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DETERMINANTS OF PERFORMANCE OF ENTERPRISE RESOURCE PLANNING SYSTEMS: A CASE STUDY OF SIDAI AFRICA (KENYA) LIMITED

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Abstract: **Enterprise Resource Planning System has greatly brought about a lot of achievements in the performance of most organizations that have integrated the system in their structures. Several factors have played key roles in these achievements. The study explored in depth the determinants of performance of ERP system in the procurement sector and especially which has facilitated greater achievements and success for Sidai Africa (Kenya) Limited. The specific objectives which guided the study were: to determine the influence of organizational factors as a determinant of performance of ERP systems', to establish the influence of financial capabilities as a determinant of performance of ERP systems', to establish the influence of personnel training as a determinant of performance of ERP systems', and lastly to determine the influence of technological factors as a determinant of performance of ERP systems in Sidai Africa (Kenya) Limited. The study adopted descriptive research design and drew its target population from all the 84 employees of the Sidai. Data was collected using well-structured questionnaires from both top and middle level employees of Sidai Africa (Kenya) Limited. Pilot test was conducted using questionnaires administered to 8 members of staff. This constituted 10% of the respondents of the sample size; purposive sampling was used to select top management and departmental heads while random sampling was used to select other employees. Data collected was analyzed by the use of descriptive statistics and inferential analysis using statistical package for social science (SPSS). Findings from the study established that top management support, financial capability, integration of technology and personnel as the main key components of ERP performance. These were found to have contributed to enhanced performance of the ERP system through improved efficiency, creation of better understanding and flexibility in the procurement processes and also aiding at reduction of errors along that might occur along the supply chain cycle and boost user support confidence on the use of ERP systems.**

Keywords: **Organizational Factor, Financial Capability, Personnel Training, Technology, Performance and Enterprise Resource Planning.**

1. INTRODUCTION

1.1 Introduction:

For companies competing in highly dynamic markets the search for new sources of competitive advantage is essential. Rapid changes in technological development are forcing businesses to look continuously for innovative strategies to improve their competitiveness. Sweeney,(2013) argues that ERP technology has transformed productivity in animal health and plant health management essentials supply firms. However, Lyons, (2006) in recent decades, technology has also assumed greater importance in the other services sector facilitating growth by offering service firms important competitive leverage.

When markets become increasingly competitive, firms seek new opportunities to improve their competitiveness. Therefore, firms use advanced information technology, such as Enterprise Resource Planning (ERP) systems, in order to achieve advantages over their competitors. ERP systems have been used on a large scale by firms in the hope to increase, among others, their market agility since the introduction of these systems in the 1990s (Lin, 2009). An ERP system has the potential to integrate all the data and the information flowing throughout the entire firm (Lopez, 2013) and these systems have been defined as enterprise wide packages that tightly integrate business functions into a single system with a shared database.

According to Karimi, 2013), Enterprise Resource planning (ERP) system is a system that integrates all departments and functions across a company onto a single computer system that can serve all departmental needs. Lin, (2009) observed that an enterprise resource planning system is universally accepted in the corporate world as a practical solution for purpose of facilitating smooth flow of common functional information and practices across entire

organization. ERP system can therefore be defined as a collection of applications that cover a wide variety of an organization's business functions, such as production, inventory, finance, human resource, among others, and consequently presents them as a monolithic system for purpose of enhancing operational efficiency and effectiveness (Lysons, 2009).

1.1.1 Global Perspective of ERP Systems:

Over the whole world, we can see a rapidly increasing number of firms that adopt an ERP system An obvious example of the rising importance of ERP systems is the considerable sales increase of the largest vendor, SAP, which has grown from less than $500 million in 1992 to $17,6 billion in 2014 (Lopez, 2013: SAP annual report, 2014). This has to do with the fact that firms seem to think that an implementation of an ERP system leads automatically to higher efficiency, and hence for better performance relative to non-adopting firms (Bernard, 2008). Further, expectations are that an ERP performance has major implications for the organizational structure, the manner of working and also on management control (MC) (Leech, 2007). The potential suggested benefits regarding ERP systems have attracted significant attention from researchers in the area of accounting (Vandael, 2011).

Several studies in the accounting literature have demonstrated that the results, regarding the changes that ERP performance may entail, are inconsistent (Dechow, 2005). In many cases, the expected changes are only partially realized or even not at all (Grandlurd, 2011). This is due because ERP systems, among others, are a complex phenomenon. (Grandlurd, 2011) notes that due to their complexity, business problems and technical challenges arise and many firms fail to implement an ERP system in a proper way (Davenport, 2008). In 2008 is reported that 70% of ERP implementations failed to reach their corporate objectives (Bernard 2008). In recent studies, it is mostly only investigated whether the expected results of an ERP implementation are achieved, but there is little discussion regarding the impact of ERP systems on MC of a firm Granlund, (2011). In current literature, there is also no distinction made between a strategic implementation, involving the expectation that there are changes regarding MC, and a technical implementation. The latter is usually applicable in practice and involves little or no change in MC. Furthermore, Pellinen, (2010) argues that there are many important questions unanswered and need more investigation. Especially, how MC systems are influenced by ERP systems is a question which should be given more attention.

The significance of information flow and by implication the significance of information communication technology, as he defines of logistics as "The process of strategically managing the procurement, movement and storage of materials, parts, and finished inventory (and the related information flows) through the organisation and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfilment of orders." In the past, management used information technology to simply automate routine business tasks (Ward & Griffiths, 2011).

1.1.2 Kenyan Perspective of Enterprise Resource Planning systems:

The implementation of an ERP system in Kenya, like any large project is fraught with danger. The Scan group 2014 survey showed that approximately 2000 firms apply ERP systems and found that only 16% were successful. The significant risks attaching to technology investments discourage many firms from committing resources to enhance their performance into the future (Bowen, 2010). Kenya has embarked on a concerted effort in joining the league of industrialized nations in the acquisition, deployment, consumption and utilization of ERP. It has become an indispensable tool for individual and national empowerment, improvement, development and actualization of service. (Debela, 2009)

emphasized that automation of physical activities has been affecting the blue-collar workers. He went further to say that automation of information activities in office has changed the nature of office work and has highly affected the activities of knowledge on workers. The use of ERP assists and improves the delivery of services in civil service due to the high qualities of processing, service delivery and maximum efficiency in all areas that involve the knowledge of computer. ERP is also relevant to both public and private organization as well as to individuals. ERP are used in assisting in the organizational functions such as administrative planning, coordinating, controlling, directing, budgeting, reporting and staffing.

