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DETERMINANTS OF INVENTORY CONTROL SYSTEMS IMPLEMENTATION IN THE MANUFACTURING INDUSTRIES IN KENYA. A CASE STUDY OF EAST AFRICA PACKAGING INDUSTRIES LIMITED

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ABSTRACT

This study sought to find the determinants of inventory control systems implementation in the Manufacturing Industries in Kenya, using a case study of East Africa Packaging Industries Limited. The study was guided by the following specific objectives; To determine the influence of staff training on inventory control systems implementation in the Manufacturing Industries in Kenya; To determine the influence of funding on inventory control systems implementation in the Manufacturing Industries in Kenya; To determine the influence of top management support on inventory control systems implementation in the Manufacturing Industries in Kenya; and To determine the influence of IT Infrastructure on inventory control systems implementation in the Manufacturing Industries in Kenya. The study adopted a survey research design. The population of the study was the employees of East African Packaging Industries Ltd. in Nairobi County, Kenya with a population of 310 employees and sample size of 147 respondents. The study used questionnaires for data collection. Upon carrying out data organization, analysis was done by use of statistical techniques. Computer packages such as Microsoft excel and Statistical Package for Social Sciences (SPSS Version 25) was used to facilitate analysis as they have in-built formulas. The study established that 69.4% of the total variance in the dependent variable (inventory control systems implementation) could significantly be explained by combined independent variables (Staff Training, Funding, Top Management Support, and IT Infrastructure). This showed that 30.6% could be explained by other factors. Therefore, the study recommended that East Africa Packaging Industries Limited together with other Manufacturing Industries in Kenya should use determinants of inventory control systems implementation as established in this study which include; Staff Training, Funding, Top Management Support, and IT Infrastructure, as they were found to be key to a successful inventory control systems implementation.

Key Words: *Staff Training, Funding, Top Management, IT Infrastructure, Inventory Control Systems*

INTRODUCTION

Since the mid1980s the strategic benefits of inventory management and production planning and scheduling have become obvious. The business press has highlighted the success of Japanese, European, North American firms in achieving unparalleled effectiveness and efficiency in manufacturing and distribution. In recent years, many of the firms have raised the bar, yet again by coordinating with other firms in their supply chains. For instance, instead of responding to unknown and variable demand, they share information so that the variability of the demand they observe is significantly lower (Axsäter, 2015).

Historically, inventory management globally has often meant too much inventory and too little management or too little inventory and too much management. There can be severe penalties for excesses in either direction. Inventory problems have proliferated as technological progress has increased the organization's ability to produce good in greater quantities, faster and with multiple design variations. The public has compounded the problem by its receptiveness to variations and frequent design changes (Lolli, Ishizaka, Gamberini & Rimini, 2017). Klosterhalfen, Holzhauer and Fleischmann (2018) argue that well and efficiently controlled inventories can contribute to the effective operation of the firm and hence the firm's overall profit. Proper management of inventory plays a big role in enabling other operations such as production, purchases, sales, marketing and financial management to be carried out smoothly. Basic challenge however is to determine the inventory level that works most effectively with the operating system or system existing within the organization.

The last two decades has seen governments around the world executing major initiatives in order to take advantage of the potential of emerging information and communication technology (Govindan, 2015). Inventory Management Information System (IMIS) is one of the most popular government ICT-based initiatives that have proved to be effective in a number of operations. IMIS enhances effectiveness and transparency of the system by computerizing the process in which public financial resources are managed. However, the results from international experience with IMIS, including the World Bank, have so far had quite mixed success stories and unsuccessful ones too.

Inventory management as one of the key activities of business logistics, has always been a major preoccupation for the company's survival and growth. The aim of inventory management is to hold inventories at the lowest possible cost, given the objectives to ensure uninterrupted supplies for ongoing operations. When making decisions on inventory, management has to find a compromise between the different cost components, such as the costs of supplying inventory, inventory-holding costs and costs resulting from insufficient inventories (Ambe & Badenhorst-Weiss, 2011). According to Eloff and Carstens (2013), inventory control is the activity which organises the availability of items to the customers. It coordinates the purchasing, manufacturing and distribution functions to meet the marketing needs. This role includes the supply of current sales items, new products, consumables; spare parts, obsolescent items and all other supplies.

