



# **THE EFFECT OF LOGISTICS MANAGEMENT ON ORGANIZATIONAL PERFORMANCE AT WONJI/SHOA SUGAR FACTORY**

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## **ABSTRACT**

*The main objectives of the study was to analyses the effect of logistics activities on organizational performance.*

*The study adopted descriptive and explanatory research design as well as quantitative research approach was employed for conducting the study. The population under consideration was employees of Sugar Factory working under facility management and material planning and inventory management. To select respondents from the target population the researcher used stratified random sampling. The representatives selected from each stratum using simple random sampling. The data was collected from both primary and secondary sources. Data analysis was employed using descriptive statistics specifically mean and standard deviation; and inferential statistics namely Pearson correlation coefficient and multiple regression analysis and then presented in tables. The finding of study implies that transportation, inventory, and warehouse management had positive and statistically significant effect on organizational performance. This study recommends, since the results shows that there is significant effect of logistics activities on organizational performance, the management of the organization should incorporate those activities under the study in all aspects of a factory since this constitutes to improve the performance of the factory.*

## **KEY WORDS**

*Logistics activities, Organizational Performance, Transportation, Warehouse, Inventory, Wonj/shoa Sugar Factor*

## 1.1. INTRODUCTION

Across the world, logistics has advanced from the simple concept of warehousing and transportation to become a strategic function in many companies.

Globally, logistics activity exhibited a great development, which is considered as the lifeblood of economies. Logistics activities are extensively important for production and distribution of produced goods.

Logistics plays a key role in the economy especially it is an important component of GDP. It is one of the major expenditures for business there by affecting and being affected by other economic activities (stock & Lambert, 2001). In 1994, the United state industry spent an estimated \$554 billion on transportation, more than \$332 billion on storage and inventory carrying cost and the overall expenditure on logistics has been more than \$900 billion (Stock and Lambert, 2001). As quoted by Weaser (2001) global company spent about \$ 3trillion on logistics. This implies logistics has a great role on organizational performance, and it needs great management.

Green et al. (2008) conduct the study on the impact of logistics practice and organizational performance. The study reveals that logistics practices have a positive impact on business performance in terms of speed of delivery, responsiveness and flexibility of deliver and also influence market performance. According to Fekadu (2013) conducted the study on logistics practice in Ethiopia.

The result of the study indicated that logistics system is poor practices, and lack of coordination of goods transport, inadequate transportation vehicles in numbers, quality deterioration of goods while handling, transporting and storage.

Above literature gap eager the researcher to conduct the study on the effect of logistics activities on organizational performance.

## 1.2. Statement of the problem

Logistics play a pivotal role in supporting organization as they strive for more efficient management system as in the business practices. Inefficient management system together with the inefficient internal management would disable the organization to react the demand of customers with the lowest price at the shortest feasible time frame including the quality level which doesn't meet the customer expectation and would like the organization to the competitive disadvantage situation against the rivals (Cozzolino, 2012).

In logistics management, inappropriate use of logistics activities added unnecessary cost and process for the industry. For instance, improper application of transport, warehouse, and inventory control and logistics information related problems are the basic problem that faces different organization (Rahul & Altekar, 2005).

Mukolwe & Wanyoike (2015) assessed how logistics management practices used in logistics affect the operational efficiency in Mumias Sugar Company. The finding of the study reveals that transportation management and practice used for physical distribution are similar with the flow of raw materials and goods that is cost effective which impacts positively operational efficiency. Furthermore, the finding of Dolven (2002) and Kerr (2005), shows that in adequate logistics activities tied with lack of skilled workers and management blamed for the high level of loss, damage and deterioration of stocks experienced.

Lwiki et al. (2013) did research on inventory management practice of sugar manufacturing firm in Kenya. Based on eight Sugar Manufacturing firms in Kenya and conclude that the accomplishment of sugar manufacturing firms was consequently due to the inventory management practice applied.

According to Fekadu (2013) conducted the study on logistics practice in Ethiopia. The finding of the study shows that Ethiopian logistics system is poor practices and lack of coordination of goods transport, inadequate fleet freight vehicles in numbers and damage and quality deterioration of goods while handling, transporting and storage. Even though there is study done by Fekadu (2013) on Ethiopian logistics practice, he did not give

prominence specifically on logistics activities like inventory and warehousing. Therefore, the current study was designed to fill in the existing gap in literature by assessing the effects of logistics activities on the performance of Sugar Factory.

