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# Lead-Time as a Determinant of Outsourcing Third-Party Logistics Providers on the Performance of Food and Beverages Manufacturing Companies in Kenya

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***Abstract:*** **Manufacturing companies in Kenya have been experiencing problems in the performance of their production and operations management. One strategy of improving their performance is resorting to logistics outsourcing. Outsourcing of non-core activities to Third Party Logistics providers (3PL) is one of the ways of ensuring efficient and effective performance of companies. This study therefore, sought to establish the influence of lead-time on the performance of food and beverages manufacturing companies in Kenya. The study adopted cross-sectional survey design using both quantitative and qualitative approaches. The target population of this study was 197 registered food and beverages manufacturing companies in Kenya as per Kenya Association of Manufacturers (KAM) Directory 2015. Data was collected using a questionnaire. Descriptive statistics was used aided by Statistical Packages for Social Sciences (SPSS) version 24 to compute percentages of respondents' answers. Inferential statistics using linear regression and correlation analysis was applied in examining relationship between the research variables. The study found out that lead-time was significant predictors in the performance of food and beverages manufacturing companies in Kenya. The study found out that order processing rate, high order fulfilment rate, inventory replenishment, delivery speed, delivery to location and delivery planning improved the performance of food and beverages manufacturing companies in Kenya.**

***Keywords:*** **Third Party Logistics providers, lead-time, manufacturing companies.**

## 1. INTRODUCTION

Outsourcing of logistics services in a manufacturing company is very important because it facilitates seamless delivery of parts and raw materials from the suppliers to the manufacturers and ensures distribution of finished goods from the factory to the point of consumption. Over the last decades, logistics has tremendously evolved from a simple activity that moves goods from the shipper to a consignee to include the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods and the related information from the point of origin to the point of consumption (Stefansson, 2006; Lucie & Hudziak, 2012). This evolution led to creation Third Party Logistics (3PL) providers. The term "3PL" was first used in the early 1970s to identify intermodal marketing companies in transportation contracts during a time of expanding globalization and an increased use of information technology (CSCMP, 2013).

It is widely accepted that the outsourcing of logistics services aims at enabling the creation of strategic and operational value and majority of shippers, that is, 64% are increasingly using 3PLs (Lucie & Hudziak, 2012). These 3PL providers

can handle more than 5,000 containers per year and account for relatively for 60% to 80% of the taxes collected by Kenya Revenue Authority in Kenya (Mathenge *et al*., 2011). Most of these 3PL providers, offer efficient and effective complete logistics solutions including inbound logistics, warehousing and outbound logistics services to their clients.

The success of manufacturing organizations majorly relies on the efficiency and effectiveness of their logistics performance in controlling cost, reducing delivery lead times, sustaining quality and achieving customer satisfaction. If the flow of materials or finished goods from the supplier to the recipient company is not seamlessly sustained, the business operation is adversely affected (Vishal *et al*., 2013). In order to evaluate properly the functions of a third party logistics provider, firms should have in place clear guidelines for appraising third party logistics provider outcomes. Logistics recognizes that all the activities of material movement across the business process are interdependent and need close coordination. These activities are to be managed as a system and not as functional silos.

**Statement of the Problem:**

Manufacturing companies in Kenya have been experiencing problems in the performance of their production and operations management (KAM, 2015). One strategy of improving their performance is resorting to logistics outsourcing. While some companies have opted for outsourcing their logistics services, their performance has continued to deteriorate and thus several manufacturing companies are in a dilemma on whether to perform in-house logistics services or to outsource the services from Third Party Logistics (3PL) providers (Lucie & Hudziak, 2012). According to Alan, Phil and Peter (2006) logistics services contribute over 50 per cent of companies operating cost. Outsourcing of logistics services enables the creation of strategic and operational value and 64% of shippers are increasingly using 3PLs (Lucie & Hudziak, 2012). A study by Langley (2015) on the state of logistics outsourcing revealed that the total logistics cost of the companies reduced from 44% to 36% as a result of outsourcing logistics services. In the competitive and dynamic environment, manufacturing companies are looking for ways of enhancing efficiency and productivity, reducing cost, ensuring timely delivery, improving service quality and risk assessment which remains a challenge to manufacturing companies in maintaining their competitive edge (Vishal *et al*., 2013; Ngonela *et al*., 2014 & SoonHu, 2010). This study sought to investigate on determinants of outsourcing 3PL providers by the food and beverage manufacturing companies in Kenya.