Inventory enables a company to support the customer service, logistic or manufacturing activities in situations where purchasing or manufacturing of the items is not able to satisfy the demand. Lack of satisfaction could arise either because of the speed of purchasing or manufacturing is too protracted, or because quantities cannot be provided without stocks. Shenoy and Rosas (2018) adds that a good inventory control system offers the following benefits; The proper relationship between sales and inventory can better be well maintained. Without inventory control procedures in place, the store or

department can become overstocked or understocked. Inventory control systems provide a business with information needed to take markdowns by identifying slow-selling merchandise. Discovering such items early in the season will allow a business to reduce prices or make a change in marketing strategy before consumer demand completely disappears.

Stores control measures started receiving attention in the advanced countries of America and Europe only after the industrial Revolution of the 1930s, which resulted in the death of materials. Bagby (cited in Adelberg, Smith, Hatton, Viswanathan & Lusardi, 2010) using a case of USA argued that, the closer they get to carry zero inventories- without sacrificing customer demand the closer they get to reach that pinnacle of organization efficiency. When the concept of just in time inventory management evolved, for example it brought a fresh new look at the entire manufacturing cycle, and how it could operate without interruption or non-value-added time costs. Such thinking combined with today's available technology, has brought inventory control system to a new level. Management can now meet their customers demand without incurring the costs and burdens that come from stocking excess inventory. Features such as effective forecasting, vendor management and data management control make it possible for organizations to achieve a much higher rate of efficiency.

Kolias, Dimelis and Filios (2011) conducted a study based on an econometric analysis of inventory behaviour using an inventory turnover model. The empirical implementation of the model was conducted on a sample of financial data for 566 Greek retail firms for the period 2000–2005. By employing panel data techniques the authors found that inventory turnover ratio is negatively correlated with gross margin and positively correlated with capital intensity and a measure of sales surprise. Decomposing the variance into its components associated with year, firm and retail segment effects, they observed that a substantial amount of inventory turns variability is due to segment-wise effects.

In Africa, Peterson (in Christopher & Kwasira, 2014) pinpoints Ethiopian case as one of the success stories. He observes that the project was implemented in a three-step approach to process change of financial procedures. These were comprehension, improvement then expansion. Comprehension meant documenting and training staff on existing procedures. Improvement meant marginal changes to better forms, streamlining procedures and expansion meant introducing new procedures thereby moving from single to double entry bookkeeping. This three-step approach to process change of phases in turn necessitated an iterative custom approach to automation, which finally brought success.

Statement of the Problem

According to Adeyemi and Salami (2010), inventory management refers to all the activities involved in developing and managing the inventory levels of raw materials, semi-finished materials (work-in-progress) and finished good so that adequate supplies are available and the costs of over or under stocks are low. Inventories are essential for keeping the production wheels moving, keep the market going and the distribution system intact. They serve as lubrication and spring for the production and distribution systems of organizations. Inventories make possible the smooth and efficient operation of manufacturing organizations by decoupling individual segments of the total operation (Kumar, Anzil, Ashik, James & Ashok, 2017). However, any increase in the redundancy of machinery or operations due to shortages of inventory may lead to production loss and its associated costs. These two aspects call for continuous inventory control.

The manufacturing sector in Kenya grew at 3.5% in 2015 and 3.2% in 2014, contributing 10.3% to gross domestic product (GDP) (KNBS, 2016). On average, however, manufacturing has been growing at a

slower rate than the economy, which expanded by 5.6% in 2015. This implies that the share of manufacturing in GDP has been reducing over time. As a result, it can be argued that Kenya is going through premature deindustrialization in a context where manufacturing and industry are still relatively under-developed. Kenya seems to have 'peaked' at a point much lower than in much of Asia (Namusonge, Mukulu & Iravo, 2017; Were, 2016).

Many Manufacturing firms have relocated or restructured their operations opting to serve the local market through importing from low-cost manufacturing areas such as Egypt, South Africa and India therefore resulting in job losses. This is an indication that many manufacturing firms in Kenya are experiencing performance challenges with many reporting profit warnings due to challenges in the operating environment. Statistics from World Bank show that manufacturers operate in Kenya registered stagnation and declining profits for the last five years due to a turbulent operating environment. Manufacturing sector in Kenya contributed barely 13.6 per cent to the GDP in the year 2016 indicating a decline from the previous year 2015 where it had reported a 5.6 per cent growth (Kariithi, 2017).

