

# Effect of Logistic Outsourcing on the Performance of Sugar Companies in Western region

<sup>1</sup>Fredrick N. Kiongera, <sup>2</sup>Mogere K. Machuki

<sup>1</sup>Masinde Muliro University, P.O. Box 190, Kakamega, Kenya

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

---

**Abstract:** The main current focus of supply chain management (SCM) world-wide is the creation of long-term, mutually beneficial relationships between a company and other participants in the supply chain. Strategic partnerships are a key factor in the effectiveness of the business of a company as a whole. The study intended to determine the influence of third party and fourth party logistic outsourcing on the performance of sugar manufacturing firms in western region. The study used both primary and secondary data collection instruments. Primary instruments included the use of structured and unstructured questionnaires. Secondary instruments involved acquiring information from the already existing records from the sugar manufacturing firms and any other public available information that is already documented. Descriptive and inferential statistics were used in data analysis using SPSS version 20 software. Karl Pearson's zero order coefficient of correlation (Pearson Product Moment Correlation or simple correlation) was used to determine the direction and strength of the relationship between logistic outsourcing and performance of sugar manufacturing firms in western region. Simple regression analysis was used to model the relationship between logistic outsourcing and performance of sugar manufacturing firms. The relationship between logistic outsourcing and the performance of sugar manufacturing firms follow a regression model of the nature  $P = \alpha + \beta_1 \text{LOS} + e$ . The findings were presented using tables and crossbar tabulations. The outcome was positive correlation between logistic outsourcing and performance of sugar manufacturing firms. The findings are of importance to the Government of Kenya, shareholders, employees and customers of sugar manufacturing firms. Further, the findings form a basis of future research by interested parties in future.

**Keywords:** Logistics, Outsourcing, Performance.

---

## 1. INTRODUCTION

In the global reign of economic, political, environmental and regulatory reforms, most firms are bound to modify their business operations and be able to keep abreast with the drift. As one of key decisions to be made in this process, firms would need to redesign their supply chain networks which basically involve re-configuration of their logistic activities. These include transportation, warehousing, freight forwarding and value adding services like packaging and labeling. Depending on the changes in regulatory and political environment, nature of the firm and type of industry, such decisions are made on occasional or routine basis (Coyle et al, 2003).

### 1.1 Background of the study

For the last two decades, outsourcing of logistics services has been one of the most popular logistic decisions (Knemeyer & Murphy, 2005). Firms embark on this relatively new strategy by using Third Party Logistics (3PLs) and/or Fourth Party Logistics (4PLs) as their source of logistics services instead of sourcing them internally. Abdullah, Mohamed, Othman, & Uli, (2009) argue that at the moment firms tend to outsource their manufacturing activities than how they did a decade ago. The decisions involved in assessing whether to outsource or not are in line with the popular make-or-buy decisions.

A crucial goal of manufacturers and retailers is to develop an efficient management of resources in order to ultimately achieve a strategic competitive advantage in the marketplace. Given the current global scenario, supply chain operations, such as the storage and transportation of materials from the shipper's facilities to the end customer, can become very complex and time consuming to manage in-house. Therefore, shippers are encouraged to outsource these logistics operations to third party experts known as 3PLs (third party logistics providers) that support the domestic and global transportation of goods safely, securely and cost-effectively (Bardhan et al, 2006).

The efficiency and effectiveness of the logistics operation has a considerable influence not only on the business performance of manufacturers but also on the customer's perception of the quality of the products and services provided by the plant. If inbound material flows from the supplier are erratic, the firm's internal operation will not be able to sustain their production strategies without a high level of safety stock. Similarly, if the flows of finished goods to the customer are unreliable, the firm's customer base will be dissatisfied. Accordingly, logistics is strategically important in many industries as it is central to achieving competitive advantage (Bowersox, Closs, & Cooper, 2010).

Logistics outsourcing has a significant effect on how manufacturing firms produce and deliver products to their customers. Indeed, many manufacturing firms do not own or manage the transportation and warehousing resources used for inbound and outbound shipments from their facilities. Earlier research, however, has cast doubt on the efficacy of outsourcing, as some companies experience favorable performance outcomes while others do not. The study attempts to understand the justification for the outsourcing option rather than internal development; to familiarize with nature and scope of logistics functions outsourced by these firms and strategies used to initiate and manage successful relationship with 3PL and 4PL service providers.

