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Effect of Enterprise Resource Planning System Implementation on Performance of Organizations Supply Chain Activities in Kenya (A Case of Coca Cola Company Nairobi)

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Abstract: **The purpose of the study is to determine effects of ERP implementation on performance in supply chain management sector with special. Reference to the Coca Cola company ltd .ERP in many organizations has been adopted and thus has helped to increase efficiency and smooth running of the operation in the organizations. The study objectives were to find out the effects of ERP on cost reduction, the efficiency in lead-time, the behavior of the employees on cultural change due to ERP implementation and the way the organization will be able to plan and forecast on future activities with help of ERP implementation. The study involved a survey and data collection using both semi structured and unstructured questionnaire which were administered through personal interviews. Thus, the study adopted descriptive design which helped the researcher to gather the necessary information from the targeted respondents.The study adopted descriptive research design. The target population consisted of 270 employees in the Coca-Cola Company Nairobi. Stratified sampling was adopted whereby a sample 20% of the employees from each department which gave a sample size of 57 respondents. A semi-structured questionnaire was used in the collection of data for the study. Data was analyzed using descriptive statistics and the analyzed data presented by charts and tables for ease of understanding the results. The study findings indicated that change in performance of organizations Supply Chain can be explained by four predictors namely Cost reduction, Lead - time, Culture effects and Planning and forecasting, an implication that the remaining of the variation in performance of organizations Supply Chain could be accounted for by other factors not considered in this study.From the findings, ERP implementations was found to have a positive impact on Cost reduction, Lead - time, Culture effects and Planning and forecasting. ERP implementations have effects on cost reduction since there is adequate preparation in ordering and purchase of goods thereby enabling the organization to enjoy economies of scale. With implementation of ERP cost reduction will be created since expenses such as abrupt ordering will not occur.The study recommends that organizations should adopt ERP systems since it helps to increase production, efficiency, smooth flow of operation and increase motivation in employees. The organization will be able to predict lead-time of supplies and therefore there will be no cases of stock out of goods. Employee culture will be affected positively and cohesive relationship will be realized in the organization. Also the organization management will be able to plan and forecast on organization procurement activities and therefore be able to run the organization affairs smoothly.**

Keywords: **Enterprise Resource Planning System, Supply Chain performance, Lead-time.**

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1. INTRODUCTION

Enterprise Resource Planning (ERP) marks the current generation of resource planning and is a central system, which replaces "islands of information" with a single, packaged software solution that integrates all traditional enterprise management functions i.e. finance, human resources management, project management, data management, warehouse management, customer relationship management, supplier relationship management, e-business and the internet function (Marchand & Kettinger et al, 2000).ERP systems are originated to serve the information needs of manufacturing companies. Over time though, they have grown to serve other industries, including financial services, customer good sector, supplier chain management and human resource sector (Mishra & Mishra, 2010).

ERP has been defined by researchers and practitioners in different ways. The Gartner Group coined the term ERP in the early 1990s to describe a collection of applications that can be used to manage all of a firm's business activities (Minahan, 1998) defines ERP as a complex software system that ties together and automates the basic processes of a business (Al-Mashariand, 2000) indicates that ERP represents an optimal enterprise-wide technology infrastructure. Researchers also refer to ERP systems as enterprise resource management (ERM) systems (Slater, 1999) and enterprise systems (ES) (Davenport, 2000). ERP systems are further described as applications that integrate functional areas and allow functions to share a common database and business analysis tools (Chen, 2001; Mabert et al, 2001).

The influence of ERP on supply chain management was further studied by a scholar in local university (Sikuku, 2014) where he focused his study on influence of ERP implementation in education institution in Kenya. From his study he mainly dwelt on the challenges of implementing ERP in education institution, and the benefits that arise due to implementation of ERP and the strategy used to deploy.

Enterprise resource planning systems have transformed the organization go about the process of providing information systems. They promise to provide all off-the-shell solution to the information needs of the organization. The study concludes that attention to the change in technology being adopted, the change management in people affected by the technology, and the adoption of proven best business practices lead to achievement of success in the adoption of these systems (Tereso, 2012).