IMIS is often viewed as the driver of financial reform in developing countries though these systems usually fail or underperform (Christopher & Kwasira, 2014). Research to date has not adequately explained their poor performance. Generally, The authors observe that the road to implementing successful IMIS is full of difficulties, such as resistance from the bureaucracies involved; lack of support from the top leadership; weak human capital; corruption; and, in the case of conflict-ridden countries, the instability and violence that impair any efficient long term sustainability.

Effectiveness of inventory management is a vital part for the manufacturing organization to be more competitive. The previous studies have indicated that there are several factors influencing inventory control systems implementation in the Manufacturing Industries but there is scanty number of researchers who carried out the research in the manufacturing industry in Kenya. Therefore, the purpose of this research was to elucidate further on this area by identify the determinants of inventory control systems implementation in the Manufacturing Industry in Kenya.

Objectives of the Study

This study sought to find the determinants of inventory control systems implementation in the Manufacturing Industries in Kenya. A case study of East Africa Packaging Industries Limited. The specific objectives were:-

- To determine the influence of staff training on inventory control systems implementation in the Manufacturing Industries in Kenya
- To determine the influence of funding on inventory control systems implementation in the Manufacturing Industries in Kenya
- To determine the influence of top management support on inventory control systems implementation in the Manufacturing Industries in Kenya
- To determine the influence of IT Infrastructure on inventory control systems implementation in the Manufacturing Industries in Kenya

LITERATURE

Theoretical Review

The Systems Theory

The General Systems Theory modelled by Ludwig Bertalanfy (1950) relates to the functioning of organizations with how living organisms function. The theory states, from a biological point of view, that, an organism is an integrated system of interdependent structures and functions made up of cells, and a cell contains molecules, which must work in harmony. Each molecule must know what others are doing,

must be capable of receiving messages and must be sufficiently disciplined to obey. Due to the complexity and instability of the external environment, the survival and effectiveness of an organization will depend on how well it scans and adapts to its internal environment (Whitchurch & Constantine, 2009).

Von Bertalanffy was reacting to reductionism and attempted to revive the unity of science. He emphasized that real systems were open to interact with their environments and that they can acquire qualitatively new properties through emergence, resulting in continual evolution. He argued that rather than reducing an entity or organization to the properties of its parts or elements, systems theory focused on the arrangement of and the inter-relations between the parts which connect them into a whole. Such an organization determined a system that is independent of the concrete substance of the elements, for instance, the various departments such as finance, accounting, human resources, research and development. Thus, the same concepts and principles of organization underlie the different disciplines, providing a basis for their unification (Keraro, 2014).

Hanson (2014) observed that, the systems theory provides a leader with a tool for analyzing organizational dynamics without providing a specific theory about how an organization should be managed. The author further observed that with the recognition of systems theory, all organizations consist of processing inputs and outputs with internal and external systems and subsystems helpful in providing a functional overview of any organization.

In using the systems theory approach, the study recognizes that there are many determinants of inventory control systems implementation in the Manufacturing Industries in Kenya, among them being; staff training, funding, stakeholder support, and IT Infrastructure. Von Bertalanffy saw organizations as a composition of its elements which together make a "whole". The key identifiable organization variables, based on this theory are the people, leadership, structures, processes, resources (human, financial and others), communication systems, position and power. All these are viewed by the systems theory as the parts that, if coordinated strategically, will lead to an effective financial management of the county. The systems theory upholds the idea that the different parts of an institution should not be managed in isolation. The theory's key message is that organizations should be regarded as systems composed of regularly interacting or interrelating groups of activities or people performing activities. Application of this theory is recognition by management of how the different sub-systems work inter-relatedly to achieve organizational goals. Relating the foregoing discussion to the study to be undertaken, the systems theory thinking will help in visualizing the fact that what may seem as an isolated problem is actually part of an interconnected network of related issues (Keraro, 2014).

The Contingency Theory

The contingency theory, developed by Joan Woodward in the 1950s, is a class of behavioural theory which claims that there is no best way to organize an organization, to lead a company or to make decisions. Instead, the optimal course of action is contingent upon the internal and external situations. Several contingency approaches were developed concurrently in the late 1960s. The authors of these theories argued that Marx Weber's bureaucracy and Fredrick Taylor's scientific management theories had failed as they neglected environmental influences and that there is not one best way to manage enterprises. These influences shape the individual behaviour in a certain situation while managing organizations (Van de Ven, Ganco & Hinings, 2013).

