

**FACTORS INFLUENCING IMPLEMENTATION OF  
ENTREPREISE RESOURCE PLANNING MODAL AMONG DAIRY  
ENTREPRISES IN KIAMBU COUNTY, KENYA**

**BY**

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## DECLARATION

This research project report is my original work and has not been presented anywhere for consideration for the award of a degree in any other University.

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## **DEDICATION**

This research project is dedicated in memory of Mr. & Mrs. Omondi who inspired me to attain my academic potential. To my husband, David for his continued support and encouragement. To my brother John Paul, and my sister Elizabeth for their patience and unfailing support; and lastly to my children Javan and Bethany for their encouragement.

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## LIST OF ABBREVIATIONS AND ACRONYMS

- ERP:** Enterprise Resource Planning
- KDB:** Kenya Dairy Board
- KCC:** Kenya Cooperative Creameries
- SPSS:** Statistical Package for Social Sciences
- UHT:** Ultra High Temperature
- ICT:** Information and Communications Technology
- IT:** Information Technology
- MRP:** Materials Resource Planning
- TTF:** Task-Technology Fit
- USA:** United States of America
- PEU:** Perceived Ease of Use
- HR:** Human Resource

## ABSTRACT

In recent years there has been an increase in using Enterprise Resource Planning (ERP) systems in large companies and government corporations mainly in developed countries. While there is wide adoption of ERP systems in Western economies, developing countries lag far behind. However, due to recent economic growth, developing countries such as Kenya are increasingly becoming major targets of ERP vendors. There is an urgent need for understanding ERP implementation issues in developing countries, as ERP systems are still in their early stages in these countries. They face additional challenges related to economic, cultural and basic infrastructure issues. This study provides some key insights into the implementation and use of ERP systems in the public and the private sectors in Kenya. The objective of the study was to establish how employee knowledge, organization culture, organization resources and stakeholder involvement influence the implementation of the ERP modal among dairy enterprises in Kiambu County. The study was carried out in three major dairies in Kiambu County, comprising the marketing, planning and development, ICT and production departments. Census technique was used to engage all the top and middle management in the selected dairies who are involved with ERP implementation. A questionnaire was used to collect primary data, the questionnaire comprised of both closed and open ended questions. Secondary data was collected through reading available material such as journals and books. The data was analyzed using descriptive and inferential statistics. The data analysis process was aided by a Statistical Package for Social Science (SPSS). The data was presented using tables. In regards to the employee knowledge, majority (81%) of the respondents had above diploma level of education and therefore they reported that they were able to utilize the ERP model in their organizations. Majority (98%) of the respondents agreed that some preparations were done before implementing the modals with citing organization need assessment as the main preparation practice done before ERP implementation. The study established that concerning the stakeholders involvement majority of the employees reported that majority of the stakeholders in the organization were involved in the ERP implementation. Majority were involved in offering technical expertise. Majority (48.9%) of the respondents were to a great extent satisfied with ERP implementation process while most respondents said stakeholder involvement helped in system modification in the last one year. The main resources required for implementation were financial related. Majority of the respondents reported that their organization had adopted customer oriented culture. Majority reported that ERP has helped in regulating production line and inventory database therefore improving the organization culture in terms of efficiency. The study therefore concluded that employee knowledge is a significant variable in ERP implementation. This means that the better the knowledge provided to employees the better the ERP implementation process. Similarly, there is a positive correlation between organization resources and the ERP implementation. Stakeholder involvement also has a positive relationship with the ERP implementation. Likewise, Organization culture has a positive relationship with implementation of ERP modal. On the basis of the findings of the study the recommendation are that the organization management must strive to improve employees' knowledge that can be used in ERP implementation. This can be improved through training and proper orientation for new employees. This will ensure that all employees are conversant with the ERP modal used in the respective organizations. The shareholders must ensure that enough resources are allocated to the implementation process. Resources in terms of human

and financial resources are crucial in strategic planning and implementation processes.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

Information technologies are becoming an inseparable part of a competitive business strategy. Enterprise Resource Planning systems (ERP) are one of products of information technologies. Enterprise Resource Planning systems are the principal infrastructure of information systems helping an organization to prosper under the present day economic conditions. Successfully implemented Enterprise Resource Planning systems create organizational synergy, which provides a stimulus for the development of particularly efficient processes necessary for the success of an organization. ERP systems can be defined as integrated software package composed of set of standard functional modules such as production, sales, human resources, and finance which can be adapted to the specific needs of each organization (Muscatello & Chen, 2008).

Enterprise Resource Planning (ERP) systems are multi-module off the shelf software suites that seek to integrate and optimize a firm's information flow, business processes, and functions and provide data in real time (Law & Ngai, 2007). It encompasses a set of business applications (modules) used to carry common business functions such as accounting, stock control and logistics. The essence of a complete ERP system is to automate business processes, share common data across the organization but most importantly, to produce real-time data (Al-Mashari, & Zairi, 2000). Popularity of ERP systems was founded in the mid to late 1990's which allowed companies to purchase a single system that could be used in the managing of business processes as a package. In a single package, data integrity was seamless in integration from one business function to another. Due to growth in ERP systems, many companies had the opportunity to replace their old systems with ERP. Being common for many companies today, reliable, seamless, flow of data between business departments was unheard of just 25 years ago (Doom, *et al.*, 2009).

Enterprise Resource Planning Systems (ERP) have emerged as a response to the enormous transformation in businesses caused by clients' demand for fast services, wider choices and lower prices. Other factors such as globalization, the need for process standardization and the highly changeable expectations of customers, have

also participated in business transformation. Implementing ERP systems allows organizations to achieve many benefits including the availability of integrated information, high responsiveness to customers' and suppliers' needs and the provision of timely information to decision makers. Another key benefit of ERP systems is the integration of information throughout the supply chain which leads to cost and inventory reductions and improved operating performance. This of course excels the performance of the functional areas within organizations. For instance, in sales, increased efficiency leads to satisfy customers through providing lower quotes and increased responsiveness. In service, accessible data on customers' services history in addition to (for example, warranty information) leads to improved interaction with customers. Therefore, it can be noted that implementing ERP systems elevates and improves the performance of organizations. From a technical perspective, ERP systems provides many advantages. For example, all information can be allocated in a central place that is easily accessible and shared by the functional departments. This eliminates the need for legacy systems that maintain incompatible and fragmented data (Sumner, 2005).

Top management support is one of the most significant factors determining a successful implementation of Enterprise Resource Planning systems in an organization. Project management is a professional activity based on contemporary scientific knowledge, experience, methods, means and technologies and focusing on high results. The majority of research work have placed a particular emphasis on top management support as prerequisite for a successful implementation of ERP systems. The mission of top management is to create a favourable environment for the implementation of ERP systems and attaining of desired results. Top executives must not only be observers, but also participants. The role of top management in the implementation of Enterprise Resource Planning systems covers formulation of real and justified goals based on the awareness of the opportunities and limitations provided by IT (Zuckweiler *et al.* 2003).

There are several reasons why a continued growth of ERP projects is to be expected (Stensrud, 2001) the ERP vendors are continuously expanding the capabilities of their packages by adding functionality for new business functions such as sales force automation, supply-chain, order management, data warehousing, maintenance repair-and-overhaul. The ERP vendors are transitioning to Web-based applications and this

may lead to faster flow of information in the logistics chain, and therefore, many ERP customers will require these Web-based ERP systems. The emergence of e-commerce will also increase the demand for Web-based ERP systems. ERP packages touch many aspects of a company's internal and external operations. Consequently, successful deployment and use of ERP systems are critical to organizational performance and survival (Markus *et al.*, 2000). Potential benefits include drastic declines in inventory, breakthrough reductions in working capital, abundant information about customer wants and needs, along with the ability to view and manage the extended enterprise of suppliers, alliances and customers as an integrated whole (Chen, 2001).

### **1.1.1 Dairy Processing in Kenya**

Kenya's dairy industry is regulated through the Dairy Industry Act, Chapter 336 of the Laws of Kenya, as enacted in 1958. Under the Act, the Kenya Dairy Board (KDB) was established in order to "organize, regulate, and develop efficient production, marketing, distribution and supply of dairy produce in Kenya". Hence the KDB has broad powers over the organization of the dairy marketing system in Kenya. However, over the years, the KDB has limited its operations primarily to the regulation of businesses involved in the processing and distribution of dairy products, at the risk of leaving the industry in the hands of a nationwide cooperative dairy processing and marketing cooperative called the Kenya Cooperative Creameries Limited (the KCC), at least upto 1992 when the "Winds of Change" in the name of marketing liberalization began to sweep across the industry (Kenya Dairy Board, 2008).

Smallholder dairy farmers accounts for over 80 percent of the country's total milk production which currently stands at approximately 3.8 billion liters annually. About 45% of the total production is consumed at home or fed to calves whereas approximately 55% is marketed. 86 percent of the 55% (almost 50% of total production) of the marketed milk get to the consumer through "warm-chain". This is either directly from farm to consumer, (approximately 42%) or from farm through milk bar, shops, kiosks, mobile traders and dairy cooperative societies (approximately 44%) to consumer. Only 14% of the marketed milk get to consumer through "cold-chain" either directly from farm to a processors or through dairy cooperative societies (approximately 12%) which is then distributed to consumers after processing. For

processors and marketers of milk and milk products to meet the growing consumer demand and to compete effectively with imports and competing beverages and foods, quality assurance (with respect to consumer perception of quality) is paramount. Milk processing process is very fragmented and the information requires proper management (Rehber, 2000).

There are 30 registered processors in the country. However, 80% is controlled by 5 processors: new KCC, Brookside, Spin knit, Githunguri and Limuru. Large dairy farmers and co-operatives collect, bulk, and sometimes cool the milk before supplying to processors. About 85% of milk is sold as fresh milk either as short life pasteurized milk or long-life Ultra High Temperature (UHT) milk.