Over the years ERP has remained Kenya's top development agenda as evident in the country's National plans and other government initiatives such as the E-Government Strategy (2004-2009) which provide a road map on ERP performance. In 2012 the Minister of State for Civil service in Kenya said automated office systems represent structured methods of handling business text processing and communications through an integrated network that may include word processing for generating correspondence, electronic message systems from person-to- person communication, teleconferencing services, facsimile transmission, electronic filing systems, on-line calendar systems, and links to corporate files and outside services.

1.2 Statement of the problem:

Several scholars have carried out research concerning the enterprise resource planning (ERP) Systems in Kenya. Karimi (2013) did an investigation of critical success factors for successful Implementation of enterprise resource planning (ERP) Systems in Kenya and the study concluded that "Teamwork and composition in the ERP implementer-vendor-consultant partnership, good communication between the implementation partners, cross functional ERP core team, presents of partnership trust in the team members working well together and change management program and culture are critical successful factors in ERP implementation". While there is 89% adoption of ERP systems in Europe and North America, developing countries like Kenya has only adopted it 27% (Palvia, 2001). This can be attributed to among others; lack of top management commitment, poor staff training on use of ERP systems, high costs of implementing the systems and how well is integrated within the organization. Many studies in literature have shown the importance of ERP system in companies' effectiveness, and this is because ERP system have become one of the main prerequisites, a price of entry, and a strong and integrated IT infrastructure for many companies enabling them to compete in the local and global market place and ensuring them to gain a competitive advantage in the global economy particularly with the current e-business (Lin, 2009).

Wanyonyi (2015) did a study on the Challenges of implementing enterprise resource planning strategy at public institutions case of Kisumu County. The study established that Wanyonyi (2015) organizational structure were incompatible with ERP, non-supportive organizational culture, inadequate allocation of resources, resistance to change, ineffective communication, high implementation costs, lack of incentives and reward systems and inadequate user training and education. Kariuki (2010) did an investigation of the business value of enterprise resource planning systems by firms in public sector in Kenya. Kangogo (2013) carried out research on implementing enterprise resource planning system at Kenya Revenue Authority. Most of the above past studies have dwelt much on the business value, effects and challenges of ERP systems performance in public sector organizations no studies have been done on determinants of ERP performance among private sector firms especially firms dealing with animal and crop health therefore this study will help bridge the missing knowledge on the determinants of performance of ERP system in Sidai Africa (Kenya) Limited.

1.3 Objectives of the study:

The study was guided by the following objectives

1.3.1 General Objective:

The main objective of this study was to establish the determinants of enterprise resource planning systems' performance on supply of animal and plant health management essentials; case study of Sidai Africa (Kenya) Limited.

1.3.2 Specific Objectives:

i. To establish the influence of organizational factor on performance of ERP systems' in Sidai Africa (Kenya) limited.
ii. To determine the influence of financial capability on performance of ERP systems' in Sidai Africa (Kenya) limited.

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iii. To assess the influence of personnel training on performance of ERP systems' in Sidai Africa (Kenya) limited.

iv. To determine the influence of technology on performance of ERP systems' in Sidai Africa (Kenya) limited.

1.4 Research questions:

i. What is the influence of organizational factors as a determinant of performance of ERP systems at Sidai Africa (Kenya) Ltd?

ii. What is the influence of financial capability on performance of ERP systems in Sidai Africa (Kenya) Ltd?

iii. What is the influence of technological factors as a determinant of performance of ERP systems in Sidai Africa (Kenya) Ltd?

iv. What is the influence of personnel training and development as a determinant of performance of ERP systems' in Sidai Africa (Kenya) Ltd?

2. LITERATURE REVIEW

2.1 Introduction:

This chapter presents a summary of past relevant literature that relates to the study and attempts to highlight the keys variables that determines enterprise resource planning systems on performance of organizations with regard to personnel training, financial capacity, technology and the overall organization environment. It describes the theoretical and conceptual frameworks, empirical studies and critical review to identify the research gaps that the study aims to bridge.

2.2 Theoretical Framework:

According Kothari (2004) a theory is a coherent group of tested propositions commonly regarded as correct that can be used as principles of explanation and prediction for class of phenomena. The study adopted three theories i.e. resource based theory, contingency theory and socio-technical theory, forming the basis of discussion of the study variables.

2.3 Conceptual Framework:

A conceptual framework is a logically developed, described and elaborated network of interrelationships among variables integral in the dynamics of a situation being investigated (Mugenda & Mugenda, 2003).

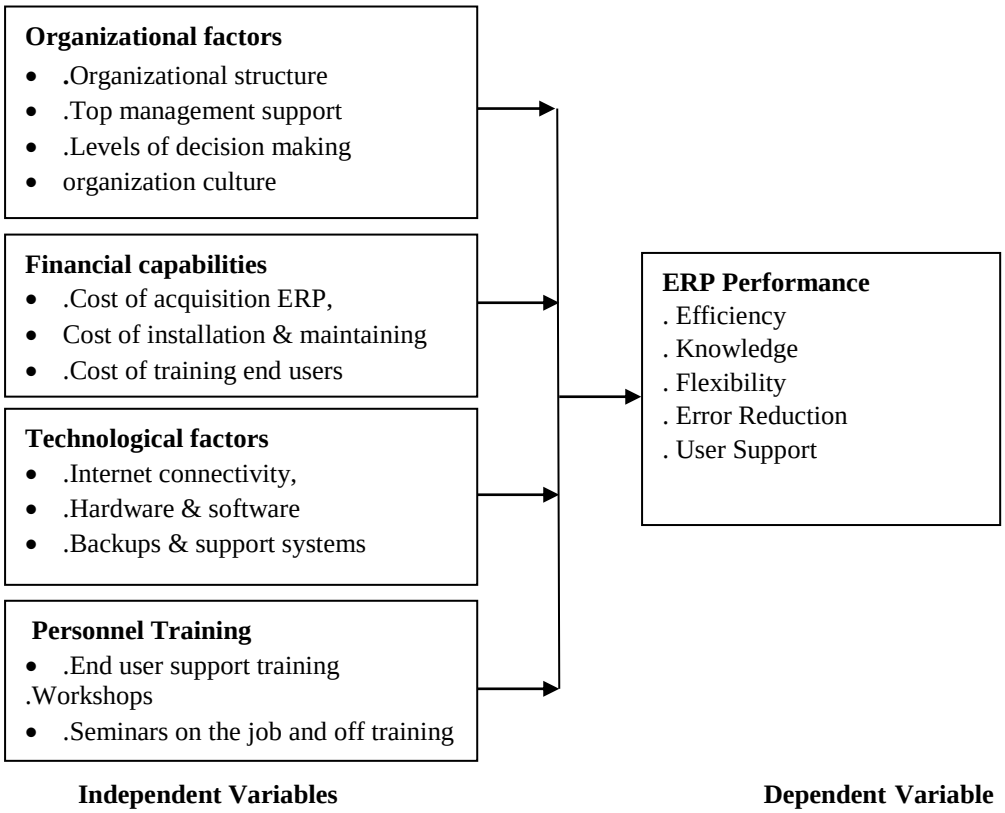

Figure 1: Conceptual framework

2.3.1 Organizational Factors:

Lack of awareness and readiness by private authorities to understand markets and technologies can be regarded as an additional barrier (Lember, 2011). The implementation of ERP systems in an organization is often accompanied by substantial changes in organizational structure and ways of working (Kallunki, Laitinen, & Silvola, 2011). ICT investment makes a statistically significant positive contribution to business performance as it enhances information exchange, accuracy, documentation and monitoring. The challenge confronted in all cases is to strike an appropriate balance and convince all actors in the supply chain on commitment to ICT despite their varying goals and objectives. The management skills, organizational encouragement for innovation and support of innovation resources would help the improvement of organizational innovation.