The contingency approach to management finds its foundation in the contingency theory of leadership effectiveness developed by management psychologist Fred Fielder. It is based on the theory that management effectiveness is contingent, or dependent, upon the interplay between the applications of administration behavior. In other words, the way you manage should change depending on the conditions and that one size does not fit all. As argued by Fiedler (2015), the contingency theory is about the need to achieve a fit between what the organization is and what it wants to become. It is all about the organization's strategy, culture, goals, technology, staff and external environment, and what it does; how it is structured and the processes, procedures and practices it puts into effect.

Conceptual Framework

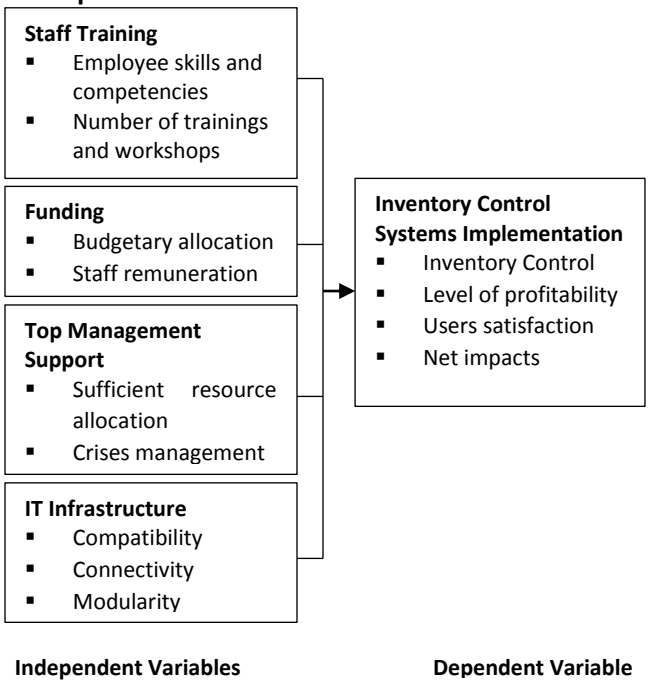

Figure 1: ***Conceptual Framework***

Source: Researcher (2018)

Empirical Review

Staff Training

A company that invests in training and development generally tends to have satisfied employees. The roles played by each employee on the effort of joining together to achieve the goals of the organization, gets to be more effective when they are offered training and education in the course of executing their job (Olaniyan & Ojo, 2008). In order to improve the competence and competitiveness of employees, education and training becomes a collaborative affair, which needs to be a top priority by all concerned. Netland, Schloetzer and Ferdows (2015) made an indication in a report on the most common reported critical success factors compiled from the different written literatures among that contributes to lean improvements. Training and education of both employees and management turned to be the second most important element that need to be put in place for a successful implementation.

Staff training can be defined as a probation preparing individuals for a job whereas development means organizational-related learning experience preparing individuals for new future jobs and performance design based on possible future direction (Huque and Vyas, 2008). The need for training and development includes that of developing employees' thoughts and reduce inferiority. Normally, the task to determine how frequently employees' training and development needs to occur remains a difficult subject. In this regard, several authors (Karim, Huda, and Khan, 2012; Fernandez and Moldogaziev, 2013) who have expertise on inventory control, postulate that it could be useful to provide staff training and development only if the organisation experiences a change in the inventory control, inventory policy, inventory control planning, and workforce. Staff training should occur once there is a change in the working system since without proper training, a candidate is not fit enough for that particular job.

Funding

Financial resources have always been one of the critical factors in implementing an information system (Tarhini, Ammar & Tarhini, 2015). Park, Ahmad and Ruighaver (2010) identified budget as a success factor for information systems implementation. The cost of implementing a system can include the cost of the acquisition of applications, the installation (including configuration), operation and maintenance, administration (including upgrading) and recovery from any incidents (Al-Tameem, Zairi & Kamala, 2009). According to Almajali, Masa'deh and Tarhini (2016) funding commitments are a key mechanism for successful implementation of MIS. Effective MIS implementation efforts require multi-year financial commitments to acquire hardware, software, and professional staff. The more successful firms were more likely to have long-term commitments from top management for the stable funding of MIS development activities.