## **1.2 Objective of the research paper**

To determine the effect of logistic outsourcing on the performance of sugar companies in western region

## **2. LITERATURE REVIEW**

This study was anchored on two theories discussed below:-

### **2.1 Theory of the firm**

Logistic outsourcing primarily occurs because of the main objectives of firms-as explained in the theory of the firm. The theory of the firm was traditionally one branch of Microeconomics which studied the supply of goods by profit-maximizing agents. In this theory, production costs played a crucial role. Coase (1937) was one of the first pointing out that in addition to production costs of the usual sort, one must also consider transaction costs in explaining institutions like the firm. He focused on the comparative transaction costs of alternative organizational known as transaction-cost economics (Williamson, 1985) or more broadly the economics of organization. The answers to the questions why firms exist and what precisely a firm is are fundamental for the understanding of corporate governance. Theories of the firm not only try to answer why businesses are organized in firms but how the relationships within the firm as well as between the firm and society at large look like. Before the 1930s the firm was very often seen as a "black box" which was assumed to behave like any other self-interested utility maximizing economic actor. This view was based on the belief about the firm's ability to almost instantaneously adjust itself to a changing environment. Consequently resources of a firm were assumed to be put to their most efficient use without having a look "inside" the firm. It was treated as an entity competing with other firms in the market. Although the limitations of this macroeconomic view have already been cited by authors like Adam Smith (1723-1790), the contemporary legal concept of separate legal personalities of companies supports this theory.

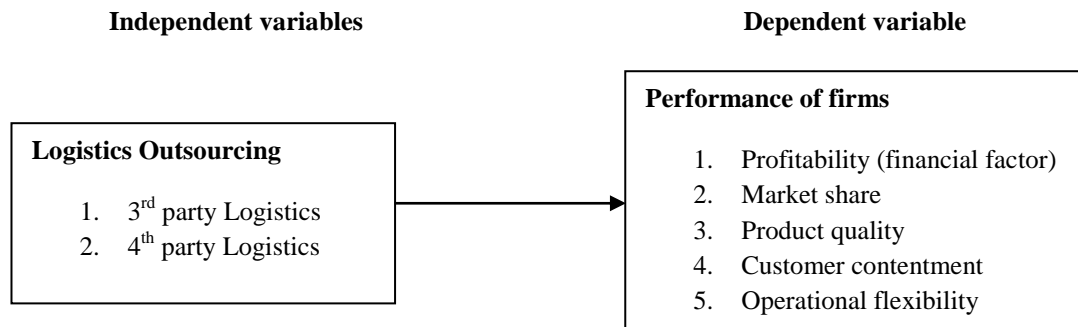
### **2.2 Hamel and Prahalad concept**

Logistic outsourcing is an evolving strategy and already there are various concepts under development to reflect the dynamics in the industry. The impracticality of excelling in every possible task has led many companies to concentrate on activities which they perceive to be linked to their core competencies, a concept proposed by Hamel and Prahalad (1994). This concentration was made possible by, and further stimulated the emergence of providers specialized on performing tasks that many organizations considered to be non-core. The resulting arrangement is referred to as outsourcing, defined by Lankford and Parsa (1999) as "the procurement of products or services from sources that are external to the organization". These specialized providers achieve economies of scale and offer increased flexibility in reacting to technological progress and changing business requirements such as just-in-time manufacturing (Goldberg, 1990)

One way of understanding the decision to outsource is through transaction costs economics. Providers are able to achieve economies of scale and learning curve effects through concentrating on a single area, enabling them to provide their service at a lower cost. On the other hand, the coordination between both parties increases transaction costs. According to this view, a company will outsource certain activities if the cost advantages of a provider exceed the additional transaction costs (Williamson, 1996).

With the positive outlook for the 3PL business and the immense competition which is likely to follow, it is critical that 3PL companies recognize that low price is no longer a sure-win strategy. In a study by Sink, Langley and Gibson (1997), it was found that the most important selection criterion for 3PL provider was core competencies.

