Zuckweiler and Lau (2003) describes ERP system as a packaged software system that enables a firm to manage the efficient and effective use of resources such as materials, human resources and finance by providing a total, integrated solution for its information processing needs. It supports a process- oriented view of an organization.

For the purpose of this study, the researcher shall adopt Stair and Reynolds (2008) description since it incorporates the issue of seamless information flow across the departments within an organization at operational and management level as it is more relevant to KCAA's.

The adoption of Enterprise Resource Planning (ERP) systems has its fair share of challenges because they are complex systems. This complexity can be compounded by flaws in the implementation process. Cost is a major challenge to organizations that implement ERP systems due to purchasing of software, hardware and consultancy and training charges. Since an ERP changes the way an entire organization operates, employees must learn and adjust to the new business processes gradually and therefore proper training is of essence during implementation. Where this is not done, organizational efficiency is compromised (Baltzan, 2014).

Ahmad et al., (2014) as cited by Seema and Daniel (2016), identifies some of the factors behind ERP adoption as operational improvements; legacy system replacements; business growth and compliance with regulatory requirements. He further takes into cognizance reduced order cycle times and improved customer service according to (Sharma et al., 2012).

Given that ERP adoption in organizations is a management initiative through top down approach, management enthusiasm towards ERP adoption and external pressure from competitors who have adopted the same are likely to play a major role in pushing organizations to adopt it.

However, organizations support the development of ERP out of the recognition of being disadvantaged in a global market place when their total computer systems are in different departments and cannot communicate resulting in poor access of systems to

provide high level business information needed for strategic development of the organization in its entirety. It is also easier to deal with one software vendor since it culminates in cost reduction. Besides, ERP promotes the unifying and integrating strategy of the organization (Curtis & Cobman, 2008)

In this study, the researcher shall incorporate employee characteristics i.e. age, gender, training and experience to investigate how they contribute in ERP System adoption.

1.1.2 Kenya Civil Aviation Authority

Kenya Civil Aviation Authority (KCAA) is a Government Parastatal that was established in the year 2002 through an Act of Parliament with the vision of being a model of excellence in Civil Aviation. It's primary functions include: - Regulation and oversight of Aviation Safety & Security; Economic regulation of Air Services and development of Civil Aviation; Provision of Air Navigation Services and Training of Aviation personnel as guided by the provisions of the convention on international civil aviation, related International Civil Aviation Organization Standards and Recommended Practices (SARPs), the Kenya Civil Aviation Act, 2013 and the Kenya Civil Aviation Regulations (KCARs).

KCAA's mandate is to plan, develop, manage, regulate and operate a safe, economically sustainable and efficient civil aviation system in Kenya in accordance with the provisions of the Civil Aviation Act 2013 while the mission is to develop, regulate and manage a safe, efficient and effective civil aviation system in Kenya (KCAA Website, 2016). The organization is comprised of four (4) Directorates namely: Air Navigation Services, Corporate, Aviation Safety Standards & Regulation and East African School of Aviation (EASA). It has Stations in Nairobi including its Headquarters, EASA and Central Transmitting Station. There are also offices countrywide in eight KCAA manned aerodromes namely Jomo Kenyatta International Airport, Moi International Airport, Eldoret International Airport, Wilson Airport, Kisumu Airport, Malindi Airport, Wajir and Lokichoggio Airports.

It is worth mentioning that several Management Information Systems have been implemented at Kenya Civil Aviation Authority for use by individual departments. However, the study's scope will be on Enterprise Resource Planning (ERP) System since it applies to the whole organization so as get a representative sample and thus reasonable confidence level.

KCAA implemented ERP System in the year 2010 and is based on Microsoft Navision software initially integrating information from Finance and Procurement Departments and allowing access by other Departments across the organization. Human Resource Department was later to be integrated but this is not yet done.

The implementation applied the pilot approach prioritizing Nairobi at KCAA Headquarters, East African School of Aviation (EASA), Jomo Kenyatta International Airport (JKIA) and Central Transmitting Station/stores. Users from Finance and Procurement Departments underwent training in 2009 and 2010. Some staff from EASA and Central Transmitting Station/Stores were also trained in 2010 while staff from JKIA underwent basic training in 2015, 5 years after ERP implementation. The KCAA manned airports outside Nairobi have the ERP System in place but it is not utilized since employees have not been trained. Since ERP System is meant for use across the entire organization, there is clearly a gap in in comprehensive training for all users involved.

Some of the realized benefits in KCAA include; access to more accurate information e.g. on available financial resources for better decision making by managers, application and monitoring of activities that require approval processes from various departments such as requisition of consumable resources from stores and claims on travel related expenses and faster turnaround times.

Indeed, the researcher has a deep desire to have a deeper understanding on the reason why the system is not fully utilized by users' way after its implementation by the organization. The recommendations can then be significant in informing the organization on the areas of improvement.

1.2 Research problem

ERP system has been accepted by powerful stakeholders in the organization through top down approach and employees are unable to air their discontent after implementation. Being an off shelf software, employees may not be aware of the inflexibility of the system prior to its implementation leading to poor perception and negative attitude after implementation. Furthermore ERP Implementation is costly, organizations tend to focus more on software, hardware and consultancy issues and underestimate the significance of user involvement in the implementation process. Lack of user involvement and training has a negative effect on the attitude and perception

and results in inefficiency in the organization yet the system is supposed to make the employee more efficient (Kerr & Houghton, 2014).

Most studies that have been done outside the aviation industry emphasize the importance of user training as a necessary core factor in the success of ERP implementation. For example, Ha and Ahn (2014) recognize user training as one of the influential factors for the success of ERP in the post implementation stage but do not go further to establish if inadequate training coupled with age, gender, experience and frequency of use affects the attitude and perception of a user towards a system.

Ileri, Omondi, Chirchir and Wafula (2015) did a study in Kenya that investigated how to actualize effective ERP implementation and problems in ERP adoption in Kenya Ordnance Factories Corporation (KOFC). The findings proved that the respondents felt that customization was done in a complicated way and that the implementation plan was not comprehensive. Furthermore, lack of proper communication between the organization and the vendor hindered ERP adoption. Malonza, Nduku and Nzuki (2014) carried out a study whose purpose was to determine the factors determining adoption of ERP Systems among 55 companies listed in the Nairobi Securities Exchange in Kenya. The findings pointed out that firm size, number of employees in an organization, location, employee turnover and age of company influenced ERP adoption. System attributes including complexity and compatibility, triability, observability and relevance also influenced ERP adoption.

Nzuki, Musyimi and Odongo (2015) did a study in order to determine the factors that influence ERP adoption among corporate members of Kenya Association of Manufacturers (KAM) that operate within the Nairobi Metropolitan involving 17 organizations. The findings indicated organizational factor (market scope, ICT resources, company size corporate culture and association membership) as a key factor in ERP adoption.

This research wishes to investigate the aviation industry since no study was found that sought to analyze the adoption of ERP Systems in this industry. Given the gap, this study intends to answer the following research questions:- To what extent ERP System is being utilized in Kenya Civil Aviation Authority since its adoption?; how do user characteristics and training affect the adoption of ERP System in KCAA?; and what

problems do users encounter while interacting with the system during their day to day operations.