Companies in Kenya, particularly food and beverages are faced with challenges of measuring the performance of their 3PL because they are not able to anticipate the requirements for clearing and removing their cargo from the port and are not able to assess the effectiveness of their logistics providers (Mathenge *et al*., 2011). A lot of research on this area has been done in other parts of world especially the developed countries but in Kenya very little has been done. For example, a study by Vishal *et al*. (2013) on third party logistical obstacles in manufacturing industries in India revealed that, third party logistics provider‘s play a vital role in cost reduction, productivity, profits as well as the improvement of the service quality of their customers and thus become important part of logistics performance. Therefore, this study sought to establish whether the findings and conclusions of this study carried out in India may be generalized in Kenya by conducting a study on food and beverage manufacturing companies Kenya.

**Objective of the study:**

The purpose of this study was to investigate influence of lead-time as a determinant of outsourcing 3PL providers on the performance of food and beverages manufacturing companies in Kenya.

**Hypothesis:**

**$H_2$** There is a positive significant influence of lead-time on the performance of food and beverages manufacturing companies in Kenya.

## 2. LITERATURE REVIEW

The study was supported by the following theory and reviewed literature:

**The Principal Agent Theory (PAT):**

This theory is based on the separation of ownership and control of economic activities between the agent and the principal. Various agent and principal problems may arise including conflicting objectives; differences in risk aversion, outcome uncertainty, behaviour based on self-interest, and bounded rationality. The contract between the principal and the

agent governs the relationship between the two parties, and the aim of the theory is to design a contract that can mitigate potential agency problems (Herbert *et al*., 2007). The "most efficient contract" includes the right mix of behavioral and outcome-based incentives to motivate the agent to act in the interests of the principal (Logan, 2000). Creating contracts with supply chain partners that balance rewards and penalties, misalignment can be mitigated (Narayanan & Raman, 2004; Baiman & Rajan, 2002).

Balancing the need of the shipper and the capability of the TPL provider is a well-known managerial issue that explicitly implies the risk of agency problems (Hertz & Alfredsson, 2003). The PAT suggests an "inter-firm contracting perspective" on TPL, focusing on the design of an efficient contract between the buyer and seller of logistics services. The idea is to develop the most efficient combination of outcome and behavioral incentives in the contract between the shipper and the TPL provider (Herbert *et al*., 2007). The extent to which the TPL provider's performance can be measured and controlled has a great effect on whether the provider is paid by actual performance (e.g. number of orders picked, packed, and shipped to the customers) or according to behavioral outcomes (e.g. salaries, hours, and/or miles). Not all aspects can be covered ex ante in the contract. Therefore, the issue of contracting should be a revisiting issue in TPL relationships (Herbert *et al*., 2007). Thus, the food and beverages manufacturing firms can use the PAT theory to mitigate on logistics risks and achieve the optimal value of the outsourced services from the 3PL firms. Because theory provides a useful tool to respond to transaction cost dilemmas through contractual and non-contractual remedies in logistics, it is critical for managers to understand and mitigate logistics challenges associated with behaviour uncertainty, relationship management, collaboration and uncertainty in logistics management.

**The Network perspective Theory (NT):**

The performance of a firm depends not only on how efficiently it cooperates with its direct partners, but also on how well these partners cooperate with their own business partners in cooperative relationships. The firm's continuous interaction with other players becomes an important factor in the development of new resources (Herbert *et al*., 2007). Relationships combine the resources of two organizations to achieve more advantages than through individual efforts. Such a combination can be viewed as a quasi-organization (Haakansson & Ford, 2002). The value of a resource is based on its combination with other resources, which is why interorganisational ties may become more important than possessing resources per se.