## **1.2 Statement of the problem**

Companies implement ERP systems to achieve competitive advantage through integration of various organizational functions; thus resulting in seamless and efficient business processes. The benefits and challenges experienced by different organizations depend on environmental and organizational factors. However, previous studies show that there are challenges in the use of ERP. Many ERP systems still face resistance, and ultimately, failure and that between 50 percent and 75 percent of U.S. firm's experience some degree of failure with the recent survey revealed that 65 percent of executives believe ERP implementation has at least a moderate chance of hurting their business (Umble & Umble, 2002). Three quarters of the ERP projects are considered failures and many ERP projects ended catastrophically (Rasmy *et al.*, 2005).

Determining factors that are positioned behind a successful ERP system implementation has been a key research question in previous research. Implementation of an ERP system is a complex process including a great many factors and conditions which can potentially influence successful implementation. These factors might have a positive effect on the ERP implementation project outcome, whereas the lack of these conditions could create trouble through ERP implementation. The literature varies regarding what factors are vital for ERP implementation success or responsible for its failure (Zhang *et al*, 2005). Critical success factors of ERP implementation projects have been investigated from several diverse points of view (Nah *et al.*, 2003). Many researchers have recognized a range

of factors that could be critical to the success of an ERP system implementation. For example, Somers and Nelson (2004) recognized 22 critical success factors including Top management support, Education on new business processes, User training on software, On the hand, Al-Mashari *et al.* (2003) identified 12 critical ERP factors such as ERP selection, project management, training and education, business process management, cultural and structural change management while Umble *et al.*(2003) divided the factors into 10 categories including Commitment by top management, Clear understanding of strategic goals, Excellent implementation project management, Great implementation team, Successfully coping with technical issues, Organizational commitment to change, Data accuracy, Extensive education and training, Focused performance measures, and Multi-site issues resolved. Based on Dezdar and Sulaiman's (2009) work the factors can be grouped into 17 categories which subsequently can be re-organized into three main categories; organizational, project and system. Dezdar (2010) found organizational factors to be quite instrumental in determining the ERP implementation success. This research focus on three aspects of the organizational factors i.e. Top management support, ERP training and education, and organization resource and culture among the dairy processors in Kiambu district.

### **1.3 Purpose of the Study**

The purpose of this study was to determine the factors influencing the implementation of Enterprise Resource Planning modal among dairy enterprises in Kiambu County, Kenya.

### **1.4 Objectives of the Study**

The objectives of the study were:

1. To establish how employee knowledge influences implementation of ERP modal among dairy enterprises in Kiambu County.
2. To examine how organization resources influence implementation of ERP modal among dairy enterprises in Kiambu County.
3. To assess the extent at which the organizational culture influence implementation of ERP modal among dairy enterprises in Kiambu County.
4. To establish how the stakeholder involvement influence implementation of ERP modal among dairy enterprises in Kiambu County.



### **1.5 Research Questions**

The study aimed at answering the following questions:

1. How does employee knowledge influence implementation of ERP modal among dairy enterprises in Kiambu County?
2. How does organization resources influence implementation of ERP modal among dairy enterprises in Kiambu County?
3. To what extent does organizational culture influence implementation of ERP modal among dairy enterprises in Kiambu County?
4. How does stakeholder's involvement influence implementation of ERP modal among dairy enterprises in Kiambu County?

### **1.6 Significance of the Study**

The focus of this study is to evaluate the factors influencing implementation of ERP modal among dairy enterprises. The findings and recommendations from this research may be useful by two key audiences. Firstly, the research findings may be useful to the community within information systems research, particularly to researchers whose area of research expertise focuses on ERP introduction, selection, acquisition, implementation, technology acceptance and technology adoption.

Secondly, the findings and recommendations may be useful to ERP system vendors who wish to capture the manufacturing market. ERP implementing firms can also recognize the environmental and internal requirements and prepare accordingly. Given the complexity and integrated nature of ERP and large investment involved it is imperative for organization to study the experiences of others, and learn from their practices and success factors. In this light, organization planning to implement ERP in Kenya can learn from the successes and failures of the case study organization and therefore, avoid pitfalls which can lead to ERP project failures. The study will be a source of reference material for future researchers on other related topics; it will also help other academicians who undertake the same topic in their studies. The study will also highlight other important relationships that require further research. The scholars and researchers who would like to debate or carry out more studies on ERP may find this study useful.

### **1.7 Limitation of the study**

While conducting this research, certain challenges were anticipated. For example, it was expected that the respondents especially staff members could give responses

which are biased due to fear of higher authorities. We informed the respondents that their responses would be treated as confidential and this encouraged them to complete the questionnaire.

### **1.8 Delimitation of the Study**

The success of the study was dependent on easy access to companies by researcher in gathering information regarding implementation of ERP modal among dairy enterprises in Kiambu County. The study focused on staff of the dairy firms in Kiambu County who are scattered in the entire County which comprises of 10 dairies namely: Sigona dairy, Muguga dairy, Gatundu dairy, Limuru dairy, Kabete dairy farmer cooperative, Ndumberi dairy farmers cooperative, Kiambaa dairy farmers cooperative, Kiganjo Dairy, Githunguri dairy, and Brookside dairy. However, considering the size of the county and the distance across these locations, this therefore means that the study was done only in three major dairies in terms of market share and profitability.

### **1.9 Basic assumptions of the Study**

The study entailed examining all persons who were involved in implementation process in one way or the other. Further, it was assumed that the respondents would be knowledgeable and provided accurate, truthful and correct responses to the items in the questionnaires.

### **1.10 Definition of terms**

**Enterprise Resource Planning (ERP):**

This is a business management software—usually a suite of integrated applications—that a company can use to store and manage data from every stage of business.

**Knowledge :**

Knowledge or ability is something a worker knows or can do that enables the worker to successfully perform the duties of the job.

- Organization resources:** Organizational resources are all assets that a company has available to use in the production process. There are four basic types of organizational resources: human resources, capital resources, monetary resources and raw materials.
- Organizational culture:** Organizational culture refers to the philosophies, attitudes, beliefs, behaviors and practices that define an organization. The organizational culture may reflect characteristics that differentiate one company from another, ranging from internal policies and procedures to public relations and customer interactions.
- Stakeholder's involvement:** Stakeholders can be defined as people or organizations that are concerned about, affected by, have a vested interest in, or are involved in some way with the ERP implementation.

### **1.11 Organization of the study**

This study is organized in five chapters.

Chapter one deals with the background of the study, the statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, assumption of the study, limitation of the study, delimitations of the study, definition of terms and the organization of the study.

Chapter two reviews the literature along the study objectives. It also presents the theoretical framework of the study. Chapter three gives the research methodology that was used in this study. It gives the research design, the target population of the study, the sample size and sampling techniques, research instruments, data collection methods and data analysis methods used.

Chapter four deals with data analysis, interpretation, presentation and discussion. Chapter five documents summary of findings, discussion of the findings, conclusion and recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter summarizes the information from other researchers who have carried out their research in the same field of study. The specific areas covered here are empirical review and the conceptual framework. It identifies the factors that drive businesses towards successful implementation of growth strategies such strategies include enterprises resource planning systems.

#### **2.2. Enterprise Resource Planning (ERP)**

Bagchi, *et al.*, (2003) define ERP systems as a broad set of activities supported by a multi-module application software that helps an organization to manage its business, including production or service planning, purchasing, maintaining inventories, interacting with suppliers (or customers), providing customer service and tracking orders. A similar definition by Botta-Genoulaz & Millet (2006), considers ERP systems as an integrated software package composed by a set of standard functional modules (Production, Sales, Human Resources and Finance), developed or integrated by the vendor, which can be adapted to the specific needs of each customer. It attempts to integrate all departments and functions across a company onto a single computer system that can serve all those different departments' particular needs.

##### **2.2.1 Evolution of ERP systems**

It is important to understand the background and evolution of ERP systems within the broader enterprise applications concept, in order to understand ERP system use and future development.

ERP systems resulted from the need in large enterprises for data and information transfer between stand-alone functional applications to become seamlessly integrated (Davenport, 1998b). Materials Resource Planning (MRP) systems emerged in the 1970s in the manufacturing and construction industries as a means to calculate the optimal quantity of the correct materials required. This led to the development of second-generation Materials Resource Planning solutions, referred to as MRP-II systems, in the 1980s. MRP-II systems provided extended calculation functionality for capacity planning, scheduling and shop floor control and other calculations. The 1990s saw MRP-II systems integrating other functional areas of business, such as

finance, human resource, and project management (Bradford, 2010). A new term was required and Gartner labelled this Enterprise Resource Planning - commonly referred to as ERP systems (Wylie, 1990). The concept of ERP seems to be growing and expanding and also industry has accepted ERP systems as a means of achieving enterprise integration. The 2000s sees a number of trends relating to extensions and method of delivery of ERP system functionality over hosted platforms, such as the web and mobile platforms. Web-based and cloud-based ERP systems are becoming increasingly popular due to the proliferation of cloud computing and e-commerce (Boonstra, 2006).

### **2.2.2 The ERP implementation process**

In order to better understand the process of ERP implementation, a number of researchers have developed conceptual ERP life cycle frameworks or process models. Ehie and Madsen (2005) suggested a five-stage ERP implementation process using various reviews of the previous literature: project preparation, business blueprint, realization, final preparation, “Go-Live” and support (See Figure 1 below).