1.3 Objectives of the study

- i. To determine the extent to which Enterprise Resource Planning (ERP) System is being utilized at Kenya Civil Aviation Authority (KCAA) since its adoption.
- ii. To establish the effect of user characteristics and training in the adoption of ERP system in the industry
- iii. To determine the challenges experienced by users in using the ERP System following adoption by KCAA.

1.4 Value of the Study

The researcher wishes to examine the adoption of Enterprise Resource Planning System (ERP) at Kenya Civil Aviation Authority.

The effects of Management Information Systems on people using them are significant and in many of the Information system failures that have occurred, the causes have been placed squarely on human and organizational factors rather than technical ones. (Avison & Fitzgerald, 2008). This study will benefit KCAA and organizations at large on the importance of user involvement and training with an aim of ensuring the right attitude and perception is imparted in a user during implementation of Management Information Systems so as to ensure optimal utilization. Policy makers in organizations will also understand the significance of user involvement and training since it can have a negative effect on their perception and attitude which in turn affects the efficiency and overall organization performance and therefore ensure its adoption in future projects.

The body of knowledge will also be enriched with information on how user involvement at all levels of system implementation is critical element in the adoption of Management Information System.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews some of the theories upon which the concept of adoption of Information Technology is based and explains the relationship between the user and the system as influenced by various factors both technical and social. The chapter also provides a survey of some of the empirical studies that have been carried out with regard to adoption of the Enterprise Resource Planning Systems and a summary of the literature review.

2.2 Theoretical Framework

The relationship between technology and the factors influencing its adoption are explained by a number of theories. The theoretical framework offers a guide for measuring these factors and will guide the researcher to achieve the study objectives. For the purpose of this study, the theories put into perspective in this section include:- Technology Acceptance Model (TAM), Diffusion of Innovation Theory and Unified Theory of Acceptance of Use of Technology(UTAUT).

2.2.1 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) as argued by Usolo and Shoyelu, (2010) was introduced by Davis, (1986) from attitude and behavior theories. This model deals with the prediction of acceptability of an Information System and helps in identifying the modifications that must be brought to the system in order to make it acceptable to users. It was developed to explain and predict computer usage behavior. The theory assumes that acceptability of an Information System is determined by two main factors which include perceived usefulness and perceived ease of use. Perceived usefulness refers to the degree to which a person believes that the use of a system will improve his performance while perceived ease of use is the degree to which a person believes that the use of a system will be effortless.

TAM suggests that the use of an Information System is determined by the behavioral intention which is determined by the individual's attitude towards the use of the system and his perception of its utility. The impact it may have on the users' performance is also considered. Technology features and system complexity affect perceived usefulness and perceived ease of use. This implies that basic features will yield a higher system usage, perceived usefulness and perceived ease than advanced features. Kim, Mannino and Nieschwietz (2009) argue that as feature complexity increases, perceived ease of use also decreases so that overall system usage is decreased. The ability of the

theory to predict acceptability of an Information System in relation to perceived usefulness and perceived ease of use has a direct relationship with objective 1 and 2 of this study.

2.2.2 Diffusion of Innovation Theory (DOI)

Rogers, (2003) as cited by Sahin, (2006) argues that diffusion is the process of communicating an innovation through a social system over time to members of a social system while adoption is the decision to fully use the system as a best course of action. The theory posits that this social system is made up of five categories of people namely:- innovators who are willing to experience new ideas and bring in new ideas from outside the system; early adopters who are limited within the social system and have leadership roles; early majority lack the leadership role but have the necessary interpersonal networks for the diffusion process; late majority who wait until most of their peers have adopted the innovation and laggards who hold the traditional view, are skeptics who lack the innovation knowledge and therefore possess the wait and see attitude.

Sahin, (2006) citing Rogers, (2003) further argues that there are also attributes that determine the degree of absorption of an innovation which include relative advantage such as cost and social advantage; compatibility; complexity; triability and observability. Since ERP systems are complex, Rogers (1995) as cited by Nah et al., (2003) generalized that “the complexity of an innovation, as perceived by members of a social system, is negatively related to its rate of adoption” (p 10). The theory relates to objective 1 and 3 of this study because of its characteristic to relate communication of an innovation to a social system categorized into innovators, early adopters, early majority, late majority and laggards. In addition, the attributes determining the degree of absorption are also relevant.

2.2.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

According to William, Rana and Dwivedi (2015), Unified Theory of Acceptance and use of Technology (UTAUT) theory was formulated by Vantekash et al., (2003) with the resolve of seeking to explain the intention of users to use an Information System and the subsequent usage behavior. The theory posits that there are four concepts which include;- performance expectancy, effort expectancy, social influence and facilitating conditions) that are direct determinants of behavioural intention and ultimately

behaviour, and that these concepts are in turn moderated by gender, age, experience, and voluntariness of use.

William, Rana and Dwivedi, (2015) further argue that the theory was developed through a review and integration of the concepts of eight theories that earlier research had used to describe Information System usage behavior namely; Theory of Reasoned Action(TRA); Technology Acceptance Model (TAM); Motivational Model; Theory of Planned Behavior(TPB); combination of TAM and Theory of Planned Behavior(TPB); Model of Personal Computer (PC) Utilization; Innovation Diffusion Theory and Social Cognitive Theory (SCT).

The UTAUT theory relates to objective 2 of this study since the researcher was interested in establishing how user characteristics and training contribute to the adoption of the ERP System in the aviation industry. Gender, age and experience have been attributed to be some of the moderators of the main constructs of the UTAUT theory and are among the user characteristics considered in this Study.

2.3 Enterprise Resource Planning (ERP) System adoption in organizations

Organizations adopt technology based on different reasons some of which cut across all organizations. Laukkanen, Sarpola and Hallikainen (2007). Observes some of these benefits to include:- savings on cost for example due to reduced paper work; improved quality and productivity; better resource management and organizational empowerment. Business needs have also become very dynamic and further complicated by the ever evolving global business environment thus contributing to innovative development of suitable corporate information systems. However, in implementing Information Technology (IT) innovations, organizations in developing countries are faced with the challenge of lack of proper ICT (Information Communication Technology) infrastructure and coupled with poor investment in Research and Development. (Nzuki, Musyimi and Odongo 2015).

The core function of ERP is to furnish decision makers with an integrated real time view of core business processes. They also provide a workflow engine where work is automated in accordance to organizational business rules and approval processes such that information and documents are availed to operational users for transactional processing and to managers for review and approval. (Almajali, Ma'sadeh and Tarhini, 2016).ERP Systems streamline and prevent duplication of the various activities in an organization and generates more information which allows a single view of information from across departments therefore providing the necessary knowledge of the

organization across multiple lines of sight. This implies a high level of impact on users' adoption of the system after completing the implementation process a factor that organizations tend to ignore. Furthermore, the single view enhances the visibility of subordinates performance as managers can access data in real time and analyse it in finer details. (Wickramasinghe & Karunasekara, 2012). As a result, managers can exercise control and the firm's overall performance improved due to hands on access to information by managers.