As noted by Lee, Lee, Olson, & Chung, (2010), training and education reduce employees' anxiety and stress about the use of the ERP system and provide better understanding about the benefits of the system for their tasks .The support and encouragement of top management is considered an essential factor for the development of innovation strategies because the resources required for the implementation of new technologies will be more easily available if the major person responsible for these resources supports the plans. In an ERP system environment, if the organization provides sufficient support to employees for their task, employees are more likely to enjoy their work and improve their performance through usage of the new system (Lee et al., 2010). Moreover, many initiatives of adopting new technologies require the collaboration and coordination of different departments and divisions and this is easier to manage when such initiatives are endorsed from the top **(**Lin, 2009). role in the advancement and development of new technologies and processes. Today more research is needed because new technologies such as RFID (Radio-Frequency Identification) and new management methods (such as collaborative forecasting and planning) are emerging and evolving faster than ever before

2.3.2 Financial Capabilities:

According to Sila (2010), financial ability of the firm to acquire, integrate and train the end users of ERP systems matters a lot in integration process of ERP systems ERP can minimize the total cost of production through reduced administrative expenses. The cost in this case is reduced by limiting the number of suppliers used by the firm and providing them with necessary training and technology. The efficient functioning of an operation will then depend on how well the suppliers meet up with the expectations of the organization. This is why the supply chain principle emphasizes the totality of ERP adoption in all facets which includes the suppliers. Enterprise resource planning systems are extensive software systems that integrate a number of business processes, such as manufacturing, supply chain, sales, finance, human resources, budgeting, and customer service activities (Weinrich & Ahmad, 2009). These in return result in enormous investments in software systems and in package customization (Doom, Milis, Poelmans, & Bloemen, 2010).

The success in the adoption process of ERP as argued by Assinform (2010), is greatly influenced by the financial resources' capability of the organization due to resource implication that can be involved. This to a larger extent will also be determined by the nature and size of the organization, and technology capabilities, though the less complicated structure allows smaller firms greater flexibility to changes (Girgin, Kurt & Odabasi, 2011).

Daughtry, (2008) also observed that networked inventory management requires a lot of information processing within and between the networked organizations. The transformation, storage and communication of information about the inventory in the stock points and in the intermediate processes across the network is highly complex. Therefore, automated information systems are essential to succeed in networked inventory management. Because of the typical features of networked inventory management, as compared to traditional inventory management within organizations, special information systems for networked inventory management are needed.

2.3.3 Technological factors:

According to (Sweeney 2013) technology has traditionally been viewed as the key to productivity in manufacturing industries. However, in recent decades, technology has assumed greater importance in the services sector facilitating growth by offering service firms important competitive leverage and Electronic transmission has revolutionized the cost and speed of purchasing processes (Lyons, 2006).

As observed by Lopez (2013) ICT resources impact on communication improvement, this includes internal and external communication and coordination of activities. ICT enables a faster and more efficient use of information both within the firm and with external agents, such as customers and suppliers. ICT facilitates interaction and better coordination among

workers, departments and firms. The process of adoption of ICT (Dyerson and Spinelli, 2011) is complex and it is stimulated by the occurrence of the following conditions: *business conditions* (sensitivity and commitment of the top strategic management), *organizational conditions* (the presence of an ICT Pivot: entrepreneur, manager, IT department employee or external consultant/vendor), *management conditions* (an appropriate presidium of ICT tools by skilled human resources). The analysis of factors of ICT adoption and the impacts on organizations are very important to understand how to stimulate in SMEs the process of investment in new technologies to acquire competitive advantages and good business performances.

Countries in the world are moving from an industrial economy to a knowledge economy in which economic growth is dependent on a country's ability to create, accumulate and disseminate knowledge. Computers and the internet have catalyzed the growth of the knowledge economy by enabling people to codify knowledge into a digital form easily transmitted to anywhere around the world. People who have access to this new wave of ICT – broadly defined as technology that can be used for transmitting and/or processing information – are part of an information society connected to a virtual network that constantly creates and disseminates new information. According to Kogilah, Santhappara and Eze, (2008) ICT has sped up the pace of globalization and increased the complexity of business practices because firms not only need to be familiar with their local context but also with global developments. Thus to compete in the knowledge economy, countries need a strong ICT - literate skills base that can innovate and adapt quickly to change. More value is placed on the knowledgeable worker than ever before. As cited by (Lin, 2009) knowledge, change and globalization are the driving forces of the new economy

Information and communication technologies (ICTs) are being adopted in different organizations to improve efficiency and to provide better services to their customers. There has been reported increase in the use of ICT in Kenya. The effects of ICT usage have been rated to be positive by many enterprises (Matambalya, 2001). Though ICT has many impacts on any given enterprise. It's been argued that ICTs are creating a new economy-information economy-in which information is the critical resource and basis for competition in all sectors (Aissaoui et al, 2007), however according to (Namusonge, 2013) In the world over 200 million people run non profit micro and small agro processing enterprises and have often singled out access to technology as the major hindrance to growth and competitiveness.

2.3.4 Personnel Training:

Training helps in preparing employees towards managing the supply chain ideology in the process of production. Training equips people with the necessary skills and techniques of quality improvement. It is argued to be a powerful building block of business in the achievement of its aims and objectives (Stahl,2005). Training is the process of developing, changing and reinforcing job related behaviors. ERP management is a new culture and a way of thinking, hence, without training such changes cannot be achieved. Training and education will reduce employees' anxiety and stress about the use of the ERP system and provide better understanding about the benefits of the system for their tasks and aid in providing a good leadership orientation providing a platform for leadership and recognition (Lee et al., 2010). Crosby (1999) recognizes the need for quality awareness to be raised among employees through education. His emphasis was on developing a quality culture within the organization so that the right climate exists.