### **1.3. BASIC RESEARCH QUESTION**

1. What is the effect of transportation management on organizational performance at Wonji/shoa Sugar Factory?
2. What is the effect of inventory management on organizational performance at Wonji/shoa sugar factory?
3. What is the effect of warehouse management on organizational performance at Wonji/shoa sugar factory?

#### **1.4.1. General objectives of the study**

The main objective of the study is to examine the effect of logistics activities on organizational performance at Wonji/shoa sugar factory.

#### **1.4.2. Specific objectives**

In line with general objectives, the research was answer the following specific research questions

1. To analyze the effect of transportation management on organizational performance at Wonji/shoa sugar factory.
2. To examine the effect of inventory management on organizational performance at Wonji/shoa sugar factory.
3. To investigate the effect of warehouse management on organizational performance at Wonji/shoa sugar factory.

### **1.5. SIGNIFICANCE OF THE STUDY**

Specifically, this study has the following main significances: First for the researcher, the study used as the fulfilment of academic requirement and helps to develop an experience on how to conduct other research in the related area. Secondly, the research help organization as it perform its work properly and as it learn from its own negative or weak side and uses to its opportunities and fill the gap in literature. Finally, for the reader the research pave the way for educator or training institutions to consider when designing training on issue related to the logistics activities.

### **1.6. SCOPE OF THE STUDY**

The study is limited to Sugar Factor, not include other factory in Ethiopia. Since Logistics activity encompasses vast area of managerial practices, this particular study conceptually delimited to specific context, which is on logistics activities such as transportation, inventory and warehouse management at Wonji/shoa Sugar Factory.

### **1.7. LIMITATION OF THE STUDY**

It is difficult to cover entire domain of logistics activities just in one study. The research sample did not incorporate all the logistics activities/participants namely: the procurement, information flow, customer service and others, due to time constrained so that it could not be generalized to other logistics activities.

## **REVIEW OF RELATED LITERATURE**

### **Logistics activities**

Logistics activities can be identified with respect to the logistics operations and management in a company and its supply chain (Lambert et al., 1998; Stock and Lambert, 2001).

These activities are transportation, customer service, warehousing and storage, plant and warehouse site selection, inventory management, order processing, logistics communications, procurement, material handling, packaging, demand forecasting, part and service support, savage and scarp disposal and reverse logistics.

## **TRANSPORTATION MANAGEMENT**

Transportation defined as the activities involved in shipping any goods or finished products from suppliers to a facility or to warehouses and sales locations (Kenyon & Meixell, 2011). The overall of transportation is to connect sourcing locations with customers at lowest possible cost within the constraints of customer service policy (Ensermu, 2013).

Transportation plays a key role in the supply chain, because without the efficient movement of finished goods and raw materials the entire system would not be able to work at its full potential (Randall et al., 2010). It is essential and major sub function of logistics that creates time and place utility in goods. In fact, the back bone of supply is the transportation management that makes it to achieve the well known seven Rs the right product, in the right quantity, the right condition, at the right time, for the right customer and at the right cost.

## **INVENTORY MANAGEMENT**

Stevenson (2009) defines an inventory as a stock or store of goods. The objective of inventory management is to determine and maintain the lowest inventory levels possible that will meet the customer service policy stipulated in the customer service policy (Ensermu, 2013). Either way, any company that sells goods likely has the material necessary to sell their products as well as finished products on hand. These materials and finished products kept on hand are the company's inventory. According to Hedrick, (2008) stocks must be well managed in order to increase profits and many small businesses cannot take up the types of losses arising from poor inventory management. Obviously, inventory management is a vital to business and logistics success. Without proper inventory management, company can miss potential sales or can lock up too much money in inventory and miss other opportunities to make money. Value is added through inventory control because goods value more to a company (or seller) when it is worth more to a customer (buyer). Therefore, if a company has great demand for their product, but does not have enough products in inventory, then these potential sales cannot take place and the company misses the opportunity to make money.

Properly keeping inventory can also be a factor in determining prices and therefore revenue generators, as a less available product becomes more expensive if the demand is there. Optimal inventory management making supply meet demand and adding as much value as possible with the asset at hand. The costs associated with inventory management related to being knowledgeable about supply, demand, current inventory, trend, etc. In order to determine demand companies must conduct research for newer products, or maintain data on demand trends for order or ingoing products (Stevenson, 2009).