ERP Systems offer higher quality data as the single database eliminates duplication and errors thus enhancing the decision making process. Co-ordination between different departments is also promoted due to the seamless environment is created through information sharing. (Gatticker & Goodhue, 2005).

Being a process- oriented system, Wickramasinghe and Karunasekara, (2012) argue that an ERP allows more access to information hence employees have greater flexibility in performing their jobs since they are able to make decisions that used to be escalated upwards to other departments for lack of information.

2.3.1 Empirical literature on users and ERP Adoption

Kerr and Houghton (2014) did a study on the effects of poorly implemented ERP Systems on the end user. It involved analyzing 3 case studies on interviewed employees in three different firms dealing with transportation, training and a mix of small and medium enterprises (SMEs) in Australia, United Kingdom and Denmark respectively with the objective of examining the far reaching effects of ERP implementation by firms. They found that there can be negative consequences after implementation of ERP resulting in overall lack of trust in the efficacy of the system. Users also worked around the system and circumvented what they did not trust. Some expectations of the software did not also align to business processes.

Koh, Simpson, Padmore, Dimitriadis, and Misopoulos (2004) studied on ERP adoption in Greek companies and explored the effects of uncertainty on the performance of these systems and the methods used to cope with these uncertainties. The study revealed an isolated ERP implementation, adoption and integration in Greek companies. The isolation evidenced that organizational culture, available resources, employees' skills, and the way ERP systems are perceived, treated and integrated within the business, play critical roles in determining the success/failure of ERP systems adoption.

Tarhini et al., (2016) did a study on the antecedents of ERP Systems implementation success in Jordan with an objective of studying the effect of ERP implementation success antecedents which consists of training, supportive leadership and ease of use on ERP implementation success itself through a mediating effect of user satisfaction. The study involved administering a survey questionnaire to ERP users in Jordanian health organizations and 175 users responded. The study revealed significant relationship was found between these antecedents and ERP implementation success. Furthermore, user satisfaction plays a significant mediating role between ease of use and ERP implementation success.

Ileri, Omondi, Chirchir and Wafula (2015) carried out a research that sought to investigate how to actualize effective adoption of ERP and understand the problems of ERP adoption in Kenya Ordnance Factories Corporation (KOFC) based on the understanding that most organizations face hostile attitude from potential users during the implementation processes. They employed questionnaires and interviews during the research and found out that most current approaches to ERP implementation are not all encompassing which leads to user resistance.

2.3.2 Challenges of adopting Enterprise Resource Planning (ERP) Systems

One of the key challenges in the implementation and adoption of ERP is lack of necessary skills. Sumner (2000) posits that lack of sufficient training, internal expertise coupled with poor mixing of internal and external expertise contributes to the risk of retaining Information Technology (IT) experts. Organizations require such IT experts to train staff internally. Poor training can also result in people not co-operating with or supporting the Information Systems (Avison & Fitzgerald, 2008).

Furthermore, ERP Implementation is costly. This is because apart from software acquisition, they often require adjustments as they are not tailor made to the customer needs. In addition, organizations usually lack internal expertise which implies external expertise from the vendor for installation and testing purposes (Oz & Jones, 2008). This factors also culminate in expanse lead time adding on the cost from the compensation of the vendor and the experts involved. Whereas ERP systems are generic off the shelf and vendor-developed applications, research has found out that organizations face difficulty in prioritizing what needs to be improved and also getting users define their needs for the system change clearly. (Maheshwari, Kumar and Kumar 2010)

ERP Systems are known to be complex systems and Sahin (2006) observes excessive complexity of an innovation as an important obstacle in its adoption. Some complexity arise from the complexity of existing legacy systems and the business set up which requires realigning. Where this happens, greater organizational and technological change is required Nah, et al., 2003) and proper change management that involves all users. The integrated nature of ERP applications causes dramatic changes on work flow, organizational structure and on the way people do their jobs (Sawah, Fattah, Mohamed and Rasmy, 2008). This calls for proper Business Process Reengineering (BPR) and culture change an uphill task because people are normally resistant to change. (Kerr & Houghton, 2014).

Consequently, organizations tend to focus more on software, hardware and consultancy issues and underestimate the significance of user involvement in the implementation process. Lack of user involvement and training has a negative effect on the attitude and perception and results in inefficiency in the organization yet the system is supposed to make the employee more efficient (Kerr & Houghton, 2014).

2.3.3 Drivers of Enterprise Resource Planning (ERP) Systems adoption

Organizations adopt ERPs with the hope of improving performance through easier access of reliable information, reduction of cycle times, elimination of redundant data and operations and increased efficiency hence reducing on costs Zhang et al., (2003) as cited by Sawah, et al., 2008). An example of such efficiency is when finance Department is able to close books more quickly because the orders and inventory information is in one database rather than several isolated legacy systems (Gatticker & Goodhue, 2005)

Strict regulatory requirements and corporate governance has resulted in adoption of ERP Systems by organizations across Africa (Idea Engineers, 2014). According to Rose and Vitale (2002) as quoted by Nzaou, Raymond and Fabi (2008) organizations adopt ERP based on a variety of motivations. These include: the need for a shared platform due to the fact that a single software is used and information is centralized in one database, process improvement, data visibility, lower operating costs, customer satisfaction and a better strategic decision making.

2.3.4 Summary of Literature Review

The chapter covered literature on adoption of ERP System in Kenya Civil Aviation Industry. It begun by reviewing the theories on which the study was built. This includes the Technology Acceptance Model which predicts that acceptance of an Information System is determined mainly by perceived usefulness and ease of use. The study also reviewed Diffusion of Innovation Theory which argues that that diffusion is the process of communicating an innovation through a social system over time to members of this system while adoption is the decision to fully use the system as a best course of action. The theory classifies users into innovators, early adopters, early majority, late majority and laggards and that the technical aspects affecting users include other compatibility; complexity; triability and observability. It further reviewed the Unified Theory of Acceptance and Use of Technology (UTAUT) examining how the theory's four key constructs i.e. performance expectancy, effort expectancy, social influence and facilitating conditions are moderated by gender, age, experience and voluntariness of use in the usage intention and behavior in the technology adoption process.