Disbursement of funds is the most important aspect of system implementation. It is on this basis that scheduled activities are translated into measurable outputs in the execution of the objectives (Ahsan & Kumar, 2018). Funds disbursement is a critical aspect of system implementation financial management since implementation activities are modelled on capital budgeting principles and as such, all relevant cash flows associated with the undertaking must be ascertained with a fair degree of accuracy so that the desirable returns are achieved within the set time periods. Therefore, all decisions made during implementation invariably have financial implications hence the need for utmost care and diligence in arriving on the same (Hassan, 2017).

Top Management Support

Top management support is the willingness of top management to provide the necessary resources and authority/power for project success. As noted by Ihuah, Kakulu and Eaton (2014), management support for projects, or indeed for any implementation, has long been considered of great importance in distinguishing between their ultimate success or failure. Lee, Shiue and Chen (2016) sees successful system implementation as not only dependent on top management for authority, direction, and support, but as ultimately the conduit for implementing top management's plans, or goals, for the organization. Further, Sun, Ni and Lam (2015) shows that the degree of management support will lead to significant variations in the clients' degree of ultimate acceptance or resistance to that product. Top Management Support refers to both the nature and amount of support the manager can expect from management both for himself as leader and for the project. Management's support of the project may involve aspects such as allocation of sufficient resources (financial, manpower, time, etc.) as well as the project manager's confidence in their support in the event of crises.

Shao, Feng and Hu (2016) argued that top management support and user involvement/participation measure the operational aspect of the project. Top management support is critical to all major IS initiatives and has been noted for its importance in (Almajali, Masa'deh & Tarhini, 2016; Johnson, 2015). According to Nizamani, Khoumbati, Ismaili and Basir (2015) alignment of and support from leadership was the third most-mentioned strength that institutions indicated would be helpful when implementing their ERP system. Leadership buy-in and ongoing support are critical components in any successful change effort. Leaders should take responsibility for determining, clarifying, and communicating a consistent message of support for the initiative as well as reinforcing the need. In addition, especially with large-scale changes or projects like an ERP implementation, leadership must recognize the volume of work involved in implementing the change and the impact upon the various functions of the organization (Almajali, Masa'deh & Tarhini, 2016).

IT Infrastructure

The topic of IT infrastructure has been a key issue for both researchers and practicing managers for some time. The organization's IT infrastructure basically integrates technology components to support business needs but the IT infrastructure concept is more complicated. The definition of IT infrastructure encompasses a variety of components. Based on previous studies, Ajamieh, Benitez, Braojos and Gelhard (2016) stated that IT infrastructure includes a group of shared, tangible IT resources that provide a foundation to enable present and future business applications. These resources include; computer hardware and software (e.g., operating systems); network and telecommunications technologies; key data; core data-processing applications; as well as shared IT services.

Roldán, Real and Ceballos (2018) stated that IT infrastructure includes the alignment of IT plans to business objectives, the IT architecture, and the skills of IT personnel. Angeles (2009) noted that IT infrastructure capabilities enable the various types of IT applications required to support current and future business objectives, and enable the competitive positioning of business initiatives. Xu, Zhang and Barkhi (2010) described IT infrastructure as the enabling foundation of shared IT capabilities upon which the entire business depends. This foundation is standardized and shared by business functions within the organization, and typically used by different organizational applications.

Inventory Control Systems Implementation

According to business link in an article, an organisation has an efficient inventory control only when they have the right amount of stock in the right place and at the right time (Axsäter, 2015). Inefficient Inventory control can lead to slower sales and disappointed customers. Inventory control basically deals with reducing the total cost of inventory. Inventory control is very relevant for businesses, especially businesses dealing with a large variety of products. According to Lwiki, Ojera, Mugenda and Wachira (2013) inventory management or control can be used to streamline warehouse processes in order to track orders and shipment. Other important applications of inventory management systems are in manufacturing, shipping, and receiving. There are three main factors in inventory control decision making process (Oballah, Waiganjo & Wachiuri, 2015). These include; the cost of holding the stock, that is the cost associated carrying inventory over time and involves having items in storage. Such cost include interest, taxes, insurance, spoilage, breakage and warehousing cost like light, rent. The cost of placing an order, that is the cost of ordering and receiving inventory which include shipping cost, preparing invoices, determine how much is needed and moving goods. The cost of shortage, that is the cost that involves what is lost if the stock is insufficient to meet all demand. This normally happens when demand exceeds the supply of inventory on hand.