## **WAREHOUSE MANAGEMENT**

Moving the material flows in the supply chain is impossible without concentration in certain areas of necessary supplies, storage for dedicated storage. In this regard, the problem associated with the operation of warehouses have a significant impact on the rationalization of movement of material flows in the supply chain, the use of vehicles and distribution costs (Linder & Harold, 2002). Kenyon & Meixell (2011) defines warehousing as the storage of components, raw materials and finished goods. Just like every other part of the supply chain, a warehouse used to add value to some goods, as the goods stored for some purpose or passed through the warehouse for some purpose. The intention of warehousing is to reduce the cost of labour, space, and equipment in the warehouse while meeting the cycle time and shipping accuracy requirements of the customer service policy and the storage capacity requirements of the inventory (Stevenson, 2009). Warehouses have always been paid a great deal of attention from managers due to the large potential impact it can have in creating customer value. Like most areas, the key objectives for managing warehouses have changed over time to create additional

competitiveness. The first objectives within warehousing related to maximizing the utilization of resources within the warehouse. The objective of present warehouse management is to efficiently and effectively organize the processes in a warehouse i.e. it encompasses both the objectives of inventory control and warehousing (Faber, 2013).

### **ORGANIZATIONAL PERFORMANCE**

Organization performance is described as the degree to which the organization is able to convene the needs of its stakeholders and its own needs for survival (Griffin, 2003). According to Swan son (2000), organizational performance is the valued productive output of a system in the form of goods or services.

Performance of organization can be measured by operational performance (non-financial performance and financial performance). These dimensions are divided into the following components: market share, return on investment, increase market share, sales growth, return on investment growth, sales margins and the overall situation of competition (Li et al., 2006).

### **FINANCIAL PERFORMANCE**

Financial performance reflects an organizations profitability and return on investment as compared to its competition (Hajiesmaeiliet al., 2016). Korsita & Cania (2016) have measured organizational performance using two criteria at the same time, financial indicators and market, including return on investment (ROI), the market share difference of profit on sales, increased return on investment, increased sales, increased share the overall market and competitive position.

### **LEAD-TIME**

Lead Time is the amount of time between process initiation and completion. For our customers Lead Time is the time between a confirmed customer order and its scheduled pick up or delivery based on our terms and conditions. This varies based on the customer and the product. Lead-time is the amount of time that passes from the start of a process until its conclusion. According to Navon & Berkovich (2006), the main logistic responsibility in any organization is to formulate master programme for the timely provision of materials, components and work-in-progress.

### **EMPIRICAL REVIEW**

Logistics activity plays an important role of adding competitive advantage to a firm in customer support and business excellence (Buyukozkan et al., 2008). Effective logistics activity provides the right product in the right place at the right time. It involves controls of product and information flow to create values-added activities such that delivery is accomplished through suitable distribution channels (Narasimhan & Das, 2001).

Mukolwe & Wanyoike (2015) assessed how logistics management practices used in logistics affect the operational efficiency in Mumias Sugar Company. These researches were analysed using descriptive and inferential statistics; the study indicates among the other findings that transportation management and the practice used for physical distribution are synonymous with the flow of raw materials and goods that is cost effective which impacts positively on operational efficiency

A review of the various studies shows that manufacturing firms seek different logistics activities; and the reasons why companies decide to outsource logistics services vary greatly. However, majority of these studies have been conducted mostly in developed countries where companies have extensively adopted or hired logistics services providers on various logistics services.

According to IMF count report (2014) inefficient logistics practice not only impede Ethiopia's export, they also increase the cost for consumers for imported goods. The Ethiopian logistics system is characterized by poor

logistics practices and lack of coordination of goods transport, low level of development of logistics infrastructure (Fekadu, 2013). Even though there is a research done by Fekadu (2013) on Ethiopian logistics practices, he did not focus specifically to logistics activities like inventory management, and warehousing. Building on this and refer limitations of previous studies in this area, the current study will articulated to fill in the existing gap in literature by assessing the effects of logistics activities on organization performance

### **RESEARCH DESIGN**

The researcher has used descriptive and explanatory research design.