2.4 Conceptual Framework

User characteristics and training in the adoption process

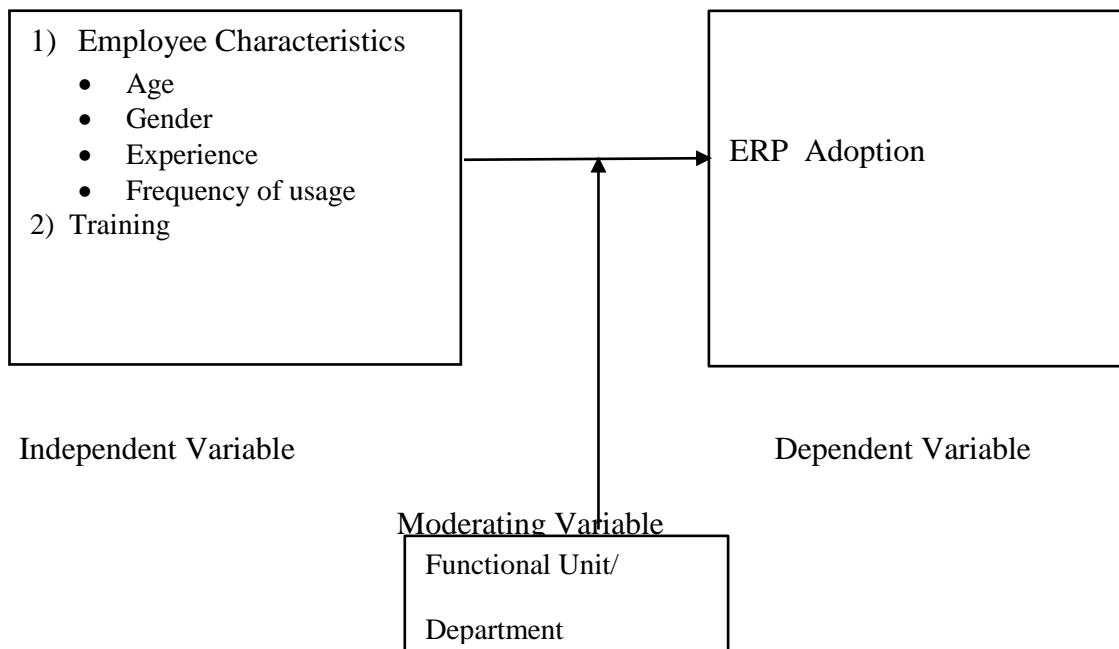


Figure 1: Conceptual Framework

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the procedures and methodologies that will be employed in conducting the study that will assist in drawing conclusions on the adoption of Enterprise Resource Planning (ERP) System in Kenya Civil Aviation Authority. In particular, the chapter will cover research design, population, sample and sampling methods, data collection techniques, data analysis and modelling.

3.2 Research design

Research design refers to the overall plan of converting the conceptual research questions into empirical data. It defines what data will be collected, the methods to be used in collecting it and how it will be analyzed to answer the research questions.

The study will employ descriptive research designs by collecting, organizing and summarizing data collected from KCAA in order to answer the research questions. The relationship between variables and the impact will be analyzed through regression analysis. Using the empirical data, the researcher will be able to reveal how variables inherent in employees i.e. age, gender, experience, frequency of ERP usage and training affects ERP usage. The effect of top down approach in the adoption process will also be measured.

3.3 Population

The population of this study shall be comprised of Kenya Civil Aviation Authority employees within Nairobi working at KCAA Headquarters, East African School of Aviation (EASA) and Jomo Kenyatta International Airport (JKIA)

3.4 Sampling Design

A sample of the target population in the organization will be studied. According to Gay's (1981) as cited by Mugenda and Mugenda (2003) a sample size which is equivalent to 10 percent of the accessible population is enough for descriptive studies. KCAA employees in EASA, JKIA and KCAA Headquarters are 81, 167 and 215 respectively, 57 questionnaires will be administered targeting a 12.3% representation. Besides, the organization is divided into four Directorates, each directorate will be assumed to be a sampling Unit. The sampling unit will further be divide into strata based on the Departments where random sampling will be employed.

Table 1: Sample size

1	STATION	NUMBER OF OFFICERS	SAMPLE	PERCENTAGE %
2	East African School of Aviation (EASA)	81	10	12
3	Jomo Kenyatta Intl. Airport (JKIA)	167	21	12
4	KCAA Headquarters	215	26	12
	TOTAL	463	57	

Source: KCAA data

3.5 Data Collection Techniques

The study will use primary data to investigate the relationship and impact between dependent and independent variables. Questionnaires will be delivered to individuals using the ‘drop and pick’ approach with follow-ups in between using e-mail and Short Messaging System (SMS).

3.6 Data analysis

The data will be analyzed using descriptive analysis, correlation and regression analysis. The regression analysis will be used to test for any relationship and impact between the dependent and independent variables. This analysis will be done using Statistical Package for Social Sciences (SPSS) and the results presented in tables.

3.6.1 Analytical Model

Regression analysis will be employed to investigate the relationship of the independent variables vested on the employee and the dependent variable. The variables of the study will include ERP adoption as the dependent variable and employee characteristics -age, gender, experience, frequency of usage and training as the independent variables. The Functional Unit is the moderating variable.

The following model will be used:-

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$$

Where:-

$Y = \text{ERP Adoption}$

$\beta_0 = \text{Constant of proportionality i.e. the intercept}$

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \text{ and } \beta_6 = \text{Regression coefficient}$

$X_1 - X_4 = \text{Employee Characteristics (gender, Age, ERP System experience, Usage frequency)}$

$X_5 = \text{Training}$

$X_6 = \text{Functional Unit}$

$e = \text{error term which represents the effects of other factors other than the selected employee characteristics and functional unit on ERP usage in Kenya Civil Aviation Authority.}$

CHAPTER 4: DATA ANALYSIS

4.1 Introduction

This Chapter offers the results of the findings of the study based on the research whose objectives included: - To determine the extent to which Enterprise Resource Planning (ERP) System is being utilized at Kenya Civil Aviation Authority (KCAA) since its adoption; To establish the effect of user characteristics and training in the adoption of ERP system in the industry and To determine the challenges experienced by users in using the ERP System following adoption by KCAA. The data for this Study was obtained from 3 KCAA Stations in Nairobi namely; KCAA Headquarters, East African School of Aviation (EASA) and Jomo Kenyatta International Airport (JKIA). A total of 54 questionnaires were received back out of the 57 that were issued representing 94.73% response rate.

4.2 Descriptive Statistics

4.2.1 Gender

The respondents were 17 female and 37 male representing 31.5% and 68.5 % as shown in table 2 below.

Table 2: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	17	31.5	31.5	31.5
Valid Male	37	68.5	68.5	100.0
Total	54	100.0	100.0	

Source: Research data

4.2.2 Departments

Data was collected from across the 4 Directorates of the organization encompassing 15 Departments .The age bracket was divided into four as follows:- less than 30 years 3.7%, Between 31-40 years 16.7%; between 41-50 years 48.1% and above 50 years 31.5%.

4.2.3 Experience

As indicated in Table 3 below, 13.2% of the respondents had less than one years' experience in ERP usage; 37.7% 1-3 years; 18.9% 3-4 years and 30.2% greater than 4 years experience.

Table 3: ERP System Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
<1year	7	13.0	13.2	13.2
1-3years	20	37.0	37.7	50.9
Valid 3-4years	10	18.5	18.9	69.8
>4years	16	29.6	30.2	100.0
Total	53	98.1	100.0	
Missing System	1	1.9		
Total	54	100.0		

Source: Research data

4.2.4 Frequency of usage

In reference to frequency of usage, table 4 below indicates that 32.1% alluded to daily usage, 37.7 % weekly; 20.8% monthly and 9.4% half yearly. The Study results indicate that ERP System is highly used in KCAA since both daily and weekly usage offered the highest percentage at 69.8% compared to 30.2% of monthly and half yearly usage combined. This is due to the fact that ERP System is a mandatory system for those organizations that have adopted it as argued in the Study literature.