According to Turrini and Meissner (2017) there are several methods of inventory control which include; visual control, used to determine if additional inventory is required through visual examination. This method is mostly used in small businesses and may not require any records; Tickler control which is the physical counting of small portion of the inventory on a regular basis; Click Sheet Control, that involves the recording of items as they are used on a sheet of paper and used for reorder purposes; and Stub control, mostly used by retailers and allow managers have certain control of prices.

METHODOLOGY

A research design is the determination and statement of the general research approach or strategy adopted/or the particular project (Garg & Kothari, 2014). This study adopted a survey research design. The population of the study was the employees of East African Packaging Industries Ltd in Nairobi

County, Kenya with a population of 310 employees according to Business Daily dated December 21, 2010. This is so as to provide first hand details concerning the information being sought by the study. Computer packages such as Microsoft excel and Statistical Package for Social Sciences (SPSS Version 25) were used to facilitate analysis as they have in-built formulas. The study was guided by the following model:

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

Where:

Y = Represents the dependent variable (Inventory Control Systems Implementation)

β_0 = The Constant, the value of *Y* when all *X* values are zero.

β_i = The regression coefficients (*i = 1, 2, 3 and 4*). The regression coefficients indicate the relative importance ofeach of the independent variables in the prediction of the dependent variable.

X_i = The independent variables (*i = 1, 2, 3 and 4*), will explain the variation in Inventory Control Systems Implementation. In this case:

X_1 = Staff Training

X_2 = Funding

X_3 = Top Management Support

X_4 = IT Infrastructure

ε = the error term (To account for all other Variables not considered in the study, assumed to be normally distributed with mean zero and constant variance).

RESULTS

Correlation between the variables

The study generated a correlation matrix between the variables and presented the findings in Table 1. From the table all the independent variables (Staff Training, Funding, Top Management Support, and IT Infrastructure) had a positive and statistically significant (p-values less than 5%) correlation with the dependent variable (Inventory Control Systems Implementation). This implied that there was positive and statistically significant linear relationship between Staff Training, Funding, Top Management Support, and IT Infrastructure and Inventory Control Systems Implementation.

Table 1: Correlation between the variables

Correlations

		Inventory Control Systems Implementation	Staff Training	Funding	Top Management Support	IT Infrastructure
Inventory Control Systems Implementation	Pearson Correlation	1	.663**	.616**	.662**	.663**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	114	114	114	114	114
Staff Training	Pearson Correlation	.663**	1	.324**	.705**	.683**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	114	114	114	114	114
Funding	Pearson Correlation	.616**	.324**	1	.348**	.280**

	Sig. (2-tailed)	.000	.000		.000	.003
	N	114	114	114	114	114
Top Management Support	Pearson Correlation	.662**	.705**	.348**	1	.705**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	114	114	114	114	114
IT Infrastructure	Pearson Correlation	.663**	.683**	.280**	.705**	1
	Sig. (2-tailed)	.000	.000	.003	.000	
	N	114	114	114	114	114

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

Descriptive Statistics for staff training

The respondents were asked the extent to which they agreed with the statements in Table 2 on the influence of staff training on inventory control systems implementation in the Manufacturing Industries in Kenya. From the table, 40.4% agreed that staff training had improved competence and competitiveness of employees in inventory control system usage, 38.6% agreed that regular trainings and workshops were conducted to enhance skills in the system usage, 46.5% agreed that trainings were carried out every time a change occurred especially in case of a system upgrade or system policy change, 39.5% agreed that employees training helped them to grow and become more responsible, 45.6% agreed that staff training increased their efficient and effectiveness especially when handling the system, while 43.0% agreed that staff training enhanced familiarity with the system and thus increases employee competence.