### **POPULATION OF THE STUDY AND SAMPLING**

#### **TARGET POPULATION**

For this study, the target population were selected from facility management, and material planning and inventory management.

#### **SAMPLING TECHNIQUE**

Both probability and non- probability sampling techniques were used to select the participants for this study. From probability sampling, stratified random sampling technique was employed to select respondents from the target population. Proportionally, the representatives were selected from each stratum using simple random sampling with the help of simple random number table.

#### **3.4.2. SAMPLE SIZE**

A sample size of 201 employees was from selected facility management, and material planning and inventory management. To arrive at the desired sample, the researcher used the formula developed by (Yamane, 1967).

#### **SOURCE OF DATA**

Both primary and secondary sources were used as a source of data.

#### **DATA COLLECTION METHODS**

In order to gather the data, questionnaires were prepared for respondents. Questionnaire was employed to collect data from participants.

#### **METHOD OF DATA ANALYSIS**

Data were analysed using descriptive and inferential statistics.

#### **RELIABILITY**

The reliability of the instruments checked by applying Cronbach alpha testing statistics on the questionnaires distributed for some selected sample. An alpha coefficient of 0.75 or higher indicated that the gathered data are reliable as they have a relatively high internal consistency. In this study, minimum reliability test by using cron batch alpha approach is 0.796.

### **DATA PRESENTATION, ANALYSIS AND DISCUSSION DEMOGRAPHIC INFORMATION OF THE RESPONDENTS**

In this section, the researcher analysed and discussed demographic information of the respondents.

		Frequency	Percent	Cumulative percent
Sex of the respondents	Male	119	62.6	62.6
	Female	71	37.4	100
Age of respondents	Less than 25 years	9	4.7	4.7
	25-33 years	36	18.9	23.7
	34-41 years	66	34.7	58.4

	42-49 years	51	26.8	85.3
	Above 50 years	28	14.7	100
Education Level	Certificate	22	11.6	11.6
	Diploma	75	39.5	51.1
	Degree	93	48.9	100
Work experience	0-5 years	33	17.4	17.4
	6-10 years	67	35.3	52.6
	11-15 years	40	21.1	73.7
	16-20 years	19	10.0	83.7
	21 and above years	31	16.3	100
Job title	Facility management	116	61.1	61.1
	Material Planning & Inventory management	74	38.9	100

#### 4.4. DESCRIPTIVE STATISTICS

For the analysis of the quantitative data, descriptive statistics supported by SPSS software version 23 was applied. Using SPSS mean and standard deviation are calculated to show the respondent organization experience in logistics activities.

**Table 4.7 Descriptive Statistics of Transportation management**

	N	Mean	Std. dev.
There is an adequate infrastructure for transportation of raw material inventory with in factory	190	2.83	1.120
Your company apply adequate Vehicle scheduling for transportation	190	2.99	1.089
		3.02	1.138
Current vehicle scheduling practices has improved cane transportation	190		
Adequate Transportations are available	190	2.98	1.208
		2.47	1.097
Measuring the transport performance of transport companies and rewarding them accordingly			1.294
		2.94	
There are enough functioning vehicles available to meet the desired delivery schedule in your factory.	190		
Overall	190	2.87	1.1576

As revealed from the above table 4.7. The statements that current vehicle scheduling practices has improved cane transportation, followed by your company apply adequate Vehicle scheduling for transportation, adequate

transportation are available, there are enough functioning vehicles available, with available fuel and drivers, to meet the desired delivery schedule in your company, and there is an adequate infrastructure for transportation of raw material inventory within factory were implemented to a moderate extent with a mean of 3.02, 2.99, 2.98, 2.94 and 2.83 respectively. However, the statement that factory measuring the transport performance and rewarding them accordingly had least extent of adoption with a mean of 2.47. Generally, the results emphasized that transportation management of the factory need to be considered deeply in order to enhance the organizational performance of the factory because; the proper management of transportation had a great role in the enhancement of the organizational performance. Goldsby et al. (2014) asserts that an inefficient transportation system may lead increased costs in the firm and this may make the firm incur losses.