Top management support is very important in achieving employees training and for the success full implementation of ERP management practices in an organization. According to Hackman and Wagenman (2005) ERP adoption is viewed as ultimately and inescapably the responsibility of top management because top management creates the organizations systems that determine how products and services are produced; the quality improvement process must begin with management's own commitment to ERP adoption. Pheny and Teo (2003) also observed that top management must communicate ERP adoption to the entire organization to create awareness, interest, desire and action.

2.4 Empirical Literature:

In 2000, a survey has been conducted on large manufacturing companies in USA indicated that, companies with a solid supply chain are able to reduce their operating costs, inventories, product life cycle, and cycle time tremendously, and that will certainly increase cash flow, working capital, efficiency of transactions in supply chain, customer services, and on-time delivery (Zheng, 2000). However, supply chain is considered as one of the most important success factors in the future of business environment, meanwhile managing the entire supply chain is very challenging and not an easy task, therefore companies began to consider and redirect their efforts toward information systems, such as ERP system, in order to improve their supply chain performance and give them the opportunity to gain a competitive advantage in the global economy (Lambert & Cooper, 2000).

Many researches argue that technology adoption brings down the operational costs (Amado et al., 2010), contributes 6 to 81% marginal increase in output (Brynjolfsson and Hitt, 2000; Adewoje et al., 2012), not only improve the efficiency (cost reduction) but also increases the effectiveness (improve performance and make the organization more flexible and better accountability) (Sabbaghi and Vaidyanathan, 2008; Rusli, 2012), reduce environmental impact instead of lowering energy costs (Bressler et al.; 2011).

Chang, Zheng (2000) pointed out that, the main five parts of any supply chain is plan, buy, make, move, and sell. Supply chain contains applications such as, manufacturing planning, demand planning, distribution planning, transportation management, warehousing management, performance management, production scheduling, freight payment, capacity planning, customer clearance, sourcing and procurement, and finally supply chain optimization. Ngulube and Tafor, (2006) in a study on impact of management of records in the public sector in Africa found that records and information management in developing countries was significant in effective management of the sector. This is because effective record management leads to accountability. However, the researchers observed that record management in most public sectors in developing countries were poorly management and hence the poor performance of most public institutions. One of the problems identified was lack of staff and appropriate training, inadequate funding to maintain records and the digital divide. This implies that if these problems are looked at, stores management in the public sector could be managed.

In a study on the relationship between inventory operations and human capital, (Maria, 2011) it was found that inventory operations management depends highly on the skills of the human resource handling them. It was observed that every task and action required to be carried out by the operatives will impact the inventory as well as the delivery lead times and other parameters.

2.5 Critique of existing literature:

ERP require implementation of an information system that facilitates and expedites the exchange of data and information between supply chain partners, integrate functional units, and allow everyone in a company to access to a single database and use the same data and information without any data inconsistency problems. The suitable information system that can provide all the above-mentioned characteristics is the ERP system (Gyampah, 2007; Kemp and Low, 2008). During the implementation of ERP system, companies should seek assistance from the external consultants in order to provide the above-mentioned facilities and avoid system failure (Maditinos, 2012). In order to create an effective and successful supply chain, it requires cross-functional integration, as well as many companies need to integrate the whole supply chain, which includes suppliers, warehouses, factories, distributors, and retail outlets, and provide cooperation between all supply chain partners through planning, coordination, and information sharing which is critical to achieve successful and effective operation of supply chain (Stevenson, 2012). In fact, the key to achieve effective supply chain is accomplishing customer demand on time. However, there are several steps must be taken in order to attain an effective supply chain that includes developing a strategic objectives and tactics, creating strategic partnerships, coordinate activities with suppliers and customers, and finally organize planning and execution within the supply chain (Lambert and Cooper, 2010). Therefore, the success of ERP systems depends on how efficient and effective each part and application of the systems in its operations, and also on how well these parts and applications integrated with each other in order to assist the entire supply chain to move smoothly and efficiently (Zheng 2010). ERP system is able to integrate all parts and applications of the supply chain, and also able to facilitate the efficiency of each part and application in the supply chain.

2.6 Research Gap:

ERP market found a great acceptance in developed countries such as USA, UK, Canada, and Australia, while in developing countries, ERP systems is a new idea and still in infancy stage because there are many untapped countries such as China, Korea, and Malaysia. ERP could be an effective system that assists companies in creating effective and successful supply chain. In fact, ERP system introduced to integrate all functional units of a company and its supply chain in order to make it in one system. Therefore, all data and information related to supply chain will be accessible and retrieved from one system. The ease of access to one system from various functional units and the advancement of IT and computing research can result in enhancement of supply chain performance (Rashid et al., 2002). In that regard then the determining factors which are needed to ensure smooth integration of ERP systems is an area that is lacking enough research therefore this study is worthwhile in discovering the factors determining the smooth integration of the ERP systems.

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3. RESEARCH METHODOLOGY

3.1 Introduction:

The chapter discusses the research design that was used for the study, the target population, sampling methodology, and data collection tools and data analysis technique. The pilot study and validity and reliability of the research instruments have also been discussed.

3.2 Research Design:

The study adopted case study and descriptive research design. According to Cooper and Schindler (2000), a descriptive research design is concerned with finding out the, who, what, where, when and how much. Furthermore, a research design is structured, has investigative questions and part of formal studies. Orodho & Kombo, (2002) argues that this choice of this design is appropriate for this study since it utilizes a questionnaire as a tool of data collection and helps to assess of the determinants of ERP implementation in health and crop health management institutions in Kenya case of Sidai Africa (Kenya) Ltd. This is supported by (Gall *et al* 2010) who assert that this type of design enables one to obtain information with sufficient precision so that research questions can be tested properly. It is also a framework that guides the collection and analysis of data.

3.3 Target Population:

Population refers to an entire group of persons or elements that have at least one thing in common. The target population of this was 87 members of staff of Sidai Africa (Kenya) Ltd.

3.4 Sampling Size and Sampling Technique:

A sample is a set of observations drawn from a population by a defined procedure. The sample represents a subset of manageable size. Samples are collected and statistics are calculated from the samples so that one can make inferences or extrapolations from the sample to the population. Random sampling was used in this study. The sample size of this study was 84 respondents that were selected from the departments in the headquarters. Since the population was highly homogeneous, a 30% proportion was be used to select all respondents from the headquarters branch. The technique gives more accurate results when most of the variation in the population is within group (Orodho and Kombo, 2002).

Table 1: Sampling Distribution

Category of employees	Target population	Sample population
Top Management	3	3
Departmental Managers	8	8
Supervisors /Technical	13	13
Other employees	60	60
Total	84	84

Source: www.sidai.org.ke (2017)

3.5 Data Collection Instrument:

According to Creswell (2002) data collection is the means by which information is obtained from the selected subject of an investigation. The researcher collected primary data using well designed questionnaires that contained both structured and unstructured questions. The open-ended questions were used to limit the respondents to given variables in which the researcher was interested in and facilitated quantitative analysis, while unstructured questions were used in order to give the respondents room to express their views in a more pragmatic manner Kothari (2004) and hence facilitated qualitative analysis.