### 2.3 Conceptual framework



### 3. METHODOLOGY

The study adopted a descriptive cross sectional research design. It used both primary and secondary data collection instruments. Primary instruments included the use of structured and unstructured questionnaires. Secondary instruments involved acquiring information from the already existing records from the sugar manufacturing firms and any other public available information that is already documented. Descriptive and inferential statistics were used in data analysis using SPSS version 20 software. Karl Pearson’s zero order coefficient of correlation (Pearson Product Moment Correlation or simple correlation) was used to determine the direction and strength of the relationship between logistic outsourcing and performance of sugar manufacturing firms in western region. Simple regression analysis was used to model the relationship between logistic outsourcing and performance of sugar manufacturing firms. The relationship between logistic outsourcing and the performance of sugar manufacturing firms follow a regression model of the nature  $P = \alpha + \beta_1 \text{LOS} + e$ . The findings were presented using tables and crossbar tabulations.

### 4. FINDINGS AND DISCUSSIONS

The study had to establish if outsourcing services had any effect on the performance of sugar manufacturing firms in western region. The respondents were asked to indicate their levels of agreement as to why their companies were being involved in outsourcing of the services. The results were analyzed and the table 4.8 below shows the mean and standard deviation of their responses.

**Table 4.1: Descriptive results indicating the Mean and standard deviation of reasons why services are outsourced**

	Mean	Std. Deviation
Lack of in-house expertise	4.4444	0.77254
High administrative costs	4.8889	0.39841
To improve company focus	4.5000	0.69693
High operational risks	4.0833	0.55420
To improve on efficiency	4.1944	0.78629
Poor customer services	3.1944	0.66845
Transfer of expertise to employees	3.8611	0.79831
Organizational culture	3.7778	0.59094
Lack of technology	3.3333	0.79282
Reduction in administrative costs	4.0556	0.82616

Better utilization of internal resources	3.9167	0.73193
Access to expert services	4.5278	0.55990
Increased customer satisfaction	4.0000	0.89443
Decline in operational risks	4.0556	0.75383
Bring cash infusion	3.8889	0.78478
Reduction in administrative costs	4.0000	0.67612
Overall results	4.04514	0.70538

Source: Research data 2014

The respondents indicated their levels of agreement on various reasons why their firms have been involved in carrying out outsourcing activities. From the results, high mean was for outsourcing to reduce administrative costs that had a mean of 4.8889 and standard deviation of 0.39841, the mean of company focus is 4.5 and standard deviation of 0.69841, mean of increasing satisfaction of customers was 4.0 with standard deviation of 0.89443 while lack of inhouse expertise had a mean of 4.444 with standard deviation of 0.77254 among others.

In summary the overall mean and standard deviation was found to be 4.04514 and 0.70538. This implies that the respondents were in agreement that the reasons why their companies are engaging in outsourcing are numerous. However, with the standard deviation of being less than 1 further confirms that the level of agreement amongst the respondents confirms that the results can be trusted.

#### 4.1 Regression results for Effect of logistic outsourcing on the performance of sugar companies in western region

The study set out the following null hypothesis;

H<sub>01</sub> Logistic outsourcing has no effect on the performance of sugar companies in western region.

The Karl Pearson's product moment correlation coefficient was used to test the hypothesis. The results were as shown in table 4.2 below.

**Table 4.2: Regression results of logistic outsourcing on performance of sugar companies.**

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.602 <sup>a</sup>	.362	.343	0.66456		
a. Predictors: (Constant), Outsourcing services						
ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	53.433	1	53.433	19.285	.000 <sup>b</sup>
1	Residual	94.206	34	2.771		
	Total	147.639	35			

a. Dependent Variable: Performance of sugar firms

b. b. Predictors: (Constant), Outsourcing services

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.917	1.818		12.058	.000
	Outsourcing	1.786	.407	.602	4.391	.000

a. Dependent Variable: Performance of sugar firms

Source: Research data 2014

The study was set so as to reject  $H_0$  if  $\beta_1 \neq 0$ . Since from the results  $\beta_1 = 0.602$ , the study rejected the null hypothesis. The results show that there is a positive linear significant relationship between outsourcing of services and performance of sugar manufacturing firms ( $r=0.602$ ,  $p \leq 0.01$ ). This led the study to reject the null hypothesis and conclude that outsourcing of services had a positive statistically significant correlation effect to the performance of sugar manufacturing firms.