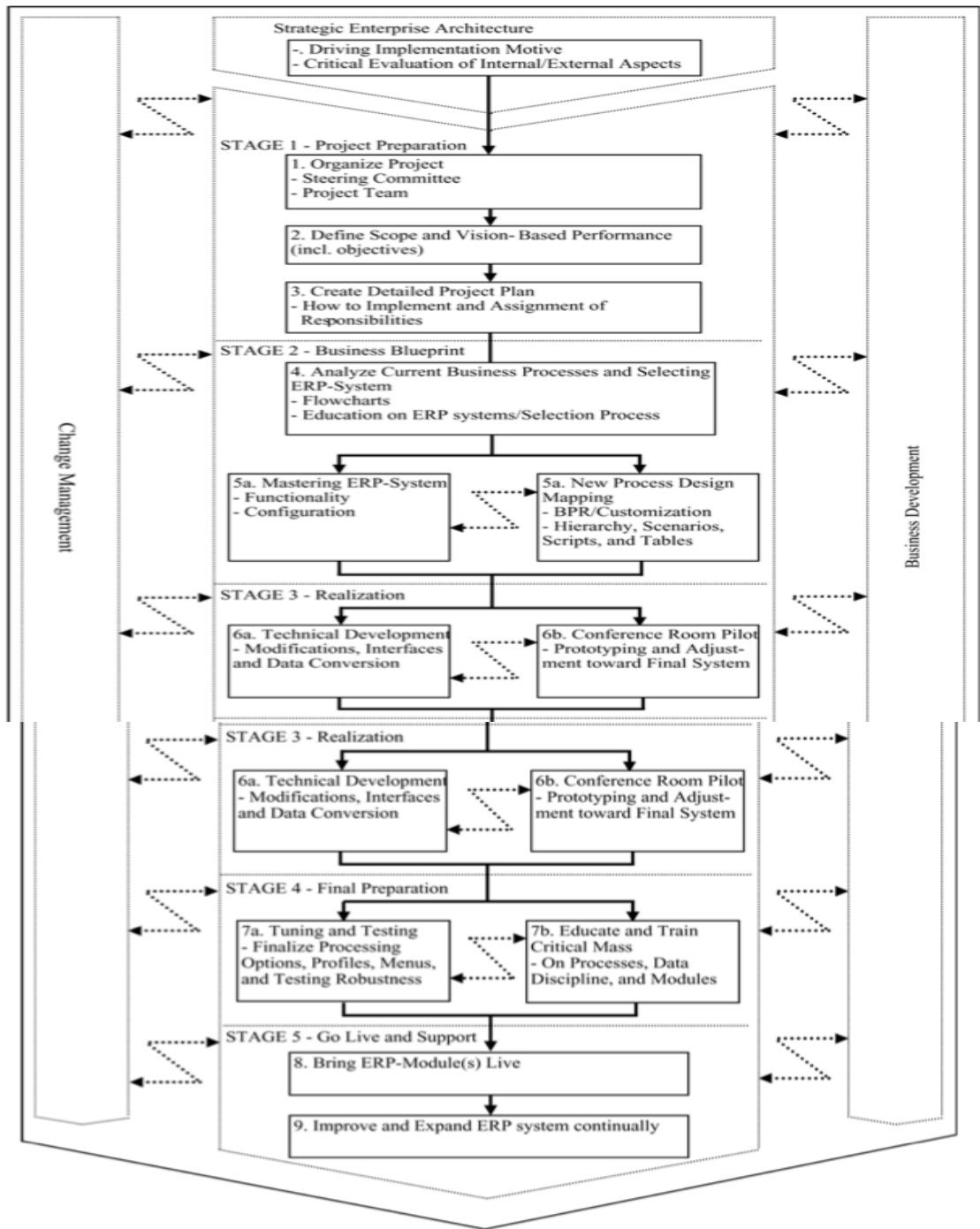


Figure 1. Five stage of ERP implementation process (Ehie & Madsen, 2005)

Project preparation refers to a comprehensive planning phase that forms a project team with leadership roles, sets budget targets, and defines the project objectives and plan. In the business blueprint phase, the current business process is analyzed in detail

in order to select an appropriate ERP system. A project team then is trained on functionality and configuration of the selected ERP system. An understanding of the selected ERP system allows a project team to gain insight to reengineering its business processes. Realization phase is heavily based on technical issues. Configuration of the basic system takes place at this stage. So-called “power users” or “super users” get education on how to use the system in their respective fields of operation. Using iterative approach, the system is fine-tuned according to feedbacks of super users. Data migration plans and interfaces are set up as well as conversion programmes, end-user documentation, and scenarios for testing, reports, user profiles and security. The outcome of this stage is configured and tested system that satisfies the requirements of customer (Ehie & Madsen, 2005).

The final preparation phase aims at fine-tuning all components of the SAP system and getting the company ready for final Go Live. Any exceptional situations need to be resolved. The super users conduct end-user trainings under supervision of consultants. Interface programmes, conversions are checked and ready, final test are performed. Finally, the data is migrated from old system into the new one. Go live and support phase commence when the system is ready to be placed in production. At Go Live date the old system is shut down and the new one is installed. Employees start to use it on every day basis. At this phase all issues related to day-to-day operations reported by end users need to be handled. This is a formal closure of implementation project (Ehie & Madsen, 2005).

### **2.3 Employee knowledge and implementation of ERP modal**

Organizations implement ERPs and their applications to improve performance by improving the availability, clarity, integration and accuracy of data and information, enhancing efficiency, and reducing performance errors (Van der Loo *et al.* 1995). Studying user performance in ERP system will clarify the complexity of their relationship with users based on the assumption that users are the core element who create value through their interaction with ERPs. Users are the central tool, which creates value and benefits from IS. In this paper users mean all ERP systems user including managers, administrative and are professionals. Paradoxically however, user aspects such as user’s needs, user task’s requirements and user issues in general have received little attention from researchers casting the domain in ambiguity, if one

considers the long history of ERP failures being attributed to the lack of fit between information and user task (Abugabah & Sanzogni, 2009).

Some past studies have mentioned the importance of user aspects, such as user involvement, user training, user characteristic and user environment as important variables when studying ERP systems (Zhang *et al.*, 2005). It has been mentioned that individual performance is an essential indicator to organizational performance. Accordingly, the study engages user performance as a tool to evaluate the ERPs since ultimately organizational performance is based on individual performance (Kositanurit *et al.* 2006). User performance assumes a critical role in the determination of the benefits and payoffs brought to the organization through its investment in ERPs. Interestingly, the conventional critique of ERP systems states the lack of fit between applications and the practices that they are expected to support.

In a similar vein, Kositanurit *et al.* (2006) conducted a comparative study between ERP users and non ERP users in the USA and Thailand. The study tried to explore the most important factors that affect user performance in ERP system. The study made valuable contributions in this area and aimed to test a structured TTF model and user satisfaction to establish how these variables can predict individual performance and organizational performance. The study concluded that system quality and utilization are very important factors that affect individual performance when using ERP systems. Although her study could potentially contribute significant results in this area, many significant factors, such as information quality, user characteristics and usefulness which have proved to affect significantly on user performance in IS environment, were not included. Thompson *et al.*, (2006) looked at many factors to assess the success of ERPs. Their study indicated that some factors are more important than others. The study concluded that “People” (in every sense that the word

According to Hawking *et al.*, (2004) training of prospective users how to use a system and education of users relating to new business processes is a vital implementation activity. The absence of user training and lack of understanding as to how an Enterprise Resource Planning system is going to change an organization’s business processes are often referred to as a problem resulting in a failed implementation of ERP systems. Education and training stand for a process in the course of which



executives and employees are familiarised with the logic and idea of Enterprise Resource Planning systems. Education helps all employees to develop a better understanding of how their work is related to other functional areas of a company. Companies are advised to train each user to use a system by explaining how his work relates to certain business processes and how his work is going to be affected by the new system (Ackermann & Helden, 2002).

Goodhue and Thompson (1995) stated that end users involvement, training and support for users are critical factors for ERP system. Their study proposed that these variables with other variables shape a framework to evaluate ERP system. Roldan and Millan (2000) examined the impact of shared beliefs concerning the benefits of ERPs among executives and engineers. The findings support the notion that systems or technologies, which are perceived to be easy to use and understand, will be viewed as more useful from the end-user's perspective. In addition, perceived ease of use (PEU) was found to mediate partially the effects of shared beliefs concerning the impacts of the ERP system from the end-user's perspective. Chang and Wang (2008), conducted a recent study to better understand ERP system adoption from user's perspective. The study proposed a conceptual model to analyse factors affecting the ERP system usage and it mentioned many important variables that affect system use such as the effects of social factors when using ERP applications. The results show that social factors are the most significant determinant affecting the ERP system usage. Other factors such as compatibility and near-term consequences, which basically determine the impacts of system on user performance are also significant.

#### **2.4 Organization resource and implementation of ERP modal**

An organization resource refers to all the resources required for a project such as financial resources, natural resources and human resources. Resource allocation involves the planning of all the resources required for the project. It helps manager to utilize only that much resources which are required. Economic environment is changing rapidly and this change is characterized by such phenomena as the globalization, changing customer and investor demands, ever-increasing product-market competition. To complete successfully in this environment, organizations continually need to improve their performance by reducing cost, innovating products and processes and improving quality, productivity and speed to market. Strategic management is an ongoing process that evaluates and controls the business and the

industries in which the company is involved, assesses its competitors and set goals and strategies to meet all existing and potential competitors, and then reassess each strategy to determine how it has been implemented and whether it has succeeded or needs replacement by a new strategy to meet changed circumstances, new technology, new competitors, a new economic environment, or a new social, financial or political environment (Raduan *et al*, 2009).