The network theory (NT) contributes profoundly to an understanding of the dynamics of inter-organisational relations by emphasizing the importance of "personal chemistry" between the parties, the build-up of trust through positive long-term cooperative relations and the mutual adaptation of routines and systems through exchange processes (Herbert *et al*., 2007). Through direct communication, the relationships convey a sense of uniqueness, ultimately resulting in supply chains as customization to meet individual customer requirements. The parties gradually build up mutual trust through the social exchange processes. Links between firms in a network develop through two separate, but closely linked, types of interaction: exchange processes (information, goods and services, and social processes) and adaptation processes (personal, technical, legal, logistics, and administrative elements). Network theory is descriptive in nature and has primarily been applied in logistics and SCM to map activities, actors, and resources in a supply chain. The focus has been on developing long-term, trust-based relationships between the supply chain members. Examples of issues include third party logistics (Halldorsson, 2002), and management roles in supply networks (Harland & Knight, 2001).

To TPL, the NT presents openness and trust between the parties as a condition for gaining the best possible results from cooperation (Herbert *et al*., 2007). Over time, mutual adjustments improve administrative and logistical systems, making them more efficient. By entering into close cooperation with TPL providers who possess complementary competencies, the individual firm is able to utilize resources and skills controlled by other players (Haakansson & Ford, 2002). In close and long-term cooperation, the parties are able to establish mutual and strong relations of trust, which may result in the elimination of cost (Parkhe, 1993; Herbert *et al*., 2007). Thus, managers of food and beverages manufacturing companies in Kenya need to ensure efficient and effective cooperative integration of all logistics activities to gain competitive advantage from the 3PL providers by managing their lead-time.

**Lead-Time in the Performance of Food and Beverages Companies in Kenya:**

In manufacturing companies, lead-time is important because it sets the timelines for delivery of materials to production schedule. Lead-time is the total time that elapses between an order's placement and its receipt. It includes the time

required for order transmittal, order processing, order preparation, and transit (Treville, Shapiro, & Hameri, 2004; Christopher (1992). According to Stewart (1995), an increase in delivery performance is possible through a reduction in lead-time attributes such as on-time delivery, on time orders fill and order completeness. Another aspect of delivery is the percentage of finished goods in transit, which if high signifies low inventory turns, leading to unnecessary increases in tied up capital. Various factors that can influence delivery speed include vehicle speed, driver reliability, frequency of delivery, and location of depots. An increase in efficiency in these areas can lead to a decrease in the inventory levels (Novich, 1990). By comparing these with the previously made agreement, it can be determined whether perfect delivery has taken place or not, and areas of discrepancy can be identified so that improvements can be made. Flexibility of delivery systems to meet particular customer needs can be achieved by meeting a particular customer delivery requirement at an agreed place, agreed mode of delivery and with agreed upon customized packaging. This type of flexibility can influence the decision of customers to place orders, and thus can be regarded as important in enchanting and retaining customers (Novich, 1990).

Lead-time has serious effects on the coordination among logistics partners and thus a key aspect in logistics service. Therefore, lead-time reduction can be viewed as a coordination enabler in supply chain. In some studies, lead time reduction has been viewed as an investment strategy. Lead-time reduction is considerably emphasized in waste reduction, especially in excess inventory. Time-based competition is a competitive strategy and it can be achieved by lead-time reduction. Time-based competition is emphasized in literature solely based on speed and is directly derived from lead time reduction. Nevertheless, another aspect of time-based competition may be the monotonic filling of the orders, which means uniform response time of received orders. This latter aspect of time-based competition can be considered by lead time variance reduction (Forrest, *et al*., 2008). Lead-time uncertainty reduction can be viewed like lead-time reduction because it will promote the responsiveness of the chain by providing products to the customers in less uncertain supply time. The key to successful outsourcing of logistics services lies in finding a 3PL provider that has the most strategic fit with the company's goals.

## 3. RESEARCH METHODOLOGY

The study adopted cross-sectional survey design using both quantitative and qualitative approaches. The target population was 197 manufacturing firms in Nairobi and its surroundings, who were members of Kenya Association of Manufacturers (KAM) in 2015. The study used stratified random sampling to pick a sample size of 116 manufacturing firms which represented 14 industrial sectors in manufacturing firms. Data was collected using questionnaire. Descriptive statistics was used aided by Statistical Packages for Social Sciences version 24 to compute percentages of respondents' answers. Also, analysis was conducted using quantitative approach.