#### 4.5. Correlation analysis

##### 4.5.1. Correlation matrix between logistics activities and organizational performance

		TM	WM	IM	OP
Transportation management	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	190			
Warehouse management	Pearson Correlation	.546**	1		
	Sig. (2-tailed)	.000			
	N	190	190		
Inventory management	Pearson Correlation	.732**	.599**	1	
	Sig. (2-tailed)	.000	.000		
	N	190	190	190	
Organizational performance	Pearson Correlation	.784**	.566**	.732**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	190	190	190	190

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

The results of the correlation matrix between each Logistics activities and organizational performance analysed as follow.

As shown in the table 4.11, the correlation between transportation management and organizational performance is positive with correlation coefficient of 0.784 and the significance level of 0.000, which is less than 0.01 ( $r=0.784$ ,



N= 190, P<0.01). Based on survey result, there is strong positive correlation between inventory management and organizational performance with correlation coefficient of 0.732 and significance level of 0.000 less than 0.01, which shows us inventory management and organizational performance have strong positive correlation and it is statistically significant(r= 0.732, N= 190 and p<0.01).

Based on survey result, there is moderate positive correlation between warehouse management and organizational performance with correlation coefficient of 0.566 and significance level of 0.000, which is less than to 0.01. This shows that warehouse management have moderate positive correlation with organizational performance, which is statistically significant at the 0.01(r= 0.556, N= 190 and p<0.01).

**4.6. Regression Analysis Table 4.13. Multi-collinearity test**

Collinearity Statistics		
Model	Tolerance	VIF
Transportation management	.447	2.29
Inventory management	.408	2.40
Warehouse management	.617	1.622

**4.6.4. Regression analysis of logistics activities and organizational performance**

**Table 4.14. Regression analysis of logistics activities and organizational performance Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted Square	R Square	R	Std. Error of the Estimate
1	.822 <sup>a</sup>	.676	.671	.671		3.11488

Predictors: (Constant), Warehouse management, Transportation management, Inventory management  
Dependent Variable: Organizational performance

In the model summary table 4.14, the multiple correlation coefficients R, indicates a very strong correlation of .822 between Logistics activities and Organizational performance. The R square Value of .676(67.6%) implies relative contribution of Logistics activities in interpreting the organizational performance while the remaining 32.4% is explained by other variables or other aspects outside the model..

**4.6.5. ANOVA MODEL FIT**

**Table 4.15. ANOVA Result between Logistics Activities and Organizational Performance**

Model	Sum of Squares	Df	Mean Square	Sig.
1 Regression	3771.889	3	1257.296	.000 <sup>b</sup>

Residual	1804.664	186	9.702
Total	5576.553	189	

Dependent Variable: Organizational performance

Predictors: (Constant), transportation management, inventory management, warehouse management

Based on Table 4.15, the ANOVA test shows that the regression model has a significant effect on organizational performance since the p-value (0.000) is less than 0.05 (0.000<0.05). This shows that, the regression model is statistically significant in explaining the relationship that exist between study variables. Hence, implying good fit for the model since it shows significant effect of transportation, inventory and warehouse management and organizational performance.

**4.6.6. BETA COEFFICIENT**

**Table 4.16: Regression Coefficients between Logistics activities and Organizational Performance**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.225	1.019		.221	.825
	Transportation management			.509		.000
	Inventory management	.558	.068	.291	8.154	.000
	Warehouse management	.288	.065	.114	4.457	.033
		.104	.048		2.147	

a. Dependent Variable: Organizational performance

The aim of the regression in this study is to find such an equation that could be used to find the effect of predictors on dependent variable. The specified regression equation takes the following form

$$Y=0.225+0.558X_1+0.288X_2+0.104X_3+\epsilon$$

Where Y= organizational performance X<sub>1</sub>=transportation activity, X<sub>2</sub>= Inventory management, X<sub>3</sub>= Warehousing and ε =error.

**CONCLUSION AND RECOMMENDATION**

**CONCLUSIONS**

The aim of this study is to examine the effects of Logistics activities on organizational performance at Sugar Factory. From the findings, it concludes that the effect of all the logistics activities under study would positively and significantly effect on performance Sugar Factory.

The studies also conclude that inventory management has significant and positive effect on the performance of the factory. The findings conclude that factory inventory planning and management is not supported by technology, Maximum and minimum inventory levels are not properly maintained. Therefore, it has concluded that in the

study, an inventory management practice within the operations of the firm is positively significant on their performance. Transportation and inventory management are the most critical activities for organizational performance and strong correlation with the performance of organization.