According to Albano and Borges (2001) the successful implementation of system takes more time than its formulation. This can challenge managers' attention to execution details. The longer time frame can also detract from managers' attention to strategic goals. Controls must be set to provide feedback and keep management abreast of external shocks and changes. The process of execution must be dynamic and adaptive, responding to unanticipated events. This imperative challenges managers responsible for execution. Systems fail because not enough resources were allocated to successfully implement them. Lack of resources is generally a bigger threat to capital intensive strategies. They observed this failing in both fast-growth, new companies that feel understaffed due to growth demands and companies under heavy competitive pressure'' who felt they could not spare resources to drive strategic innovation.

In a discussion of the causes of re-engineering failure, Albano and Pino (2001) refer to the inadequate treatment of the human aspect when implementing ERPS-related change. Blair, (1997) discusses some elements of human change management which he describes as the more difficult challenge, and explains how ERPS represents a danger to people when it introduces new job structures and definitions, and forces employees to change their work style. Hammer and Champy classify the human factor as a major dimension that ERP-related improvements should focus on. They recognize the importance of the human resource when they state companies are not asset portfolios, but people working together to invent, sell and provide service. However, they fail to demonstrate how to reengineer the human resource in conjunction with reengineering processes. Although Hammer and Champy (1993) provide a long list of why reengineering fails, nowhere do they include the prerequisite that no reengineering effort will succeed without first reeducating and retraining the people who will ultimately work with the new process (Hammer & Champy, 1993).

## **2.5 Stakeholders involvement and implementation of ERP modal**

In an ERP system implementation the focus is very much on people, and in particular users, as well as on processes and technologies. Training with a focus on the new business processes, technical aspects of the system and end user needs is a key part of successful ERP system implementation (Parr & Shanks, 1999). Establishing a sound change management strategy, seeking input from potential system users and regular, comprehensive communication to provide information, assist in the change management process and manage expectations are key activities of both the organization and the project team (Jurison, 1999).

Similar studies conducted in China by creating interactive structural model have identified four critical factors on the funds support, departments' participation, training and service of the supplier of ERP which influences the system of ERP implementation most directly. The four factors above are critical factors which decide whether the ERP system is successful or not (Ranzhe et al, 2007). The best practices for ERP implementation in organizations are investigated by using a problem driven approach by dividing implementation process into several components which reflect the nature of ERP projects and makes them distinctive from other systems design. Effective communication is critical to ERP implementation where expectations at every level need to be communicated to all stakeholders. Management of communication, education and expectations are critical throughout the organization (Wee, 2000).

Top management support, has been emphasized, as a crucial factor in successful ERP implementation by many. Top management support, plays a significant role in the ERP implementation success because ERP are normally large-scale and require extensive resources. Top management support has two major aspects in ERP implementation projects: providing the necessary resources and providing leadership. The responsibilities of top management in ERP implementation include communicating the company strategy to all members of the organization, developing an understanding of the restrictions and abilities, demonstrating commitment, and establishing rational objectives for the ERP implementation. Many studies provided evidences that display how top management support is essential during the entire ERP implementation process and how it remained critical in order to reap the benefits

(Bradford and Florin, 2003). (Ngai *et al.*, 2008; Zhang *et al.*, 2005; Umble *et al.*, 2003)

Willcocks and Sykes (2000) noted that senior-level sponsorship, championship, support, and participation are one aspect of organizational factor that influences ERP success. Implementing ERP does not only involve changes in software systems usage rather it involves the repositioning of a company and transformation of all business practices. Therefore, top management should publicly, explicitly, and sincerely show their support in financial and non-financial terms to emphasize the precedence of the ERP implementation (Somers and Nelson, 2004).

## **2.6 Organization culture and implementation of ERP modal**

The principal factor of a successful ERP implementation is an organization's culture valuing trust between partners, employees and executives as well as stressing such values as rising of common goals above personal aspirations. An ERP is an integrated information system, so its designing, installation and use require a particularly close co-operation of employees of all business segments of an enterprise. A full and open communication influences success and facilitates the education of the organization's employees. Close co-operation and communication among the employees of the organization is referred to not only as the critical factor of a successful ERP implementation, but also as a benefit provided by a system (Zuckweiler *et al.* 2003).

McAfee (2002) investigated the impact of enterprise technology on operational performance. He found that performance had been significantly improved and the study confirmed the returns of the ERP implementation for individual and organizations. Demonstrating the benefits of ERP system is not easy because implementing these complex applications is time-consuming and needs a huge resource. The alignment of the standard ERP processes with the company's business processes has been, for a long time, considered a critical step of the implementation process, and thus holds the attention of many researchers (Venkatesh, 2000).

In 1990s, globalization led to immense competition and companies, especially in the manufacturing sector, realized the need for more customer focus and shortened product life cycles. Corporations had to move towards agile manufacturing, continuous improvement of business processes and business process reengineering. This required an integration of manufacturing with other functional areas like

accounting, marketing and HR. This led to the evolution of ERP systems. ERP combines all the business functions together into one single integrated system with a single central database. This system serves the information needs of all the departments across geographies, while allowing them to communicate with each other. ERP system consists of modules for manufacturing, Production Planning, Quality Management, Financial Management, Human Resource, Manufacturing and Logistics and Sales and Distribution. Once an enterprise wide implementation is in place, operating managers are relieved of routine decisions and they thus have the time to plan and execute long-term decisions that are vital for the growth of an organization (Sadagopan, 1999).

A fairly serious problem of ERP implementation lies in a system's incompatibility with an organization's culture and its information provision needs. When selecting a system, organizations' usually consult specialists, who recommend the systems best meeting the needs of that branch of business. However, irrespective of the suitability of a system, no universal ERP system suitable for all enterprises exists. In the course of ERP implementation, an organization almost always needs to decide whether to reorganize organizational culture according to the logic proposed by a system or to modify the system by adapting it for existing culture of the organization. An enterprise resource planning system itself cannot improve an organization's work until it restructures its business processes. In order to obtain a tangible benefit provided by enterprise resource planning systems, it is necessary to reorganize an organization's business processes according to the logic proposed by a system. An enterprise must be prepared for the acceptance of the best practice contained in enterprise resource planning systems and modeling of its business processes according to their description in the system (Zuckweiler *et al.*, 2003).

## **2.7 Conceptual framework**

The conceptual framework is developed to provide clear links of dependent and independent variables as they relate to each other in this research. This study was guided by the following conceptual framework. The framework shows how the independent variables such as employee knowledge, organization resources, stakeholders' involvement and organization and their effects on the dependent variable which is implementation of ERPs in the dairy industry. Apart from the

independent variables, the improved also depends on environment as moderating variable. The framework is illustrated in Figure 1 below.

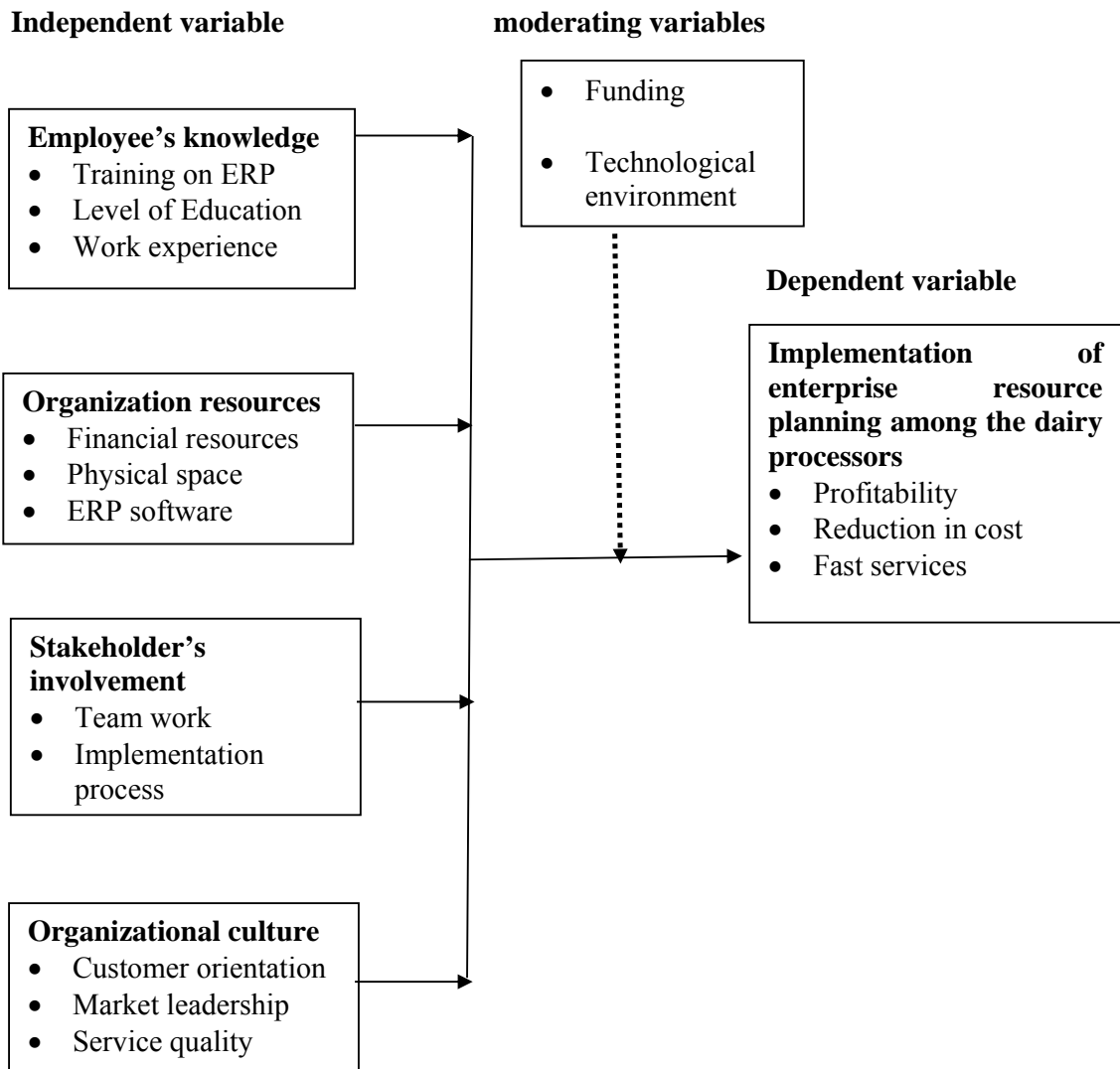


Figure 2: Conceptual framework

**Employee knowledge:** Successful ERP implementation is highly affected by the way team members are selected and managed; they should be experienced in various techniques such as strategic visioning, change management as well as technical knowledge. People with job experience should be included in bringing new ideas in ERP implementation efforts. Limited expertise in IT generally tends to result in lesser user involvement and participation.