3.6 Data collection Procedure:

The researcher contacted the Company and its Procurement Department in order to seek permission to conduct the study. Once permission was received, the researcher proceeded to reach out to the respondents at their locations of work, explained the purpose of the study to them and requested them to be part of it by their voluntary participation. Once the consent of the respondents was confirmed, the researcher proceeded with administration of the questionnaires through drop and pick method.

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3.7 Pilot Study:

According to (Sekaran, 2008, Mugenda, 2008, William, 2006) pilot test is necessary and the validity of a study. A pilot test was conducted using questionnaires administered to 8 members of staff, this constituted 10% of the respondents. The pilot was undertaken to pretest data collection instrument for validity and reliability.

3.8 Reliability:

The study conducted factor analysis to select a subset of variables from a larger set based on the original variables with the highest correlations with, the principal component factors. Reliability analysis was conducted using Cronbach's alpha to determine whether the data gathered on each variable had a significant relationship with supply chain performance. Reliability analysis was then subsequently performed using Cronbach's Alpha which measured the internal consistency by establishing if certain item within a scale measures the same construct. Gliem and Gliem (2003) established the Alpha value threshold at 0.7, thus forming the study's benchmark. Cronbach Alpha was established for every objective which formed a scale. Table shows that Organizational factors had the highest reliability (α= 0.920), followed by technological factors (α=0. 847), financial capabilities (α=0. 715) and personnel training (α=0. 713).

Reliability is the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable (Joppe, 2000).

3.9 Data Analysis and Presentation:

The study received both quantitative and qualitative data from the respondents. The questionnaires received were coded and edited for completeness and consistency. Quantitative data were analyzed by employing descriptive statistics and inferential analysis using statistical package for social science (SPSS). This technique gives simple summaries about the sample data and present quantitative descriptions in a manageable form, Gupta (2004). Together with simple graphics analysis, descriptive statistics form the basis of virtually every quantitative analysis in the following equation:

$$\mathbf{Y = \beta_0 + \beta_1 X_{1+} \beta_2 X_2 + \beta_3 X_{3+} + \epsilon} \text{ ..... (ii)}$$

The data were then presented using frequency distribution tables, bar charts and pie charts for better understanding.

3.9.1 Linear Regression Model:

ERP performance was regressed against four variables of independent variables namely (Organizational factors, Financial capabilities, Technological factors, Personnel training)

The regression which was expressed as:

Y = Implementation of ERP systems

β_0 = constant (coefficient of intercept)

X_1 = Organizational factors

X_2 = Financial capabilities

X_3 = Technological factors

X_4 = Personnel training

B_1, …., B_4 = regression coefficient of four variables.

4. DATA ANALYSIS AND INTERPRETATIONS

4.1 Response Rate:

The study targeted a sample size of 84 respondents from which 73 filled in and returned the questionnaires making a response rate of 86.9%. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was considered to be excellent and satisfactory to make conclusions for the study.

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Table 2: Response rate

	Questionnaires Administered	Questionnaires filled & Returned	Percentage
Respondents	84	73	86.9 %

4.1.1 Reliability Analysis:

A pilot study was carried out to determine reliability of the questionnaires. Reliability analysis was subsequently done using Cronbach's Alpha which measured the internal consistency by establishing if certain item within a scale measures the same construct. Gliem and Gliem (2003) established the Alpha value threshold at 0.7, thus forming the study's benchmark. Cronbach Alpha was established for every objective which formed a scale. Table below shows that Organizational factors had the highest reliability (α= 0.920), followed by technological factors (α=0. 847), financial capabilities (α=0. 715) and personnel training (α=0. 713). This illustrates that all the four.

Table 3: Reliability Analysis

Scale	Cronbach's Alpha	Number of Items
Organizational factors	0.920	7
Technological factors	0.847	6
Personnel Training	0.713	4
Financial capabilities	0.715	4

4.2 Organization Factors:

4.2.1 Do organizational factors in your institution determine ERP system performances?

The study sought to determine whether organizational factors determine ERP system performances, from the findings, majority of the respondents as shown by 98.6 % indicated that organizational factors affected the ERP system performance of the firm while 1.4 % of the respondents were of the contrary opinion. This implies that organization factors affect ERP system performance.

Table 4: Organizational factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	72	98.6	98.6	98.6
	No	1	1.4	1.4	100.0
	Total	73	100.0	100.0	

Table 5: Descriptive statistics for organizational factors

Descriptive Statistics	N	Mean	Std. Deviation
Flexible work structure enables faster ERP Performance	73	1.3425	.60597
The ability of top management to make faster decision enables success in ERP performance	72	1.6111	.59471
Working well in teams within the organization enables easier integration of ERP	73	1.5068	.64814
Top Management support helps achieve better ERP performance	72	1.5139	.53056
Valid N (list wise)	71		

From the table above showed that majority of the respondents strongly agreed that flexible work structures put in place enable faster ERP system performance. Structures such as good communication networks reduce the delays that may take place when conveying information from one point to another. This was indicated by the mean and standard deviation 1.3425 and 0.61 respectively. The respondents agreed that the ability of top management to make faster decision enables success in ERP performance. Decision making is a key component as it determines the direction in which an organization would take. This aspect was indicated by a mean and a standard deviation of 1.61 and 0.59 respectively.

Team work has been identified as tool of success in most projects. The study observed that respondents were inclined to the fact that working well in teams within the organization enables easier integration of ERP, this was indicated by a mean and a standard deviation of 1.51 and o.65 respectively.

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Lastly, an organization is usually divided into three levels of management starting with the top level consisting of CEOs and Directors, followed by middle level managers and finally technical staff. Most theories state that for success to be significant the top level management should support decision making in all other levels of the organization. This concept was supported by the findings of the study where the respondents were in agreement that Top Management support helps achieve better ERP performance. This was indicated by a mean and a standard deviation of 1.51 and o.53 respectively.

4.3 Financial Capabilities:

Do Financial Capabilities in your institution determine ERP system performances?

The study sought to determine whether financial capabilities determine ERP system performances, from the findings, majority of the respondents as shown by 95.9 % indicated that financial capabilities affected the ERP system performance of the firm while 4.1 % of the respondents were of the contrary opinion. This implies that financial capabilities affect ERP system performance.

Do you think financial strength of the organization determines performance of ERP Systems?