Table 4: ERP System Usage Frequency

	Frequency	Percent	Valid Percent	Cumulative Percent
Daily	17	31.5	32.1	32.1
Weekly	20	37.0	37.7	69.8
Valid Monthly	11	20.4	20.8	90.6
Halfyearly	5	9.3	9.4	100.0
Total	53	98.1	100.0	
Missing System	1	1.9		
Total	54	100.0		

Source: Research data

4.2.5 Training

As captured in the table 5, 59.3% of the respondents indicated that they had been trained while 40.7 % had not been trained on the ERP System even though they were using it.

Table 5 : ERP System training

	Frequency	Percent	Valid Percent	Cumulative Percent
Untrained	22	40.7	40.7	40.7
Valid Trained	32	59.3	59.3	100.0
Total	54	100.0	100.0	

Source: Research data

4.2.6 ERP System Adoption

18.5 % of the respondents indicated that they were not comfortable with ERP Adoption while 81.5% werer comfortable.

4.3 Regression Analysis Results

The adoption of Enterprise Resource Planning (ERP) System at the Kenya Civil Aviation Authority (KCAA) was investigated using multiple linear regressions. The results are presented in the table below (Table 6) . The study established the adoption model as follows:-

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \quad \text{which becomes:-}$$

$$Y = 0.888 + 0.203 X_1 - 0.137 X_2 - 0.021 X_3 - 0.031 X_4 + 0.338 X_5 + e$$

From the results of the regression equation established, taking all variables constant at zero, ERP Adoption will be will be positive 0.888%. At 10% level of significance and 90% level of confidence, the researcher established that gender had a significance level of 0.135 with a positive t value of 1.523 while training had 0.014 significance level with a positive t value of 2.556. Age, ERP experience and user frequency had a significance of 0.329, 0.884 and 0.340 with negative t values of negative 0.987, 0.146 and 0.965 respectively implying no significance.

Table 6: Regression Results of Independent and Dependent Variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.888	.275		3.231	.002
	gender	.166	.109	.203	1.523	.135
	Agebracket	-.065	.066	-.137	-.987	.329
	ERP_Experience	-.008	.052	-.021	-.146	.884
	Use_freq	-.052	.054	-.131	-.965	.340
	Training	.259	.101	.338	2.556	.014

a. Dependent Variable: ERP_Adoption

Source: Research data

4.3.1 ERP Adoption and Gender

As depicted in the table below, the researcher established that there is a positive relationship between ERP Adoption and gender of 0.166. This means that if gender would be varied upwards by 1%, employee opinion on ERP Adoption increases by 0.166%. This is in line with the researcher's intention to incorporate employee age as an employee characteristic to investigate how it contributes in ERP System adoption.

At 10% level of significance and 90% level of confidence the researcher established that ERP Adoption had a significant level of 0.135. This therefore denotes that gender had a significant impact on ERP Adoption at Kenya Civil Aviation Authority.

4.3.2 ERP Adoption and Age

From table 6, the researcher established that there is a negative relationship between ERP Adoption and age of 0.065. This means that if age would be varied downwards by 1%, employee opinion on ERP Adoption would decrease by 0.065%. At 10% level of significance and 90% level of confidence the researcher established that ERP Adoption had a significant level of 0.329. This therefore denotes that age had an insignificant impact on ERP Adoption at Kenya Civil Aviation Authority.

4.3.3 ERP Adoption and experience

As shown in table 6, the researcher established that there is a negative relationship between ERP Adoption and experience of 0.008. This means that if the employee's level of experience with the ERP System would be reduced by 1%, employee opinion on ERP Adoption would decrease by 0.008%. At 10% level of significance and 90%

level of confidence the researcher established that ERP Adoption had a significant level of 0.884 which is insignificant.

4.3.4 ERP Adoption and ERP System usage frequency

From table 6, a negative relationship between ERP Adoption and ERP System usage frequency was established. This means that if the employee's frequency of ERP System usage was to be reduced by 1%, employee opinion on ERP Adoption would decrease by 0.052%. At 10% level of significance and 90% level of confidence the researcher established that ERP Adoption had a significant level of 0.340 which is quite insignificant.

4.3.5 ERP Adoption and Training

From table 6 a positive relationship between ERP Adoption and ERP System usage frequency was established. This means that if the employees training on ERP System usage was to be increased by 1%, employee opinion on ERP Adoption would increase by 0.259%. At 10% level of significance and 90% level of confidence the researcher established that ERP Adoption had a significant level of 0.014 with a t value of 2.556.

This finding implies that training is a significant predictor variable in ERP adoption in KCAA. It supports the researchers' argument that users are left with little or no training when organizations are adopting systems yet it is a key component in adoption process.

4.4 Department as a moderating variable

Table 7: Regression Results of Independent, Dependent and Moderating Variables

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.914	.286		3.197	.003
	gender	.179	.115	.219	1.550	.128
	Agebracket	-.071	.069	-.148	-1.037	.305
	ERP_Experience	-.005	.053	-.014	-.098	.923
	Use_freq	-.050	.055	-.127	-.921	.362
	Training	.260	.102	.339	2.543	.014
	Dept	-.005	.013	-.053	-.374	.710

a. Dependent Variable: ERP_Adoption

Source: Research data

As shown in table 7, the researcher added employees' departments which was a moderating variable in the model and established that training was still a strong variable in determining how comfortable employees are with the Adoption of ERP System in KCAA.

4.5 Summary of the ANOVA Model analysis

At 10% significance level and 90% confidence level, the ANOVA model is significant since the p value $0.43 < 0.1$

Table 8: ANOVA Model analysis

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.574	5	.315	2.510	.043 ^b
Residual	5.897	47	.125		
Total	7.472	52			

a. Dependent Variable: ERP_Adoption

b. Predictors: (Constant), Training, Agebracket, gender, Use_freq, ERP_Experience

Source: Research data

From table 9 below, the Adjusted R Square value shows that the model used accounts for 12.7% of the ERP Adoption score.

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.459 ^a	.211	.127	.35422

a. Predictors: (Constant), Training, Agebracket, gender, Use_freq, ERP_Experience

Source: Research data

4.6 Correlation Analysis Results

The researcher used correlation analysis to determine the extent to which employee characteristic variables and training are associated with ERP System adoption in KCAA. Table 10 shows the results for the independent and dependent variables. The results corroborate the findings of the multiple regression analysis and research problem since there is a strong positive significant correlation between ERP Adoption in KCAA and training Pearson correlation co-efficient of +0.381 which is high with the

significance of two tailed test figure being 0.004 which is less than 0.01. Gender has a weak positive significance correlation with ERP Adoption in KCAA with Pearson correlation co-efficient of +0.293 which is low with the significance of two tailed test figure of 0.032 higher than 0.05. The rest of the valuables i.e. age, experience, and usage frequency had an insignificant correlation with a Pearson correlation of -0.076, +0.045 and 0.176 respectively.