**Organizational resource:** This refers to all the resources required for a project such as financial resources, natural resources and human resources. Resource allocation involves the planning of all the resources required for the project management. It helps manager to utilize only those resources which are required efficiently and effectively.

**Stakeholders' involvement:** User involvement and participation refers to the behaviors and activities that users perform in the system implementation process. It refers to a psychological state of the individual and is defined as the importance and personal relevance of a system to a user. Research has shown that implementations are far more likely to achieve their goals when users are given the proper training to master the new solution at the start of the implementation.

**Organizational culture:** Implementation of ERP is influenced a lot by culture because culture affects not only human relationships at the work place but also their attitude towards change which in itself is the central theme of ERP. Some scholars have suggested that in order to effectively implement ERP, organizational culture must be changed.

## **2.9 Chapter summary and research gap**

Most of the literature reviewed is mostly from different countries whose system approach and culture is different from that of Kenya. The studies done in Kenya have also not looked on the issue of implementation process are done in other areas other than the Dairy sector. Thus, there is a research gap on the factors influencing implementation of ERP modal among dairy sector in Kiambu County, Kenya which this study seeks to fill.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter covers the overall methodology used in the study; the research design, population and sample, data collection methods and research procedures are detailed.

#### 3.2 Research design

The study employed a descriptive survey design. Mugenda and Mugenda (2003) described descriptive survey as collecting data in order to test hypothesis or to answer questions concerning the current status of the subject of study. Descriptive research design enables the researcher to generalize the findings to a larger population. The descriptive research design approach has been credited due to the fact that it allows analysis and relations of variables. The study was carried out in the form of descriptive research which describes the situation as it exists. The design is preferred for this study because it allowed in-depth study of the situation.

#### 3.3 Target population

There are three dairy processors in Kiambu County namely; Ndumberi dairy, Githunguri dairy and Brookside dairy. The study that targeted 91 respondents including the top and middle level managers from the Information Communication and Technology department, Marketing department, business development and production departments that are concerned with the implementation of Enterprises Resource planning system in the respective dairy firm.

**Table 3.1 Target population**

Company Department	Marketing	Production	Business development	ICT
Ndumberi	6	3	14	3
Brookside	15	5	27	4
Githunguri	7	1	5	1
<b>Total</b>	<b>28</b>	<b>9</b>	<b>46</b>	<b>8</b>

Source: (Dairy societies, 2014)



### **3.4 Sample size and sampling procedure**

#### **3.4.1 Sample size**

This comprised all of the 91 respondents who were used in data collection. The target population was divided into five main departments namely; from Finance department, Human resource, procurement, customer service department as well as ICT department that are involved in ERP implementation.

#### **3.4.2 Sampling procedure**

According to Mugenda and Mugenda (2003), at times the target population may be small that selecting a sample would be meaningless and therefore taking the whole population in such cases is advisable. Census technique was used to engage all the top and middle management in the selected dairies who are involved with ERP implementation. Census was used to include all the managers.

### **3.5 Data collection instrument**

The questionnaire was used as the main data collection instrument. Mugenda and Mugenda (2003) indicated that each item in the questionnaire is developed to address a specific objective, research question or hypothesis of the study. The questionnaire provides the same set of questions hence solicits comparable data. It also gives the respondents time to give well thought answers. The questionnaire had both open ended and closed ended questions. The questionnaire had two sections namely: section one will have demographic information of the respondents while section two consisted of questions related to ERP implementation in the dairy sector. It was self administered and was left with the respondents to complete and collected later by the researcher for analysis.

### **3.6 Data collection procedure**

This refers to the means the researcher used to gather the required data or information. The researcher administered the questionnaire individually to all respondents. The researcher exercised care and control to ensure all questionnaires issued to the respondents were received and to achieve this, the researcher maintained a register of questionnaires sent, and received back. The questionnaires were administered using a drop and pick later method to the sampled respondents.

### **3.6.1 Validity of instrument**

Validity indicates the degree to which an instrument measures what it is supposed to measure (Kothari, 2004). The questionnaire was well structured to ensure that it remained focused, accurate and consistent in the course of the study. The validity of the research instruments were established by seeking opinions of experts in the field of study especially my supervisors. Validity of the research instruments simply implies that the conclusion the researcher derives is correct or true. This was assured through consultations between the researcher and the supervisor giving guidelines.

### **3.6.2 Reliability of instrument**

Reliability of a research instrument enhances its ability to measure consistently what is intended. Reliability was increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. The researcher selected a pilot group of 5 individuals from Githumu dairies in the neighboring Muranga County to test the reliability of the research instruments. In order to test the reliability of the instruments, internal consistency techniques were applied using Cronbach's Alpha. The coefficient was between 0.6-0.7 which indicated an acceptable reliability. The pilot data was not included in the actual study.

### **3.7: Method of Data Analysis**

After field work, all the data from the field was sorted, coded and analysed. Statistical tool SPSS (Statistical Package for Social Scientists) was used to analyse and present the specific issues through coding and summarizing the responses of all the respondents. The qualitative data was analyzed using content analysis which is the best suited method of analyzing secondary data. Quantitative data was analysed through the use of a combination of descriptive statistics particularly frequency distributions, percentages mean and standard deviation. Inferential statistics such as regression was used to analyze the qualitative data. Statistical tool SPSS (Statistical Package for Social Science) was used to analyze and present the specific issues through coding and summarizing the responses of all the respondents. The data was presented using frequency Tables.

### **3.8 Ethical Considerations**

In this research, consent was obtained, firstly, by talking to the managers. Consent was obtained from individual participants before they were interviewed. The nature of the research was explained to them, anonymity and confidentiality of their identities was assured by carrying an introduction letter from the university indicating the data was only for academic purpose. The researcher ensured that the information remained confidential by not disclosing the responses to a third party.

### 3.9: Operationalization of variables

The operationalization of variables is as shown in Table 3.2

**Table 3.2: Operationalization of variables**

Objective	Variable	Indicator(s)	Measurement	Scale	Data collecting method	Data Analysis
To determine how employee knowledge influences implementation of ERP modal among dairy enterprises in Kiambu County	<b><u>Independent variable</u></b> Employee's knowledge	-Level of Training on ERP -Level of Education -Work experience	-expertise  -Academic qualifications  -Previous experience in manufacturing	Ordinal	Questionnaire	Descriptive statistics
To examine how organization resources influence implementation of ERP modal among dairy enterprises in Kiambu County	<b><u>Independent variable</u></b> Organization resources	-Financial resources -Physical space -ERP software	-Availability of finance  -Availability of work space  -Availability of ERP system	Ordinal	Questionnaire	Descriptive statistics

To assess the extent at which the organizational culture influence implementation of ERP modal among dairy enterprises in Kiambu County	<b><u>Independent variable</u></b> Organizational culture	-Customer orientation -Market leadership -Service quality -	-Customer loyalty -Market share -Nature of service	Ordinal	Questionnaire	Inferential statistics
To establish how the stakeholder involvement influence implementation of ERP modal among dairy enterprises in Kiambu County	<b><u>Independent variable</u></b> Stakeholder involvement	-Efficiency - Implementati on process -End users involvement	-System installation -Team work -Ease in application	Ordinal	Questionnaire	Descriptive statistics
Implementation of enterprise resource planning among the dairy processors	<b><u>Dependent variables</u></b> Enterprise resource planning	-High profits -Reduction in cost -Fast services	-Annual income -Turnovers	Ordinal	Questionnaire	Descriptive statistics

### **3.10 Chapter Summary**

This chapter has looked at the research design of the study, the target population and outlined the sampling frame of the project. It has also discussed the validity, reliability and data analysis and presentation as well as presented the operationalization of variables Table.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introduction

This chapter presents the data analysis and interpretation and discusses the findings of the study in line with the specific objectives of the study.

#### 4.2 Overview of questionnaire return rate

The data was collected using questionnaire method comprising of closed ended and open ended questions. The questionnaires were self-administered to the respondent during the normal working hours of the week. Out of the 91 respondents targeted 60 respondents completed the questionnaire while the rest cited personal returns of refraining. This represents a response rate of 66% which is significant to provide reliable findings for this study. According to McBurney (2001), a low response rate could have a potentially biasing effect on the study results. The Table 4.1 below shows the response rate:

**Table 4.1: Response Rate**

	<b>Frequency</b>	<b>Percent</b>
Non Respondent	31	34%
Actual Respondents	60	66%
<b>Target Population</b>	<b>91</b>	<b>100%</b>

#### 4.3 Demographic Information

In order to capture the general information of the employees in the dairy societies, issues such as gender and age of the respondents, level of education and the years of service in current position were discussed.