## 4. RESEARCH FINDINGS AND DISCUSSION

**Response Rate:**

The targeted respondents in the study were supply chain managers of the manufacturing firms in Kenya and which were registered members of Kenya Association of Manufacturers (KAM) in the year 2015. A total of 83 self-administered questionnaires were filled out of the expected 116 yielding a response rate of 72%. This response rate was good and representative and confirms to Mugenda (2008) stipulation that a response rate of 50% is adequate for analysis; a rate of 60% is good and a response rate of 70% and over is excellent. This good response rate was attributed to the data collection procedure, where the researcher personally administered questionnaires to the respondents who filled them. The researcher collected the filled questionnaires later. This response rate demonstrated willingness to respond to study.

**Influence of Lead-time on the performance of food and beverages manufacturing:**

The study sought to examine if lead-time determines performance of food and beverages manufacturing companies in Kenya. This objective was measured using the following indicators: on time delivery and delivery reliability in the opinion statements given. Respondents were asked to indicate the extent to which lead-time affected performance of food and beverages manufacturing companies. This was on a likert scale of not at all, small extent, moderate, large extent and very large extent. Thus, in this study the scale of not all and small extent meant disagree while large and very large extent meant agreed.

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**a) Time delivery:**

Basing on the results of the study, 53% of the respondents agreed that order processing rate affected performance of food and beverages manufacturing companies while 38% indicated moderate and small number of respondents (8.4%) disagreed that order processing rate affected performance of food and beverages manufacturing companies. On order fulfilment rate, 73.4% of respondents agreed that order fulfilment rate affected performance of food and beverages manufacturing companies whereas 14.5% of respondents indicated moderate and 12% of respondents disagreed that order fulfilment rate affected performance of food and beverages manufacturing companies. With regarding to inventory replenishment, 77.1% of respondents agreed that inventory replenishment affected performance of food and beverages manufacturing companies and small number of respondents (19.3%) disagreed that inventory replenishment affected performance of food and beverages manufacturing companies as shown in Table below.

**Time delivery:**

| on time delivery | Not at all (%) | Small extent (%) | Moderate (%) | Large extent (%) | Very large extent (%) | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Order processing rate | 0 | 8.4 | 38.6 | 25.3 | 27.7 | 3.14 | .93 |
| Order fulfilment rate | 2.4 | 9.6 | 14.5 | 37.3 | 36.1 | 3.52 | .94 |
| Inventory replenishment | 2.4 | 16.9 | 3.6 | 36.1 | 41.0 | 3.22 | .86 |

From the study, it was found out that order processing rate affected performance of food and beverages manufacturing companies. This is because food and beverages manufacturing companies regarded order processing rate as very important in the performance of their business and therefore a key criteria on outsourcing of 3PL providers. Thus, a high order processing rate would increase the performance of companies and it is on this basis that companies would select 3PL service providers. Equally, a high order fulfilment rate would increase the performance of food and beverages manufacturing companies and therefore, companies would choose 3PL providers that would help them to improve performance. Increase in delivery performance is possible through a reduction in lead-time attributes such as on-time delivery, on time orders fill rate and order completeness. This study is in line with the findings of Forrest *et al*. (2008), who noted that lead-time reduction would promote the responsiveness of the chain by providing products to the customers in less uncertain supply time. The key to successful outsourcing of logistics services lies in the finding a 3PL provider that has the most strategic fit with the company's goals. Likewise, the study found out that inventory replenishment affected performance of food and beverages manufacturing companies. This is because the rate at which inventory is replenished is key in determining the appropriate 3PL providers to be outsourced. Inventory assists companies to prevent stock outs, stabilise prices and increase sales volume. Thus, food and beverages manufacturing companies would outsource 3PL providers whose inventory replenishment rate is high.

**b) Delivery Reliability:**

From the study findings, 69.6% of respondents agreed that delivery speed affected performance of food and beverages manufacturing companies while 16.9% indicated moderate and 13.3% of respondents disagreed that delivery speed affected performance of food and beverages manufacturing companies. Regarding delivery to location, 61.5% of respondents agreed delivery to location affected performance of food and beverages manufacturing companies whereas 31.3% indicated moderate and 7.2% of respondents disagreed that delivery to location affected performance of food and beverages manufacturing companies. On delivery planning, 56.6% of respondents agreed that delivery planning affected performance of food and beverages manufacturing companies while 26.5% of respondents indicated moderate and 16.9% of respondents disagreed that delivery planning affected performance of food and beverages manufacturing companies as in Table below.

