ADOPTION OF INFORMATION MANAGEMENT SYSTEMS AND PERFORMANCE OF ORTHODOX TEA PROJECT IN KENYA TEA DEVELOPMENT AGENCY

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DECLARATION

This project is my original work and has not been presented for a degree in any other University

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DEDICATION

I dedicate this research project to my loving wife Jackie Wanja Mwarangu, our sons Marshall Mukunya Mwarangu and Ethan Kuria Mwarangu and daughter Stephanie Wanjiru Mwarangu.

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OPERATIONAL DEFINITION OF TERMS

Adoption: Refers to the use of ICT day to day operations in an institution.

Performance: Refers to the degree to which the objectives of an institution have been achieved

Information Management System: Refers to the planned system of collecting, storing and disseminating data in the form of information needed to carry out the functions of management.

Orthodox Tea: Refers to a major export cash crop grown in Kenyan Highlands.

Enterprise Resource Scheduling: Refers to a software solution that integrates business functions and data into a single system to be shared within a company.

Electronic Weighment: Refers to an electronic devices used to measure weight or mass.

Electronic document management: Refers to the management of different kinds of documents in an organization using computer programs and storage.

ABBREVIATIONS AND ACRONYMS

AFMS	-	Automated fleet management system
BI	-	Business Intelligence (Reporting)
EDMS	-	Electronic document management system
ERP	-	Enterprise resource planning
EWS	-	Electronic weighment system
FICO	-	Financial & control
GP	-	Grower Payments
HCM	-	Human Capital Management
IMS	-	Information Management systems
KTDA	-	Kenya Tea Development Agency
MM	-	Material Management
PM	-	Plant Maintenance
PP	-	Production planning
SAP	-	Systems applications and processes
SD	-	Sales & distribution
SPSS	-	Statistical Package for the Social Sciences

ABSTRACT

Performance of the project has always been an important and critical issue for any business worldwide. Although some studies conducted earlier have showed IMS has positive impact to organization productivity, theoretical frameworks are yet to be established or explain how MIS systems affects the performance of various projects undertaken by the organizations. The study aimed at determining the effects of Information Management Systems (IMS) systems such as System applications and Processes (SAP) Enterprise Resource Planning system (ERP), Electronic weighment system (EWS), Electronic document management system (EDMS) and automated fleet management system (AFMS) on the performance of orthodox tea project in Kenya Tea Development Agency. The effect of IMS on performance of orthodox tea project implemented by Kenya Tea Development Agency has not been established. The study focused on orthodox tea project that was implemented by the KTDA head office in the three KTDA managed factories that were Kangaita, Mununga and Kimunye Tea factories. The study used descriptive research design to acquire detailed and in-depth analysis for the study. The target population included 430 respondents comprising of 26 management staff, 149 designated staff and 255 non- designated staff from the three KTDA managed tea factories. Sample size of 131 respondents was selected which represented 30% of the target population. The study adopted multistage sampling method. Simple random sampling was used to select the respondents from each stratum. Primary data was collected using questionnaire that had both closed and open ended questions. The data collected was analyzed using descriptive statistics such as mean, percentages, frequencies and standard deviation; inferential statistics such as correlation coefficient, regression and ANOVA and Statistical Package for Social Sciences (SPSS). The results were presented using charts and tables. The study concluded Information Management Systems (IMS) systems such as System applications and Processes (SAP) Enterprise Resource Planning system (ERP), Electronic weighment system (EWS), Electronic document management system (EDMS) and automated fleet management system (AFMS) had greatly improved the performance of orthodox tea project in KTDA. The study recommended that the organization should train its employees on its Management Information Systems as well facilitate them with the appropriate facilities and support. Organizations should ensure the MIS systems adopted are relevant to the organization need and there is effective internet connectivity to enhance sharing of information.

CHAPTER ONE

INTRODUCTION

1.1 Background

Performance of the project is considered as a source of concern to both public and private sector clients. Project success requires creating a well-planned project schedule as well as understanding of the key success factors also. It helps the project manager and the stakeholders to take the right decisions and act towards the project success. Most popular determinants of project successes accepted by research community are-project mission, top management support, project schedule plan, client consultation, personnel, technology to support the project, client acceptance, monitoring and feedback, channels of communication, troubleshooting expertise (Serrador & Turnner 2014).

For a while now, a good number of organizations have relied mainly on traditional methods in management of Information which drive their processes. According to Gattiker and Goodhue (2005), these systems have not only been unreliable but overly inefficient and ineffective. These organizations have therefore found it quite challenging to deal with demands of modern environments of doing business. Due to this reason, there has been a rapid shift in adoption of Information Management Systems (IMS) in running business. Organizations have now become knowledge driven as opposed to a while back. According to Petter and McLean (2013), IMS provides accurate and appropriate information at convenient time to support the processes of the business. IMS increases the responsiveness of the employees in the organization by facilitating instant flow of information among employees and

between the departments. Fairbank, et al (2006) observed that the organisations both in manufacturing and in provision of services should adopt information management systems into their operations so as to enhance competitiveness and consequently encourage the growth, success and visibility.

Although various organisations have varying information needs, as they try to attain competitive advantage and continuously improve their products and processes they do adopt different information management systems.

1.1.1 Project Performance

Project performance refers to the degree to which results have been achieved (Krzysztof, Potkański, & Stanisław, 2011). Indicators of project performance consists of timeliness, number of deliverables achieved, number of activities, number of satisfied customers and cost of project (Acharya, Kumar, Satyamurti, & Tandon, 2006). Information on all these sub-components of project performance, are interestingly considered at project planning design. During project implementation, all that is done is monitoring whether an activity has been done on schedule and if not evaluation provides a reason why and project management on the other hand can adjust the project plan accordingly.

Development projects are generally recognized as successful when they are finished on time, within budget, and in harmony with specifications and to stakeholders' satisfaction. Many of the projects exceed the original cost; get cancelled prior to completion, while others fail in terms of the delivered functionality. While a lot of time and resources are dedicated to selecting and designing projects, it remains of

vital significance that projects be adequately managed in organizations so that they can achieve their performance objectives (Ngari & Ndiritu, 2017).

According to Raymond (2008), it is paramount for organizations to adequately manage their projects if they are to achieve their performance objectives. He further observes that project performance remains highly a problematic endeavor since most projects are either not completed on time or exceed the budget. For instance, the Athens Olympic Games Stadium exceeded its budget by 9 billion Euros while the Canadian Arms Registry was completed 10 years later.

1.1.2 Adoption of Information Management Systems

Information management systems are developed using Information technology to assist people in performing their tasks(Ali, Anbari & Money, 2008). Project Management Information System is an example of these Information Systems and is widely regarded as an important building block in project management. These systems have continued to evolve from just being planning, scheduling and resource management information systems to complex, distributed, multi-functional systems that can easily generate information necessary to make decisions, improve the efficiency of implementation among other functions within life cycle of the project. What sets Project Management Information System apart from other classes of information system is the volatility nature of their usage, context that is project environments, and as such they need to be more customizable in their functionality than most other enterprise information systems (Ali et al, 2008).

In the year 2010, KTDA management embarked on a spirited campaign to computerize its major operations to enhance efficiency and effectively serve its

shareholders who are farmers and also its customers. System applications and Processes (SAP) Enterprise Resource Planning system, Electronic weighing system, Electronic document management system and automated fleet management systems were proposed. The committee of experts was formed to evaluate the viability of the project and by the year 2012, the board of management of KTDA together with the major tea stakeholders and the ministry of agriculture in Kenya unanimously agreed on its implementation. The system roll out commence in 2014.

System applications and Processes (SAP) Enterprise Resource Planning system, was implemented to solve the following challenges that was experienced by the organization in the management of the Orthodox tea project, Reporting challenges where reports meant for decision making cannot be generated real-time, Processes for the diversified business not supported in the old systems, Changing business dynamics e.g. interaction with suppliers and customers at systems level not supported, Consolidation of group business and monitoring /evaluation function through system were not being supported, Compliance with best practice and Support challenges which included The Informix system which went down in may 2015 after a heavy downpour and we could not get support locally. Offshore support did not help either due to unavailability (Aging technology). This involved implementation of the Core SAP ERP with the following functional modules; Financial & control (FICO); Human Capital Management (HCM); Grower Payments(New development) (GP) and Business Intelligence (Reporting)

Electronic document management system was implemented to provide workflow system, for the organization to digitize the orthodox tea project's manual documents and archive them electronically in order to enhance their management, increase

business processes efficiency and reduce cost. The major objective of the system roll out was to digitize and electronically archive manual documents, provide complete and auditable records for decision-making, Real-time notifications and tracking of documents and records, automate, streamline and optimize business processes, eliminates duplication and challenges of lost documentation,enhance security and management of enterprise information, provide complete document and user audit trails, hasten access to related business documents, shorten processes cycle times while enabling better decision making and provide unified view of actions and history related to an issue.

Electronic Weighing System was developed by KTDA in partnership with Virtual City and Amity Inc. to automate the green leaf procurement process meant for the processing of orthodox teas. The initial project phase addressed green leaf weighing, collection and reception. EWS phase one implementation was a successful and celebrated innovation. However, over the passage of time there was a need to enhance features in the EWS concept and address emerging needs, trace-ability; tracking of made tea from the factory to the warehouse, customer satisfaction; through efficient and effective service delivery to the farmers, costs identification and management, reduce falsification; though product monitoring, real time communication, align business with emerging technologies and empower farmers through provision of financial services

In 2009/10 KTDA commissioned Automated Fleet Management System (AFMS) with the aim of improving fuel consumption by controlling fuel siphoning and pilferage, improving coordination and monitoring of the leaf collection process by providing readily and easily accessible data (real time data). It was expected that it

would minimize idle time, improve vehicle turnaround and minimize leaf collection delays from the field as well as minimize/eliminate fleet misuse by ensuring that fleet is only used for the designated and approved purposes. Also control driving beyond approved speed limits and minimize vehicle wear/tear associated with bad driving habits and also eliminate manual keying of data hence help minimize chances of data manipulation.

1.1.3 Orthodox Tea Project

Green orthodox and green CTC teas were first processed on experimental basis in the month of December 2003 and later on produced for commercial basis. The services of Mr. David Walker and Charles K. Wang'oe both of Tea Technology Associates were engaged. The first trial run processing was on 7th March 2002 and the rotor vane orthodox style of manufacture was used. Green orthodox and green CTC teas were first processed on experimental basis in the month of December 2003 and later on produced for commercial basis. Construction of the TVAP current facility commenced in earnest from the month of April 2002 in the three factories and the first orthodox machinery installation followed and was completed by mid January 2003.