##### 4.2.1. Gender of employees

The study sought to establish the gender of those respondents implementing ERP modal in dairy enterprise in Kiambu County. The findings are illustrated in Table 4.2 below.

**Table 4.2 Gender of the respondents**

	<b>Frequency</b>	<b>Percent</b>
Male	29	49
Female	31	51
<b>Total</b>	<b>60</b>	<b>100</b>

These findings show that majority (51%) of the respondents were female while the males constituted 49% of the employees. This implies that a good number of employees in the implementation process were female.

#### **4.2.2. Age of employees**

The study sought to establish the age of the employees in the dairy enterprises' in Kiambu County as shown in Table 4.3.

**Table 4.3: Respondents Age**

<b>Age (Years)</b>	<b>Frequency</b>	<b>Percent</b>
20-30 years	4	6.7
31-40 years	24	40
41-50 years	25	42.2
Above 50 years	7	11.1
<b>Total</b>	<b>60</b>	<b>100</b>

Findings indicate that 42.2 % of the respondents were between the ages of 41 to 50 years, 40% of the employees were between the ages of 31 to 40 years, 11.1% of the employees were those aged above 50 years and 6.7% of the employees aged between 20 to 30 years. This suggests that most of the employees are of the age brackets of 31 to 50 years which is considered to be the productive years.

#### **4.2.3. Level of Education**

Education/training is probably the most widely recognized critical success factor, because user understanding and buy-in is essential, therefore the study aimed at establishing the



level of education of the employees involved in implementing the ERP in the dairy enterprises. The Table 4.4 shows the educational level of the dairy society's employees.

**Table: 4.4: Education level**

<b>Education level</b>	<b>Frequency</b>	<b>Percent</b>
Primary level	2	2.5
Certificate level	9	15.3
Diploma education	32	53.3
University level	12	20.0
Post graduate	5	8.9
<b>Total</b>	<b>60</b>	<b>100</b>

The findings indicate that majority (53.3%) of the respondents have diploma level of Education, 20% have university education, with 15.3% having certificates in system application, 8.9% possess post graduate level of education as their highest academic qualification while 2.5% had basic education. This implies that a good number of employees had high level of education.

The findings concur with Ehie & Madsen (2005), that ERP implementation teams should be composed of top-notch people who are chosen for their knowledge, past accomplishments, reputation, and flexibility. They argued that these people should be entrusted with critical decision making responsibility.

#### **4.2.4. Department of work**

Since ERP covers diverse functional areas across an organization, ERP team composition is also important for the successful ERP implementation; an ERP project team should consist of representatives from all functional units related to ERP. The researcher categorized the employees according to their departments in the dairy enterprises. This information is shown in Table 4.5.

**Table 4.5 Department of work**

<b>Department</b>	<b>Frequency</b>	<b>Percent</b>
Production	25	42
ICT	15	25
Marketing	10	17
Business development	10	16
<b>Total</b>	<b>60</b>	<b>100</b>

The findings indicates that majority (42%) of the respondents worked in production department, 25% were working in ICT department, 17% were in marketing department while 16% were in business development department. This indicates that most of the employees involved in the ERP implementation were those using the system on a daily basis.

The findings agreed with a similar study by Ngai *et al.*, 2008 that ERP systems also require that everyone in the organization must work within the system, not around it. They added that employees must be convinced that the company is committed to using the new system, they will totally changeover to the new system and will not allow continued use of the old system.

#### **4.2.5. Position of work**

Respondents' position in the organization is crucial to the accuracy of the information provided. The respondent's position is illustrated in Table 4.6.

**Table 4.6 Position held in the organization**

<b>Position</b>	<b>Frequency</b>	<b>Percent</b>
Program coordinators	23	38
Other positions	19	32
middle level managers	15	25
senior manager	3	5
<b>Total</b>	<b>60</b>	<b>100</b>

From the Table majority (38%) of the respondents were program coordinators in their respective department, 32% of the respondent held other positions such system administrators and inventory control, 25% of the respondents were middle level managers while 5% of the respondents were senior managers. This indicates that a good number were either in program coordination or system administration.

These finding are in agreement with Ehie & Madsen (2005), that the project team competence is another important success factor for Information System implementation. The Enterprise System project involves the entire functional department and demands the efforts and involvement of technical and business experts as well as the end users.

#### **4.2.6. Duration of service**

The study sought to establish the duration of services of the respondents. The information data is illustrated in Table 4.7.

**Table 4.7 Duration of service**

<b>Work experience</b>	<b>Frequency</b>	<b>Percent</b>
1 to 3 years	15	24.4
4 to 6 years	34	57.8
7 to 10 years	9	15.6
Above 10 years	2	2.2
<b>Total</b>	<b>60</b>	<b>100</b>

From the above Table, findings indicate that majority (57.8%) of the employees in dairy societies have worked between 4 to 6 years, 24.4% have worked between 1 to 3 years, 15.6 % have worked between 7 to 10 years while 2.2% have over 10 years of experience in their current position. The findings show that a good number of respondents had a long duration of services which can be used to suggest work experience.

### **4.3. Employee Knowledge and the implementation of the ERP modal**

The study aimed at establishing the effects of employees' knowledge in ERP implementation process. The study aimed at establishing whether the user can operate the ERP modal, where prior arrangements were done before implementation as well as

effects of employee knowledge on ERP modal implementation. The Table 4.8 shows respondents on the usability of the ERP system.

**Table 4.8 Employee Knowledge**

<b>ERP usability</b>	<b>Frequency</b>	<b>Percent</b>
Able to effectively operate the modal	47	78
Not able to effectively operate the modal	13	22
<b>Total</b>	<b>60</b>	<b>100</b>

Majority (78%) of the respondents felt that most of the ERP users were able to operate the system; however, 22% of the respondents were of contrary opinion stating that not all users were able to operate the ERP modal in their organizations.

#### **4.3.1. ERP implementation arrangement**

The study sought to determine whether there were some preparations done before the ERP implementation and the findings were presented in the Table 4.9.

**Table 4.9 ERP implementation arrangements**

	<b>Frequency</b>	<b>Percent</b>
Yes	59	98
No	1	2
<b>Total</b>	<b>60</b>	<b>100</b>

Majority (98%) of the respondents reported that some arrangements were made before system implementation in their firm while 2% said no necessary arrangements were conducted before ERP implementation.

#### **4.3.2. ERP Pre implementation activities**

The study further aimed at investigating the nature of preparations conducted in the dairy enterprises before implementing the system. The information is shown in Table 4.10.

**Table 4.10 Pre implementation activities**

<b>Preparation activities</b>	<b>Frequency</b>	<b>Percent</b>
Organization need assessment	19	31.1
Facts finding	7	11.1
ERP testing	8	13.3
Back up storage	16	26.7
Staff training	10	17.8
<b>Totals</b>	<b>60</b>	<b>100</b>

Majority (31.1%) cited organization needs assessment as the major activity done before implementation, 26.7% pointed out back up exercise as the major activity, 17.8% indicated staff training, 13.3% cited system testing as the major activity while 11.1% highlighted facts finding as the major activity. This shows employee training on the ERP implementation was not given the first priority

The findings contradicts with hawking *et al.*, (2004) who found that the training of prospective users on how to use a system and education of users relating to new business processes is a vital implementation activity. They argued that absence of user training and lack of understanding as to how an enterprise resource planning system is going to change an organization's business processes are often referred to as a problem resulting in a failed implementation of ERP systems. Education helps all employees to develop a better understanding of how their work is related to other functional areas of a company.

#### **4.3.3. Influence of employee knowledge on ERP performance**

The study investigated the effects of employees' knowledge on ERP performance. The results are presented in Table 4.11.

**Table 4.11 Influence of employee knowledge on ERP modal**

<b>Knowledge</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Percent</b>
Managers have adequate management training	3.51	0.08	33
The training has assisted in the running of ERP	3.20	0.56	30
Management skills affect the level of performance of ERP.	4.12	0.21	45
Inexperience of managers affects performance of ERP	4.05	0.05	44
There is competent team in ERP management	3.56	0.11	35
Market efficiency is available with ERP use	4.61	0.01	52
Outdated and inadequate infrastructures affect the level of performance of ERP	4.22	1.05	47
Inadequate marketing information impact on decision making process	4.30	0.98	49

The findings show that majority (52%) agreed that market efficiency was possible with ERP as represented by (4.61) mean score, 49% agreed that inadequate marketing information impacted on decision making process (4.30 mean score), 47% cited outdated and inadequate infrastructures affect the level of performance of ERP (4.22 mean score), 45% said management skills affects the level of performance of ERP (4.12 mean score), 44% agreed inexperience of managers affects performance of ERP (4.05 mean score), 35% said that there is a competent team in ERP management in their organization (3.56 mean score) and that 33% said that managers have adequate management training to enable proper management (3.51 mean score). However, majority of the respondents were not sure whether training had assisted in the running of ERP in their organizations (3.20 mean score). This illustrates that employee's knowledge is very critical in determining the failure of an ERP modal.

#### 4.4 Stakeholders involvement and the implementation of the ERP modal

##### 4.4.1 ERP target needs

The study sought to establish the level of stakeholders' involvement in the implementation of ERP modal. First the study sought to find whose needs the ERP was meant to cater for. This is illustrated in Table 4.12.

**Table 4.12 ERP target needs**

<b>Needs addressed by ERP</b>	<b>Frequency</b>	<b>Percent</b>
Organizational needs	38	63
Employee needs	16	26
Community needs	7	11
<b>Total</b>	<b>60</b>	<b>100</b>

Majority(63%) of the respondents felt that ERP system were meant to address the organizational needs, 26% stated that the ERPs addressed the employees' needs while 11% viewed the ERP solutions as addressing the community needs.

