

# Influence of Inventory Management on Organizational Performance of Sugar Factories in Western Kenya

<sup>1</sup>Eric N. Wasilwa, <sup>2</sup>Dr. Janet Manyasi, <sup>3</sup>Evans S. Kwendo

<sup>1</sup>Masinde Muliro University, Kakamega, Kenya

<sup>2</sup>Masinde Muliro University, P.O. Box 190, Kakamega, Kenya

<sup>3</sup>Masinde Muliro University, P.O. Box 190, Kakamega, Kenya

---

**Abstract:** With increase in competition in the manufacturing sector globally, organizations are pursuing cost containment measures to ensure efficiency and competitiveness. Inventory management has been identified as a critical approach towards attaining this pursuit. It includes aspects such as storage of inventory, ordering the amount of inventory sales and ordering of inventory. It is basically adherence to the 5 Rs of Supply Chain Management (Right inventory, at the right time, in the right quantity, at the right cost and the right place) hence performance. The study purposed to investigate how inventory management influences performance of sugar factories in Western Kenya. Specifically, the study addressed the following objective: To establish the influence of inventory management on performance of sugar factories in Western Kenya. The research employed a descriptive survey and co relational research design. The target population of the study consisted of 268 respondents from the Procurement Department of five Government Owned Sugar Companies. Purposive sampling was applied to categorize the respondents. Primary data was collected using questionnaires. Descriptive statistics and linear regression was used to analyze the data. From the results, the correlation of the mean of inventory management and mean of performance had a beta term  $\beta = 0.505$ ,  $P=0.001$ . This implies that the value of beta is positive and significant. Basing on this value, it therefore implies that there exists a statistically significant positive effect of inventory management on the performance of sugar factories in Western Kenya. From the results, 25.5% of performance can be explained by inventory management ( $r^2 = 0.255$ ). Therefore, the null hypothesis was rejected as there is significant relationship between inventory management and performance of sugar factories in Western Kenya. The study then recommended that management of organization should participate adequately in the inventory management process from inventory planning, supervision, monitoring and assessment. Further, Organizations should have inventory management policies in place in the organization to guide the organization's inventory management processes and conduct in conjunction with procurement practices.

**Keywords:** Inventory Management, Organizational Performance.

---

## 1. INTRODUCTION

The purpose of this paper is to establish the influence of inventory management on organizational performance. Inventory management is increasingly gaining popularity in the world and scholars are attributing it to the success of many organizations. According to Ogbo (2011), inventory management is the supply of the rights goods, at the right time, in the right quantity, at the right cost and at the right place. Inventories provide an appropriate link between manufacturing and the income of the product and it represents a big portion of the manufacturing costs. Ogbo (2011) describes it as a critical and high priced belonging of any organization and represents a big fraction of the investment capital.

### 1.1 Background of the research:

The dynamic nature of the business environment has been characterized by diminishing resources, intense competition and internationalization. This makes many manufacturing firms try to produce products at low costs. Inventory control technique has been the most used strategy to reduce operational costs while enhancing profits (Sharma & Arya, 2016).

Inventory management practices enhance efficiency and effectiveness of the supply chains thereby improving the performance of manufacturing firms. Gibson (2013) asserts that inventory plays a critical role among the manufacturing firms since it improves the company's customer base and eventual profitability. This therefore calls for inventory management to reduce the problem of stock outs which may dissatisfy clients (Nsikan, Etim & Uduak, 2015).

According to Muhayimana (2015), a company's inventory is one of its key resources and covers an item that is tied up until it is sold or has completed the production of the final product. Inventories are sometimes insured and stored hence costly to have. Mismanaged inventories can create financial constraints to the company whether it creates shortages or surplus in the inventory (Luthubua 2014). Successful inventory management is hence associated with the creation of a purchase plan that assures that inventories are there the times that they are needed in addition to monitoring the items in store and their uses. Buffa and Sarin (2007) have suggested reasons why organizations preserve inventory. Too much inventories may result to finances to being tied down, deterioration of substances, growth in protection of prices and obsolesce. Likewise, shortage of inventory may result into poor customer relations, interruption of finished products for sale and underutilized equipments and machines.