In recent literature, the definition of ERP has undergone changes as ERP systems were extended to include inter-firm activities through integration of front-office and back-office business applications such as supply chain management (SCM) and customer relationship management (CRM). In the early 2000s, the Gartner Group coined the term enterprise resource planning II (ERP II) to refer to business strategies and a set of industry domain-specific applications that build customer and shareholder value by enabling and optimizing enterprise and inter-enterprise collaborative operational and financial processes (Gartner & Gould, 2002) stated that the cross-enterprise integration enhancements such as process extensions, verticalization of functionalities, and IT architecture define ERP II.(Weston , 2003) indicates that the concept of ERP II extends beyond ERP to include technology planning and execution issues that support business processes and change management; and hardware, software, and technical issues. Researchers also refer to ERP II systems as ES's (Kawalek & Wood-Harper, 2002) and as electronic- ERP (e-ERP) systems (Ash & Burn, 2003).

In simplest terms, ERP systems use database technology and a single interface to control the all-encompassing information related to a company's business (Jutras, 2004). The functional perimeter of ERP systems expands into its adjacent markets, such as customer relationship management, decision support systems, and e-business, making systems less inward looking.

ERP can be the means for business-process reengineering, increasing flexibility and responsiveness by breaking down barriers between functional departments and reducing duplication of effort. An ERP system as a whole can provide the organization with central availability of information, and hence effective and efficient provisioning of accurate data, communication and service to all customers. A good ERP system can provide businesses with powerful competitive advantage, including increased revenues (Petrissens, 1998).

ERP can hold a number of advantages for many organizations. In the areas of customer relationship management, supply chain management, competitiveness, timeliness, data and communications, ERP can assist an organization to gain an edge over competition and over previous ways of operation. Johnson and Scholes (1999) argue that it is difficult for a competitor to imitate differentiation based on a multiple of compatible linkages and processes throughout the value chain.

There is a lot of interest and discussion in enterprise resource planning (ERP) systems over the past decade in the international arena. Firms belonging to the developed countries in North America, Europe, and Asia-Pacific dominated the ERP market throughout most of the1990s. Most firms in these developed markets have stabilized and extended their ERP system and shifted their focus from implementation to effective system utilization and integration. During the late 1990s and the early 2000s, ERP vendors turned their attention to the developing countries in Asia, Africa, Middle East, and South America. The focus of most firms in these developing markets is on the successful implementation and obtainment of early benefits from their ERP system.

Given that Sub-Saharan Africa cultural contexts embody organizational practices different from those encountered in North America and Europe where most of ERP systems are developed, there can be significant problems associated with the reengineering of local practices and processes. Furthermore, ERP being capital intensive is likely to be faced with constrained IT budgets (Heeks & Kenny, 2002) due to poor economic performance in this region. Cultural conflicts escalate implementation cost, and can lead to long implementation period as organizations spend more time and resources in resolving cultural conflicts. This becomes a twofold problem: companies lack the financial resources to gain access to tailored world-class ERP systems; and ERP companies are not prepared to deal effectively with the customization processes that these markets require. In many cases, the basic infrastructure for supporting ERP may be lacking or insufficient to enable organizations to reap optimum benefits from ERP investments. ERP implementation and usage also require specialized skills which may not be sufficiently available in developing countries.

While there is wide adoption of ERP systems in Europe and North America, developing countries lag far behind (Huang & Palvia, 2001; Huang et al., 2004). However, due to economic growth, developing countries such as Kenya are becoming major targets for ERP vendors (O'Kane, & 2002; Huang *et al*., 2004). In some developing countries, for example Kenya, a number of large and mid-sized organizations have implemented ERP solutions and more are expected to follow suit. The majority of adopting organizations that joined the `ERP bandwagon' (Kraemers & Dissel, 2000) presumed that with relative ease they can benefit from the alleged `best business practices' that are embedded within ERP systems. However, the transfer of information systems like ERP (typically developed in developed countries) to developing countries is often marred by problems of mismatch with local, cultural, economic and regulatory requirements (Huang & Palvia, 2001).

Despite these challenges, many public sector organizations in developing countries have followed the private sector and implemented pre-packaged commercial Enterprise Resource Planning (ERP) solutions in favor of a proprietary systems development effort. Although ERP software may not exactly support all complex business processes, public sector organizations are willing to trade-off complex domain specific functionality for the benefits gained from a pre-packaged enterprise information system. By not developing a proprietary solution, the expectation is that there will be significant cost savings and increased organizational efficiency (Gulledge & Sommer, 2004).

Nationally most societies have not been left behind in the ERP implementation example the Kenya Revenue Authority has established the online filing of returns, the central Government of Kenya has established online application of jobs, birth certificates and identification cards.