##### 4.4.2. ERP System selectors

The study aimed to establish the role of stakeholders' involvement in system selection. This is illustrated in the Table 4.13.

**Table 4.13 System Policy selectors**

<b>Selectors</b>	<b>Frequency</b>	<b>Percent</b>
Management	30	51.1
Employee	7	11.1
Shareholders	20	33.3
Vendors	3	4.4
<b>Total</b>	<b>60</b>	<b>100</b>

The findings shows that majority (51.1%) of the respondents felt that organization management are the major selectors of policies in their organization, 33.3% of the respondents stated that shareholders select the policies to be implemented, 11.1% of the respondents cited employees involvement while 4.4% of the respondents stated vendors

were involved in the policies and especially system implementation. this indicates that a good number of respondents reported that employees were sparsely involved.

#### 4.3.3 Members satisfaction with ERP modal

The researcher also aimed at establishing the extent to which users were satisfied with the system implementation. The results are indicated in Table 4.14.

**Table 4.14 ERP choice satisfaction**

<b>ERP choice satisfaction</b>	<b>Frequency</b>	<b>Mean</b>	<b>S.D</b>	<b>Percent</b>
very great extent	2	4.56	0.15	4.4
great extent	22	4.32	0.78	48.9
moderate extent	14	3.58	1.04	31.1
minimal extent	6	2.41	1.58	13.3
not at al	1	1.05	0.90	2.3
<b>Total</b>	<b>60</b>			<b>100</b>

Majority (48.9%) of the respondents were to a great extent satisfied with ERP modal implemented, 31.1% were to a moderate extent satisfied, 13.3% were at a minimal extent, while 4.4% were satisfied to a very great extent 2.3% was not sure. This illustrates that majority were happy with their system choice. This implies that majority of the respondents were satisfied with the implementation.

#### 4.4.4. Effects of end users involvement

The study aimed at establishing the role played by the respondents and its effects on the ERP implementation and found that Majority (44.4%) of the respondents reported offering technical expertise in the implementation process, 33.3% reported being part of the management team, 11.1% of the respondents were leaders in the ERP projects, and 6.7% reported sponsoring the process while 4.5% were indirectly involved. The findings on the effects of user involvement are presented in Table 4.15.



**Table 4.15 Effects of end user involvement**

<b>Effects of end user involvement</b>	<b>Frequency</b>	<b>Percent</b>
Assisted in system modification	27	45
Assist in ERP improvement	22	37
Help in Field training	11	18
<b>Total</b>	<b>60</b>	<b>100</b>

Majority (45%) of the respondents said that end users involvement in ERP implementation assisted in system modification, 37% reported that it led to ERP improvement and 18% reported that it helped in field training. This illustrates the importance of involving the end users in the ERP implementation.

#### **4.5 Organization resources and the implementation of the ERP modal**

##### **4.5.1. Availability of organization resources**

Resources are important in the implementation process. The study sought to establish the availability and nature of resources used in the implementation process. The findings indicated that majority (97%) of the respondents concurred that their organization provided resources for ERP implementation while 3% disagreed that their organization provided resources for ERP implementation. With multiple responses allowed, majority (95.6%) felt that their organization provided financial resources, 88.9% cited provision of qualified personnel, 71.1% reported the provision of office spaces, 60% cited that machinery were provided, while 55.6% reported availability of clean work environment. The finding are shown in Table 4.16.

**Table 4.16 Type of resources**

<b>Type of resources</b>	<b>Frequency</b>	<b>Mean</b>	<b>S.D</b>	<b>Percent</b>
Spacious offices	32	3.00	1.20	71.1
Clean work environment	25	3.45	0.89	55.6
Financial resources	43	4.51	0.49	95.6
Machinery	27	4.00	1.05	60
Qualified personnel	40	4.60	0.99	88.9

#### 4.5.3. Challenges faced by organization in resource allocation

The study sought to determine the Challenges facing resource allocation in dairy sectors and the findings were shown in Table 4.17.

**Table 4.17 Challenges facing resource allocation**

<b>Challenges facing resource allocation</b>	<b>Frequency</b>	<b>Percent</b>
Inadequate resources	16	26.7
Resource wastage	8	13.3
High cost of doing business	23	37.8
Rapid change in technology	13	22.2
<b>Total</b>	<b>60</b>	<b>100</b>

From the finding, 37.8% reported the high cost of doing business as the major challenge facing organizations in allocation of resources, 26.7% cited limited resources as a major challenge facing resources allocation, 22.2% cited rapid changes in technology and 13.3% reported resource wastage. The findings agree with Blair, (1997) who discusses some elements of human change management which he describes as the more difficult challenge, and explains how ERPS represents a danger to people when it introduces new job structures and definitions, and forces employees to change their work style.

#### 4.6 Organization culture and the implementation of the ERP modal

The study sought to investigate the organization culture of the selected dairy firm and presented the findings in Table 4.18

**Table 4.18 Type of organization culture**

<b>Organization culture</b>	<b>Frequency</b>	<b>Percent</b>
Customer oriented	26	44
Market orientation	20	33
Profit oriented	12	20
Employee oriented	2	3
<b>Total</b>	<b>60</b>	<b>100</b>

Majority (44%) of the respondents perceived their organizations as adopting customer oriented culture, 33% reported adopting market orientation culture, 20% cited profit orientation culture and 3% reported employee oriented culture.

#### 4.6.1. Reasons For ERP implementation

Majority (53.3%) of the respondents reported that poor data storage was the major reason for implementing ERP system, 33.3% reported slow services delivery to customers and 13.4% cited high running costs as the major reason for ERP implementation in their organization.

**Table 4.19 Reasons for ERP implementation**

<b>Reasons for ERP</b>	<b>Frequency</b>	<b>Mean</b>	<b>S.D</b>	<b>Percent</b>
Poor data storage	32	2.88	0.15	53.3
Slow services to customer	20	2.79	1.09	33.3
High running costs	8	2.11	1.00	13.4
<b>Total</b>	<b>60</b>			<b>100</b>

#### 4.6.2. Effects of ERP on organization performance

The effects of ERP on organization performance was evaluated and recorded the findings in Table 4.20.

**Table 4.20 Effects of ERP on organization performance**

<b>Effects of ERP on Organization</b>	<b>Frequency</b>	<b>Mean</b>	<b>S.D</b>	<b>Percent</b>
Tracking customer contacts	8	2.55	0.14	13.3
Provision of timely price quote	7	3.45	0.84	11.4
configures quantity discounts	4	2.71	0.11	6.7
Regulate inventory database	17	5.01	1.05	28.9
Regulate production line	21	5.42	0.78	35.6
Tracking accounts records	3	4.88	0.05	4.4
<b>Total</b>	<b>60</b>			<b>100</b>

The finding shows that most (35.6%) of the respondents said ERP has regulated production line to ensure constant supply of products, 28.9% said it has regulated

inventory database to ensure raw material level are checked all the time, 13.3% cited that ERP has helped in tracking customer contacts, 11.4% said that it has helped in the provision of timely price quote, 6.7% said has helped in configuring quantity discounts while 4.4% stated that it has helped in tracking accounts records in the organization. The findings agree with McAfee (2002) who investigated the impact of enterprise technology on operational performance. He found that performance had been significantly improved and the study confirmed the returns of the ERP implementation for individual and organizations.

#### 4.7. Inferential statistics on challenges facing ERP implementation in Dairy industry

The study used inferential statistics in trying to reach conclusions that extend beyond the immediate data alone as shown in Table 4.21 below.

Variable Title		Implementation of ERP	Employee knowledge	Organization resources	Stakeholders involvement	Organization culture
Implementation of ERP	Pearson correlation	1.00	.818 *	.870 *	.414	.662
	Sig.(2 tailed)		.000	.020	.016	.004
Employee knowledge	Pearson correlation	.817	1.00	.467	.651*	.514
	Sig.(2 tailed)	.004		.058	.062	.000
Organization resources		.870 *	.425	1.00	.581 *	.121
	Sig.(2 tailed)	.002	.003		.001	.001
Stakeholders involvement		.414	0.32	.113	1.00	.314
	Sig.(2 tailed)	.000	.006	.005	.016	.000
Organization culture		.662	.514	.121	.317	1.00
	Sig. (2 tailed)	.000	.005	.001	.000	.000

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

Inferential statistics was used to infer from the sample data what the population might think or to make judgments of the probability that an observed difference between groups is a dependable one or one that might have happened by chance in this study. Correlation analysis was used to find the relationship between two or more sets of variables. It also tells the direction as well as how much relationship exist between these variables. In this study we used Pearson's coefficient of correlation which is one of the most popular methods to measure the relationship between variables. The value of the correlation lies between "-1" to "+1". The positive value of correlation shows relationship; only the direction that differ. The Table 4.21 shows the correlation values of different variables. The first variable employee knowledge in relation to the dependent variable ERP implementation has the coefficient of correlation of "0.818 \*" which shows a strong positive relationship between the two variables. It means that the better the knowledge is provided to employees the better the ERP implementation process. Similarly, the second independent variable of organization resources also has a positive correlation of "0.870" with the ERP implementation. Stakeholder involvement also has a positive relationship with the ERP implementation with the value of 0.414. Organization Culture has a positive relationship with implementation of ERP with the value of 0.662. All the independent variables used in our study have a positive relationship with dependent variable which shows that they significantly affect positively the dependent variable.