The results in the above table show that 36.2% of the performance of sugar manufacturing firms can be explained by outsourcing of the services ( $r^2 = 0.362$ ) and the relationship followed a simple regression model of the nature  $P = \alpha + \beta_2 OS + c$  where P is the performance of sugar manufacturing firms,  $\alpha$  is the constant intercept of which in this case is 1.786 and beta  $\beta = 0.602$ .

## 5. CONCLUSION

The first objective of the study was to find the effect of logistic outsourcing on the performance of sugar companies in western region. The study was set so as to reject  $H_0$  if  $\beta_1 \neq 0$ . Since from the results  $\beta_1 = 0.602$ , the study rejected the null hypothesis. The results show that there is a positive linear significant relationship between outsourcing of services and performance of sugar manufacturing firms ( $r=0.602$ ,  $p \leq 0.01$ ). This led the study to reject the null hypothesis and conclude that outsourcing of services had a positive statistically significant correlation effect to the performance of sugar manufacturing firms. The results showed that 36.2% of the performance of sugar manufacturing firms can be explained by outsourcing of the services ( $r^2 = 0.362$ ) and the relationship followed a simple regression model of the nature  $P = \alpha + \beta_2 OS + c$  where P is the performance of sugar manufacturing firms,  $\alpha$  is the constant intercept of which in this case is 1.786 and beta  $\beta = 0.602$ .

The results of the research are in agreement with past studies. The research is in agreement with the fact that outsourcing provides opportunities to focus on core competences. Sink & Langley (1997) argue that it is a viable business strategy since handing over non core functions to 3PL service providers enables the management to leverage its resources, spread risks, and concentrate resources in issues critical to survival and future growth. Likewise, the role of logistics functions in areas such as sourcing, manufacturing, and distribution activities is prone to the influence of strategic decisions such as development of core capabilities and discarding of business segments or functions (Rao & Young, 1994).

## 6. RECOMMENDATIONS

Basing on the premise of this study, the following recommendation was made;

Firms should proactively involve in logistic outsourcing since it has a positive effect on the performance of sugar manufacturing firms.

## ACKNOWLEDGEMENT

The paper wants to acknowledge the contributions from Mr. Mogere who assisted in the formulation of this paper to the best of his ability.

## REFERENCES

- [1] Aimi, G. (2007). Logistics Outsourcing: What it Takes to Succeed. *Supply Chain Management Review*, 11(8), 13.
- [2] Abdullah, H. H., Mohamed, Z. A., Othman, R., & Uli, J. (2009). The effect of Sourcing Strategies on the Relationship Between Competitive Strategy and Firm Performance. *International Review of Business Research Papers*, 5 (3),
- [3] Bardhan, I., Whitaker, J., & Mithas, S. (2006). Information Technology, Production Process Outsourcing, and Manufacturing Plant Performance. *Journal of Management Information Systems*, 23(2).
- [4] Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2010). *Supply Chain Logistics Management* (3rd edition Ed.). Boston, Mass.: McGraw-Hill.
- [5] Busi, M., & McIvor, R. (2008). Setting the outsourcing research agenda: the top-10 most urgent outsourcing areas. *Strategic Outsourcing: an International Journal*, 1(3), 185.
- [6] Boyson, S., Corsi, T., Dresner, M., & Rabinovich, E. (1999). Managing effective third party logistics relationships: What does it take? *Journal of Business Logistics*, 20 (1),