Table 10: Correlation results for Dependent and Independent Variables

		ERP Adoption	gender	Age bracket	ERP Experience	Frequency Of usage	Training
ERP_Adoption	Pearson Correlation	1	.293*	-.076	.045	-.176	.381**
	Sig. (2-tailed)		.032	.585	.747	.208	.004
	N	54	54	54	53	53	54
gender	Pearson Correlation	.293*	1	.013	.101	-.208	.087
	Sig. (2-tailed)	.032		.925	.472	.136	.531
	N	54	54	54	53	53	54
Agebracket	Pearson Correlation	-.076	.013	1	.339*	-.086	.030
	Sig. (2-tailed)	.585	.925		.013	.542	.829
	N	54	54	54	53	53	54
ERP_Experience	Pearson Correlation	.045	.101	.339*	1	-.241	.180
	Sig. (2-tailed)	.747	.472	.013		.083	.198
	N	53	53	53	53	53	53
Use_freq	Pearson Correlation	-.176	-.208	-.086	-.241	1	-.058
	Sig. (2-tailed)	.208	.136	.542	.083		.682
	N	53	53	53	53	53	53
Training	Pearson Correlation	.381**	.087	.030	.180	-.058	1
	Sig. (2-tailed)	.004	.531	.829	.198	.682	
	N	54	54	54	53	53	54

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

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

Source: Research data

4.7 Extent of ERP System utilization since adoption

From the analysis of the descriptive data on ERP System utilization, Table 11 and Figure 1 below indicates that the highest utilization was at 51.9% for employee and departmental facilitation in travel and finances followed by single view of data at 34% and internal requisitions at 33.3%. None of the respondents felt that the ERP System is used to improve customer service to a very small extent.

Table 11: Extent of ERP System utilization in KCAA

Item	Valid Percentage				
	Very minimal extent	Small extent	Moderate extent	Large extent	Very large extent
Internal requisition	1.9	1.9	20.4	42.6	33.3
External requisition	19.2	11.5	17.3	23.1	28.8
Employee and department facilitation	3.7	1.9	7.4	35.2	51.9
Streamlining activities	5.7	7.5	22.6	37.7	26.4
Data duplication eradication	12.2	18.4	14.3	30.6	24.5
Single data view across departments	5.7	11.3	18.9	30.2	34
Surbordinate performance	5.6	9.3	42.6	24.1	18.5
Core business integration	3.7	14.8	29.6	38.9	13
Customer service improvement	0	11.3	32.1	37.7	18.9
Control tool	1.9	18.5	24.1	31.5	24.1
Enhancing data visibility	3.7	9.3	24.1	40.7	22.2
Promoting co-ordination across departments	5.6	14.8	22.2	31.5	25.9
More information access	1.9	14.8	25.9	35.2	22.2
Improving employee flexibility	3.7	22.2	27.8	29.6	16.7
Organization performance	5.7	17	28.3	34	15.1

Source: Research data

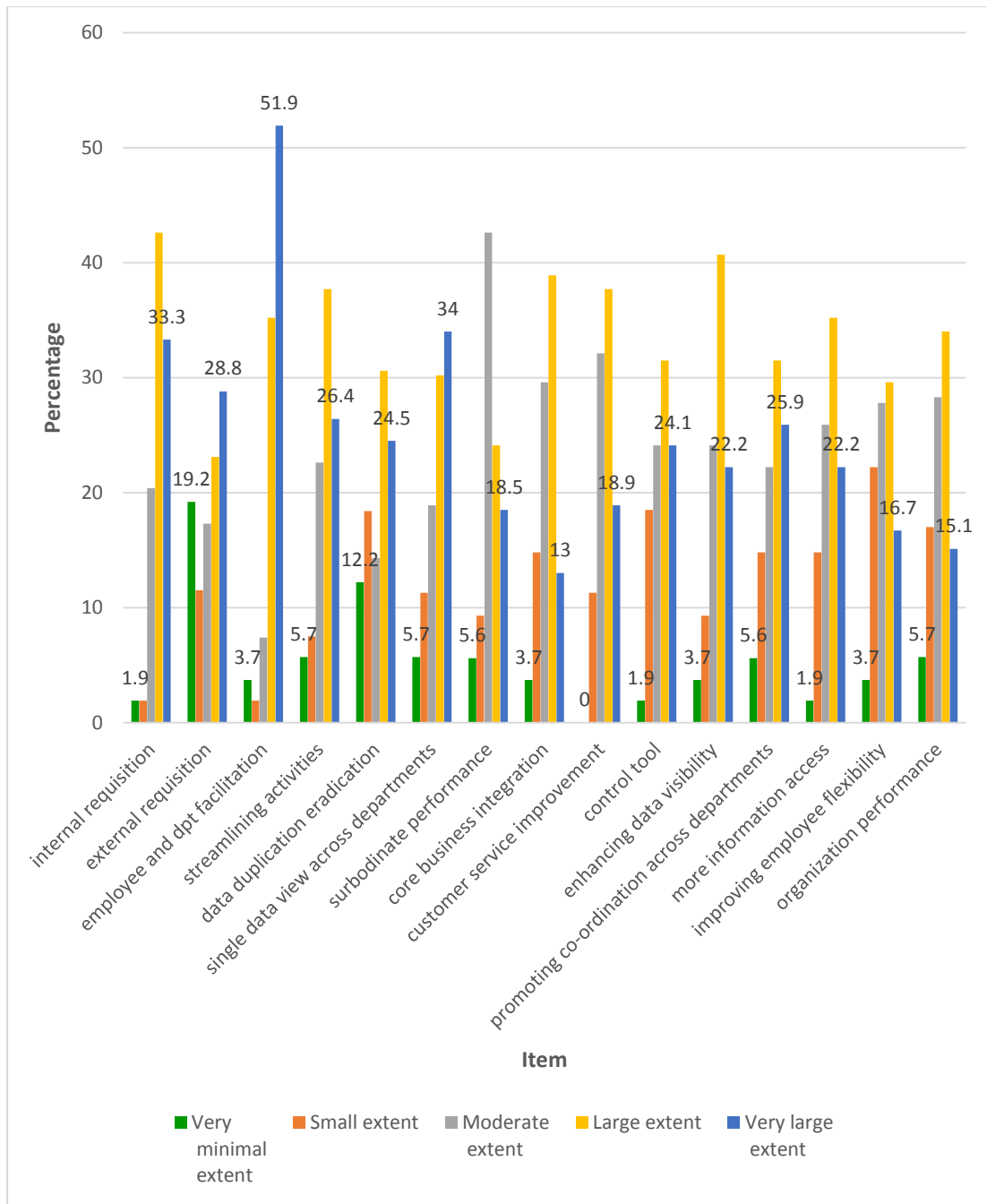


Figure 2: Extent of ERP System utilization in KCAA

4.8 User Challenges since ERP System adoption

From the output in Table 12 and Figure 2, it is clear that inadequate training posed the highest challenge to a large extent to the respondents at 26.4% followed by lack of system documentation at 25.9%. This is consistent with the researcher’s argument in the research problem. No relationship however was established between inadequate training and negative attitude and perception of the ERP System which scored 3.7% to a very large extent with most respondents being of the opinion that it is a challenge to

a very small and small extent at 25.9% respectively. ERP System complexity was also viewed as a challenge to a small extent at 35.2%.