The target population comprised of 430 employees of KTDA Headquaters and three KTDA managed tea factories in Kirinyaga County. Expansion of the facilities to the current capacity commenced in 2008 and was completed in 2009.This saw the addition of four more rolling tables and one more drier and sorting machines. Research and development team of the KTDA white teas began in November 2004 and a number of clones were identified for the manufacture of these teas. The month of July 2006 can be recorded as the first commercial manufacture of white tea or silver tips. TVAP project have therefore been in existence for the last 10 years and

have great potential. The character of grades is affected by the standard of green leaf used in manufacture. Fine plucking, to a high standard of two leaves and a bud, makes for tea of good appearance and liquor. Correct and skillful withering, rolling, fermentation and firing also play a critical part in the teas overall quality. Orthodox tea is rolled as opposed to cut in CTC type tea. Orthodox tea is for markets where tea is taken without milk/cream. Orthodox tea is leaf teas and mostly sold as loose teas as opposed to CTC teas that are mostly in teas bag. All green teas are not oxidized and are at times referred to as unoxidized teas. Green teas may be processed in orthodox or CTC styles. Purple tea is made from a recently released clone of tea rich in athocynins. To maximize on the value of the athocynins purple tea is processed like green tea.

1.2 Statement of the Problem

Performance of the project has always been an important and critical issue for any business worldwide. The Orthodox Tea Projects often experience poor performance in terms of cost overruns, quality defects, delay and time. The reasons of poor performances have often been examined and analyzed. Researchers throughout the world have long tried to establish and understand the relationships between information management systems (IMS) and organization project performance in production, distribution and service industry (Chi, Holsapple & Srinivasan, 2007). Although some studies conducted earlier have showed IMS has positive impact to organization productivity, theoretical frameworks are yet to be established or explain how MIS systems affects the performance of various projects undertaken by the organizations (Sambamurthy, Bharadwaj & Grover, (2003)). According to Rai et al., (1996), previous studies have regularly made various simple assumptions about the

direct relationship between IMS, competitive advantage and organization performance. Fairbank et al. (2006) suggested that the information management systems performance relationship is so complex that the answer may well hinge upon examinations of practices and procedures within certain companies.

Empirical evidence shows that very little effort has been put to establish and explain the influence of information management systems on the performance of orthodox tea project implemented by Kenya Tea Development Agency in Kenya. There is unjustifiable knowledge that IMS is cost centers in organizational project. For the last ten years, KTDA has invested heavily on information management systems such as Electronic weighment system to automate orthodox tea project leaf buying in factories, Electronic document management system to achieve a paperless office, automated fleet management system for vehicle tracking and fuel monitoring and others, SAP-ERP for integrating various business processes at the factories which have cost the shareholder millions of money. A host of benefits have been realized out of these projects but there has been raging debate over whether the overall organizational project efficiency has been achieved.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to assess the effect of adoption of information management systems on the performance of orthodox tea project in Kenya Tea Development Agency.

1.3.2 Specific Objectives

The specific objectives of this study were;

i. To determine the influence of adoption of System Applications on Processes (SAP) Enterprise Resource Planning on performance of orthodox tea project in Kenya tea development agency.

ii. To assess the influence of adoption of Electronic Weighment on performance of orthodox tea project in Kenya tea development agency.

iii. To establish the effects of adoption of Electronic Document Management on performance of orthodox tea project in Kenya tea development agency.

iv. To evaluate the influence of adoption of Automated Fleet Management on performance of orthodox tea project in Kenya tea development agency.

1.4 Research Questions

i. What is the influence of adoption of System Applications and Processes Enterprise Resource Planning information system on performance of orthodox tea project in Kenya tea development agency?

ii. What is the influence of the adoption of Electronic Weighment Information System project on performance of orthodox tea project in Kenya tea development agency?

iii. What is the effect of the adoption of Electronic Document Management Information System on performance of orthodox tea project in Kenya tea development agency?

iv. How has the adoption of Automated Fleet Management Information System affected the performance of orthodox tea project in Kenya tea development agency?

1.5 Significance of the study

The study will be beneficial to the directors, board of trustee and the management staff of Kenya Tea Development Agency as they use information management systems in implementing Orthodox tea project. Further, the study will be useful to other organizations in agricultural sector that have adopted IMS in the management of their projects. The study would assist them when implementing MIS systems in their organizations.

The study was also beneficial to researchers as it would provide them with a background for conducting research related to the subject in future with the aim of providing detailed insights. Students and other academicians would also get a platform to pursue the subject in awards of various academic awards and qualifications.

1.6 Scope of the study

The scope of the study focused on IMS such as SAP-ERP, EWS, EDMS and AFMS that were implemented within the First phase of the Orthodox tea project. Secondly, the study was conducted in Kirinyaga County where the Orthodox tea project was based.

1.7 Limitations and Delimitations of the Study

The researcher experienced challenges in the course of conducting the study. Some questionnaires were not returned despite making numerous calls and follow-up. Out of 131 questionnaires issued, 13 were never returned. 8 questionnaires suffered gross inconsistence and they were rejected as they could not lead to any valid conclusion. The researcher also took a lot of time to issue questionnaires to the managers and

some designated staff as well as receiving their response. Managers were mostly tied up in meetings while designated staff especially in logistic and ICT department spent most of their time in the field. The researcher had to request the human resource department to assist, send the questionnaire online via email and also exercised a lot of patience. Some respondents misplaced the questionnaire and the researcher or his assistance had to reissue hence increasing the cost and time taken in data collection. Some respondents were unwilling and very uncooperative to answer the questionnaire. This was overcome by using convincing them the questionnaire was only meant for academic purposes.

1.8 Assumptions of the study

The researcher made the following assumptions:

i. That the respondents provided honest responses to the items in the questionnaire.

ii. That there is poor performance of projects within Orthodox Tea Project.

iii. That adoption of information management system had the ability to improve project performance.

1.9 Organization of the study

The study is organized into five chapters. Chapter One highlights background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study , limitations of the study, delimitations, basic assumptions of the study and organization of the study.

Chapter Two presents review of related literature as per the objectives of the study namely; including adoption of System Applications and Processes (SAP) Enterprise Resource Planning information system, adoption of Electronic Weighment Information System, adoption of Electronic Document Management Information System and adoption of Automated Fleet Management Information System on project performance of orthodox tea project in Kenya tea development agency. Further, the chapter entails theoretical framework, conceptual framework and research gaps in the reviewed literature.

Chapter Three encompasses research design, target population, sample size and sampling technique, research instruments, instrument validity, instrument reliability, data collection procedure and analysis techniques.

Chapter Four comprises research findings and discussions.

Chapter Five consists of summary, conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews scholarly work on issues relating to the relationship between IMS and the performance of projects implemented by various organizations. The section examined various relevant theories which relates to independent and dependent variables under the study. Critical empirical review was conducted. Conceptual framework was developed to show the relationship between the independent and dependent variable and also looks at the research gaps.

2.2 Theoretical Review

The attempts to establish a causal link between Information Technology and organization performance have not been concluded completely. There are very many studies which have been conducted since late 1980s to date. Floyd (1990) and scholars Banker and Kaufman (1988) their different studies about the adoption of Automated Teller Machines and the performance of financial institutions found no overall connection between the adoption of this technology and the performance of financial institutions. Mahmood and Soon (1991) concluded in primary, secondary and tertiary industries IT has little impact in providing a competitive edge and also does not act as barrier to entry. Zahra and Colvin (1993) in a study on technology implementation and policy reported there is no any direct relationship between adoption of IT and performance of the business. Kettinger et al (1994) found that within six years of Information Technology implementation, 30 to 35 companies in various industries in United Kingdom had experienced not an improvement but a

decline in market share or profits or both. They argued many firms within the industry concentrates on improving their IT infrastructure more than their products hence compromising the quality of their products.

2.2.1 Technology-Organization-Environment Theory

Technology-Organization-Environment (TOE) was developed by Tornatzky and Fleischer's in (1990). According to the TOE theory, there are three separate contexts that influence the adoption and implementation of technological innovations in a business set up, namely; technological context, organizational context and environmental context.

2.2.1.1 Technological context

Technological context describes both internal and external technologies that are relevant to the firm (Tornatzky & Fleischer, 1990). Internal technologies relate to practices and technologies which have been embraced by the firm. External technologies refer to the set of technologies available on the market. This implies that the focus of the technological context is about how technology characteristics themselves influence the adoption process. In discussions on the decisions about the adoption of innovative technologies, Rogers (1983) posits that organizations typically assess five characteristics of the technologies, including compatibility, complexity, observability, trialability and relative advantage. Tornatzky and Klein (1982) also identified the above five characteristics in their meta-analysis study of 75 prior studies on innovation adoption. Although these five attributes were usually considered as technological factors affecting firms' decision on adopting new technologies, the relative advantage is one of the two factors that have been consistently associated with innovation adoption (Cragg & King, 1993). In agreement with this notion, Chau

and Tam (1997) as well as Kuan and Chau (2001) solely included relative advantage and operationalized it into two dimensions of perceived benefits in their studies of the adoption of EDI systems by small organizations. Perceived direct benefits refer to the recognition of improvements on the internal functioning of an organization apparent in everyday activities, such as improving operation efficiency, improving data accuracy and reducing clerical errors.

Perceived indirect benefits relate to the recognition of improvements in external relationships with customers and competitors, which include improving customer services, relationships with business partners and competitive advantage. In the context of the present study, improving operational efficiencies and customer satisfaction have long been the key contributing factors for survival and success in the long term (Jones, 1999). Since ICT offers various tools to improve employee performance, enhance business coordination, enhance customer satisfaction and increase market share (Karadag, Cobanoglu, & Dickinson, 2009), it can be assumed that the acknowledgement of both direct and indirect benefits offered by ICT is also an important driver of initial and continued adoption of ICT.

2.2.1.2 Organizational context

Organizational context refers to the characteristics and resources available to the firm in order to successfully adopt and operationalize the new technology. Regardless of how great the benefits of the technologies are, it is meaningless to the organization if there are insufficient resources to support the adoption. Among all firm-related characteristics, organizational readiness has been identified as a vital determinant that impacts the adoption of innovative technologies (Cragg & King, 1993; Grandon & Pearson, 2004; Ramdani,`(2013). In their study on EDI adoption practices of small

organizations, Iacovou, Benbasat, and Dexter (1995) added that two dimensions of organizational readiness, which are financial readiness and technological readiness, are of particular significance to an organization's adoption of technology innovation.