Table 6: Financial capacity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	70	95.9	100.0	100.0
Missing	System	3	4.1		
Total		73	100.0		

Table 7: Descriptive statistics for financial capabilities

Descriptive Statistics	N	Mean	Std. Deviation
High Acquisition cost hinders performance of ERP systems	73	1.5205	.68940
High Cost of installation of ERP systems soft and hardware's hinders performance of ERP systems.	73	1.6849	.66409
High Cost of maintaining ERP systems hinders performance	73	1.4247	.52488
Valid N (list wise)	73		

The table above showed that majority of the respondents strongly agreed that high acquisition cost hinders performance of ERP systems. Costs of procuring new technological innovations that improve organizational performance today are very expensive. This has rendered most organizations to be technically obsolete hence affecting most of their operations. This was indicated by a mean and standard deviation of 1.52 and 0.69 respectively.

Another finding made by the study was that High Cost of installation of ERP systems soft and hardware's hinders performance of ERP systems. This was indicated with a mean and standard deviation of 1.68 and 0.66 respectively.

Lastly the respondents observed that the high cost of maintaining ERP systems hinders performance. New systems today require regular maintenance and update of software and hardware, this has proven to be quite costly for most organizations and therefore the operations and performance of some systems get affected. This was indicated with a mean and standard deviation of 1.42 and 0.52 respectively.

4.4 Technological factors:

Do technological factors determine performance of ERP systems organizations?

The study sought to determine whether financial capabilities determine ERP system performances, from the findings, majority of the respondents as shown by 97.3 % indicated that financial capabilities affected the ERP system performance of the firm while 2.7 % of the respondents were of the contrary opinion. This implies that financial capabilities affect ERP system performance.

Table 8: Technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	71	97.3	97.3	97.3
	No	2	2.7	2.7	100.0
	Total	73	100.0	100.0	

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Table 9: Descriptive statistics for technological factors

Descriptive Statistics			
	N	Mean	Std. Deviation
High internet connectivity enables better performance of ERP systems	73	1.3973	.66122
Does availability of high speed and modern hardware and software enable better performance of ERP systems	73	1.6438	.63179
Does availability of ICT backups and end user support systems enable better performance of ERP systems	73	1.4658	.55483
Valid N (list wise)	73		

The table above showed that majority of the respondents agreed that High internet connectivity enables better performance of ERP systems. Most systems today run on internet connection in order to transmit information from one point to another, therefore good connectivity means good communication hence better performance. This was indicated with a mean and standard deviation of 1.397 and 0.66 respectively.

Secondly the respondents agreed that availability of high speed and modern hardware and software enable better performance of ERP systems. Well maintained systems both in hardware and software allow smooth operation of systems. This was indicated in the study with a mean and standard deviation of 1.64 and 0.63 respectively.

Lastly the respondents agreed to the fact that availability of ICT backups and end user support systems enable better performance of ERP systems. This implies that feedback from users is a vital aspect in establishing success of any given system. Feedback would clearly indicate whether the system was successful in conducting its duties or not. The study supported this with a mean and standard deviation of 1.47 and 0.55 respectively.

4.5 Personnel Training:

Do you consider employee training as necessary in performance of ERP Systems?

The study sought to determine whether financial capabilities determine ERP system performances, from the findings, majority of the respondents as shown by 94.5 % indicated that financial capabilities affected the ERP system performance of the firm while 5.5 % of the respondents were of the contrary opinion. This implies that financial capabilities affect ERP system performance.

Table 10: Personnel training

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	69	94.5	100.0	100.0
Missing	System	4	5.5		
Total		73	100.0		

Table 11: Descriptive Statistics

	N	Mean	Std. Deviation
Continuous training of workers on the job improves ERP systems	73	1.3699	.67714
Continuous training through attending workshops of ERP systems enables better performance	73	1.6712	.62483
Regular training through seminars and open days enhances performance of ERP systems	73	1.7123	1.30681
Valid N (list wise)	73		

The table above showed that the respondents agreed that continuous development of employees in terms of technical skills and on job training improved how the ERP system performs. Organizations that support employee development ensure that they have well skilled personnel to handle any new system brought to the organization. This concept was supported with a mean and standard deviation of 1.37 and 0.68 respectively.

Secondly, the mode of training adopted determines the level of skill that employees would have to help them manage and handle ERP systems. The respondents were in agreement that Continuous training through attending workshops of ERP systems enables better performance; this was supported with mean and standard deviation of 1.67 and 0.62 respectively.

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Lastly, the respondents were in agreement that Regular training through seminars and open days enhances performance of ERP systems. This was supported by statistics of the study that is mean and standard deviation of 1.7123 and 1.30681 respectively.

4.6 ERP Performance:

Do you believe that ERP systems performance significantly improves supply chain performance of the firm?

The study sought to determine whether financial capabilities determine ERP system performances, from the findings, majority of the respondents as shown by 97.2 % indicated that financial capabilities affected the ERP system performance of the firm while 2.8 % of the respondents were of the contrary opinion. This implies that financial capabilities affect ERP system performance.

Table 12: ERP Performance

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	70	97.2	97.2
	No	2	2.8	100.0
	Total	72	100.0	
Total		73		

Table 13: Descriptive statistics for personnel training

Descriptive Statistics	N	Mean	Std. Deviation
Good organizational towards culture affects ERP performance	73	3.3014	1.50633
Automation of ERP systems greatly improves performance	73	3.3288	1.52802
Levels of training of staff affects performance of ERP systems and hence affects supply chain performance	73	3.3836	1.56018
High internet connectivity, hardware and software support systems contributes greatly to ERP system's performance	73	3.4247	1.58042
Valid N (list wise)	73		

The table above showed that the respondents agreed that continuous development of employees in terms of technical skills and on job training improved how the ERP system performs. Organizations that support employee development ensure that they have well skilled personnel to handle any new system brought to the organization. This concept was supported with a mean and standard deviation of 1.37 and 0.68 respectively.

Secondly, the mode of training adopted determines the level of skill that employees would have to help them manage and handle ERP systems. The respondents were in agreement that Continuous training through attending workshops of ERP systems enables better performance, this was supported with mean and standard deviation of 1.67 and 0.62 respectively.

Lastly, the respondents were in agreement that Regular training through seminars and open days enhances performance of ERP systems. This was supported by statistics of the study that is mean and standard deviation of 1.7123 and 1.30681 respectively.

4.7 Regression Analysis:

Regression analysis was performed to establish the relationship between organizational factors which is the dependable variable and ERP performance in organizations.

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.842[a]	.759	.702	5.80307

a. Predictors: (Constant), Personnel Factors, Technological Factors, Financial Capabilities Factors, Organizational Factors

The results in the above table shows that the independent variables explained 70.2% of the variation in the financial performance as indicated by the coefficient of the determination (R^2) value of 0.702. Analysis of variance was performed to test for the significance of the whole model).

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Table 4.8 showed the analysis of variance which aimed at determining the significance of the overall model.