It has become evident from this review that there are a number of significant gaps in the current literature in relation to the uptake, adoption and implementation of inventory management. Current studies on procurement have adopted rather narrow definitions and conceptualizations of inventory management in the performance of public organizations. There are a number of studies that identify inventory management and how it might impact or affect performance of an organization, but they tend to be empirically tested. Moreover, such studies do not provide complete and coherent taxonomies of the problems with traditional procurement, or potential benefits of, and exhibitors facilitators of procurement practices, with this back drop. This study investigates the influence of inventory management on performance of an organization. This study builds upon the factors identified in prior studies. It is envisaged that it will provide a far deeper and richer data set upon which to draw conclusions on the influence of inventory management on organization performance in the sugar sector in Kenya and the World at large.

### **1.2 Objectives of the research paper:**

To establish the influence of inventory management on organizational performance of sugar factories in western Kenya

## **2. LITERATURE REVIEW**

This study was anchored on the following theories:

### **2.1 Resource Based View (RBV):**

Resource Based Theory was developed by Wenefeldt in 1984. It is a method of analyzing and identifying a firm's strategic advantages based on examining its distinct combination of assets, skills, capabilities and intangibles as an organization. The RBV's underlying premise is that a firm differs in fundamental ways because each firm possesses a "unique" bundle of resources tangible and intangible assets and organizational capabilities to make use of those assets. Each firm develops competencies from these resources, and when developed especially well, these become the source of the firm's competitive advantage (Pearce and Robinson, 2007). In this study, when a company uses resources like inventory management it gains sustained competitive advantage and can ultimately leads to organization performance in Sugar Producing Companies.

### **2.2 Contingency Theory:**

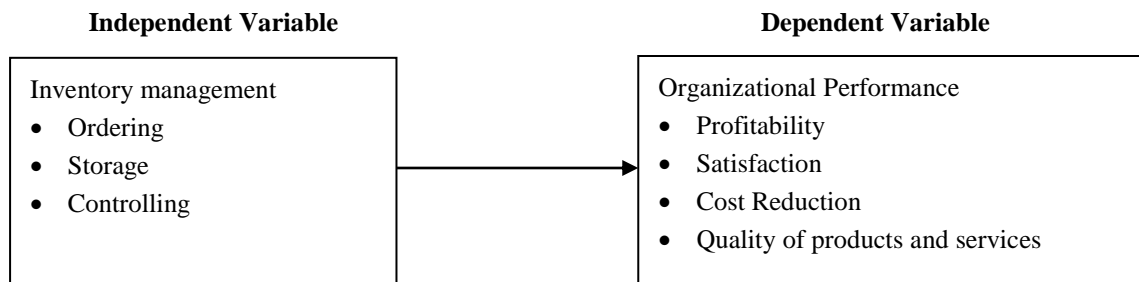
The essence of contingency theory is that best practices depend on the contingencies of situation. According to Halldorsson, Herbert and Tage (2003) the changes in dependent measures are considered to represent performance caused by variations in the independent measures. Following Carton's hypothesized relationship, inventory management practices are determinants of changes in organizational competitiveness of a firms. In this respect changes in inventory management practices will represent organizational competitiveness. The essence of organizational competitiveness is creation of value.

Organizational record management systems have a major influence on the organizational performance (Croom & Brandon-Jones, 2007). Organizational record management is an important driver for increasing internal process improvement, enhancing learning and innovation including the knowledge of purchasing personnel, their computer skill and resources. Record Management support is key influence organizational performance (Rotchanakitumnuai & Speece, 2004). Positive management support for e-procurement can ensure system adoption success. Training is the best support

to enable personnel use the records more efficiently. Croom& Brandon-Jones (2007) found that record management is one key success factor of strategic procurement implementation. Record management makes the procurement process more transparent and helps organizations achieve good governance impacts (Hui *et al.*, 2011).

A study carried out by Oyuke and Shale (2014) on record management and organizational performance found out that majority of the employees were not well trained on records management, that they had other working knowledge of other than procurement, that records management affects organizational performance process and that training of employee on record management affects procurement performance to a moderate extent.

**2.3 Conceptual framework:**



**3. METHODOLOGY**

The research employed a descriptive survey and cross sectional research design. The target population of the study consisted of 268 respondents from the Procurement Department of five Government Owned Sugar Companies. Purposive sampling was applied to categorize the respondents. Primary data was collected using questionnaires. To establish the statistical significance of the respective hypotheses, analysis of variance (ANOVA) or F-tests as well as multiple linear regression analysis were conducted as appropriate at 95 percent confidence level (α = 0.05). The following regression equation was used to represent inventory management and organizational performance:-

$$Y = a + b_1x_1 + e$$

Where Y= Organizational performance

a= Y intercept when x is zero

b= inventory management

e= error term

**4. FINDINGS AND DISCUSSIONS**

Inventory management was operationalized along three dimensions ordering, storage and controlling. Four statements were formulated to measure the inventory management sub-constructs. The statements were anchored on a five point Likert-type scale as strongly agree (SA) = 5, Agree (A) = 4, undecided (U) = 3, Disagree (D) =2 and strongly disagree (SD) = 1 and respondents were asked to indicate the extent to which they agreed to the statements. The pertinent results are presented in Table 4.6.