Table2: Descriptive Statistics for staff training

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Staff training has improved competence and competitiveness of employees in inventory control system usage	0.9%	7.0%	21.9%	40.4%	29.8%
Regular trainings and workshops are conducted to enhance skills in the system usage	0.0%	8.8%	27.2%	38.6%	25.4%
Trainings are carried out every time a change occurs especially in case of a system upgrade or system policy change	2.6%	6.1%	17.5%	46.5%	27.2%
Employees training helps them to grow and become more responsible	4.4%	17.5%	21.9%	39.5%	16.7%
Staff training increases their efficient and effectiveness especially when handling the system	1.8%	5.3%	21.9%	45.6%	25.4%
Staff training enhances familiarity with the system and thus increases employee competence	0.9%	6.1%	28.1%	43.0%	21.9%

Funding

The respondents were asked the extent to which they agreed with the statements on the influence of funding on inventory control systems implementation in the Manufacturing Industries in Kenya. The findings were in Table 3 below. From the table, 36.0% agreed that the organization allocated funds for system upgrading and its implementation, 35.1% agreed that the budgetary allocations were sufficient to cover all expenses that come with system implementation, 41.2% agreed that funds were committed in every annual budget for hardware, software, and professional staff acquisition, 35.1% agreed that allocated funds were disbursed according to the scheduled activities, 35.1% agreed that system implementation staff are adequately remunerated, while 37.7% agreed that the funding process for system implementation is structured systematically so as to avoid misappropriation of funds.

Table 3: Descriptive Statistics for funding

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The organization allocates funds for system upgrading and its implementation	0.9%	13.2%	23.7%	36.0%	26.3%
The budgetary allocations are sufficient to cover all expenses that come with system implementation	0.0%	13.2%	28.1%	35.1%	23.7%
Funds are committed in every annual budget for hardware, software, and professional staff acquisition	2.6%	10.5%	20.2%	41.2%	25.4%
Allocated funds are disbursed according to the scheduled activities	5.3%	21.1%	22.8%	35.1%	15.8%
System implementation staff are adequately remunerated	2.6%	13.2%	26.3%	35.1%	22.8%
The funding process for system implementation is structured systematically so as to avoid misappropriation of funds	1.8%	14.0%	21.9%	37.7%	24.6%

Top Management Support

The respondents were asked to rate the extent to which they agreed on the statements on the influence of top management support on inventory control systems implementation in the Manufacturing Industries in Kenya. The findings were shown in Table 4. From the table, 44.7% agreed that inventory system implementation was always supported by the top management in their organization, 36.0% strongly agreed that system implementation team in their organization depends on top management for authority, direction, and support, 44.7% agreed that the top management in their organization ensured that the system implementors had sufficient resources at their disposal, 52.6% agreed that top management assured the implementation team of their support in case of any crises, and 47.4% agreed that top leadership in their organization encouraged adoption of an inventory control system and reinforces its need.

Table 4: Descriptive Statistics for Top Management Support

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Inventory system implementation is always supported by the top management in our organization	0.9%	4.4%	14.9%	44.7%	35.1%
System implementation team in our organization depends on top management for authority, direction, and support	0.9%	2.6%	28.1%	32.5%	36.0%
The top management in our organization ensures that the system implementors have sufficient resources at their disposal	0.0%	5.3%	16.7%	33.3%	44.7%
Top management assures the implementation team of their support in case of any crises	0.0%	1.8%	14.0%	52.6%	31.6%
Top leadership in our organization encourages adoption of an inventory control system and reinforces its need	0.0%	0.9%	21.1%	47.4%	30.7%

IT Infrastructure

The study asked the respondents to rate the extent to which they agreed with the statements on the influence of IT Infrastructure on inventory control systems implementation in the Manufacturing Industries in Kenya. From Table 5, a majority (47.4%) of the respondents agreed that their IT resources offered a foundation to enable present and future business applications, 43.9% agreed that their IT infrastructure capabilities enabled the various types of IT applications required to support current and future business objectives, 43.0% agreed that their IT infrastructure provided a foundation for communications interchange across the entire organization and for the development and implementation of present and future business applications, 45.6% agreed that their IT infrastructure provided flexibility in that they were able to handle increased customer demands without increased costs.

Table 5: Descriptive Statistics for IT Infrastructure

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Our IT resources offer a foundation to enable present and future business applications	0.9%	3.5%	15.8%	47.4%	32.5%
Our IT infrastructure capabilities enable the various types of IT applications required to support current and future business objectives	1.8%	7.0%	36.0%	43.9%	11.4%
Our IT infrastructure provide a foundation for communications interchange across the entire organization and for the development and implementation of present and future business applications.	0.0%	6.1%	21.9%	43.0%	28.9%

Our IT infrastructure provides flexibility in that we are able to handle increased customer demands without increased costs	0.0%	7.0%	16.7%	45.6%	30.7%

Inventory Control Systems Implementation

The researcher generated a descriptive statistics table for Inventory Control Systems Implementation from SPSS Program and presented the results in Table 6. From the table, 46.5% of the respondents rated there was an increased level of inventory Control, 49.1% strongly agreed that level of profitability had increased, 53.5% agreed that users satisfaction had increased, while 35.1% strongly agreed that the net impacts generally increased.