**Delivery Reliability:**

| Delivery reliability | Not at all (%) | Small extent (%) | Moderate (%) | Large extent (%) | Very large extent (%) | Mean | Std. Deviation |
|---|---|---|---|---|---|---|---|
| Delivery speed | 0 | 13.3 | 16.9 | 38.6 | 31.3 | 3.59 | .92 |
| Delivery to location | 0 | 7.2 | 31.3 | 45.8 | 15.7 | 3.70 | .82 |
| Delivery planning | 0 | 16.9 | 26.5 | 36.1 | 20.5 | 3.60 | 1.00 |

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From the results, it was observed that delivery speed, delivery to location and delivery planning affected performance of food and beverages manufacturing companies. The performance of food and beverages manufacturing companies can improve through reduction of lead-time and this can be attributed to on-time delivery, on time orders fill and order completeness. Thus companies would look for delivery speed, delivery to location and delivery planning as a way of reducing lead-time thereby increasing their performance. Companies would make decisions to outsource 3PL providers whose delivery speed is high, who can deliver to the required destination on time as planned. These findings are in harmony with Ellinger and Chen (2010), who observed that the performance of logistics, ranking of 3PL selection criteria can be based on price, reliability, service quality, on-time performance, cost reduction, flexibility and innovation, good communication, management quality, location, customize service, speed of service, order cycle time, easy to work with, customer support, vendor reputation, technical competence, special expertise. Flexibility of delivery systems to meet particular customer needs can be achieved by meeting a particular customer delivery requirement at an agreed place, agreed mode of delivery and with agreed upon customized packaging.

**Test of hypothesis:**

The researcher conducted regression analysis so as to examine if lead-time determines performance of food and beverages manufacturing companies in Kenya. The hypothesis to test for this specific objective was:

**$H_2$** There is a positive significant influence of lead-time on the performance of food and beverages manufacturing companies in Kenya.

The linear regression model showed $R^2$= 0.566 which means that 56.6% change of performance of food and beverages manufacturing companies in Kenya can be explained by a unit change of lead-time. The result is shown in Table below.

| **Model Summary of lead-time** | | | | |
|---|---|---|---|---|
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** |
| 1 | .756[a] | .572 | .566 | .18748 |
| a. Predictors: (Constant), Lead time | | | | |

From the result there was an indication that one unit change in lead-time translates to 56.6% change of performance of food and beverages manufacturing companies in Kenya and therefore, lead-time has influence on performance of food and beverages manufacturing companies in Kenya. More test on ANOVA showed that the significance of the F-statistic (38.525) is less than 0.05 since p value, p=0.00, as indicated in Table below. This implies that there is a positive significant relationship between lead-time and performance of food and beverages manufacturing companies in Kenya.

| **ANOVA[a] of lead-time** | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** |
| 1 | Regression | 13.296 | 1 | 13.296 | 38.525 | .000[b] |
| | Residual | 24.850 | 72 | .345 | | |
| | Total | 38.146 | 73 | | | |
| a. Dependent Variable: performance | | | | | | |
| b. Predictors: (Constant), Lead time | | | | | | |

Additional test on the beta coefficients of the resulting model, the constant α= 0.140, if the independent variable of lead-time is held constant then there will be a positive performance of food and beverages manufacturing companies in Kenya by 0.140. The regression coefficient for lead-time was positive and significant (β = 0.538) with a t-value=7.577 (p-value<0.001). As shown in Table below.

| **Coefficients[a] of lead-time** | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** |
| | | **B** | **Std. Error** | **Beta** | | |
| 1 | (Constant) | .140 | .068 | | 2.049 | .044 |
| | Lead-time | .538 | .071 | .756 | 7.577 | .000 |
| a. Dependent Variable: performance | | | | | | |

This implied that for every 1 unit increase in lead-time, performance of food and beverages manufacturing companies in Kenya is predicted to increase by 0.538 units and therefore $H_2$ is accepted. From the result it showed that lead-time affects performance of food and beverages manufacturing companies in Kenya. Thus, this study finding is in harmony with the study of Stewart (1995); Vishal *et al*. (2013) who found out that, an increase in delivery performance is possible through a reduction in lead-time attributes such as on-time delivery, on time orders fill and order completeness.