**4.1 Descriptive Results for Inventory Management:**

INVENTORY MANAGEMENT	1	2	3	4	5	Mean	STDV
The company has put in place systems and processes that identify inventory requirements	5.45% (3)	16.36% (9)	18.18% (10)	29.09%(16)	30.91%(17)	3.6364	1.23773
The company always set inventory targets	7.27% (4)	16.36% (9)	20% (11)	25.45%(14)	30.91%(17)	3.5636	1.28760
The company observes replenishment techniques	7.27% (4)	9.09% (5)	7.27% (4)	32.73%(18)	43.64%(24)	3.9636	1.24668
The company handles all functions related to the tracking and management of material	9.09% (5)	7.27% (4)	10.91% (6)	34.55%(19)	38.18%(21)	3.8545	1.26810

Source: Research Data (2018)

From the table 1, majority of the respondents indicated the company has put in place systems and processes that identify inventory requirements as shown by 29.09 % (16) of the respondents who agreed and 30.91 % (17) who strongly agree with a mean of 3.6364 and standard deviation of 1.23773 which indicate there is great dispersion from the mean. Similarly, 25.45 % (14) agreed and additional 30.91 % (17) strongly agreed that the company always set inventory targets with a mean of 3.5636 and standard deviation of 1.28760. This implies that there is also great dispersion from those who agreed.

More than half of the respondents confirmed that the company observes replenishment techniques of which 32.73 % (18) agreed and 43.64 % (24) strongly agreed with a mean of 3.9636 and standard deviation of 1.24668. This indicated there was great dispersion from those who agreed. Lastly, 34.55 % (19) agreed and 38.18 % (21) strongly agreed that the company handles all functions related to the tracking and management of material with a mean of 3.8545 and standard deviation of 1.26810. This implies there is great disparity from the mean.

#### 4.2 Regression Results between Inventory Management and Organizational Performance:

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.505 <sup>a</sup>	0.255	0.241	0.93263		
a. Predictors: (Constant), Inventory management						
ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.798	1	15.798	18.163	0.000 <sup>b</sup>
	Residual	46.099	53	0.870		
	Total	61.898	54			
a. Dependent Variable: Organizational Performance						
b. Predictors: (Constant), Inventory management						
Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error			
1	(Constant)	2.287	0.473		4.834	0.000
	IM	0.518	0.121	0.505	4.262	0.000
a. Dependent Variable: Organizational Performance						

Source: Research Data (2018)

From Table 2, the correlation of the mean of inventory management and mean of organizational performance had a beta term  $\beta = 0.505$ ,  $P=0.001$ . This implies that the value of beta is positive and significant. Basing on this value, it therefore implies that there exists a statistically significant positive effect of inventory management on performance of sugar factories in Western Kenya. From the results, 25.5% of performance of sugar factories in Western Kenya can be explained by inventory management ( $r^2 = 0.255$ ) and the relationship followed a simple regression model of the nature

$$P = 2.287 + 0.518PM$$

Where P is the performance of sugar factories in Western Kenya,  $\alpha$  is the constant intercept of which in our case is 2.287 and beta  $\beta_1 = 0.518$ , PM is the inventory management. From the results, the study rejected the null hypothesis as there was significant relationship between inventory management and performance of sugar factories in Western Kenya.

In agreement with these findings, Lwiki, Ojera, Mugenda and Wachira (2013) found that there exists a positive correlation between inventory management and financial performance of Sugar Manufacturing Firms in Kenya. Mukopi and Iravo (2015) indicated that there was a high significant relationship between inventory management and performance of the procurement function of sugar manufacturing companies in the western sugar belt. Kimaiyo and Ochiri (2014) found out that Inventory Management has significant role on the Performance of Manufacturing Firms in Kenya with specific reference to the new Kenya Cooperative Creameries. However, Sekeroglu and Altan (2014) founded that there is no relationship between inventory management and profitability in weaving industry and wholesale and retail industry.