Financial readiness refers to the financial resources available for installing and implementing the technology, while technological readiness is related to the level of sophistication of technology usage and management in a firm (Iacovou et al., 1995). Swatman and Swatman (1992) found that the availability of financial resources within an organization is a fundamental ingredient that drives the adoption of innovative technologies. Kuan and Chau (2001) also reported that perceived technical competence, which is conceptually the same as technological readiness, is relatively higher among those adopter firms than non adopter firms. Drawing on the findings from previous studies, it can be postulated that financial readiness and technological readiness are determinants affecting ICT adoption and usage in an organization.

In addition to organizational readiness, top management support is another facilitator of the organizational adoption of ICT (Racherla & Hu, 2008; Wang et al., 2010). Thong (1999) noted that top management can stimulate change by communicating and reinforcing value and articulating vision for the organization. Lee and Kim (2007) also argued that the vision, support and commitment by top management can effectively create a supportive climate for technological innovation.

2.2.1.3 Environmental context

Environmental context represents the arena in which an organization conducts its business. This includes factors external to an organization that present opportunities and constraints for technological innovations (Tornatzky & Fleischer, 1990). In general, a firm is forced to embrace a technology due to pressure exerted by various

external forces. Perceived pressure from industry, denoting the level of technological capability of the firm's industry as well as its competitors, has been identified as the most important technological factor of technology adoption (Fuchs, Höpken, Föger, & Kunz, 2010; Ramdani et al., 2013; Wang et al., 2010).

Wang and Qualls (2007) suggested that competitor-oriented firms often feel pressured when they see more competitors in the industry adopting the technology. To maintain their competitive position and avoid lagging behind their competitors, this type of firm typically recognizes the need and has a higher intention to adopt new technologies. Several studies found that pressure from trading partners would influence a firms' inclination to adopt new technologies (Grandon & Pearson, 2004; Hong & Zhu, 2006). Iacovou et al. (1995) described three strategies that powerful partners may pursue to induce their small partners to adopt new technologies. Recommendation strategy means providing small partners with information describing what they can benefit from. Promise strategy refers to convincing small partners to follow their technological strategies via the provision of incentives. Threat strategy represents the application of negative sanctions if small partners do not follow their technological strategies.

In addition to the pressure from competitors and trading partners, customers are another source of external force driving technology adoption (Fuchs et al., 2010; Zhu, Kraemer, & Xu, (2003). In view of the increasing competition in the business landscape, conforming to customer demand and expectation is no longer optional but necessary to survive in the marketplace. As such, it is believed that the demand and expectation from customers is another facilitator fostering firms in adopting ICT. The theory is very relevant to this study as it evaluates whether usefulness, effectiveness

and ease of use information management systems can impact on performance of orthodox tea project in Kenya Tea Development Agency.

2.3 Empirical Review

The independent variables of the study are; System applications and Processes (SAP) Enterprise Resource Planning system (SAP-ERP), Electronic weighment system (EWS), Electronic document management system (EDMS) and automated fleet management system (AFMS). These independent variables collectively or single contribute to the performance of orthodox tea project in Kenya Tea Development Agency (KTDA). Performance of orthodox tea project in KTDA managed tea factories in Kirinyaga County in Kenya is the dependent variable of the study. Several researchers have undertaken several studies on these independent variables as outlined below;

2.3.1 System applications and Processes (SAP) Enterprise Resource planning system (SAP-ERP) and project performance

Huang et al, 2008; Loh et al., 2007 and Weider, et al, 2005, were among researchers who conducted studies on the impact of Enterprise Resource Planning on the organization operations, processes and operations respectively. In their studies which they conducted separately, they found ERP system has cost saving effects to the organization. According to Cotteller and Bendoly (2006), ERP systems can significantly reduce the operational aspects and costs associated with lead time especially on information processing. It also facilitates various internal and external business operations and processes (Gattiker and Goodhue, 2005). It also provides better information management in the organization (Fedderi, 2009). Kogut B. and Zander U. (2003) concluded ERP system help in fulfilling faster processing of

customers order hence achieving greater customer satisfaction and loyalty. Gupta et al. (2004) and Galbraith, J. R. (2010), also concurred with Kogut B. and Zander U. (2003) that SAP-ERP system also increases efficiency and effectiveness in transfer of information and reduces lead time in delivery of the products hence providing more customer satisfaction.

Although a lot of existing literature seems to agree ERP improves performance, some scholars still express some concern. Hitt et al. (2002) argued in some cases there have been notable drop in performance in pre and post implementation of EPS system. Authors such as Montverde, K. and Teee, D. J. (1992), tried to give a reason to this by suggesting that in services-sector business (like financial institutions, transport (airlines)) they adopt ERP system with anticipation to gain more effectiveness than efficiency. Therefore quality of information and business processes might not be of great importance as compared to reduction of cost and increasing productivity. Huang, et al. (2009), suggested ERP system may result to negative relationship between the quality of the product if business enterprise uses efficiency and productivity measurements to evaluate the impact of ERP in the organization. This have negative effect to the general performance of the enterprise in the market because customers' satisfaction will be compromised resulting to customer churn.

As some researchers agree ERP effects project performance positively, other has found contradicting results. Petter, et al. (2013), suggested ERP system do not always affect project performance positively since the are other factors such as organization structure, culture, processes among others which may also affect the relationship. Fairbank, J., G. Labianca and H. Steensma (2006), found that ERP systems may affect

some specific areas- such as departments, sections and operations in the organization but not the overall project performance.

System applications and Processes (SAP) Enterprise Resource Planning system, was implemented to solve the following challenges that was experienced by the orthodox tea project; Reporting challenges where reports meant for decision making cannot be generated real-time, Processes for the diversified business not supported in the old systems, Changing business dynamics for example interaction with suppliers and customers at systems level not supported, Consolidation of group business and monitoring /evaluation function through system not supported, Compliance with best practice and Support challenges which included The Informix system went down in may 2015 after a heavy downpour and we could not get support locally. Offshore support did not help either due to unavailability (Aging technology). This involved implementation of the Core SAP ERP with the following functional modules; Financial & control (FICO); Human Capital Management (HCM); Material Management(MM); Production planning(PP); Plant Maintenance (PM); Sales & distribution (SD); Grower Payments(New development) (GP) and Business Intelligence (Reporting)

2.3.2 Electronic Weighment System (EWS) and project performance

According to Amity (2012), Electronic Weighing System (EWS) can increase productivity and farmer yields by up to 200%. This technology is however exact for uses electronic weighing scales that measure green leaf to the gram. Many agricultural organisations are now adopting these technologies to ensure and increase in farmers' productivity which translates to an increase in the overall processing factory

productivity. In this system, the data is usually transmitted instantly through mobile virtual private network, and also via Personal Data Assistant (PDA) to the farmer's factory. A printer relying on Bluetooth transmission spot churns out a receipt for the farmer at real-time. AKS Amity therefore eludes to the fact that electronic weighment of green leaf, therefore, helps in increasing productivity.

2.3.3 Electronic Document Management System (EDMS) and project performance

Hung et al, (2009), commented most private organizations and government institutions all over the world are now developing and adopting information technology to keep abreast with progression of information technology development as well as offer satisfactory products and services to their clients. Dashmir, I. et al. (2013), suggested that, government agencies are adopting and implementing IT with aim of delivering better services to the citizen and businesses and customers; as well as to support the modernization of their institution and businesses respectively. Electronic Document Management Systems (EDMS) is being adopted by the organizations to enable them improve in convenience, efficiency and provide quality services to the citizen, customers and any other stakeholder (Jones, 2012).

According to Chi, L., et al. (2007), the needs of citizens, customers and the originations are dynamic and they keep on changing with change in various micro and micro environmental factors. Due to this, it is paramount important for the organization(s) to keep its records in a manner that they are safe and easy to retrieve. They further argued IT could provide a perfect solution on managing organizations documents. Brown, J., et al. (2006) suggested documents should be stored as asset and

memory of the organization. They further added well-kept documents are a clear signal that the organization understand how the business is done, its operations, its customers, competitors as well as the environment in which it is operating in. Information/document management is the primary mechanism of conducting business and it is central to its functioning.

Electronic Document Management System facilitates to advancement the management of information, thereby improving the levels of support and productivity for managers, speeds up communications, increases the productivity of business processes, and improving the flow of information. Electronic Document Management System is a virtual constituent in creating a virtual working environment and transforming capabilities of an organisation and its workforce (Fairbank, et al. 2006). Benjamin, R. et al. (1996), noted that the organizations which had adopted EDMS are able to monitor its activities, reduces a lot of cost associated to paperwork and information is available on time. Hence this improves efficiency in the organization.

2.3.4 Automated Fleet Management System (AFMS) and project performance

In modern competitive marketplace, it is imperative important that organization operate with a lot of efficiency, and get implemented timely. Miles, M. B., and Huberman, M. A. (1994) suggested is it very vital for project implementers to identify the areas of cost savings to enhance efficiency would exercise and cost may be reduced. Azevedo and Ferreira (2007) support the concept that information communication technology (ICT) systems can affect competition in logistics and fleet management sector in three different ways. Automated fleet management system may change the structure of the logistics and fleet management in agricultural, manufacturing and in general production industry. It can even reverse or modify the

rules of competition in the market place. Automated fleet management system may offer new value-added and integrated services that previous paper-based fleet or transport management could not. Secondly, automated fleet management system may create relative competitive advantage in terms of efficiency, effectiveness and the cost hence giving the firm a new competitive edge. Automated fleet management system which is implemented through ICT systems does ultimately call for need to change the existing organization structure and processes. It rather facilitates execution of business operations within the current business model.

Organizations that manage fleet(s) are faced by many challenges. According to Banker, R. D., Kauffman, R. J. & Morey, R. C. (1990), these challenges include improving compliance to the statutory requirements, organisational communications, reducing costs, and improving customer satisfaction. Due to this, fleet management systems are perceived in terms of how they are able to benefits the organizational projects by reducing to organizational overheads, realising efficiency and improving profitability. According to Miles, M. B., & Huberman, M. A. (1994), most organizations especially in agricultural and manufacturing settings spend a lot of resources on transport. They also argued poor fleet management has made many businesses to incur hefty losses which would otherwise have been controlled. To increase the level competence in the market, it is important to identify those areas in fleet management where the cost can be reduced through the adoption of appropriate innovations and technology. Firms should search for new opportunities of cutting costs by improving production, distribution and even marketing process efficiency or by developing new products which are cost effective (Hidalgo & Lopez, 2010). According to Mason-Jones and Towill (1999), firms can improve their operational

efficiency through the ongoing implementation of information or automation technologies in accordance with their business characteristics.