Table 15: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	138.734	4	34.684	20.030	.001[b]
	Residual	2222.590	66	33.676		
	Total	2361.324	70			

a. Dependent Variable: ERP PERFORMANCE

b. Predictors: (Constant), Personnel Factors, Technological Factors, Financial Capabilities Factors, Organizational Factors

The results in table above indicated that the model predicted organizational factors as indicated by $F = 20.030$; $p = 0.001$

Table 16: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.383	2.806		5.125	.000
	Organizational Factors	-.501	.707	-.647	-.708	.002
	Financial Capabilities Factors	-.636	.795	-.658	-.800	.002
	Technological Factors	.535	.702	.723	.763	.000
	Personnel Factors	.571	.376	.497	1.518	.034

a. Dependent Variable: ERP PERFORMANCE

The results in the table above indicated that organizational factors, financial capabilities, technological factors and personnel factors predicted ERP performance of Sidai Kenya Limited at 5% level of significance. This is indicated by p-values that are greater than 0.05.

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Findings:

The main purpose of the study was to work out the result of the impact of organizational factors on the performance of ERP systems. The study was conversant by the subsequent specific objectives; to research the result of organizational factors on ERP performance of Sidai Africa (Kenya) Ltd, to work out the result financial capabilities factors on ERP performance of Sidai Africa (Kenya) Ltd, to determine the impact of technological factors on ERP performance of Sidai Africa (Kenya) Ltd and to establish the influence of personnel training on ERP performance of Sidai Africa (Kenya) Ltd. A summary of the analyzed findings is given below.

5.1.1 The effect of organizational factors on ERP performance of Sidai Africa (Kenya) Ltd:

The study observed that the implementation of ERP systems in an organization is often accompanied by substantial changes in organizational structure and ways of working. ICT investment makes a statistically significant positive contribution to business performance as it enhances information exchange, accuracy, documentation and monitoring. training and education reduce employees' anxiety and stress about the use of the ERP system and provide better understanding about the benefits of the system for their tasks. The support and encouragement of top management is considered an essential factor for the development of innovation strategies because the resources required for the implementation of new technologies will be more easily available if the major person responsible for these resources supports the plans. The respondents agreed that the ability of top management to make faster decision enables success in ERP performance. Team work has been identified as tool of success in most projects. Lastly, an organization is usually divided into three levels of management starting with the top level consisting of CEOs and Directors, followed by middle level managers and finally technical staff.

5.1.2 Effect of financial capabilities on the performance of ERP systems:

financial ability of the firm to acquire, integrate and train the end users of ERP systems matters a lot in integration process of ERP systems ERP can minimize the total cost of production through reduced administrative expenses. The cost in this case is reduced by limiting the number of suppliers used by the firm and providing them with necessary training and

technology. The efficient functioning of an operation will then depend on how well the suppliers meet up with the expectations of the organization. This is why the supply chain principle emphasizes the totality of ERP adoption in all facets which includes the suppliers. The study's cost of procuring new technological innovations that improve organizational performance today are very expensive. This has rendered most organizations to be technically obsolete hence affecting most of their operations. Another finding made by the study was that High Cost of installation of ERP systems soft and hardware's hinders performance of ERP systems. Lastly the respondents observed that the high cost of maintaining ERP systems hinders performance. New systems today require regular maintenance and update of software and hardware, this has proven to be quite costly for most organizations and therefore the operations and performance of some systems get affected.

5.1.3 Effects of technological factors on ERP systems performance:

The study indicated that ICT resources impact on communication improvement; this includes internal and external communication and coordination of activities. ICT enables a faster and more efficient use of information both within the firm and with external agents, such as customers and suppliers. ICT facilitates interaction and better coordination among workers, departments and firms. The study observed that High internet connectivity enables better performance of ERP systems. Most systems today run on internet connection in order to transmit information from one point to another, therefore good connectivity means good communication hence better performance. Well maintained systems both in hardware and software allow smooth operation of systems.

5.1.4 Effects of personnel training on ERP systems performance a case of Sidai Africa (Kenya) Ltd:

Training is the process of developing, changing and reinforcing job related behaviors. ERP management is a new culture and a way of thinking, hence, without training such changes cannot be achieved. Training and education will reduce employees' anxiety and stress about the use of the ERP system and provide better understanding about the benefits of the system for their tasks and aid in providing a good leadership orientation providing a platform for leadership and recognition. The table above showed that the respondents agreed that continuous development of employees in terms of technical skills and on job training improved how the ERP system performs. Organizations that support employee development ensure that they have well skilled personnel to handle any new system brought to the organization. The mode of training adopted determines the level of skill that employees would have to help them manage and handle ERP systems. Regular training through seminars and open days enhances performance of ERP systems.

5.2 Conclusion:

5.2.1 The effect of organizational factors on ERP performance of Sidai Africa (Kenya) Ltd:

A simple linear regression model was performed with ERP system as the dependent variable and determinants of ERP performance as independent variables. This is aimed to establish a linear relationship between them. According to the findings organizational factors was found to negatively explain a fifty percent variation that occurred in ERP system performance of Sidai Africa (Kenya) Ltd. The organization should careful look at its structure to avoid a lot of bureaucratic system in order to allow ease of communication and decision making.

5.2.2 The effect of financial capabilities on ERP system performance of Sidai Kenya:

Form the second regression analysis, financial capabilities was also one of the key factors in explaining the performance of ERP systems. The findings revealed that the relationship between financial capabilities and ERP performance was significant therefore it could predict ERP performance system. The success in the adoption process of ERP, is greatly influenced by the financial resources capability of the organization due to resource implication that can be involved. This to a larger extent will also be determined by the nature and size of the organization, and technology capabilities, though the less complicated structure allows smaller firms greater flexibility to changes.

5.2.3 The effects of technological factors on the performance of ERP system:

Another variable in the multiple linear regressions was technological factors. The findings revealed that technological factors were found to explain of the variation that occurred in the ERP system performance. The analysis of factors of ICT adoption and the impacts on organizations are very important to understand how to stimulate in SMEs the process of investment in new technologies to acquire competitive advantages and good business performances. Countries in the world are moving from an industrial economy to a knowledge economy in which economic growth is dependent on a country's ability to create, accumulate and disseminate knowledge.

5.3 Recommendations of the Study:

From the findings of the study, executives should focus on improving on organization factors and financial capabilities since they pose the greatest challenge to the performance of ERP systems. Despite these factors such as technological and personnel training should not be ignored since they significantly affect ERP systems too. Finally, the support and influence of the ICT structures by the government is greatly needed to support organizations that are just adopting these new systems.

5.4 Suggestions for Further Studies:

The study sought to determine factors affecting the performance of ERP system performance. The study variables accounted for 70.2 percent changes in performance, the study therefore recommends that other variables accounting for 29.8% should be established and their effects assessed as well.