Statement of the problem:

It is the essence of companies to ensure continuity of key operations with fewer resources. The enterprise resource planning is being considered by many companies to be efficient, improve production process, minimize complexities, integrate the systems and erase redundancy. Although ERP's systems pledge to be of beneficial to companies and substantial investment of capital, not all the implementation process of ERP generate successful stories. According to Ehie and Madsen (2005), the implementation process of ERP have commonly delayed an estimated scheduled and overrun the budget initially set. There are some organizations which have not yet experienced the efficiency of the ERP systems thus causing more frustrations. These frustrations may propel users to come up with more innovative solutions and methodologies for purchasing, managing and tracking the resources of the organization. The self innovations may negate the full benefits of ERP systems like centralized planning, efficient procurement and insightful financial reporting. Failure of the business groups to submit up to date data hinders effective activities of the ERP system like generation of accurate and timely information and other management report.

At this moment, manufacturing organizations have started to realize that for them to exist and grow globally in business

environment ought to improve on supply chain functions. This has led to organizations making tough decisions of investing heavily in developing and implementing better technologies and systems such as the ERP systems (Davenport & Brooks, 2004).

There are some local studies which have been done regarding ERP systems in Kenya. (Adhiambo, 2013) did a study on the use of ERP systems but as strategic approach by the Equity Bank limited in Kenya. The study revealed that ERP system approach is an important investment that institutions need to consider to remain competitive. Boersman and Kingman (2005) argue that the benefits of implementing ERP as revealed by most studies are applicable to the developed countries but they advocate the need to conduct more studies in developing countries regarding ERP systems and procurement.

Objectives of the study:

The objective of the study was to investigate the effect of Enterprise Resource Planning (ERP) implementation and performance in supply chain management sector in Kenya, with a specific focus on Coca-Cola Company, Nairobi

Specific Objectives of the Study

i. To determine the extent of cost reduction after ERP implementation in Coca-Cola Company.

ii. To evaluate performance on the lead time of supplies after ERP implementation in Coca-Cola Company, Nairobi.

iii. To examine the influence of culture on employees after ERP implementation in Coca-Cola Company, Nairobi.

iv. To evaluate the effect of ERP implementation on planning and forecasting in Coca-Cola Company, Nairobi.

2. THEORETICAL BACKGROUND

This research mainly focused on. Effect of Enterprise Resource Planning System implementation on performance of organizations Supply Chain Activities in Kenya The underpinning theories included; Cost Theory,Contingency Theory and Social Technical Theory.

Cost Theory:

Cost is defined as the expenditure of funds or use of property to acquire or produce a product or service (Scott, 2010).It's also defined as the amount of time effort or other resources expended in accomplishing something. ERP system hold promises of improving processes and decreasing cost. Furthermore two important frontier of ERP are electronic business (e-business) and supply–chain management (Wang, 2001).By linking supply chain applications with other business systems, user can slash cycle times and reduced inventory . With implementation of ERP cost reduction will be created since expenses such as abrupt ordering cost will b eliminated.

Contingency Theory:

Integration of functions and firms is currently a big challenge in a modern manufacturing organization. Contingency theory argues that the integration is as a result of environmental factors and complexon an organization and its structure (Hsu and Chen 2004). According to (Ruekert & Walker, 1987), interaction among functions in an organization is a contingent to internal and external factors such as procurement structures and manufacturing structures with the different degrees of uncertainties and environmental factors, ERP system is required to improve efficiency of the procurement function in an organization by using existing information to forecast.