Overally Pokharel (2009) summarises the influence of IMS adoption by asserting that they perform a supplementary and supportive role to employees activities, enhances organisational efficiency and effectiveness. According to Delone, W., and McLean, E. (1992), IMS also helps the employees to execute their activities faster, supports management in decision making processes, enables efficiency in distributive operations and achieves higher logistics efficiency. Petter, S. and McLean, E. R. (2013) added that IT also improves transparency to the stakeholders and leads to the adoption of better business practices to meet the customer service levels. IMS increases organisational ability to respond to a dynamic business environment and reduces the cost of organization operations by as much as 40% over traditional practices.

2.4 Research Gaps

The literature reviewed showed that the advent of high-tech ICT technologies has created room for adoption of the technologies in various aspects of organizational and project management. While the main challenge of the modern organization projects implementation alongside the myriad operations that go along with the organization's existence is to improve efficiency and cut costs of operations, strategies adopted by any organization should be aligned toward achievement of efficiency in operations.

ICT technologies have increasingly been adopted in various aspects of project management and other organizational operations. The studies have however speculated the general advantages and merits of adopting information technology

leaving a great gap in the specific influence of information technologies to the specific organisational setting.

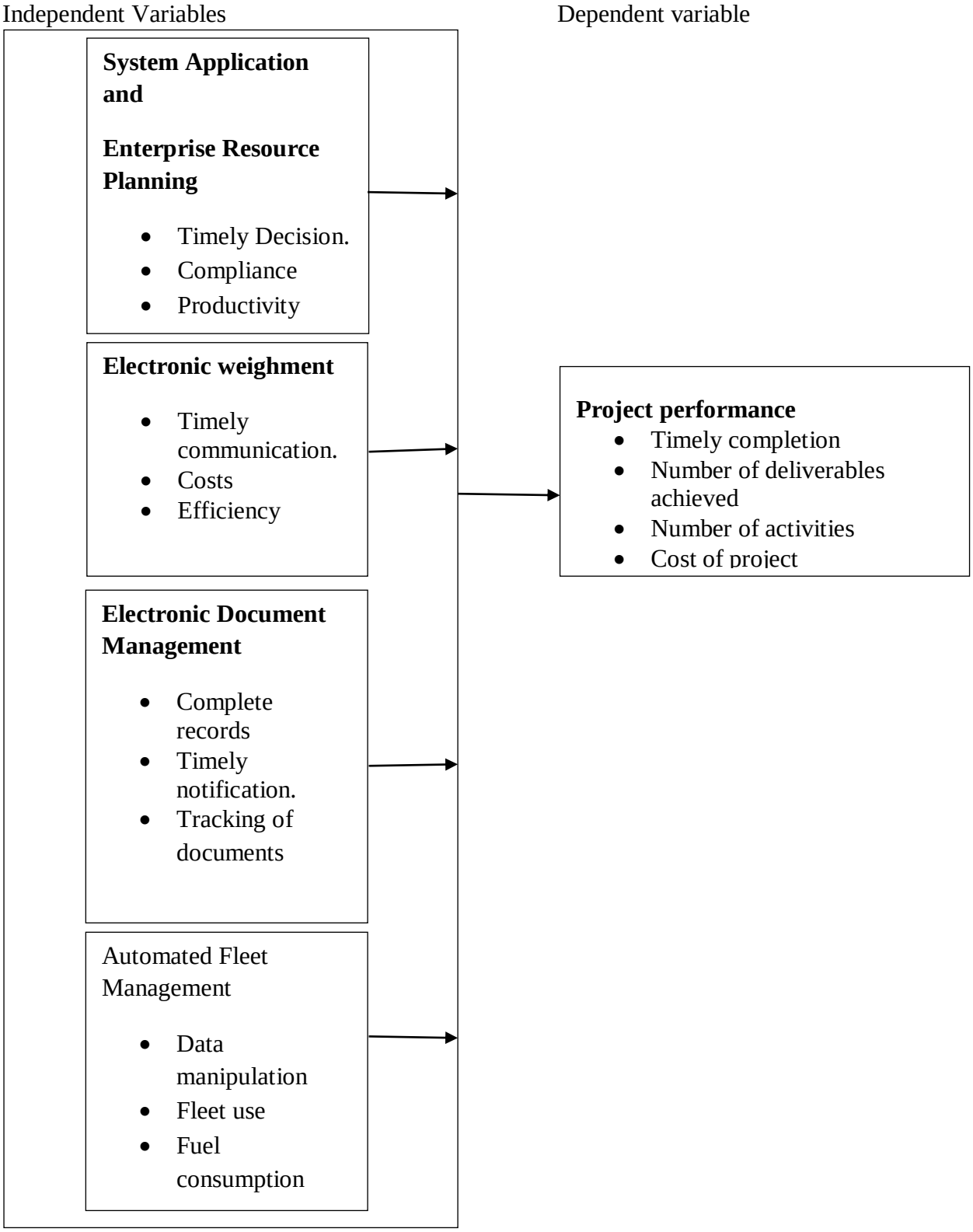
In spite the importance of how the Information Management Systems or changes in technology affect project performance to various stakeholders, studies are not precise on what is known or unknown about the subject. Past studies and theories indicate varying conclusions on relationship between Information Technology and project performance. Some studies shows negative relationship while others positive. Therefore, it is imperative to investigate how the technologies impact the project in light of the fact that organizations are increasingly adopting the IT-based platforms with the hope that the move will have a positive impact on the various target processes.

2.5. Conceptual Framework

The aim of the study was to analyse the influence of information management systems on implementation and performance of orthodox tea project in KTDA in Kenya. This therefore forms independent variables which include; SAP-ERP, EWS, EDMS and AFMS information management systems where any change in one may result in change in the dependent variable which is performance of orthodox tea project.

This relationship is illustrated by the following framework.

Figure 2.1 Conceptual framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology of the study. The researcher critically discusses the research design, the target population, the research site, target population, sampling methods and sample size. It also focuses on data collection instruments, data collection procedure, data analysis and presentation testing the data collection instrument for reliability and validity as well as the ethical considerations. The research was carried out at Kenya Tea Development Agency headquarters and managed tea Factories in Kirinyaga County in Kenya.

3.2 Research Design

The study adopted descriptive and explanatory research designs. Cooper and Schindler (2003) described descriptive research design as most appropriate when the researcher wanted to explain or find out what, why, how and where of a phenomenon under study. Descriptive research design also enabled the researcher to obtain detailed information of the current status of the phenomenon (Kothari, 2005), and critically describe the relationship that exist between independent and dependent variables being studied or conditions under the study. It also enabled the researcher to describe record, analyze and report conditions that existed as stated by Kothari (2005). According to Mugenda (2012), descriptive design is most appropriate when detailed, in-depth analysis for a study is desired. The design enables the researcher not only to establish factors explaining phenomena but also unearth underlying issues, Kombo and Tromp (2006). Questionnaires were administered to the selected employees.

According to Yousaf (2018), explanatory research design focuses on explaining the aspects a study in a detailed manner. It is meant to provide details where a small amount of information exists for a certain product in mind of that researcher.

3.3 Target Population

The target population comprised of 430 employees of KTDA Headquaters and three KTDA managed tea factories in Kirinyaga County. Specifically, the target population comprised of 26 members of management, 149 designated staff and 255 non-designated staff of KTDA head quarters and managed tea factories in Kirinyaga County

Table 3.1: Target population

Group	Management Staff	Designated Staff	Non Designated Staff	Total
KTDA HQ	5	113	43	161
Kangaita	7	12	57	76
Kimunye	7	12	73	92
Mununga	7	12	82	101
Total	26	149	255	430

(Source: KTDA HQ and managed Tea Factories in Kirinyaga County 2017)

3.4 Sampling

3.4.1 Sample Design

Cooper and Schindler (2003) referred sampling design as the method which the researcher would use to select the respondent. Sampling is done if the elements target population is big in number. Neuman (2004) argued that the best sample design should select a sample which is a true representative of the whole target population. He also suggested the important factor to consider in determining the sample size is the need to keep it manageable enough, derive detailed data using available and affordable resource in terms of cost, time, and human resource. A sample of 30% of a population was selected. Cooper and Schindler (2006) argued that well-chosen sample of 30 percent was ideal in a descriptive design research study especially if the target population is not too large. In this study a multistage sampling method was adopted. McQueen & Knussen (2010) says multistage sampling combines several methods of sampling. In this study, the researcher used stratified and simple random sampling methods. In this case the staff from the head office and three factories from Kirinyaga County were subdivided into management, designated staff or non-designated staff. Out of each Stratum, simple random sampling using random numbers was used to select the respondent.

3.4.2 Sample Size

The sample of 131 respondents was selected. These represented about 30.4% of the target population. It comprised 8 members of the management staff; that was 2 from head office and 2 from Kangaita, Kimunye and Mununga respectively. 46 designated staff comprised of 34 from head office and 4 from Kangaita, Kimunye and Mununga respectively. 77 non-designated staff was selected which included 13 from head office,

17 from Kangaita, 22 from Kimunye and 25 Mununga tea factories.

Table 3.2: Sample population

Group	Management Staff	Designated Staff	Non Designated Staff	Total
KTDA HQ	2	34	13	49
Kangaita	2	4	17	23
Kimunye	2	4	22	28
Mununga	2	4	25	31
Total	8	46	77	131

(Source: Researcher 2018)

3.5 Data Collection Instrument and Procedure

3.5.1 Questionnaires

The primary data was collected using a questionnaire (appendix 2) which had both closed and open ended questions. According to Glass and Hopkins (2002), closed ended questions enables the researcher to get detailed controlled response which can be analyzed using quantitative methods while open end questions enable the researcher to capture the divergent views of the respondent. Questionnaire was preferred in this study because most of the respondents are literate. Nassiuma, (2010) suggested that well designed questionnaires can be appropriate when the researcher is attempting to find out answers in a concrete and unambiguous phenomena. According to Farag (2009) stated that questionnaire is suitable and cost effective when collecting data from large pool of respondent. He concluded it gives results faster which are more specific and accurate. According to Mugenda and Mugenda (1999) a

questionnaire response rate of 50% is adequate for analysis and reporting; 60% is good and 70% and over is excellent.