Table 12: Challenges of ERP System Usage in KCAA

Challenges	Valid Percentage				
	Very minimal extent	Small extent	Moderate extent	Large extent	Very large extent
Lack of support	14.8	31.5	25.9	20.4	7.4
Inadequate training	11.3	22.6	24.5	15.1	26.4
Initial user involvement	17	13.2	26.4	22.6	20.8
Negative user attitude and perception	25.9	25.9	24.1	20.4	3.7
Lack of system documentation	9.3	18.5	20.4	25.9	25.9
work interruption	25.9	25.9	18.5	16.7	13
System inflexibility	21.2	25	25	13.5	15.4
Strict regulatory requirement	16.7	27.8	29.6	20.4	5.6
Mangement perception	14.8	25.9	22.2	13	24.1
External competitor's pressure	33.3	18.5	18.5	16.7	13
Lack of alternative system	27.8	25.9	24.1	13	9.3
Longer time in task accomplishment	33.3	22.2	20.4	7.4	16.7
system complexity	33.3	35.2	16.7	9.3	5.6

Source: Research data

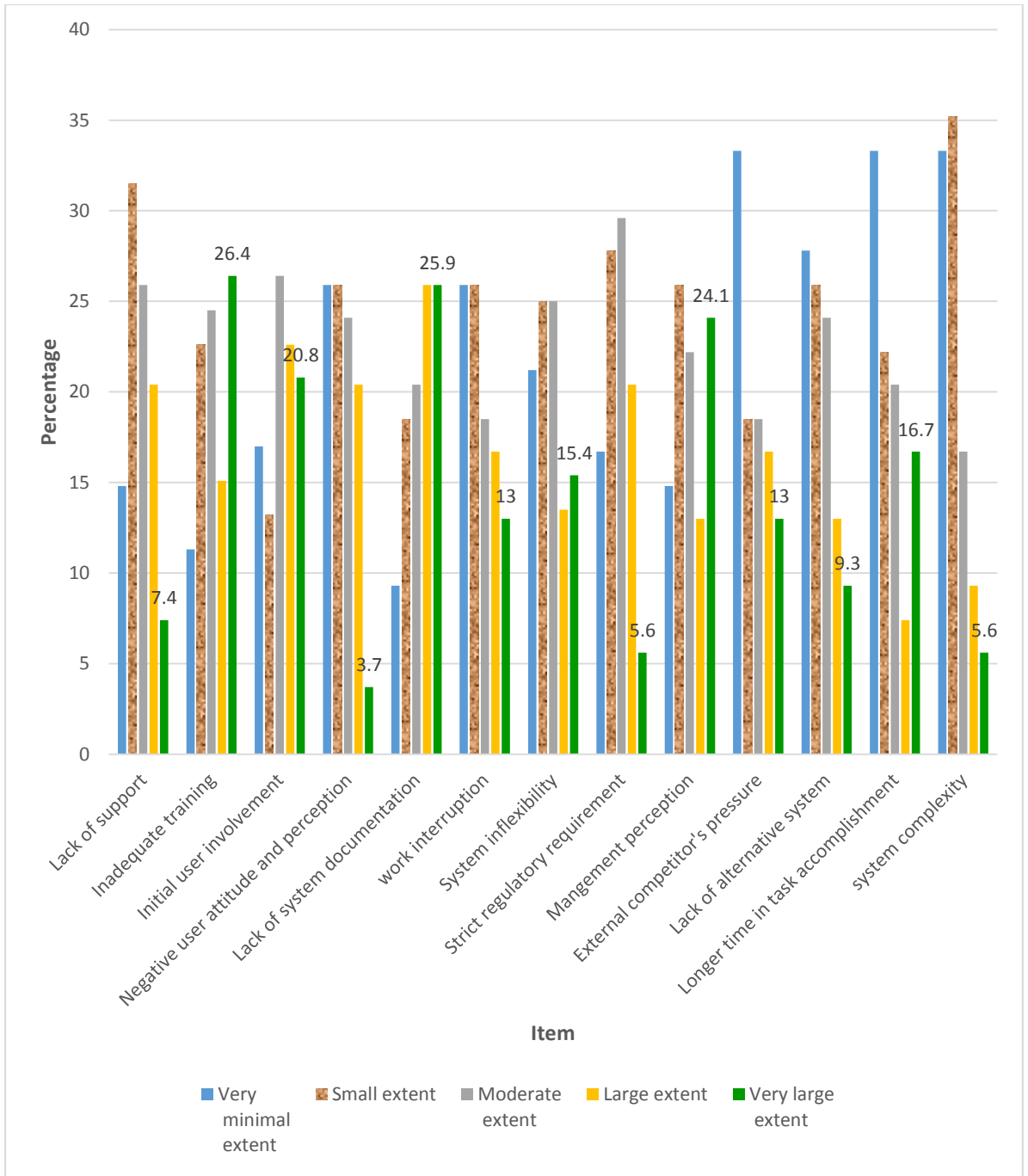


Figure 3: Challenges of ERP System Usage in KCAA

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter seeks to give a summary of key findings, conclusion and recommendations on the study. The limitations of the study and recommendations for further research are also discussed.

5.2 Summary of key findings

The Study was on the adoption Enterprise Resource Planning (ERP) System in Kenya Civil Aviation Authority (KCAA). Based on the research objectives, the findings indicated that ERP System in KCAA is utilized in all areas under the researcher's Study. This is corroborated by the argument in the literature that it is a mandatory system and thus for those organizations that adopt it, defined functions can only be executed using the System. The highest utilization was at 51.9% being employee and/or departmental facilitation in meeting financial obligations such as travel and training. This was followed by single view of data across departments at 34% and internal requisition at 33%. None of the respondents felt that the ERP System was being utilized to improve customer service to a very small extent.

Multiple Regression and Correlation Analysis were used in establishing the effect of user characteristics and training in the adoption of ERP System in the industry. The skills acquired through training followed by gender had the highest effect with Standardized Beta Coefficient values of 0.338 and 0.219 as compared to age, experience, usage frequency and department at -0.148, -0.14, -0.127 and -0.053 respectively. This is an indication that a unit change in training and gender variables would have a large effect on ERP System adoption in the industry. The t value of 2.543 and a Significant (p) value of 0.014 on training shows a significant impact on the training variable. A further analysis using Correlation revealed that the training variable had a Pearson Correlation of 0.381 which is significant at the 2 tailed 0.01 level. Gender, age, experience and usage frequency had weak Pearson Correlations of positive 0.293, negative 0.076, positive 0.045 and negative 0.176 respectively.

The researcher sought to determine the challenges facing users of ERP System in KCAA using descriptive statistics. The results of the research findings indicated that inadequate training posed the highest challenge to a very large extent at 26.4%. This confirms the researcher's argument in the background and literature review on how training is neglected during the adoption of Information Systems. Sumner (2000) also

suggests lack of sufficient training as a challenge in ERP System adoption. However, no relationship was established between lack of adequate training, negative attitude and perception towards the ERP System. This is because inspite of 22 respondents (40.7%) being untrained, negative attitude and perception on the ERP System as a challenge to a very great extent scored the lowest at 3.7%. Lack of sytem documentation where users can refer incase they encounter difficulties in the usage of the ERP System was a close second at 25.9% followed by management perception of better results at 24.1%.