The study also confirmed that warehouse management positively effect on the performance of factory.

Generally, the overall activities of logistics activities under study were positive effect on the performance of Sugar factory.

## **RECOMMENDATIONS**

The study recommends Sugar Factory should give priority and enhance the logistics activities because if properly practiced, they can significantly improve its organizational performance. Therefore, the researcher recommends

- ✓ It is advisable if the factory increase investment on infrastructure of transportation for raw material inventory within factory.
- ✓ The firms can work closely with transport companies and stakeholders for fast delivery of raw material (cane) from farmers to the factory.
- ✓ The factory recommended in this study that managers and concerned body of Sugar factory should impress warehouse management in strategic plan can increase financial performance and reduce lead-time.
- ✓ Factory warehouse activities should be supported by automated technology in order to minimize the effort of employees and reduce the time to deliver service.
- ✓ The factory should give due attention in proper implementation logistics activities for efficient delivery of transportation, better warehouse management and inventory management.

Generally, the study recommends that managers and concerned bodies of Sugar Factory should incorporate transportation, inventory and warehouse management within the performance strategies of their Factory. This will helps to enhance the performance of a factory as revealed in this study. By doing so, Sugar Factory would improve financial performance and reduce lead-time.

### **Study of future suggestion**

To clearly investigate the issue of logistics future research should be done on the remained logistics activities like the effect of procurement, material handling, customer service and others activities which helps to enhance the performance of a factory.

### References

- Auckara-aree, K., & Boondiskulchok, R. (2008). Analysis of the inbound collecting system for a case of the natural rubber industry in Thailand. *International Journal of Logistics and Transport*, 2 (1), 25-39.
- Bartholdi, J., & Hackman, S. T. (2011). *Warehouse & Distribution*. Atlanta: Georgia Institute of Technology Atlanta Printing Press.
- Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2010). *Supply Chain Logistics Management* (3rd Ed); Boston, Mass: McGraw-Hill.
- Buyukozkan, G., Feyzioglu, O. & Nebol, E. (2008). Selection of the strategic alliance partner in logistics value chain. *International Journal of Production Economics*. 113, 148- 158.
- Capkun, V., A. Hameri, & L.A. Weiss, (2009). On the relationship between inventory and financial performance in manufacturing companies, *International Journal of Operations & Production Management*, 29 (8), 789-806.
- Cozzolino, A. (2012). *Humanitarian Logistics and Supply Chain Management*. In *Humanitarian Logistics*, Springer Berlin Heidelberg
- Dolven, B. (2000). The peril of delivering the goods. *Far Eastern Economic Review*, 165(29), 28-32.
- Ensermu, M. (2013). *Logistics Management a green Supply Chain Perspective: Addis Ababa*.
- Fekadu, D. (2013). *Logistics Practices in Ethiopia. (Unpublished Master's Thesis)*. Swedin: Swedish University of Agricultural Sciences.
- Frazelle, E. ( 2002 ). *Supply chain strategy: The logistics of supply chain management*. New York:McGraw-Hill.
- Green, K.W., Whitten, D. &Imman, R.A. (2008). The Impact of Logistics Performance on Organizational Performance in a Supply Chain Context. *An International Journal Supply Chain Management*, 13 317327.
- IMF. (2014).The federal democratic republic of Ethiopia selected issues paper. Country Report No. 14/304: Washington, D.C
- Kenyon, G. N., & Meixell, M. J. (2011). Success factors and cost management strategies for logistics outsourcing. *Journal of Management and Marketing Research*, 7, 117.
- Kerr,J.(2005). Key challenges for the Chinese Logistics industry. *Logistics management*, 44(2), 64-68.
- Mukolwe, G., & Wanyoike, D. (2015). An Assessment of the Effect of Logistics Management Practices on Operational Efficiency at Mumias Sugar Company Limited, Kenya. *International Journal of Economics, Commerce and Management United Kingdom*, 3 (6), 1134-1156.
- Rahul V. Altekar. (2005).*Supply chain management: concepts and cases*. PHV learning private limited New Delhi.
- Stock, J., & Lambert. (2001). *Strategic Logistics Management (4<sup>th</sup> ed.)*. Boston: McGraw-Hill. Weaser, M.(2001).*Companies Turning to Outsourcing For Logistics Needs*. Philippines: Computer world.