3.5.2 Data Collection Procedure

Before the collection of the data, the researcher requested for an official letter from Kenyatta University to acknowledge he was a student carrying on research project. The letter was presented to KTDA headquarters Human Resource division for permit and authorization letter to collect the data. Printed copies of questionnaires were distributed to eligible persons through the head of departments to respective KTDA managed tea factories and the head office in Nairobi. The factory manager and respective departmental heads at head office also helped to distributed questionnaires to employees of their factories.

3.6 Pilot Test

To establish validity, the research instrument was given to at least three professionals who were experienced in training need assessment to examine the relevance of each item/question in the questionnaire in relation to the objectives. The aim was to ensure that the data was collected from reliable sources; the language used in the questionnaire was simple with no ambiguity and misunderstanding. The questionnaires were given to at least 10 employees who were chosen randomly and not included in the study before the official roll out. The aim was to test relevance and consistence of each item in the data collection instrument. This also enabled the researcher to establish the respondents' ability to respond without difficulties. Any ambiguous, unclear and double edged questions were be identified and rectified.

3.7 Validity of the Instrument

Hafeznia, (2009), defined validity as the degree to which result obtained from the analysis of the data from the data collection instrument(s) actually represents the phenomenon under study According to Kothari (2004), this can also be referred as the meaningfulness, accuracy and the true reflection of the variables from the data collected. The researcher used content validity to test the suitability for the questionnaire. It measured the degree to which data collected using a questionnaire represented a specific domain or content of a particular concept (Miles & Humerman, 1994). To ensure content validity the researcher used content validity index (CVI). CVI was obtained by summing up items rated 4 and 5 and dividing the aggregate with the total number of all items in the questionnaire. Kothari (1992) noted a questionnaire with validity coefficient of at least 0.7 is a valid research instrument for collecting the data. The researcher also used experts to examine and review the instrument for validity.

3.7.1 Reliability of the Instrument

Reliability refers to a measure of the degree to which research instruments yield consistent results (Hafeznia, M. D. R. (2009). The researcher used Cronbachs alpha coefficient to assess the internal consistency among research instrument items. Cronbach's alpha was calculated by SPSS application. According to Cooper & Schindler (2008) it can be used to test whether the variables are within the acceptable range of between 0 and 1. The closer the Cronbach Alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale and the closer the Cronbach coefficient is to zero (0), the less the internal consistency of the items in the scale. Table 3.3 shows the reliability coefficients of the variables of the study.

Table 3.3: Reliability Results

Variables	No. of items	Cronbach Alpha	Remark
System applications and Processes (SAP) Enterprise Resource Planning system	5	0.813	Reliable
Electronic weighment system	5	0.767	Reliable
Electronic document management system	7	0.798	Reliable
Auto Fleet mgt system	5	0.776	Reliable
Overall Reliability	22	0.7885	Reliable

Source: (Research data, 2018)

As indicated in table 3.3, reliability coefficient of all variables of the study were more than 0.7 as recommended by Collis and Hussey (2014).

3.8 Data Presentation and Analysis

The data collected was cleaned for consistency, sorted and then coded. It was analyzed using quantitative methods like percentages, mean, mode, frequencies and standard deviation. Inferential statistics like correlation analysis was used to establish the relationship between the independent and dependent variable. Statistical Package for Social Sciences (SPSS) program was also used in data analysis. Content analysis was used to analyze open ended questions. The study also used one way ANOVA (Analysis of Variance) to test whether there exist any significant difference between the variables being studied at 95% level of significance. In addition to ANOVA and SPSS multiple regression analysis was also be conducted. The findings were presented using frequency tables.

This study used multiple regression equation to establish the relationship between the Information management systems' project and organizational operation performance in KTDA.

The multiple regression equation was;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y is the dependent variable (project performance), β_0 is the regression constant, β_1, β_2, β_3, and β_4 are the coefficients of independent variables.

X_1 is System applications and Processes (SAP) Enterprise Resource Planning information system project

X_2 is Electronic weighment information system project

X_3 is Electronic document management information system project

X_4 is automated fleet management information system project

ε is the error.

3.9 Ethical Consideration

The researcher protected the rights and welfare of all the respondents and all parties involved in research study. Ethical, safety and privacy of every individual was taken into consideration while carrying out the research project. Confidentiality of data collected was adhered to as part of the ethics. This was to ensure that it was not disclosed to any other party that might use the data for their own purpose (Mugenda & Mugenda, 2008). Participants were informed the purpose of the study and it was be voluntary. They were informed that one would withdraw if they do not wish to

continue. The participant's personal details were eliminated and only relevant information to the survey was gathered. There was no discrimination on the basis of gender, race, physical disability, colour, ethnicity, or any factor that are not related to the competence and integrity of the probable respondent.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSIONS

4.1 Introduction

This chapter presents data analysis and presentation. Quantitative methods such as descriptive analysis, inferential statistics and ANOVA were used to analyze quantitative data while content analysis was used to analyze qualitative data. The data is presented in tables and graphs.

4.2 Response Rate

The study targeted 131 respondents; 49 were from headquarters, 23 from Kangaita, 28 from Mununga and from 31 Kimunye. They were sampled from the management staff (8), designated Staff (46) and non-designated Staff (77). The number of response was as tabulated below.

Table 4.1: Rate of response

Category of respondents	Management Staff	Designated Staff	Non Designated Staff	Total
KTDA HQ	2	29	13	44
Kangaita	1	3	14	18
Mununga	2	3	21	26
Kimunye	1	4	16	21
Total	6	39	64	109

Source: Researcher data, 2018

131 questionnaires were issued to the respondents. 117 representing approximately 89% of all the questionnaires issued were returned duly filled but 14 questionnaires representing approximately 11% were not returned. 7 of the returned questionnaires

were rejected because they were neither consistent nor complete hence were not suitable for analysis. Hence 109 questionnaires, approximately 83% were analyzed. 44 were from KTDA headquarters staff, 18 from Kangaita tea factory, 21 and 26 from Kimunye and Manunga tea factories respectively. 6% of all the respondents were from KTDA management staff, 39 respondents representing 36% were designated staff and 64 representing 58% were non-designated staff.

4.3 Background Information

This section analyzed the profile of the respondents such as the gender, age, highest level of education, job designation, department they work in and the period of time in years one have worked in KTDA headquarters or in tea factories.

4.3.1 Gender distribution of Respondents

The researcher requested the respondents to indicate their gender. The aim was to ascertain whether there was fair demographic representation of male and female in the study as well as identify gender distribution in KTDA.

Table 4.2 Demographic information

Gender	Frequency	Percentage	Cumulative Percentage
Male	79	72.4	72.4
Female	30	27.6	100.0
Total	109	100.0	

Source: Researcher data, 2018

Tables 4.2 above, 79 respondents were male representing 72.4% while 30 were female representing 27.6% of all the respondents. Majority of the respondents were male. The ratio of male to female in KTDA was approximately 3:1. This implies that KTDA focuses on employing more male than female.

4.3.2: Age Distribution of Respondents

The researcher strived to find out the age distribution in KTDA.

Table 4.3: Age Distribution in KTDA

Age (Years)	Frequency	Percentage	Cumulative Percentage
24 and Below	2	1.8	1.8
25 – 30	7	6.4	8.2
31 – 34	14	12.7	20.9
35 – 40	37	33.6	55.5
41 -44	42	38.2	93.6
45 – 50	7	6.4	100.0
Total	109	100.0	

Source: Researcher data, 2018

Table 4.3 above show age distribution of respondents in KTDA. 1.8% of the respondents were 24 years and below. 6.4% were between 25 to 30 years, 12.7% between the age of 31 to 34 years, 33.6% between 35 to 40 years, and 38.2% were aged between 41 to 44 years and 6.4% were between 45 to 50 years. None of the respondent was 50 of age and above years. From the table above, majority of the respondents were between the ages of 31 to 44 years representing 74% of all the respondents. This is an indication that KTDA does not retain most of its employees for long.

4.3.3 Job Designations of Respondents

To enable the researcher identify whether KTDA employees at all levels were represented in the study, the respondents were requested to indicate their job designation. Table 4.4 below shows 6 respondents representing 5.5% of all the respondents were managers, 39 respondents representing 35.8% and 64 representing 58.7% were designated and non-designated staff respectively. Hence majority of the respondents were non designated staff closely followed by designated staff.

Table 4.4: Job designation in KTDA

Job Designation	Frequency	Valid Percent	Cumulative Percent
KTDA Management	6	5.5	5.5
KTDA Designated staff	39	35.8	41.3
KTDA Non Designated staff	64	58.7	100.0
Total	109	100	

Source: Researcher Data, 2018

4.3.4 The Highest Level of Education Attained by Respondents

The researcher sought to identify the highest level of education attained by the respondents. This was important for the researcher to establish the ability of the respondents to read and interpret the questionnaire appropriately as well provide accurate answers. It was also vital in provision of the level of literacy of employees in KTDA.

Table 4.5: Highest Level of Education

Education Levels	Frequency	Valid Percentage	Cumulative Percentage
Secondary Certificate	5	4.5	4.5
Diploma/Certificate	14	12.8	17.3
Bachelor's Degree	78	71.5	88.8
Post Graduate Degree and Above	12	11.2	100
Total	109	100	

Source: Researcher data, 2018

Table 4.5 above, shows that 4.5% of the respondents had attained Kenya Certificate of Secondary Education, 12.8% Certificates and Diploma courses, 71.5% had bachelor's degree and 11.2% post graduate degree and above. All the respondents who filled the

questionnaires had attained Secondary school certificate and above. Hence they were literate and had ability to read, write, interpret and answer the questionnaire precisely.

4.3.5 Department the respondent work

The researcher had targeted all the departments in KTDA that uses MIS systems to run and manage operations of orthodox tea project. Hence he had requested the respondents the department which they work to ascertain whether MIS systems were used in the whole organization.

Table 4.6: Department the respondent(s) work in

Department		Frequency	Percent	Cumulative Percent
Valid	Operations	23	20.9	20.9
	Procurement	41	37.3	58.2
	ICT	20	18.2	76.4
	Finance	26	23.6	100.0
	Total	109	100.0	

Source: Researcher data, 2018

From the table 4.6 above indicates that approximately 21% of respondents were operations department, 37% procurement department, 18% and 24% from ICT and finance departments respectively. Hence researcher was able to get response from all the departments that were targeted. This implies that KTDA has employed few individuals in the ICT section and therefore it is likely to interfere with the adoption of IMS in the management of projects in the firm.

4.3.6: Length of Service in Years in KTDA

The researcher aimed to establish the duration of time in years the respondents had worked in KTDA. The aim was to find out whether the respondent was well acquainted with KTDA operations.