- [7] Buyukozkan, G., Feyzioglu, O., & Ersoy, M. S. (2009). Evaluation of 4PL Operating Models: A decision Making Approach Based on 2-additive Choquet integral. *International Journal of Production Economics*.
- [8] Coyle, J. J., Bardi, E. J., & Langley, C. J. (2003). *The Management of Business Logistics: A Supply Chain Perspective (7th ed.)*. Mason, OH: South-Western Thomson Learning.
- [9] Croom, S. (2001). Restructuring supply chains through information channel innovation. *International Journal of Operations & Production Management*, 21(4), 504-515.
- [10] Deepen, J., Goldsby, T., Knemeyer, A., & Wallenburg, C. (2008). Beyond expectations: An examination of logistics outsourcing goal achievement and goal exceedance *Journal of Business Logistics*, 29(2), 75-105.
- [11] Chen, H., Tian, Y., Ellinger, A. E., & Daugherty, P. J. (2010). Managing Logistics Outsourcing Relationships: An Empirical Investigation in China. *Journal of Business Logistics*.
- [12] Fernie, J. (1999). Outsourcing distribution in UK retailing. *Journal of Business Logistics* Hofer, A. R., Knemeyer, A. M., & Dresner, M. E. (2009). Antecedents and dimensions of customer partnering behaviour in logistics outsourcing relationships. *Journal of Business Logistics*, 30.
- [13] Hannon, D. (2006). Boeing, HP makes the most of outsourced logistics. *Purchasing*, 135(9), 39.
- [14] Hannon, D. (2008). Vesuvius makes the most of its 3PL implementation. *Purchasing*, 137(6), 21
- [15] Holcomb, T. R., & Hitt, M. A. (2007). Toward a model of strategic outsourcing. *Journal of Operations Management*, 25(2), 464-481.
- [16] Jiang, B., Frazier, G. V., & Prater, E. L. (2006). Outsourcing effects on firms' operational performance: An empirical study. *International Journal of Operations and Production Management*, 26(12), 1280-1300.
- [17] Jharkharia, S., & Shankar, R. (2007). Selection of logistics service provider: An analytic network process (ANP) approach. *International Journal of Management Science*, 35.
- [18] Knemeyer, M. A., & Murphy, P. R. (2005). Exploring The Potential Impact of Relationship Characteristics and customer Attributes on the Outcomes of Third-Party Logistics Arrangements. *Transportation Journal*, 44.
- [19] KSB: Kenya sugar Industry Strategy paper 2004 – 2009 • Sugar Act 2001
- [20] Kegode P: National Sugar Investment Conference “Legal and Institutional Practices in global Sugar Production and Marketing, a comparative analysis. Nairobi 2004.
- [21] La Londe, B. J., & Cooper, M. C. (1989). Customer service: A management perspective. *The Council of Logistic Management*, Oak Brook, IL.
- [22] Laarhoven, P. V., Berglund, M., & Peters, M. (2000). Third-party logistics in Europe – five years later. *International Journal of Physical Distribution & Logistics Management*, 30 (5).
- [23] Lieb, R. C., & Lieb, K. J. (2010). The North American Third-Party Logistics Industry in 2008- The Provider CEO Perspective. *Transportation Journal*.
- [24] Lieb, R. (2008). The North American Third-Party Logistics Industry in 2007: The Provider CEO perspective. *Transportation Journal*, 47 (2).
- [25] Lieb, R., & Butner, K. (2007). The North American Third-Party Logistics Industry in 2006: The Provider CEO perspective. *Transportation Journal*, 46 (3).
- [26] McMullan, A. (1996). Supply chain management practices in Asia Pacific today. *International Journal of Physical Distribution & Logistics Management*, 26 (10).
- [27] Mello, J. E., Stank, T. P., & Esper, T. L. (2008). A model of Logistics Outsourcing Strategy. *Transportation Journal*, 47 (4).
- [28] Murphy, P., & Poivrt, R. (2000). Third Party Logistics: Some user versus provider perspectives. *Journal of Business Logistics*, 21 (1).



- [29] Paul, M. R., Knemeyer, M. A., & Thomas, C. M. (2003). Logistics Outsourcing Relationships: Customer Perspectives. *Journal of Business Logistics*, 24 (1).
- [30] Power, D., Bhakoo, V., & Sharafali, M. (2007). Adding Value Through Outsourcing: Contribution of 3PL services to Customer Performance. *Management Research News*, 30 (3).
- [31] Rao, K., & Young, R. R. (1994). Global Supply Chains: Factors influencing outsourcing of logistics functions. *International Journal of Physical Distribution & Logistics Management*.
- [32] Sink, H. L., & Langley, C. J. (1997). A managerial framework for the acquisition of third-party logistics services. *Journal of Business Logistics*, 18 (2).
- [33] The sugar Industry task force report 2003 – “The Amayo Report”.
- [34] Walton, C. (2010). 4PL Versus 3PL. *Motor Transport*.
- [35] Wilding, R., & Juriado, R. (2004). Customer Perception on Logistic Outsourcing in the European Consumer Goods Industry. *International Journal of Physical Distribution and Logistics Management*, 34.