Table 6: Descriptive Statistics for Inventory Control Systems Implementation

	Strongly disagreed	Disagreed	Neutral	Agreed	Strongly agreed
Increased level of inventory Control	0.0%	1.8%	21.1%	46.5%	30.7%
Increased level of profitability	0.9%	5.3%	14.9%	29.8%	49.1%
Increased users satisfaction	0.0%	6.1%	18.4%	53.5%	21.9%
Increased net impacts	0.0%	6.1%	26.3%	32.5%	35.1%

Multiple Regression Analysis

From the Model Summary, 69.4% of the total variance in the dependent variable (Inventory Control Systems Implementation) can be explained by combined independent variables (Staff Training, Funding, Top Management Support, and IT Infrastructure).

Table 7: Model Summary Table of independent variables and the dependent variable

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.833[a]	.694	.683	.33195
a. Predictors: (Constant), IT Infrastructure, Funding, Staff Training, Top Management Support				

Anova Table below showed that the model fitted the data as p-value was less than 0.05 (Sig. = .000).

Table 8: Anova Table of independent variables and the dependent variable

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.269	4	6.817	61.868	.000[b]
	Residual	12.011	109	.110		
	Total	39.279	113			
a. Dependent Variable: Inventory Control Systems Implementation						
b. Predictors: (Constant), IT Infrastructure, Funding, Staff Training, Top Management Support						

From the Coefficients Table, for every unit increase in the dependent variable (Inventory Control Systems Implementation), the independent variables, Staff Training contributes .178, Funding contributes .276, Top Management Support contributes .138 and IT Infrastructure contributes .244. All the contributions

of the independent variables and the constant are statistically significant since p-values are all less than .05 and therefore the optimal model;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + €$$

Becomes;

$$Y = .845 + .178X_1 + .276X_2 + .138X_3 + .244X_4$$

Table 9: Coefficients Table of independent variables and the dependent variable

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.845	.209		4.044	.000
	Staff Training	.178	.065	.222	2.744	.007
	Funding	.276	.039	.408	7.173	.000
	Top Management Support	.138	.069	.167	1.991	.049
	IT Infrastructure	.244	.070	.279	3.479	.001

a. Dependent Variable: Inventory Control Systems Implementation

CONCLUSION

In the first objective, the researcher sought to establish the influence of staff training on inventory control systems implementation in the Manufacturing Industries in Kenya. From the study findings staff training had a statistically significant positive influence on inventory control systems implementation as was indicated by both correlation and regression analysis.

In the second objective, the researcher sought to determine the influence of funding on inventory control systems implementation in the Manufacturing Industries in Kenya. From the findings, the researcher concluded that better funding leads to better and successful implementation of inventory control systems.

In the third objective, the researcher sought to find the influence of top management support on inventory control systems implementation in the Manufacturing Industries in Kenya. The study concluded that top management support was very important for a successful inventory control systems implementation.

In the fourth objective, the researcher sought to the influence of IT Infrastructure on inventory control systems implementation in the Manufacturing Industries in Kenya. From the findings of the study, the researcher concluded that IT Infrastructure is key to the improved inventory control systems implementation in the Manufacturing Industries in Kenya.

RECOMMENDATIONS

The study recommended that East Africa Packaging Industries Limited together with other Manufacturing Industries in Kenya should use determinants of inventory control systems implementation as established in this study which include; Staff Training, Funding, Top Management Support, and IT Infrastructure, as they were found to be key to a successful inventory control systems implementation.

Recommendations for further research

A similar study can be carried out using a different case study. Moreover, the study used Staff Training, Funding, Top Management Support, and IT Infrastructure as its variables. Therefore, a similar study can be carried out using different variables especially considering that this study could not

explain 30.6% of the total variability in the dependent variable (inventory control systems implementation). In addition, a similar study can be carried out in different geographical location outside the realm of this study.

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