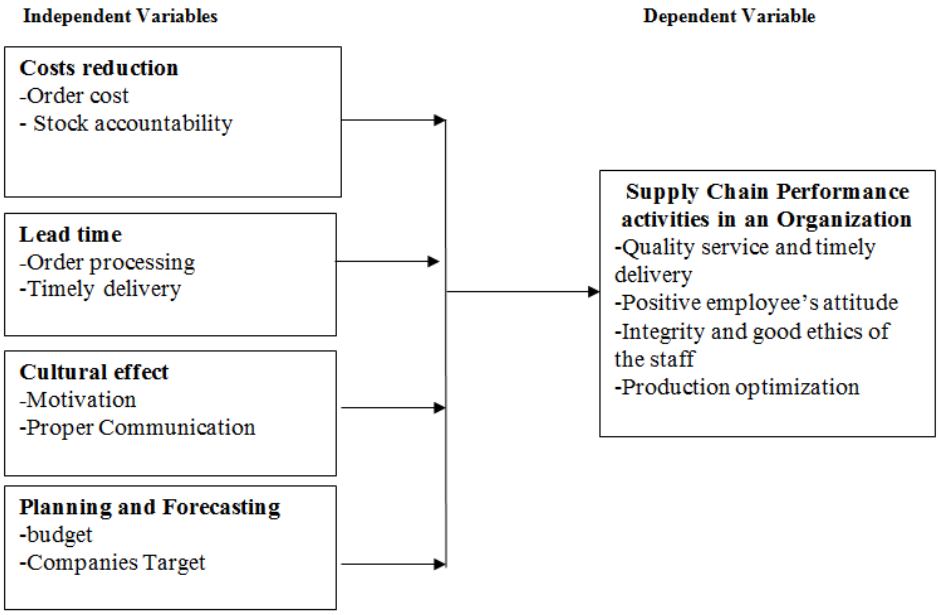
Social Technical Theory:

The social technical theory studies about social aspects of people and technical aspects of organization structure, and process and the effects to technology implementation (Bostrom & Heinen, 1977). Therefore social technical theory is about joint optimization which designs the social system and technical system in tandem to enable work efficiency. According to Walker Stanton, Salmon and Jenkins (2007), the social and technical factors interact to generate conditions for successful/unsuccessful of the system performance in the efficiency of functions in the organization.

Conceptual Framework:

According to Thomas (2010), a conceptual framework can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. Its aim is to assist a researcher to develop

awareness and understanding of the situation under scrutiny and communicate the same in a broad perspective. It highlights the study variables and illustrates the underlying relationships (Thomas, 2010).



3. RESEARCH METHODOLOGY

This study used a descriptive research design. This design refers to a set of methods and procedures that describe variables (Babbie, 2002). It involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data. Descriptive studies portray the variables by answering who, what, and how questions (Babbie, 2002). According to Mugenda and Mugenda (2003), descriptive design is a process of collecting data in order to answer the questions of the current status of the subject under study. Its advantage is that, it is used extensively to describe behavior, attitude, characteristic and values.

The study was conducted in Nairobi's Coca-Cola head offices where supply chain management activities are carried.The target population consisted of the employees in the Coca-Cola Company Nairobi. The target population was suitable because it is where the key decisions in supply chain management activities are made. Use descriptive research was appropriate because it helped to explain characteristics of the population and the phenomenon being studied.

Stratified sampling was used to select the respondents whereby the sample of employees from each of the eight departments was chosen. The study took sample of 20% of the employees from each department in the Nairobi's Coca-Cola Company to give a sample size of 57 respondents. This representative sample was drawn from the eight key departments in the company. Mugenda and Mugenda (2003) recommend that a representative sample should comprise between 10-30% of the population.

Table 3. 1: Sampling Procedure:

Population Category	Population Frequency	Sample (20% of population)
Supply Chain	42	9
Sales and Marketing	31	7
ICT	15	3
Finance	74	15
Public relations (PR)	7	2
Human Resource (HR)	26	6
Operations departments	15	3
Administration	60	12
Total	**270**	**57**

The main instrument used in the collection of data for the study was a semi-structured questionnaire. This questionnaire

had both open and closed ended questions. It was administered to the respondents through drop and pick later method. The method was preferred because of time and cost constraints. The questionnaire had five sections. Section one was used to collect background information of the respondents while the other four sections addressed the study objectives.

Before the actual data collection process, the researcher carried out a pilot test to ensure reliability and validity of the research instrument and ensure it's consistent and appropriate for the study. (Babbie, 2001) indicated that, no matter how carefully a data collection instrument is designed, there is always the certainty of possible error, and the surest protection against such error is through pre-testing the instrument. Ten questionnaires were distributed to Nairobi's Coca-Cola staffs and excluded from the main study. This was important as it helped the researcher identify different areas that needs modifications.

According to Mugenda and Mugenda (2003), Validity is the accuracy and meaningfulness of inference which are based on the results. It is the degree to which the results will be obtained from the analysis of the data actually represents the variables of the study. Before the actual study the questionnaire was discussed with supervisors. The feedback from the supervisors and the experts helped in modifying the questionnaires.