## 5. CONCLUSIONS

The objective of the study was to determine the influence of inventory management on organizational performance of sugar factories in Western Kenya. The study used the correlation  $r$  (beta,  $\beta$ ) to test the null hypothesis. The test criteria was set such that there is either a positive or negative effect if the value of beta,  $\beta \neq 0$ . From the results, the correlation of the mean of inventory management and mean of performance had a beta term  $\beta = 0.505$ ,  $P=0.001$ . This implies that the value of beta is positive and significant. Basing on this value, it therefore implies that there exists a statistically significant positive effect of inventory management on the performance of sugar factories in Western Kenya. From the results, 25.5% of performance can be explained by inventory management ( $r^2 = 0.255$ ). Therefore, the null hypothesis was rejected as there is significant relationship between inventory management and performance of sugar factories in Western Kenya.

## 6. RECOMMENDATION

The management of organization should participate adequately in the inventory management process from inventory planning, supervision, monitoring and assessment. Further, Organizations should have inventory management policies in place in the organization to guide the organization's inventory management processes and conduct in conjunction with procurement practices.

## ACKNOWLEDGEMENT

The paper wants to acknowledge the contributions from Dr. Manyasi and Mr. Kwendo who assisted in the formulation of this paper to the best of their ability.

## REFERENCES

- [1] Buffa, M, & Sarin, K. (2007). The effect of inventory management on firm performance. *International Journal of productivity and performance Management*, 57, 355-369.
- [2] Coyle, J. J., Bardi, E. J., & Langley, C. J. (1988). *The management of business logistics*. St. Paul: West Pub. Co.
- [3] Croom, S. Brandon-Jones A. (2007). Progress on E-Procurement: Experiences from Implementation in the UK Public Sector. *Journal of Purchasing and Supply Management*,
- [4] Hult, G. T. M., Ketchen, D. J., & Arrfelt, M. (2007). Strategic supply chain management: Improving performance through a culture of competitiveness and knowledge development. *Strategic Management Journal*, 28(10), 1035-1052. DOI: 10.1002/smj.627
- [5] Kimaiyo, K. K. & Ochiri, G (2014). Role of Inventory Management on Performance of Manufacturing Firms in Kenya. A case of new Kenya Cooperative Creameries. *European Journal of Business Management*, 2 (1), 336-341.
- [6] Likwi, T., Ojera, P. B., Mugenda, N. G., & Wachira, V. K. (2013). The impact of inventory management practices on financial performance of sugar manufacturing firms in Kenya. *International Journal of Business, Humanities and Technology*, 3(5), 75-85.
- [7] Luthubua, D. M. (2014). Supplier base rationalization practices and supply chain performance of large manufacturing firms in Nairobi, Kenya (Doctoral dissertation, University of Nairobi).
- [8] Muhayimana V. (2015). Inventory Management Techniques and Its Contribution on Better Management of Manufacturing Firms in RWANDA Case Study: SULFO RWANDA Ltd. *European Journal of Academic Essays*, 2(6), 49-58.
- [9] Mukopi CM, Iravo MA (2015). An Analysis of the Effects of Inventory Management on the Performance of the Procurement Function of Sugar Manufacturing Companies in the Western Kenya Sugar Belt. *International Journal of scientific and Research Publications* 5(5).
- [10] Nsikan, E., Etim, J., & Uduak, T. (2015). Inventory management practices and operational performance of flour milling firms in Lagos, Nigeria. *International Journal of Supply and Operations Management*, 1(4), 392-406.
- [11] Ogbo, A. I. (2011). *Production and Operations Management*. Enugu: De-verge Agencies Ltd.

- [12] Oyuke, O.H & Shale, N. (2014). 'Role of Strategic Procurement Practices on Organizational Performance; A Case Study of Kenya National Audit Office County', *European Journal of Business Management*, 2 (1), pp. 336-341.
- [13] Rotchanakitumnuai and Speece (2004), "Corporate Customer Perspectives on Business Value of Thai Internet Banking", *Journal of Electronic Commerce Research*, Vol. 5, (4), 270-286
- [14] Sekeroglu, G. and Altan, M. (2014) The relationship between inventory management and profitability: A comparative research on Turkish firms operated in weaving industry, eatables industry, wholesale and retail industry, *International Journal of Social. Behavioural, Economic, Business and Industrial Engineering*, 8(6) 1698 – 1703
- [15] Sharma, A. & Arya, V. (2016). Inventory Management in Manufacturing Industry. *International Journal of Advanced Engineering and Global Technology*, 4(3), 2012-2021.