The table 4.7 below shows that 0.9% of the respondents had worked in KTDA for a period below 1 year. 11% between 1 to 4 years, 16.5% had worked between 5 to 9 years, 15.6% between 10 to 15 years, 47.7% between 15 to 19 years and 8.3% above 19 years. From the above tabulation, most of the respondents (71.6%) had worked in KTDA for more than 10 years and 88.1% for more than 5 years. Hence they were familiar with this the operations and MIS systems used in KTDA.

Table 4.7 : Period in (Years) in KTDA

Years	Frequency	Percentage	Cumulative Percentage
Below 1 year	1	0.9	0.9
1 – 4 years	12	11	11.9
5 – 9 years	18	16.5	28.4
10 -14 years	17	15.6	44
15 - 19 years	52	47.7	91.7
Above 19 years	9	8.3	100.0
Total	109	100.0	

Source: Researcher, 2018

4.4 ICT Literacy in KTDA

The study sought to establish whether the respondents had been trained on MIS systems and whether they understood the systems they were working with. The researcher further wanted to find out whether KTDA provided right and adequate equipment to access MIS systems and if the respondents received adequate support when needed.

4.4.1 Employees Training on IMS Systems

Table 4.8: Percentage of Employees Trained on IMS Systems

	SAP (%)	EDMS (%)	EWS (%)	AFMS (%)
Yes	92.7	89.8	97.3	84.5
No	7.3	10.2	2.7	15.5
Total	100	100	100	100.0

Source: Author, 2018

Table 4.8 above shows 93% had been trained on SAP Enterprise resource planning; only 7% had not trained. 89.8% had been trained on Electronic document management system (EDMS) and 10.2% not trained. 97% had been trained on Electronic Weighment System (EWS) and 2.7% were not trained. Automated Fleet Management System (AFMS) had 84.5% of the respondents being trained and only 15.5% not being trained.

4.4.2 Use MIS to manage orthodox tea project in KTDA

The researcher aimed at finding out how often the respondents use IMS systems in the course of performing their duties.

Table 4.9: Frequency of use of MIS to manage orthodox tea project

	Frequency	Percent	Cumulative Percent
Daily	90	82.5	82.5
Weekly	12	11	93.5
Monthly	7	6.5	100.0
Total	109	100.0	

Source: Researcher Data, 2018

Table 4.9 above shows 82.5% of the respondents uses MIS systems to manage orthodox tea project daily, 11% and 6.5% uses the systems on weekly and monthly basis respectively.

4.4.3 Provision of right equipment to access the MIS to manage orthodox tea project

The study sought to establish whether KTDA facilitate in provision for the right equipment to manage orthodox tea project.

Table 4.10: provision for the right MIS equipment

	Frequency	Percent	Cumulative Percent
Yes	106	96.4	96.4
No	4	3.6	100.0
Total	109	100.0	

Source: Researcher data, 2018

Tables 4.10 above indicated that 96.4% of the respondents had been provided with the right MIS equipment to manage orthodox tea project. 3.6% responded they had not been provided with the equipment. 89.1% of the respondents further agreed that MIS equipment provided were sufficient to manage orthodox tea project while 10.9 responded they were not adequate as indicated in table 4.11.

Table 4.11: Adequacy of MIS system equipment

	Frequency	Percent	Cumulative Percent
Yes	98	89.1	89.1
No	12	10.9	100.0
Total	109	100.0	

Source: Researcher data, 2018

4.4.4 Availability of support when your equipment/MIS systems fail

The study sought to establish whether the KTDA staff were provided with the necessary support when MIS systems or information technology fail.

Table 4.12: Availability of support when MIS/ Equipment fail

	Frequency	Valid Percent	Cumulative Percent
Yes	99	90.0	90.0
No	11	10.0	100.0
Total	109	100.0	

Source: Researcher data, 2018

From tabulation above, 90% of the respondents agreed they always receive support if MIS system and equipment(s) fail while 10% indicated the support is not always available.

4.5 Descriptive Statistics

4.5.1 Adoption of System applications and Processes (SAP) Enterprise Resource Planning system and project performance

The study aimed at establishing the extent to which System applications and Processes (SAP) Enterprise Resource Planning system had improved the performance of orthodox tea project. A likert scale of 1-5 was used with 5 representing extremely great extent; 4-Great extent; 3-Moderate extent; 2- low extent and 1- I don't know.

Table 4.13: Extent to which adoption of SAP Enterprise Resource Planning system have improved the project performance of orthodox tea project

	Generation of real-time decision	Interaction with suppliers and customers at systems level.	Consolidation of group business through system	Compliance with best practice	Monitoring/evaluation function of the business operation
	109	109	109	109	109
Maximum	5.0000	5.0000	5.0000	5.0000	5.0000
Mean	3.1500	3.0257	3.2143	4.674	4.2956
Standard Deviation	.91646	.98312	.84619	.97864	.77815

Source: Researcher data, 2018

Table 4.13 shows System Application and Processes-Enterprise Resource Planning had improved the performance of orthodox tea project on the following functions. Generation of real time decision had mean of 3.15 and standard deviation 0.91646; interaction with suppliers and customers had mean of 3.0257, standard deviation 0.98312; consolidation of group of businesses through MIS system mean of 3.2143, and standard deviation of 0.84619; compliance with the best practice had mean of 4.74 with standard deviation of 0.97864 and monitoring/evaluation of business operation had mean of 4.2956 with standard deviation of 0.77815. Hence SAP-ERP had contributed to great extent to the improvement of the performance of orthodox tea project.

4.5.2 Adoption of Electronic weighment system (EWS) and Project Performance

The study sought to identify the extent Electronic Weighment System had improved the performance of orthodox tea project in KTDA in various related functions listed in the table 4.14 below. A likert scale of 1-5 was used with 5 representing extremely great extent; 4-Great extent; 3-Moderate extent; 2- low extent and 1- I don't know.

Table 4.14: Electronic weighment system improvement on orthodox tea project

	Tracking of tea from the factory to the warehouse	Efficient and effective service delivery to the farmers	Costs identification and management	Reduce falsification; through product monitoring	Real-time communication
N	109	109	109	109	109
Maximum	5.0000	5.0000	5.0000	5.0000	5.0000
Mean	4.2303	4.3364	4.1172	4.2000	4.2364
Standard Deviation	.47352	.49304	.49233	.67093	.51132

Source: Researcher data, 2018

The table 4.14 above shows tracking of tea from factory to the warehouse had mean of 4.2303 and standard deviation of 0.47352, effective and efficiency in service delivery to farmers mean of 4.3364 and SD 0.4904, cost identification and management mean of 4.1172 and SD 0.4923, reduction of falsification through product monitoring mean of 1.2 and SD 0.67093 and real-time communication mean of 4.2364 and SD of 0.51132. Hence

4.5.3 Adoption of EDMS on the management of orthodox tea project in KTDA.

The study sought to establish the effect of EDMS on digitization and electronic archival of manual documents and its impact on management of orthodox tea project in KTDA. A likert scale of 1-5 was used with 5 representing extremely great extent; 4-Great extent; 3-Moderate extent; 2- low extent and 1- I don't know.

Table 4.15: Effect of EDM system on digitization of documents

	Real-time notification and tracking of documents and records	Provide complete document and user audit trails	Provide complete documen t and user audit trails	Hasten access to related business document s	Shorten process cycle times while enabling better decision making	Eliminates duplicatio n document ation	Enhance security and management of enterprise information
N	109	109	109	109	109	109	109
Maximum	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Mean	4.2593	4.2512	4.1816	4.3689	4.3891	4.3181	4.2271
Standard Deviation	.77306	.73183	.56321	.59268	.86723	.36581	.79623

Source: Researcher data, 2018

EDM system had affected digitization of manual documents in the management of orthodox tea project in KTDA to extremely great extent. Functions such as real-time notifications and tracking of documents and records mean 4.2593and standard

deviation of 0.77306, complete and auditable records for decision-making mean 4.2512 and Standard Deviation of 0.73183, hasten access to related business documents mean 4.1816 and Standard Deviation of .56321, shorten processes cycle times while enabling better decision making mean of 4.3689 and Standard Deviation of 0.59268, Eliminates duplication documentation mean 4.3181 and Standard Deviation of 0.86723, enhance security and management of enterprise information mean of 4.3182 and Standard Deviation of 0.86663 and provision complete document and user audit trails mean 4.2271and Standard Deviation of 0.79623as shown in table 4.15 above.

4.5.4 Effect of adoption of Automated Fleet Management System (AFMS) had improved management of transport logistics in Orthodox tea project in KTDA

The study sought to examine the extent to which fleet management system enhance efficiency in managing transport and logistics in areas where orthodox tea project have been launched by KTDA.

Table 4.16 Importance of AFMS managing transport and logistics

	Improved fuel consumption/ monitoring	Minimize/ Eliminate fleet misuse	Improved coordination and monitoring of the leaf collection process	Control careless driving	Eliminate data manipulation
N	109	109	109	109	109
Max.	5.0000	5.0000	5.000	5.0000	5.0000
Mean	4.4909	3.7103	4.829	3.9355	3.6100
Std. Deviation	.80986	.94684	.95631	.92055	.85810

Source: Researcher Data, 2018

The above table 4.16 shows majority of the respondents concurred AFMS had improved management of transport and logistics to extremely great extent in the

following functions; improve monitoring and consumption of fuel had mean of 4.45 and SD 0.8 and improving coordination and monitoring of the leaf collection process Mean 4.82; standard deviation 0.945. Other functions such as Control careless driving had mean of 3.93 and Standard deviation 0.92, Eliminate data manipulation mean of 3.63 and SD 0.92 and Minimize/eliminate fleet misuse with mean of 3.71 and Standard Deviation 0.858. Hence AFMS had improved management of orthodox tea project to great extent.

4.5.5 Influence of Management Information System on improving performance Orthodox tea project in KTDA

The study sought to examine how management information system had improved the performance of orthodox tea project in KTDA.

Table 4.17: The Influence of MIS on improving the performance of Orthodox tea project in KTDA

	System applications and processes (SAP) Enterprise Resource Planning	Electronic Weighment System	Electronic Document Management System	Automated Fleet Management System
N Valid	109	109	109	109
Max.	5.0000	5.0000	5.0000	5.0000
Mean	4.3455	4.6545	4.5364	4.4182
Std. Deviation	.70952	.85065	.51895	.59635

Source: Researcher Data, 2018

Results obtained from table 4.17 above shows most of the respondents agreed MIS system had greatly improved performance of orthodox tea project. System applications and Processes (SAP) Enterprise Resource Planning system had mean of 4.34 and SD 0.709, Electronic weighment system mean of 4.65 and SD 0.8506,

Electronic document management system mean of 4.536 and SD 0.518 while Auto Fleet management system had mean of 4.42 and SD 0.596. All IMS systems had a mean above 4 out of the possible 5 points.