## 5. CONCLUSION AND RECOMMENDATIONS

Based on the study, lead-time was measured using on-time delivery and delivery reliability indicators. It was established that order processing rate and high order fulfilment rate would increase the performance of food and beverages manufacturing companies and therefore, companies would choose 3PL providers that would help them to improve performance. Likewise, the study found out that inventory replenishment affected performance of food and beverages manufacturing companies. Inventory assists companies to prevent stock outs, stabilise prices and increase sales volume. Thus, food and beverages manufacturing companies would outsource 3PL providers whose inventory replenishment rate is high.

In addition, the study observed that delivery speed, delivery to location and delivery planning affected performance of food and beverages manufacturing companies. Hence, companies would consider delivery speed, delivery to location and delivery planning as a way of reducing lead-time thereby increasing their performance. Companies would make decisions to outsource 3PL providers whose delivery speed is high and who can deliver to the required destination on time as planned. Also, from the study findings it was observed that there was a strong positive correlation between lead-time and performance of manufacturing companies in Kenya. This was an indication that food and beverages manufacturing companies considered lead-time when outsourcing logistics activities. Logistics providers whose lead-time is short are given high consideration while those with low performance rate are avoided. Therefore, lead-time reduction can be viewed as a coordination enabler in supply chain in enhancing the overall performance of food and beverages manufacturing companies in Kenya.

The study established that lead-time influence positively performance of food and beverages manufacturing companies in Kenya. Therefore, the study recommends that it would be appropriate for management to consider lead-time as criteria of outsourcing 3PL providers for improving performance of food and beverages manufacturing companies in Kenya. In addition, the study recommends that food and beverages manufacturing companies in Kenya should outsource logistics activities from 3PL providers who assist them to reduce their delivery lead-times such as high order processing rate, high order fulfilment rate and high delivery speed.

## REFERENCES

[1] Alan, R., Phil, C., & Peter, B. (2006). *The handbook of logistics and distribution management*.(3rd ed.). London, Kogan page Limited.

[2] Anderson, M. C. (1997). A primer in measuring outsourcing results. *National Productivity Review,* 17(1), 33-41.

[3] Aron R., Clemons E., & Reddi S. (2005). Just right outsourcing: Understanding and managing risk. *Journal of management information systems*, 22(2), 37-55.

[4] Apte, U., & Goh, C. H. (2004). Applying lean manufacturing principles to information intensive services. *International Journal of Services Technology and Management,* 5, (5/6), 341-363.

[5] Bagchi, P., & Virum, H. (1996). European logistics alliances: a management model. *International Journal of Logistics Management,* 7(1), 93-108.

[6] Baiman, S., & Rajan, M. (2002). Incentive issues in inter-firm relationships. *Accounting, Organizations and Society*, 27(2), 213-238.

[7] Bardi, E., & Tracey, M. (1991). Transportation outsourcing: a survey of US practices. *International Journal of Physical Distribution & Logistics Management*, 21(3), 15-21.

[8] Bask, A. H. (2001). Relationships among TPL providers and members of supply chains - a strategic perspective. *The Journal of Business and Industrial Marketing,* 16(6), 470-486.

[9] Belsley, D. A., Kuh, E., & Welsch, R. E. (2004). *Regression Diagnostics: Identifying Influential Data and Sources of Collinearity*. Hoboken, NJ: John Wiley & Sons, Inc.

[10] Bergman, B., & Klefsjö, B. (2010). *Quality from Customer Needs to Customer Satisfaction*, (3rd ed).. London: Studentliteratur.

[11] Chopra, S., & Sodhi, M. (2004). Managing risk to avoid supply-chain breakdown. *Sloan Management Review*, 46(1), 53-61.

[12] Christopher, M. (1992). *Logistics and Supply Chain Management.* London: Pitman Publishing.

[13] Coase, R. (1937). The nature of the firm. *Economica New Series*, 4(16), 386-405.