Reliability is the measure of the degree to which research instruments yields consistent and coefficient results on data in another similar situation. Reliability of instruments is done to ensure that there is consistence across all given variables (Mugenda and Mugenda, 1999). Cronbach's Alpha method was used to check the reliability and validity of the instruments used to determine the internal consistency of the scale used. Cronbach's Alpha for each value was established by the SPSS application and gauged against each other at a cut off value of 0.7 which is acceptable. Cronbach's Alpha is a reliable coefficient that indicates how well items are positively related to one another.

The collected data was first cleaned, coded and entered in the data analysis software. Data was analyzed using descriptive statistics. Descriptive statistics was used in distribution percentages and mean scores. A computer package, Statistical Package for Social Science (SPSS) was used to aid in analysis. The analyzed data was presented using charts and tables for ease of understanding the results.

The regression model was as follows:

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

Where:

Y = ERP effects;

β_0 = Constant Term;

β_1, β_2, β_3 and β_4 = Beta coefficients; X_1= Cost reduction; X_2= Lead time; X_3= Cultural Effects; X_4= Planning and Forecasting; ε = Error term

4. RESEARCH FINDINGS AND DISCUSSION

The study sought to investigate the effects of ERP implementation on performance in supply chain management using a case study in Coca Cola Company Nairobi. Particularly the study looked at cost reduction, lead time, cultural effect, planning and forecasting and effects on performance after ERP implementation.

The researcher targeted 57 respondents from Coca Cola Company. However, only 36 questionnaires were filled correctly and returned. This translates to 63.16%.The high response rate was attributed by the researcher's personal visit and contact to remind the respondent to fill-in and return the questionnaires. This response rate was considered adequate as recommended by Babbie (2002).

Table 4. 1: Response Rate

Category	Frequency	Percent
Response	36	63.16
Non response	21	36.84
Total	57	100.0

Results of Pilot Study:

A pilot study was undertaken to pretest data collection instrument for validity and reliability. According to Orodho (2003), a pilot study is necessary for testing the reliability of data collection instruments. Cooper & Schindler (2001) explains reliability of research as determining whether the research truly measures that which it was intended to measure or how truthful the research results are. The researcher pre-tested each of the questionnaires to the pilot sample. These respondents were not used in the main study. It was done in order to refine and ascertain the reliability of the research instruments before they were applied in the actual research (Cooper and Schindler, 2003). As a result of piloting, errors discovered were corrected, ambiguous questions made clear and relevant contents revised.

Cronbach"s Alpha method was used to check on the reliability and validity of the instruments used by determining the internal consistency of the scale used. Data reliability played an important role towards generalization of the gathered data to reflect the true characteristics of the study problem (Klein & Ford, 2003). Cronbach"s Alpha for each value was established by the SPSS application and gauged against each other at a cut off value of 0.7 which is acceptable according to Cooper and Schindler (2008).Cronbach"s Alpha is a reliable coefficient that indicates how well items are positively related to one another. The average Cronbach"s Alpha value was 0.688 .

Demographic Characteristics of the respondents:

This analyses the background information of the respondents from their gender, age, level of management, duration in the company, department and the respondents" level of education.

Gender Distribution:

Majority of the respondents (54.172%) were male while the rest (45.828%) were female, an indication that Coca Cola Company has more male employees than female. Since majority of the responses for this study relies on the perpetual measures of the respondents, this gender distribution is expected to accommodate the opinions and views from both sides of the gender. Nevertheless the balance in gender in public sector may also be evidence of successful efforts of various gender mainstreaming campaigns.

Age Distribution of the Respondents:

Table 4.2 shows that 52.78% were the age bracket of 25-35 years, 22.22% were in the age bracket of 20-24% years, 11% were in 19.44% while 5.56 were in the age bracket of 45-55. Therefore, the majority of the participants were between ages 25-35 years. This implies that majority of the staff were young and probably not very experienced.

Table 4.2: Age distribution

Age	Frequency	Percentage
20-24	8	22.22
25-35	19	52.78
35-45	7	19.44
45-55	2	5.56
Total	**36**	**100**

Level of education of respondents:

The study sought to establish academic qualifications of the respondents. Their response was presented in table 4.3.

Table 4.3: Level of Education distribution

Educational level	Frequency	Percentage
KCSE	1	2.75
Certificate	3	8.34
Diploma	9	25
Bachelor's Degree	20	55.57
Postgraduate Degree	3	8.34
Total	**36**	**100**

Source: Research data (2017)

The respondents profile constituted majority of the management staff are holders of the bachelor's degree represented by 55.57%. 8.34% of the respondents were holders of post graduate qualifications as 25% hold diploma and 8.34% hold certificate qualifications. Only 2.75% of the respondents were KCSE holders. This is interpreted that the recruitment in Coca Cola Company is done on academic merits.