4.6 Inferential Statistics

Inferential statistics were used to make predictions from the data collected and also to determine whether the results obtained from the sample could be generalized to the whole population; that is, all employees who were working in KTDA.

4.6.1 Correlation Analysis

To establish the strength of the relationship between the explanatory and the dependent variable, the researcher used Pearson correlation analysis. It sought to examine whether explanatory variables such as SAP Enterprise Resource Planning, Electronic Weighment System (EWS), Electronic Document Management System (EDMS) and Automated Fleet Management System (AFS) are associated either positively or negatively related to the dependent variable which was the performance of orthodox tea project.

Table 4.18: Correlation

		Performance of Orthodox Tea Project	SAP Enterprise Resource Planning	Electronic Weighment System	Electronic Document Management System	Automated Fleet Management System
Performance of Orthodox Tea Project	Pearson Correlation	1	.763**	.784**	.842**	.937**
	Sig. (2-tailed)		.000	.000	.000	.000
System applications and processes (SAP) Enterprise Resource Planning	Pearson Correlation	.763**	.643**	.563**	.605**	.754**
	Sig. (2-tailed)		.000	.000	.000	.000
Electronic Weighment System	Pearson Correlation	.784**	1	1	.507**	.613**
	Sig. (2-tailed)	.000			.000	.000
Electronic Document Management System	Pearson Correlation	.824**	.619**	.507**	1	.840**
	Sig. (2-tailed)	.000	.000	.000		.000
Automated Fleet Management System	Pearson Correlation	.937**	.719**	.613**	.840**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation; (2-tailed) significance level 0.01 level.

Source: Researcher Data, 2018

The researcher used SSPS package version 21 to conduct Pearson moment correlation. There was a strong positive relationship between the performance of orthodox tea project with all MIS systems and shown on table 4.18 above. System applications and processes (SAP) Enterprise Resource Planning MIS system (SAP-ERP) had correlation coefficient factor of 0.763 and level of significance level of

0.000. This relationship was statistically significant since significant value of 0.000 was below the level of significance of 0.05 (0.1 in 2- tailed test).

There was also strong positive correlation between Electronic Weighment System (EWS) and the performance of orthodox tea project. The correlation coefficient factor was 0.784; the significance value was 0.000. Electronic Document Management System (EDMS) had correlation coefficient factor of 0.824 and significance value of 0.000. While Automated Fleet Management System (AFMS) had correlation coefficient factor 0.937 and significance value was 0.000. All the MIS systems were statistically significant as their significance value was 0.000 which was below 0.05 or 0.1 level of significance in 2-tailed test.

These findings agreed with studies conducted by Hitt, L. M. and Zhou X.G, (2002) who had argued System applications and processes (SAP) Enterprise Resource Planning system can improve performance of an organization if used effectively. Petter, Delone, and Mclean (2013); Benjamin, Malone and Yates (1996) ; Galbraith (2010) separately stated MIS systems can improve efficiency of any project the organization is undertaking hence reducing the cost, enhancing utilization of factors employed and ultimately improving productivity.

4.6.2: Regression Analysis

The study adopted multiple regression analysis statistical technique to measure the effect of the predictive variables on dependent variable.

Table 4.19: Coefficient of determination

Model	R	R Square (R^2)	Adjusted R Square	Standard Error of Estimate
1	.893[a]	.865	.854	.56601

Source: Researcher Data, 2018

Coefficient of determination was used to examine the extent to which the model used fitted the data collected in the study. Table 4.19 above shows the model fit was 86.5% as indicated by R^2 (R Square). Adjusted R^2 (coefficient of multi determination, is the percentage of variance explained by the independent variables) was 85.4%. Hence 85.4% of the variation in performance of orthodox tea project implemented by KTDA was explained by predictors variables used in the study. That is the variations in performance of orthodox tea project had been explained by explanatory variables such as System applications and processes (SAP) Enterprise Resource Planning, Electronic Weighment System, Electronic Document Management System and Automated Fleet Management System.

4.6.3 ANOVA Analysis

In the study, researcher also used ANOVA to evaluate significance of regression analysis model.

Table 4.20: ANOVA

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	11.955	1	11.955	37.317	.000[b]
Residual	34.599	108	.320		
Total	46.555	109			

Source: Researcher data, 2018

The significance level was 0.00% which was less than p value of 5%. This indicated the data was ideal and the model was statistically significant. The critical value of 37.317 is greater than 2.40 (from the F test tables) that is (37.317>2.40), an indication that System applications and processes (SAP) Enterprise Resource Planning, Electronic Weighment System, Electronic Document Management System and

Automated Fleet Management System all had significant effect on performance of orthodox tea project. Mean of squares of 11.955 indicated the variations among the variables were minimal at 1 degree of freedom in 2 tail test.

4.6.4 Coefficients

Table 4.21: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-1.117	1.2015			
System applications and processes (SAP) Enterprise Resource Planning	.649	.049	.367	81.83	.000
Electronic Weighment System	.598	.069	.286	10.561	.000
Electronic Data Management System	.489	.032	.249	83.72	.000
Automated Fleet Management System	.555	.091	.523	13.109	.000

Source: Researcher Data, 2018

The coefficients of equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$) as generated by SSPS output was:

$Y = -1.17 + 0.649X_1 + 0.598X_2 + 0.489X_3 + 0.555X_4 + 1.2015$

From the regression equation, the study revealed a unit change in System applications and processes (SAP) Enterprise Resource Planning while holding all other factors constant would affect the performance of orthodox tea project by a factor 0.649; a unit change in Electronic Weighment System while holding all other factors constant would affect the performance of orthodox tea project by factor 0.598; a unit increase in Electronic Data Management System Electronic Data

holding all other factors constant would enhance the performance of orthodox tea project by factor 0.489 while a unit change in Automated Fleet Management System while holding all other factors constant would affect the performance of orthodox tea project by factor 0.555. Hence all the four management information systems had direct effect to the performance of orthodox tea project.

4.7 Rating MIS functions in relation to management of orthodox tea project in KTDA

The researcher aimed to identify whether in general all MIS systems were important in improving the performance of orthodox tea project.

Table 4.22: Rating of MIS functions in relation to management of orthodox tea project in KTDA

		Frequency	Percent	Cumulative Percent
Valid	Very important	82	74.5	74.5
	Important	21	19.1	93.6
	Not important	5	4.5	98.2
	I don't know	2	1.8	100.0
	Total	109	100.0	

Source: Researcher Data, 2018

Table 4.18 above indicated 74.5% of respondents approved the MIS systems were very important, 19.1% important, 4.5% not important and 1.8% I don't know. From above statistics, the majority of the respondents 96.6% agreed the systems were important to the organization.

4.8 Areas of MIS need to be improved in managing orthodox tea project in KTDA

The researcher used content analysis to examine areas which KTDA needed to improve its information management systems in managing the operations of orthodox tea project. Majority of the respondent approximately 90% (97 out of 109

respondents) stated there was need for the KTDA to conduct regular end user training in various MIS systems to build more capacity especially in System Application and Processes (SAP) and EDMS. They also cited enhancement of Graphical user interface (GUI), to make it have more user friendly features and facilitate more interaction with the users. Other area which respondents felt need to be improved was to re-engineer the business flow processes to enhance efficiency and effective flow and interaction of various operations. Improvement of existing equipment, provision of new equipment and replacement of old hardware as well upgrading of the software was a major concern among the respondents. Respondents especially in ICT department claimed information processing speed needed to be improved to facilitate performance optimization. Respondents from Mununga and Kimunye Tea factories had opinion that KTDA needed to improve on internet connectivity to facilitate real-time receipt and sharing of information.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter represents the summary, conclusions and recommendations of the data collected, analyzed and the study findings based on the study objectives.

5.2 Summary

The purpose of the study was to investigate the effect of adoption of information management systems on project performance: case of orthodox tea project, Kenya. The study aimed to achieve the following objectives; determine the influence of the adoption System Applications and Processes (SAP) Enterprise Resource Planning (ERP) information system, assess the effect of adoption of Electronic Weighment Information System, establish the effect of adoption of Electronic Document Management Information System and to evaluate the influence of adoption of Automated Fleet Management Information System on project performance of orthodox tea project in Kenya Tea Development Agency.

Both descriptive and explanatory research designs were employed in the study whereas 430 respondents were targeted for the study. They were drawn from the headquarters, Kangaita, Mununga and Kimunye tea factories. They included the management staff, designated Staff and non-designated Staff. The management and all the departments in KTDA were well represented in the study

Descriptive statistics revealed majority of the respondents uses MIS systems to manage orthodox tea project either on daily, weekly or monthly basis. They also agreed they had been provided with the right MIS equipment to manage orthodox tea

project. The respondents further agreed that MIS equipment provided were sufficient to manage orthodox tea project and they are always provided with support in case the system failed.

5.2.1 Effects of System Applications and Processes (SAP) Enterprise Resource planning system on performance of orthodox tea project in KTDA

Results obtained from the findings showed that majority of the respondents were trained on SAP- ERP. There was also a strong positive correlation between performance of orthodox tea project in KTDA and System Applications and Processes (SAP) Enterprise Resource Planning (ERP) information system. Regression analysis revealed a unit change in System applications and processes (SAP) Enterprise Resource Planning (ERP) while holding all other factors constant.

Descriptive statistics confirmed that SAP-ERP system affects the performance and the operation of orthodox tea project to great extent .SAP-ERP had to great extent facilitated generation of real time decision, interaction with suppliers and customers, consolidation of group of businesses; and to extremely great extent in enabling the organization to comply with the best practice as well as monitoring and evaluation of business operation. Hence it had contributed to great extent to the performance of orthodox tea project.

5.2.2 Effects of Electronic Weighment System (EWS) on performance of orthodox tea project in KTDA

Descriptive statistics revealed that majority of the respondents were trained on Electronic Weighment System (EWS). They further showed EWS had positively impacted performance of orthodox tea project to extremely great extent. A strong

positive correlation exists between EWS- MIS system and project performance. EWS led to the improvement of tracking tea from factory to the warehouse, effective and efficient service delivery to farmers, cost identification and management, reduction of falsification through product monitoring and real-time communication. Hence Electronic Weighment System had improved the operations of orthodox tea project to great extent.