[14] Cohen, J., Cohen, P., West, G., & Aiken, S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences.* London: Lawrence Erlbaum Associates.

[15] Cohen, L., Manion, L., & Morrison, K. (2011). *Research Methods in Education.* London: Routledge.

[16] Cooper, D. R., & Schindler, P. S. (2008). *Business Research Methods. 8th edition.* Boston: Irwin/McGraw-Hill.

[17] Crockford, N. (1986). *An Introduction to Risk Management*. (2nd ed.). Cambridge: Woodhead-Faulkner.

[18] Cronbach, L. J. (2004). My current thoughts on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, 64(3) 391-418.

[19] Fabbe-Costes, N., Jahre, M., & Roussat, C. (2009). Supply chain integration: the role of logistics service providers. *International Journal of Productivity & Performance Management*, 58(1), 71-91.

[20] Faisal, N., Banwet, D., & Shankar, R. (2006). Supply chain risk mitigation: modeling the enablers. *Business Process Management*, 12 (4), 535-552.

[21] Farndale, E., Hope-Hailey, V., & Kelliher, C. (2010). High Commitment Performance Management: The Roles of Justice and Trust. *Personnel Review*, *40*(1), 5-23.

[22] Government of Kenya . (2007). *Kenya Vision 2030. Nairobi: Ministry of Planning, National Development and Vision 2030.* Nairobi: Government Printer.

[23] Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation . *California Management Review*, 33(33), 114-135.

[24] Green, F. B., Turner, W., Roberts, S., Nagendra, A., & Wininger, E. (2008). A Practitioner's Perspective On The Role Of A Third-Party Logistics Provider. *Journal of Business & Economics Research*, 6(6), 10-14.

[25] Green, K. J., Whitten, D., & Inman, R. (2008). The impact of logistics performance on organizational performance in a supply chain context. *Supply Chain Management: An International Journal*, 13(4), 317-327.

[26] Kenya Institute for Public Policy Research and Analysis. (2013). *Kenya Economic Report* . Nairobi: KIPPRA.

[27] Kenya National Bureau of Statistics. (2015). *2015, Economic Survey.* Nairobi: Kenya National Bureau of Statistics.

[28] Ketokivi, M., & Schroeder, R. (2004). Manufacturing practices, strategic fit and performance: a routine-based view. *International Journal of Operations & Production Management*, 24(1/2), 171-191.

[29] Kiess, H. O., & Bloomquist, D. W. (2009). *Psychological Research Methods: A Conceptual Approach.* New York: Prentice Hall.

[30] Kingcott, T. (1991). Opportunity-based accounting: better than ABC. . *Management Accounting*, 1(10), 36-37.

[31] Kline, R. B. (2005). *Principles and Practice of Structural Equation Modeling* (2nd ed.). New York: The Guilford Press.

[32] Knemeyer, A., & Murphy, P. R. (2004). Evaluating the performance of third party logistics arrangements: a relationship marketing perspective. *The Journal of Supply Chain Management- A Global Review of Purchasing and Supply*, 40(1), 35-51.

[33] Langley, J. C., & Allen, G. R. (2004). *Third party-logistics study results and findings of the 2004 ninth annual study.* Capgemini US: LCC and FedEx Corp.

[34] Langley, C.J., & Holcomb, M.C. (1992). Creating Logistics Customer Value. *Journal of Business Logistics* 13 (2), 1-27.

[35] Langley, J. (2015). The state of logistics outsourcing. *Journal of Third party logistics outsourcing* 1 (2015) 4-5.

[36] Large, R., Kramer, N., & Hartmann, R. K. (2011). *'Customer-specific adaptation by providers and their perception of 3PL-relationship success.* Stanford-USA; Departement of business logistics.

[37] Lysons, K. & Farrigton, B. (2006), *Purchasing and Supply Chain Management*. (7th ed.). Harlow-UK: Pearson Education Limited.

[38] Maltz, A. (1994a). Outsourcing the warehousing function: economic and strategic considerations. *Logistics and Transportation Review,* 30(3), 245-65.

[39] Maltz, A. B., & Lieb, R. (1995). *The Third Party Logistics Industry: Evolution, Drivers and Prospects. In Proceedings of the 24th Annual Transportation and Logistics Educators Conference.* Chicago.