5.3 Conclusion

Based on the research findings, it is evident that lack of adequate training posed the biggest challenge to users in KCAA. Davis, (1986) as cited by Usolo and Shonyelu, (2010) posits in the Technology Acceptance Model theory that acceptability of an Information System is determined by two main factors which include perceived usefulness and perceived ease of use. For this to be realised, the users must be adequately trained so as to gain more exposure to the features and manipulation techniques for better acceptability.

The Diffusion and Innovation Theory by Rogers (2003) as cited by Sahin, (2006) describes diffusion as the process of communicating an innovation through a social system. This agrees with the value of the Study as argued by Avison and Fitzgerald (2008) that the effect of Management Information Systems on people using them is significant and that most implementation failures are social and organizational not technical. The social factor when communicating an innovation is therefore very important.

The researcher has also employed gender, age and experience as some of the user characteristics used as moderators in the Unified Theory of Acceptance and Use of Technology (UTAUT).

5.4 Recommendations

As quoted by the researcher in the background, problem statement and literature training plays a key role in the adoption of an Information System. From the findings it is evident that KCAA has adopted ERP System yet there was no adequate training which posted the highest challenge to a very large extent at 26.4%. This is in spite of the fact that it is a mandatory system for those organizations that have embraced it owing to the fact that some activities such as procurement, requisition of consumables and finances required by employees and/or departments for travel or training cannot be done outside this System. All the employees who cited lack of training apparently use

the System. Furthermore, users lack system documentation which they can reference in case they encounter difficulties in the process of using the ERP. It is therefore important for training to be factored and allocated enough resources in the implementation stage before adoption to avoid scenarios whereby a system is in place and training is yet to be done.

System documentation is also necessary in assisting users in the adoption process as depicted from the findings where lack of it scored the second highest challenge to a very large extent at 25.9%. Organizations should ensure that System documentation is part of the main deliverables when adopting an Information System deliverable.

Organizations should also take user involvement seriously as argued out by the researcher in the literature. From the data analysis, it is clear that KCAA employees felt that they were not involved in the initial stages of implementing the ERP System to a very large extent at 20.8%. This is collaborated by the fact that most organizations adopt ERP Systems through top down policies necessitated by external pressure from competitors or regulatory requirements as argued in the Study literature.

From the findings, the researcher recommends that another study should be done involving several organizations in different industries where the sample size will be across several organizations. This will facilitate the capture of diverse views in order to be able to generalize.

Policy makers and other organizations that wish to embrace a similar system and other Information Systems should allocate sufficient resources for training. This will enhance user understanding and acceptance of these systems. As a result, organizations will realize expected benefits. System documentation should be among the key deliverables. Users should be involved before implementation so that they can give their valuable input and also own the process to avoid resistance to change when the system is already adopted.

5.5 Limitations of the study.

There are a number of limitations that could be singled out for this study. Firstly, the study was limited to one organization in the aviation industry. Generalization of the findings is thus difficult without taking into consideration other organizations in different industries.

Secondly, the sample size was limited to one organization.

Thirdly, this study established the effect of user characteristics and training on ERP System adoption, extent of utilization and determined user challenges. There are other factors that can be considered for study.

5.6 Recommendation for further research

Based on the aforementioned limitations, the researcher wishes to recommend further cross-organizational research that involves other industries outside the aviation industry and a consideration of a larger sample.

Other factors can be added to the Study for better generalization.

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APPENDIX

RESEARCH QUESTIONNAIRE

INTRODUCTION

Dear Sir/Madam

This questionnaire is meant to assist in carrying out an academic study on ERP System adoption in KCAA.

You are humbly requested to answer **ALL** questions in this research questionnaire since your input is very valuable to the research findings. Kindly be assured that the information you will provide shall be treated with utmost confidentiality and shall be used for the purpose of this research study.

SECTION A

This part contains the general section. Kindly answer as requested

- i. Gender
Male [] Female []
- ii. Department.....
- iii. What is your age?
Below 30 years [] 31-40 years [] 41-50 years [] Above 50 years []
- iv. For how long have you used the ERP System
Less than 1 year [] 1-3 years [] 3-4 years [] Above 4 years []
- v. Have you been trained on the ERP system
Yes [] No []
- vi. Kindly indicate how frequent you use the ERP
Daily [] Weekly [] Monthly [] Half yearly []
- vii. Are you comfortable with the ERP System adoption in KCAA?
Yes [] No []

SECTION B

To what extent do you think the Enterprise Resource Planning System (ERP) is being utilized in KCAA since its adoption? Kindly indicate on a scale of 1-5 where: 1=To a Very Minimal Extent ; 2= Small Extent; 3=Moderate Extent; 4=Large Extent; 5= Very Large Extent

	EXTENT OF ERP UTILIZATION AT KCAA	1	2	3	4	5
i.	For internal requisition of work related consumables					
ii.	In external procurement processes					
iii.	ERP System is used by employees and/or departments requiring finances to meet financial obligations e.g. travel, training etc.					
iv.	Promotes streamlining of activities					
v.	Eradicates data duplication					
vi.	Allows a single view of data across departments					
vii.	I feel that the visibility of subordinates performance is enhanced since managers can access data in real time and analyze it in finer details.					
viii.	It provides an integrated view of core business processes.					
ix.	The system offers better customer service					
x.	Management uses the ERP as a control tool					
xi.	The system is used to make data more visible					
xii.	I feel the ERP System has promoted co-ordination between different departments due to its seamless environment					
xiii.	The ERP System offers more access to information					
xiv.	The system has been used to increase flexibility in employees performance since they can manage most tasks due to availability of information					
xv.	ERP System has been used to improve overall performance in the organization					
	Any other use(s) ? Kindly rate below					
xvi.						

SECTION C

What are the challenges experienced by users in using the ERP System following adoption by KCAA? Indicate on a scale of 1-5 where: 1=To a Very Minimal Extent; 2= Small Extent; 3=Moderate Extent; 4=Large Extent; 5= Very Large Extent

	CHALLENGES IN ERP USAGE	1	2	3	4	5
i	Lack of support in the process of utilizing the ERP System					
ii	Inadequate training					
iii	Lack of user involvement in the initial stages of implementing the ERP System					
iv	Negative attitude and perception on the ERP System					
v	Lack of system documentation which I can refer to incase I encounter some difficulties when using the ERP System					
vi	I feel am interrupting work by consulting my colleagues on ERP System Usage.					
vii	System inflexibility and difficulty in manipulation					
viii	Strict regulatory requirements and corporate governance compelling KCAA to adopt ERP System					
ix	Perception by management that better results will be achieved					
x	I feel that KCAA has not realized the expected results of ERP adoption					
xi	External pressure from competitors has contributed to ERP adoption in KCAA					
xii	Lack of an alternative system to accomplish defined ERP tasks					
xiii	I take longer to complete a task on the ERP system than necessary					
xiv	I view the ERP System as a complex System					
	Any other challenge? kindly rate below					
xv.						
xvi.						

Thank you for you valuable time