REFERENCES

[1] Adewoje, J.O., Akanbi, T.A. (2012), *Role of Information and Communication Technology Investment on the Profitability of Small Medium Scale Industries – A Case of Sachet Water Companies in Oyo State, Nigeria*, Journal of Emerging Trends in Economics and Management Sciences (JETEMS) 3 (1): 64-71.

[2] Asghar Sabbaghi and Ganesh Vaidyanathan (2008), *Effectiveness and Efficiency of RFID technology in Supply Chain Management: Strategic values and Challenges*, Journal of Theoretical and Applied Electronic Commerce Research, Vol. 3, issue 2, p.71-81.

[3] Augier, M. and D.J. Teece (2009), *"Dynamic capabilities and the role of managers in business strategy and economic performance*

[4] Benson, W. (2008). *Strategic value of information technology on procurement process among manufacturing firms in Kenya*. International Journal of Science and Research Vol. 2 No.32, pp.44-59

[5] Deloitte, (1999). "*ERP's second wave maximizing the value of ERP-enabled processes* Asian Journal of business and commerce 45 (6) :457-475.

[6] Gibson, N., Holland, C.P., & Light, B. (2010). *"Enterprise resource planning: a business approach to systems development"*, Proceedings of the 32nd Hawaii International Conference on System Sciences.

[7] Goodhue, D.L., Wybo, M.D., & Kirsch, L.J. (1992). "*The impact of data integration on the costs and benefits of information systems",* MIS Quarterly, Vol. 16 No.3, pp.293-308.

[8] Hitt, L.M., Wu, D.J., & Zhou, X. 2012). "Investment in enterprise resource planning", Journal of Management Information Systems, Vol. 19 No.1, pp.71-98.

[9] Hsu, L.L. (2005). *"Supply chain system effects on performance for interaction between suppliers and buyers"*, Journal of Industrial Management & Data Systems, Vol. 105 No.7, pp.857-75.

[10] Hsu, L.L., & Chen, M. (2004). *"Impacts of ERP system on the integrated-interaction performance of manufacturing and marketing*", Journal of Industrial Management &

[11] , Y.C. (2011). *"Planning enterprise resources by use of a reengineering approach to build a global logistics*. Data Systems, Vol. 104 No.1, pp.42-55.

[12] Huang, S.M., Kwan, I.S.Y., & Hung (2011). *Management system*", Journal of Industrial Management and Data Systems, Vol. 101 No.9, pp.483-91.

[13] Huang, Z., & Palvia, P. (2011). *'ERP implementation issues in advanced and developing countries*. Business Process Management Journal 7 (3): 276-284.

[14] Kallunki, J.-P., Laitinen, E. K., & Silvola, H. (2011). *Impact of enterprise resource planning systems on management control systems and firm performance.* International Journal of Accounting Information Systems, 12(1), 20e39.

[15] Kemp, M.J., & Low, G.C. (2008). "*ERP innovation implementation model incorporating change management*", Business Process Management Journal, Vol. 14 No.2, pp.228-42.

[16] Khaled, A., Zahran, A., & Eldabi, T. (2011). *'Critical Success Factors in ERP Implementation* European and Mediterranean conference journal 3 (7) 12.

[17] Kremzar, M.H., & Wallace, T.F. (2001). *ERP: Making it Happen: The Implementers' Guide to Success with Enterprise Resource Planning*, John Wiley & Sons Inc, New York, NY.

[18] Lambert, D.M., & Cooper, M.C. (2010*). "Issues in supply chain management*", Industrial Marketing Management, Vol. 29 pp.65-83.

[19] Li, S., Rao, S.S., Nathan, T.S.R., & Nathan, B.R. (2005). "*Development and validation of a measurement instrument for studying supply chain management practices*", Journal of Operations Management, Vol. 23 pp.618-41.

[20] Liang, H., Xue, Y., Boulton, W.R., & Byrd, T.A. (2004). "*Why Western vendors don't dominate China's ERP market"*, Communications of the ACM, Vol. 47 No.7, pp.69-72.

[21] Liu Z., & Wei, P. (2016). *ERP Implementation Case of China's Hauling Company Finance & Accounting 7* Asian journal of commerce and business 123 (4) 13.

[22] Mabert, V.A., Soni A., & Venkataramanan, M.A. (2013). *Enterprise resource planning Managing implementation process*, European journal of operational Research 146 (2): 304 ,314

[23] Maditinos, D., Chatzoudes, D., & Tsairidis, C. (2012). *"Factors affecting ERP system implementation effectiveness*", Journal of Enterprise Information Management, Vol. 25 No.1, pp.60-78.

[24] Molla, A., & Bhalla, A. (2006*). "Business transformation through ERP: a case study of an Asian company"*, Journal of Information Technology Case and Application Research, Vol. 8 No.1, pp.34.

[25] Neely, A., Gregory, M., & Platts, K. (1995). *"Performance measurement system design: a literature review and research agenda*", International Journal of Operations and Production Management, Vol. 15 No.4, pp.80-116.

[26] Njuguna, D. (2011). *Influence of ERP systems on revenue collections at Kenya Revenue Authority*, Asian journal of commerce and business 90 (12):345-376.

[27] Nyaga, W. (2012). *Role of ICT support tools in procurement in manufacturing sector firms,* International journal of science and research 42 (5); 12-24.

[28] Olson, D.L., Chae, B., & Sheu, C. (2005). *"Issues in multinational ERP implementation"*, Int. J. Services and Operations Management, Vol. 1 No.1, pp.7-21.

[29] Otieno, J. (2015). *Role of ERP systems on procurement among service sector organizations case of tourism hotels in Kenya*. African journal of business 12 (6): 21-32.

[30] Park, K., Kusiak, A. (2005). *"Enterprise resource planning (ERP) operations support system for maintaining process integration"*, International Journal of Production Research, Vol. 43 No.19, pp.3959-82.

[31] Parr, A., Shanks, G. (2000). "*A taxonomy of ERP implementation approaches*", 33rd Hawaii International Conference on System Sciences (HICSS), Maui,

[32] Rashid, M.A., Hossain, L., Patrick, J.D. (2002). *The Evolution of ERP Systems: A Historical Perspective*, Idea Group Publishing, Hershey, PA.

[33] Rom, A., Rohde, C. (2006). "*Enterprise resource planning systems, strategic enterprise management systems and management accounting: a Danish study*", Journal of Enterprise Information Management, Vol. 19 No.1, pp.50-66.

[34] Shepherd, C., Gunter, H. (2006). *"Measuring supply chain performance: current research and future directions"*, International Journal of Productivity and Performance Management, Vol. 55 No.3/4, pp.242-58.

[35] Sila, M. (2010). *ERP systems and their role in modern procurement practices* International journal of business and commerce 34 (2) :234-245.