[40] Martz, E. (2013). *Enough is Enough! Handling Multicollinearity in Regression Analysis*. Retrieved on 14th January, 2016, from Minitab: http://www.blog.minitab.com.

[41] Mugenda, A. (2008). *Social Science Research: Conception, Methodology and Analysis.* . Nairobi: Kenya Applied Research and Training Services.

[42] Mugenda, O., & Mugenda, A. (2003). *Qualitative and Quantitative approaches.* Nairobi: ACTS .

[43] Munguti, J. K. (2013). *Ministry of Industrialization Enterprise and Development during the Industrialization conference held at KICC Nairobi on 19th November 2013.* Nairobi: Government Printer.

[44] Narayanan, V., & Raman, A. (2004). Aligning incentives in supply chains. *Harvard Business Review,* 82(11), 94-102.

[45] Neely, A., Gregory, M., & Platts, K. (1995). Performance measurement system design:a literature review and research agenda. *International Journal of Operations & ProductionManagement,* 15(4), 80-116.

[46] Nemoto, T. K. (2007). Advantage of Third Party Logistics in Supply Chain Management. *Journal of Physical Distribution and Logistics Management,* 30(2), 112-127.

[47] Orodho, J. A. (2008). *Techniques of writing research proposals & reports in education and social sciences.* Nairobi: Kanezja HP Enterprises.

[48] Osborn, R., & Baughn, C. (1990). Forms of interorganizational governance for multinational alliances. *Academy of Management Journal,* 33(3), 503-519.

[49] Pallant, J. (2010). *SPSS Survival Manual. A step by step guide to data analysis using SPSS* (4th ed.). Melbourne: Open University Press.

[50] Palay, T. M. (1984). Avoiding regulatory constraints: contractual safeguards and the role of informal agreements. *Journal of Legal Studies,* 13, 265-287.

[51] Parkhe, A. (1993). Strategic alliance structuring: a game theoretic and transaction cost examination of inter-firm cooperation . *Academy of Management Journal,* 36(4), 794-829.

[52] Paul, S. R., & Zhang, X. (2010). Testing for normality in linear regression models. *Journal of Statistical Computation and Simulation,* 80(10), 1101-1113.

[53] Parasuraman, A., Berry, L.L., & Zeithmal, V.A. (1985). A Conceptual Model of Service

[54] Quality and its Implications for Future Research. *Journal of Marketing,* 49(1), 41-50.

[55] Solakivi, T., Engglom, J., & Ojala, L. (2011). Logistics outsourcing and company performance of SME. *Strategic outsourcing: An international journal,* 4 (2), 131-151.

[56] SoonHu, S. (2010). A decision model for evaluating third-party logistics providers using fuzzy analytic hierarchy process. *African Journal of Business Management*, 4(3), 339-349.

[57] Sople, V. V. (2013). *Logistics Management* (3rd ed.). Singapore: Pearson.

[58] Sriram, V., Krapfel, R., & Spekman, A. (1992). Antecedents to buyer-seller collaboration: ananalysis from the buyer's perspective. *Journal of Business Research*, 25(4), 144-161.

[59] Vashta, J. L. (2012). *Green Supply Chain Management and Supply Chain Responsiveness among Food and Beverages Manufacturing Firms in Nairobi, Kenya.* Nairobi: University of Nairobi.

[60] Vishal.V.B., Nitin, P., Satiish, B. C., & Nishant, G. J. (2013). International Journal of Engineering Science and Innovative Technology (IJESIT). *Third Party Logistical Obstacles in Manufacturing Industries*, 2(3), 190-201.

[61] Waiganjo, E. W. (2013). *Effect of competitive strategies on the relationship between strategic human resource management and firm performance of Kenya's corporate organizations.* Unpublished doctoral dissertation, JKUAT, Nairobi.

[62] Zinbarg, R. E., Revelle, W., Yovel, I., & Li, W. (2005). Cronbach's α, Revelle's β, and McDonald's ω H: Their relations with each other and two alternative conceptualizations of reliability. *Psychometrika*, 70(1), 123-133.

[63] Zhou, H., & Benton, W. C. (2007). Supply chain practice and information sharing. *Journal of Operations Management*, 25(1), 1348-1365.