#### **4.7.1. Regression Analysis**

Regression analysis was conducted to determine the effects of employee knowledge, organization resources, stakeholders' involvement and the organization culture on implementation of ERP in dairy sector. The regression equation was:  $Y = \alpha_0 + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \epsilon$

Whereby  $\alpha_0$  is the regression constant,  $\alpha_1, \dots, \alpha_4$  are regression coefficients,

Y= implementation of ERP in the dairy sector

X<sub>1</sub> = Employee knowledge

X<sub>2</sub> = Organization resources

X<sub>3</sub>= Stakeholders involvement

$X_4 =$  Organization culture

Whereas  $\epsilon$  = Error term

**Table 4.22: Goodness of Fit Model**

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
.721 <sup>a</sup>	.612	.600	.331

The findings show a correlation value of 0.721 as this illustrates a linear relationship between the dependence and independent variables. An R-square value of 0.612 was established and adjusted to 0.600. This coefficient of determination shows that employee knowledge, organization resource, stakeholders' involvement and organization culture affect implementation of ERP at a rate of 61.2% the remaining 38.8% of variations are brought about by factors not captured in the objectives.

**Table 4.23: Regression Coefficients**

	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	
(Constant)	0.302	.460		.013
Employee knowledge	0.223	.058	0.815	.002
Organization resources	0.432	.123	0.712	.000
Stakeholders involvement	0.042	.077	0.553	.004
Organization culture	0.334	.033	0.479	.000

The regression equation therefore becomes:

$$\text{ERP implementation} = 0.332 + 0.815X_1 + 0.712X_2 + 0.553X_3 + 0.479X_4 + e$$

**p<0.001**

From the above regression model, when aggregate independent variables assume null value; ERP implementation would be equal to 0.332. An improvement in employee knowledge would yield a 0.815 increase in an ERP implementation. An increase in organization resources would result to a 0.712 increase in an ERP implementation; an increase in stakeholders' involvement would yield 0.553 increase in an ERP

implementation. While an increase in organization culture would also have a 0.479 increase in an ERP implementation.



## CHAPTER FIVE

### SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter consists of a summary of the findings on the research, conclusions relating to the research objectives, suggestions and recommendations on the challenges facing implementation of Enterprise Resource Planning in the dairy industry in Kenya.

#### 5.2 Summary of the findings

In regards to the demographic information about the respondents, the findings indicated that majority (51%) of the respondents were female, 82.2% of the respondents were between 31 years and 50 years and had worked in their organization between 4 to 6 years and majority of the respondents were working as programs coordinators.

In regards to the employee knowledge, majority (81%) of the respondents had above diploma level of education and therefore they reported that they were able to utilize the ERP model in their organizations. Majority (98%) of the respondents agreed that some preparation were done before implementing the modals with citing organization needs assessment as the main preparation practice done before ERP implementation.

The study established that concerning the stakeholders involvement majority of the employees reported that majority of the stakeholders in the organization were involved in the ERP implementation. Majority were involved in offering technical expertise. Majority (48.9%) of the respondents were to a great extent satisfied with ERP implementation process while most respondents said stakeholder involvement helped in system modification in the last one year.

On organization resources majority of the respondents reported that their organization devoted resources to the implementation process. The main resources provided were financial related as reported by 95.6% of the respondents. The major (37.8%) challenge facing resource allocation was the high cost of doing business therefore limiting the resources available for ERP implementation.

Majority of the respondents reported that their organization had adopted customer oriented culture, majority cited poor data storage as a main organization cultural aspect the ERP implementation was meant to address. Majority reported that ERP had helped in regulating production line and inventory database therefore improving the organization culture in terms of efficiency.

### **5.3 Conclusion of the study**

The first objective was to ascertain the influence of employee knowledge in relation to the dependent variable ERP implementation. The findings show a strong positive relationship between the two variables. This means that the better the knowledge is provided to employees, the better the ERP implementation process.

Similarly, there is a positive correlation between independent variable of organization resources and the ERP implementation. This means that as the resources allocated to implementation increase the more successful the process becomes. Although there is a weak relationship (0.414) as the coefficient of correlation, Stakeholder involvement also has a positive relationship with the ERP implementation.

Organization culture has a positive relationship with implementation of ERP. This implies that organization way of doing this influences the performance of Enterprise Resource Planning. All the independent variables used in our study have a positive relationship with dependent variable which shows that they significantly affect the dependent variable positively.

### **5.4 Recommendations of the study**

On the basis of the findings of the study the following recommendations can be made;

1. The organization management must strive to improve employees' knowledge which can be used in implementation of policy implementation. This can be improved through training and proper orientation for new employees. This will ensure that all employees are conversant with the ERP modal used in the respective organizations.
2. The strategy implementation processes should involve all the stakeholders, this includes the shareholders, workers and ender users as they benefit from the ERP

modal in different ways. The involvement can enhance adoptability and acceptance of the strategy as a way of increasing the organization performance.

3. The shareholders must ensure that enough resources are allocated to the implementation process. Resources in terms of human and financial resources are crucial in strategic planning and implementation processes.
4. The dairy sector management needs to align their organization culture with the ERP modal. The ERP modal are meant to enhance the organization way of doing business and therefore the more proactive the culture is the better the ERP utilization.

### **5.5. Suggestions for further research**

Other areas which might be explored in future are;

1. Effects of ERP implementation on organization culture in the dairy sector.
2. Effects of ERP utilization on employee job satisfaction in the dairy sector.

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## APPENDICES

### Appendix 1: Introduction Letter

To whom it may concern

Dear Sir/Madam,

**RE: REQUEST FOR PARTICIPATION IN A RESEARCH STUDY**

I am Bernahdette Omondi, a MA Project Planning and Management student at Nairobi University. I am currently undertaking a research on **“Factors influencing implementation ERP modal among the dairy enterprises in Kiambu County, Kenya.”**

I would be grateful if you could spare some time from your busy schedule and participate in providing the required information. All the information provided will be used purely for academic purposes only and will be treated with utmost confidentiality. Kindly contact me in case of any queries or clarification on any of the questions.

Thank you for your cooperation.

Yours faithfully,

Bernahdette Omondi.

M.A Project Planning & Management – University of Nairobi

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## Appendix 2: Questionnaire

**Instructions: Please tick appropriately**

Please fill in the questionnaire provided by ticking appropriately or filling in as directed.

### **SECTION A: Demographic Information**

1. What is your gender?
  - a. Male
  - b. Female
2. Branch/department/section  
\_\_\_\_\_
3. Position held in the organization
  - a. Chief Manager  senior manager  Program Coordinator
4. What is your age bracket?
  - a. 20 - 30 years
  - b. 31 – 40 years
  - c. 41 – 50 years
  - d. Above 50 years
5. What is your highest level of education attained so far?
  - a. Primary level
  - b. Tertiary College (Diploma)
  - c. University (Graduate)
  - d. University (Post-graduate)
  - e. Other (specify) \_\_\_\_\_
6. How long have your organization existed? (state in years) \_\_\_\_\_
7. How many years have you served in the current department \_\_\_\_\_

**Employees’ Knowledge**

1. Are all users able to use ERP effectively? Yes..... No.....

2. Before the ERP system implementation was the necessary preparation done?

Yes..... No.....

If yes which arrangements were done.....

3 The following are likely scale statements that relate to factors affecting implementation of ERP in dairy industry. Using scale 1-5 where 1- strongly disagree and 5- strongly agree indicate the extent to which you agree or disagree with it.

ID- indifferent, SD- strongly disagrees, D- disagrees, A- agrees and SA- Strongly agrees.

<b>Knowledge</b>	SD	D	ID	A	SA
Managers have adequate management training					
The training has assisted in the running of ERP					
Management skills affects the level of performance of ERP.					
Inexperience of managers affects performance of ERP					
There is competent team in ERP management					
Market efficiency is available with ERP use					
Outdated and inadequate infrastructures affect the level of performance of ERP					
Ineffective storage methods affect the Implementation of ERP					
Inadequate marketing information has impacted on the overall performance of ERP					

**Stakeholders’ involvement**

1. What are the major needs targeted by the ERP implementation in your organization

a. Common needs within the community

b. Individual employee needs

c. organizational needs

2. In your organization who determines the policies to be carried out?

(i) Shareholders

ii) Community leaders

(iii) Organization management

(iv) Employees

v) Vendors

3. To what extent are you satisfied with the choice of ERP modal you are carrying out?

(Tick as appropriate using the key below)

5 = Very great extent

4=Great extent

3=Moderate extent

2=Minimal extent

1= Not at all

4. How would you describe your involvement in your institution's ERP implementation?

a) I was the executive sponsor / co-sponsor for the project

b) I was the project leader

c) I was part of the management team

d) I served as a functional or technical specialist

e) I was partially involved

f) I was not directly involved

5. Are the end users fully aware of the benefits of the ERP? Yes..... No.....

6. What are the end users contributions on the ERP implementation?

System modification.....ERP Improvement..... Field training.....

### **Organization resources**

1. Does your company provide facilities and resources for system implementation?

Yes..... No.....

2. Which resources are provided by the company?

- a) Spacious offices..... b) Clean environment..... c) Financial aids.....
  - d) Work machines..... e) Qualified personnel.....
3. How do resources influence system implementation?
- a) By providing comfortable working environment
  - b) By providing opportunities for further growth.
  - c) By making system components available.
4. In your own opinion what challenges are faced by using company in resources allocation?

.....

.....

.....

**Organization culture**

1. How can you describe the organization culture in your organization?
- Customer oriented
  - Profit oriented
  - Growth oriented.....
2. Which challenges were experienced before ERP system was implemented
- a) Poor data storage
  - b) Slow customer services
  - c) High running costs
  - d) Manual recording
3. What are the best practices, associated with the ERP module which you have discovered?
- a) Tracks customer contacts
  - b) Provides the customer with a timely price quote
  - c) Configures quantity discounts
  - d) Checks the inventory database to see if items can be delivered on time
  - e) Updates the production planning database to avoid any shortfalls
  - f) Updates accounting records
  - g) Provides an interface with CRM (customer relationship management)