Descriptive Analysis:

Descriptive statistics are a set of brief descriptive coefficients that summarizes a given data set, which can either be a representative of the entire population or a sample. The measures used to describe the data set are a measures of central tendency and measures of variability or dispersion. This helped describe, show or summarizes data in a meaningful way, it helped in the simplification of large amounts of data in a sensible and management form. It expressed the variables, frequencies, percentages, means and standard deviation.

Cost Reduction:

The study sought to establish the effects of cost reduction on ERP systems implementation and the performance on supply chain management in Coca Cola. From the table 4.4 ERP implementation affects ordering cost. This is per analysis where 27.8% moderately agreed while 38.9% and 33.3% to a great extent and very great extent agreed to the fact. This implies that lack of proper implementation of ERP will affect ordering cost negatively. Effectiveness of stock control mechanism is affected by ERP implementation (mean = 4.3), whereas mean =3.8 indicates that ERP generates economies of scale the firm. ERP also helps to reduce production and process cost and also increases profit margin with reference to (mean= 3.9 and mean= 3.8) respectively. The findings are in line with (Change et al, 2008) on evaluation of ERP implementation effects on supply chain management will greatly affect Cost reduction in the organization.

Table 4.4: Percentage distribution of respondents' perception on cost reduction

Cost Reduction	Not at all	Small extent	Moderate extent	Great extent	Very Great extent	Mean
ERP implementation affects ordering cost in an organization	0%	0%	27.8%	38.9%	33.3%	3.9
ERP contributes to effective stock control mechanism	0%	0%	16.7%	33.3%	50%	4.3
ERP helps to generate economies of scale to the firm	0%	11.1%	44.4%	27.8	16.7%	3.8
ERP helps to reduce firms operational and process cost	0%	5.5%	27.8%	36.1%	30.6%	3.9
ERP increases profit margin to the firm	0%	0%	22.2%	38.9%	38.9%	4.1

Lead-time:

Respondents were asked to indicate the lead-time enable timely delivery. From the findings in the table 4.7, it is evident that ERP implementation affects lead-time thereby enabling timely delivery with a mean = 4.4. Timely delivery is where raw materials are delivered from the source to the firm at the right time or finished products are available to the market at the right time, at the right place for consumer use. Also lead-time contributes to stock accountability with reduced obsolescence and a mean=3.9 acknowledged that. Lead-time also contributes to consumer satisfaction and smooth flow of operation in the firm with a mean =4.3, mean=4.3 in both cases.

Table 4.5: Percentage distribution of respondents' perception on lead–time

Lead-Time	Not at all	Small extent	Moderate extent	Great extent	Very great extent	Mean
ERP implementation enables Timely delivery	0%	0%	5.6%	44.4%	50%	4.4
ERP implementation	0%	5.6%	27.8%	38.9%	27.8%	3.9

contributes to Stock accountability						
Customer satisfaction is derived with proper Implementation of ERP	0%	0%	16.7%	38.9%	44.4%	4.3
ERP helps in Smooth flow of operation	0%	0%	11.1%	50%	38.9%	4.3

Culture effect of organisation staff:

The study sought to establish the effects of ERP implementation on the organization culture. From the findings ERP implementation slightly affects the managerial skills and helps them in making proper decision with a mean=3.4 from the respondents. Goal setting and achieving the goals are also influenced by organization culture where positive attitude is derived from ERP implementation with a mean = 3.9. Proper stock accountability and efficiency is increased in the organization by cultural change effect led by ERP Implementation with a mean = 4.1 from respondents. Finally employees skills and customer proper handling by employees arise due to positive attitude derived from organization culture and good working environment mean = 3.8. These findings agree with (Mzoughil et al, 2008) where they examined and concluded that ERP implementation impacts of supply Chain management performance through employee's cultural change.