5.2.3 Effects of Electronic document management system (EDMS) on performance of orthodox tea project in KTDA

The results obtained in study showed majority of the respondents were trained on Electronic document management system (EDMS). The findings showed there was a strong positive correlation between performance of orthodox tea project and Electronic document management system (EDMS) MIS system. Descriptive statistics also revealed EDMS affect the project performance of orthodox tea project to great extent. EDM system had facilitated digitization of manual documents in the management of orthodox tea project in KTDA to extremely great extent. Functions such as real-time notifications, documents and records tracking, auditing records, access to business related documents, shortening of processes cycle times, eliminates duplication documentation, enhance security and management of enterprise information, and provision complete document and user audit trail has greatly improved.

5.2.4 Effects Automated Fleet Management System (AFMS) on improving the performance of orthodox tea project in KTDA

The study also found majority of the respondents were trained on Automated Fleet Management System (AFMS) MIS system. The findings revealed that AFMS system

had enhanced improvement of orthodox tea project to great extent. AFMS had greatly improved efficiency management of transport and logistics, fuel consumption, coordination and monitoring of the leaf collection process. It had also controlled careless driving, data manipulation and fleet misuse. This was reaffirmed by inferential statistics which showed a strong positive relationship between the project performance of orthodox tea project and Automated Fleet Management System MIS system.

5.3 Conclusion

5.3.1 Effect of adoption of IMS on project performance of orthodox tea project

This study concluded that the adoption of IMS leads to improved project performance. This was evident in the seamless use of IMS systems throughout the organization which facilitated the smooth flow internal and external business processes of Kenya Tea Development.

5.3.2 Effect of adoption of System Applications and Processes (SAP) Enterprise Resource Planning System on project performance of orthodox tea project in KTDA

The study also concluded that the adoption of System Applications and Processes (SAP) Enterprise Resource Planning system had strong positive impact on project performance of orthodox tea project in KTDA. It had facilitated smooth flow of internal business activities such as generation of real time decision, monitoring and evaluation of business operation and compliance with the best practice. Hence reducing costs associated with lead time on information processing and operation aspects.

5.3.3 Effect of adoption of Electronic Weighment Information System (EWS) on performance of orthodox tea project in KTDA

Electronic Weighment Information System (EWS), MIS system can greatly improve the performance a project in any organization especially in manufacturing and agricultural sector. EWS had led to the improvement of tracking of tea from factory to the warehouse which can as well be used by any organization to monitor inventories and materials in the stores. Effective and efficient service delivery to producers/ customers and real-time communication through virtual private mobile networks and personal data assistance (PDA) among the organization departments/subsidiaries and customers/ producers of raw material can also be enhanced. EWS enable the organization to improve cost identification and management mechanism as well as reduction of falsification through product monitoring as shown in the study.

5.3.4 Effect of adoption of Electronic Document Management System (EDMS) on project performance of orthodox tea project in KTDA

The study has shown there was strong positive relationship between the project performance and EDMS. Hence functions such as real-time notifications, tracking of documents, decision-making, accessibility to business documents, shorten processes cycle time, elimination of duplication documentation, security and management of enterprise information had been made easy.

5.3.5 Effect of adoption of Automated Fleet Management System (AFMS) MIS system on project performance of orthodox tea project in KTDA

The study also concluded Automated Fleet Management System (AFMS) MIS system also lead in improving efficiency and effectiveness in transport and logistics management. It enables the organization to control fuel consumption, coordination and monitoring fleets, control careless driving and Minimize/eliminate fleet misuse.

5.4 Recommendations

5.4.1 Recommendation on adoption of MIS and project performance of orthodox tea project

The study recommends that project managers of orthodox tea project should acquire adequate MIS equipment and integrate the system in the project management. MIS increases efficiency in the organization hence eliminating unnecessary costs and improves smooth flow of operations.

5.4.2 Recommendations on adoption of System Applications and Processes (SAP) Enterprise Resource Planning system MIS and project performance of orthodox tea project

System Applications and Processes (SAP) Enterprise Resource Planning system has the potential of improving project performance in organizations. The project managers of orthodox tea project should therefore integrate and train employees on the usage of System Applications and Processes (SAP) Enterprise Resource Planning system.

5.4.3 Recommendations on adoption of Electronic Weighment Information System (EWS) on improving project performance of orthodox tea project

The study also recommended Electronic Weighment Information System (EWS), is an important tool of managing stores and warehouses. It improves effectiveness and efficiency in service delivery to producers/ customers, real-time communication, cost identification and management mechanism and reduce of falsification through product monitoring. The project managers should therefore facilitate the usage and integration of EWS in project management in order to improve project performance.

5.4.4 Recommendations on adoption of Automated Fleet Management System (AFMS) on improving project performance of orthodox tea project

Automated Fleet Management System (AFMS) is also recommended as an important tool for improving efficiency and effectiveness in transport and logistics management. It enables the organization to control fuel consumption, coordination and monitoring fleets, control careless driving and Minimize/eliminate fleet misuse. The management should adopt the usage of AFMS in the management of its fleet.

5.5 Recommendations for further studies

There is need to examine the effectiveness of MIS systems in improving the performance of the projects in other organizations in manufacturing and service provision sector. Critical evaluation can also be conducted on each individual MIS system to establish its individual contribution to the performance of any project. More studies should be done on possibility of integrating all the four systems and evaluate the challenges or benefits organization can experience in implementing and running the operations of their projects. A different research design can also be used especially in organizations undertaking many projects where some systems (independent variables) can be manipulated and comparison of the results done.

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APPENDICES

APPENDIX 1: LETTER FOR INTRODUCTION

Martin Mwarangu

P.O BOX 30213-00100

Nairobi

Tel: 0722590332

5th March 2018

Dear Sir/ Madam,

Re: REQUEST FOR COLLECTING THE DATA

I am Kenyatta university student undertaking Degree of Masters in Business Administration (Project Management). I am currently conducting research project on the effect of Information management systems on performance of orthodox tea project in KTDA

I request that you answer the enclosed questionnaire to help me carry out this project. The information provided will be treated with utmost confidentiality and will only be used for academic purposes. If you agree to participate you will be given the questionnaire to fill. Should you change your mind not to fill the questionnaire it will be allowed but we request that you give us a notice of one week.

Thank you for your cooperation.

Martin Mwarangu

APPENDIX 2: QUESTIONNAIRE

Instruction: please tick where appropriate in the bracket or provided space.

WORK STATION: ……

Section one: Demographic Information

i. Gender: Male ( ) Female ( )

ii. What is your age bracket? (Tick where appropriate).

24 years and below ( ) 25-30 years ( ) 31- 35 years ( ) 36-40 years ( )

41-45 years ( ) 46- 50 years ( ) 51 years and above ( )

iii. Indicate your designation in KTDA. (Tick where appropriate).

KTDA HQ Top management ( ) KTDA HQ Designated staff ( )
Factory management staff ( ) Factory designated staff ( )
Factory designated staff ( )

iv. Indicate your highest level of education; please tick where appropriate.
Primary School ( ) Secondary School ( ) College Certificate ( ) Diploma ( )
Bachelor Degree ( ) Master's Degree ( ) Others ( )
Post Graduate Degree and above ( )

v. In which Department do you work?

Operations ( ) Procurement ( ) ICT ( ) Finance ( )

vi. From the space provided below please tick for how long you have worked with KTDA.

Below 1 year ( ) 1 to 4 years ( ) 5 years- 9 years ( )
10years to 14 years ( ) 15 years to 19 years ( ) Above 19 years ( )

SECTION 2: ICT Literacy Penetrations in KTDA

i. Have you trained in any of the following ICT systems? (Tick where appropriate)

a) SAP Enterprise resource planning system Yes [ ] No [ ]

b) Electronic document management system (EDMS) Yes [ ] No [ ]

c) Electronic weighment system (EWS) Yes [ ] No [ ]

d) Automated fleet management system (AFMS) Yes [ ] No [ ]

ii. How often do you use MIS to manage the orthodox tea project in KTDA?

Daily ( ) Weekly ( ) Monthly ( ) Not at all ( )

iii. Has the company provided you with the right equipment to access the MIS?

a. Yes ( ) No ( )

iv. Are the MIS equipments adequate? Yes ( ) No ( )

v. Do you get the right support when your equipment/MIS fails?

a. Yes ( ) No ( )

SECTION 3

(a) To what extent has System applications and Processes (SAP) Enterprise Resource Planning system improved the performance of orthodox tea project in KTDA

Question	Extremely great extent	Great extent	Moderate extent	Low extent	I don't know
Generation or real-time decision					
Interaction with suppliers and customers at systems level not supported.					
Consolidation of group business and through system not supported.					
Compliance with best practice					
Monitoring /evaluation function of the business operation					

(b) To what extent has the Electronic weighment system improved the operations of orthodox tea project in the following functions?

Question	Extremely Great Extent	Great Extent	Moderate Extent	Low Extent	I Don't Know
Tracking of made tea from the factory to the warehouse					
Efficient and effective service delivery to the farmers					
Costs identification and management					
Reduce falsification; through product monitoring					
Real time communication					

(c) The effect of electronic document management system on digitization and electronic archival of manual documents in the management of orthodox tea project in KTDA.

Question	Extremely great extent	Great extent	Moderate extent	Low extent	I don't know
Provide complete and auditable records for decision-making					
Real-time notifications and tracking of documents and records					
Hasten access to related business documents					
Shorten processes cycle times while enabling better decision making					
Eliminates duplication documentation					
Enhance security and management of enterprise information					
Provide complete document and user audit trails					

(d) To what extent is automated fleet management system important in managing transport logistics for the Orthodox tea Project in KTDA

Question	Extremely Important	Very Important	Important	Fairly Important	Not Important
Improved fuel consumption					
Improved coordination and monitoring of the leaf leaf collection process					
Control careless driving					
Eliminate data manipulation					
Minimize/eliminate fleet misuse					

SECTION 4: Organization Operation Performances

(a) To what extent do you agree with the following statements concerning the influence of Management Information System on performance of Orthodox tea project in KTDA?

QUESTION	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
System applications and Processes (SAP) Enterprise Resource Planning system					
Electronic weighment system					
Electronic document management system					
Auto Fleet mgt system					

(b) How do you rate the MIS functions in relation to management of orthodox tea project in KTDA

Very Important ( ) Important ( ) Not Important ( ) I don't know ( )

(c) According to your view, which other areas of MIS need to be improved to improve performance of your duties in managing orthodox tea project in KTDA?

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