Table 4.6: Percentage distribution of respondents' perception on cultural effect

CULTURE EFFECT	Not at all (%)	Small extent (%)	Moderate extent (%)	Great extent (%)	Very great extent (%)	Mean
ERP gives the managers the skills and ability to make decision in organization.	0	16.7	38.9	33.3	11.1	3.4
ERP implementation increase motivation on staff members.	0	5.6	22.2	44.4	27.8	3.9
ERP helps to increase proper communication among the company's staff.	0	0	27.8	33.3	38.9	4.1
ERP increase skills to staff which increase mutual relationship in the organization.	0	5.6	33.3	38.9	22.2	3.8

Planning and forecasting of the organization:

The study sought to establish how ERP implementation enhances proper planning and forecasting. This phase is primarily concerned with evaluation on whether ERP implementation helps the management in making future plans with a mean = 4.4 from respondents. Also proper planning and forecasting helps in faster decision making mean = 4.5, growth and expansion of the organization mean = 4.4 and increase in profit and proper consumer handling mean = 4.4. This indicates that ERP implementation enable proper planning and forecasting on the organization operations and activities. The findings are in line with (Akkermans et al, 2003) on the impact of ERP implementation on supply chain management: Exploratory findings from European Delphi Study highlighted that it helps in future planning and forecasting of the firm.

Table 4.7: Percentage distribution of respondents' perception on planning and forecasting

PLANNING AND FORECASTING	Not at all (%)	Small extent (%)	Moderate extent (%)	Great extent (%)	Very great extent (%)	Mean
ERP enable management to make future plans in relevance to organization operations.	0	0	11.1	38.9	50	4.4
ERP helps in faster and easy	0	0	5.6	38.8	55.6	4.5

decision making in the organization.						
ERP has enabled the organization to grow and expand due to smooth flow of operation.	0	0	5.6	44.4	50	4.4
The organization get profit and achieve consumer needs due to proper planning and forecasting	0	0	5.6	50	44.4	4.4

Supply chain performance:

Respondents were asked to indicate ERP increase efficiency in supply chain performance. From the findings in the table 4.7, it is evident that ERP implementation affects performance of supply chain thereby increasing quality and timely delivery with a mean = 3.9. Also ERP implementation contributes to positive employees attitude with a mean=4.3 acknowledged that. ERP also contributes to proper communication with a mean =4.3. and finally it was evident that ERP implementation affects performance of supply chain thereby increasing efficiency with a mean = 4.4 . The findings were in line with Venkatesh and Morris, (2003) where they suggested supply chain performance strongly occur following ERP implementation.

Table 4.8: Percentage distribution of respondents' perception on supply chain performance

Supply chain performance	Not at all	Small extent	Moderate extent	Great extent	Very great extent	Mean
ERP increase efficiency towards supply chain performance in the organization.	0%	0%	5.6%	44.4%	50%	4.4
ERP helps to increase quality service and timely delivery.	0%	5.6%	27.8%	38.9%	27.8%	3.9
ERP increases positive employee's attitude.	0%	0%	16.7%	38.9%	44.4%	4.3
ERP improves integrity and ethics of the staff.	0%	0%	11.1%	50%	38.9%	4.3

Regression Analysis results:

The study utilized multiple linear regression analysis to examine the relationship of the predictor variables with the dependant variable. The research used Statistical package for social science (SPSS V21.0) to code, enter and compute the measurements of the multiple regressions. Adjusted R^2 which is known as the coefficient of determination was used to explain how ERP implementation affects performance in supply chain management with cost reduction, lead-time, cultural effects and planning and forecasting. The model summary table 4.10 shows that 62.5% of change in ERP implementation can be explained by four predictors namely cost reduction, lead-time, cultural effects and planning and forecasting an implication that the remaining 37.5% of the variation in ERP implementation could be accounted for by other factors not involved in the study. R-Squared is a commonly used statistic to evaluate model fit. R-square is 1 minus the ratio of residual variability

Table 4.9: Model Summary

Model	R	R Square	Adjusted R square	Standard error of the Estimate
1	.825	.670	.625	.467

a. Predictors: (Constant) Cost reduction, Lead-time, Cultural effects, Planning and forecasting.

Analysis of Variance (ANOVA) was done to establish the fitness of the model used. The ANOVA table shows that the F-ratio (F=3.138, *p*=.022) was statistically significant. This means the model used was appropriate and the relationship of the variables shown could not have occurred by chance.

Table 4.10: ANOVA

ANOVA[a]

Model		Sum Squares	of Df	Mean Square	F	Sig
1	Regression	11.916	4	2.617	3.138	0.022
	Residual	38.647	31	.691		
	Total	50.563	35			

a. Dependent Variable : Supply Chain Performance

b. Predictors: (Constant), Cost reduction, Lead-time, Cultural effects, Planning and Forecasting

Table 4.11: Regression Co- efficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	1(Constant)	.961	1.492		.814	.218
	Cost reduction	.064	.530	.041	.224	.097
	Lead-time	.292	.421	.286	.694	.049
	Culture effects	.327	.319	.329	.810	.000
	Planning and forecasting	.782	710	.681	2.339	.011
a. Dependent Variable: Supply Chain performance						

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

$Y= 0.961 + 0.064X_1 + 0.292X_2 + 0.327X_3 + 0.782X_4$

Where;

Y= Supply Chain Performance

X_1 = Cost reduction

X_2 = Lead-time

X_3 = Culture effect

X_4 = Planning and forecasting

According to the regression equation established, holding all independent factors a constant, supply chain performance will be 0.961 units. From the regression equation holding all other independent variables a constant, a unit increase in cost reduction will lead to a 0.064 improvement in supply chain performance; a unit change in lead-time will lead to a 0.292 increase in supply chain performance; a unit increase in cultural effect will lead to a 0.327 increase in supply chain performance and a unit increase in planning and forecasting will lead to a 0.782 increase in supply chain performance.

However, at 4% level of significance and 96% level of confidence Cost reduction, Lead - time, Culture effects and Planning and forecasting have a significance influence on supply chain performance with p-values of 0.097, 0.049, 0.000 and 0.011 respectively and therefore their coefficients should be retained in the final model.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

This study sought to ascertain effects of ERP System implementation on performance in supply chain management sector in Coca Cola Company Nairobi**.** the specific objectives that guided the study included; to determine effects of ERP on cost reduction; to determine performance on the lead-time of suppliers after ERP implementation; to determine cultural effects after ERP implementation; to examine effects of ERP implementation on planning and forecasting.

Cost is defined as the expenditure of funds or use of property to acquire or produce a product or service. From findings ERP implementations have effects on cost reduction since there is adequate preparation in ordering and purchase of goods

thereby enabling the organization to enjoy economies of scale. With implementation of ERP cost reduction will be created since expenses such as abrupt ordering will not occur.

Lead-time is the period between ordering and delivery. Hence for the system to be effective this time must be reduced. ERP system does not mean reducing lead time in totality since there still some external factors (i.e. poor infrastructure and delays due to strikes) cannot be overcome by the system .But the undue layback as a result of bureaucracy can be reduced.

The culture of the organization is very important, particularly on the side of employees who fall under departmental heads. Since culture is the way things are done and how employees are supposed to behave calls for a sober approach. From the findings culture affects the organization performance in various ways for example employee embracing the ERP system positively in the organization cultivates the culture of flexibility and thereby increase efficiency.

Planning and forecasting are significant management tools which are adopted when installing an ERP system .Planning and forecasting require vast information about the system and its features. Hence organization should be very clear on what they want but not act as a result of rival pressure.

Conclusion:

From the findings, the study concludes that ERP implementation has great effects on performance in supply chain management. ERP helps to reduce cost especially during acquisition of materials, it helps to manage lead-time i.e. ordering and delivery period, it motivates cultural effects towards employees, and helps management in planning and forecasting thereby enabling smooth flow of operation in the organization. A well implemented ERP system will enable the organization to operate well without delays or hiccups due to failures or challenges that may occur during acquisition and ordering.

Recommendations:

The study recommends that organizations should adopt ERP systems since it helps to increase production, efficiency, smooth flow of operation and increase motivation in employees. The reduction of cost will be realized since the organization will be able to determine when to order and thereby prepare in advance on ordering arrangements. This helps to reduce abrupt ordering which will lead to incurring extra cost. The organization will be able to predict lead-time of supplies and therefore there will be no cases of stock out of goods. Employee culture will be affected positively and cohesive relationship will be realized in the organization. Also the organization management will be able to plan and forecast on organization procurement activities and therefore be able to run the organization affairs smoothly.

Suggestions for Further Research:

The study was confined in Nairobi County, where the result of this study can be further utilized to suggest several directions for future research. A field study can focus on investigating on ERP challenges on procurement in E-business sector. Another study can focus on development and validation of a measurement instrument for studying supply chain management. Also causal analysis of the impact of information systems and supply chain management practices on operational performance. Finally more research in this area is needed because the study has investigated a subset of the variables found to be important determinants.

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