EFFECT OF THIRD PARTY LOGISTICS PROVIDERS’ SERVICES ON THE PERFORMANCE OF MANUFACTURING FIRMS IN NAIROBI CITY COUNTY

1* Mgonzo Millie Mweresa  2* Dr. Kepha Ombui  3* Dr. Mike A. Iravo

1* College of Human Resource and Development, Jomo Kenyatta University of Agriculture and Technology
P. O. Box 62000, 00200 Nairobi, Kenya.

2* College of Human Resource and Development, Jomo Kenyatta University of Agriculture and Technology

3* College of Human Resource and Development, Jomo Kenyatta University of Agriculture and Technology

Corresponding Author email: dayomillie@yahoo.com.


ABSTRACT

In globalized and highly competitive markets, organizations strive to be innovative and agile to meet customer demands. The highly competitive environments along with customers’ demands for tailored products and services has forced companies to continuously evaluate, improve and reengineer their logistics operations. This research project examined the effect of third party logistics providers’ services on the performance of manufacturing firms in Nairobi City County. This was achieved through fulfilling objectives which guided the research. The first objective was to determine the extent to which warehousing services influence performance of manufacturing firms in Nairobi City County. The second objective was to establish the effect of transport services on the performance of manufacturing firms in Nairobi City County. The third objective was to assess the influence of inventory services on the performance of manufacturing firms in Nairobi City County. The fourth objective was to determine the extent to which information management services affects the performance of manufacturing firms in Nairobi City County. The literature relating to the research was reviewed and a conceptual framework developed. Descriptive research design, specifically a survey study was employed in carrying out the research. The target population of the study consisted of a sample of logistics personnel of 45 manufacturing firms...
firms in Nairobi City County as sampled in chapter three. The research instrument was structured questionnaires that were self-administered to the key respondents. Secondary data was obtained from books available in the Companies. Data was analyzed using SPSS and presented in tables and charts. The respondent rate was 88.8%. On the demographic data, the researcher sought to investigate the age of respondent, 7.5 of the respondents were aged below 30 years, 45% of respondent were aged between the ages of 31 to 40. 42.5% of the respondents were aged between 41 to 50 while 5% were over 50 years of age. On the extent to which the Manufacturing firms adopted third party logistics services, the findings reveals over (70%) of the firms had adopted these services in their organizations in Nairobi City County. This shows that the factors that are not covered amount only to 20%. It is therefore, means the four factors have a big role to play on the performance of manufacturing firms in Nairobi City County. The ANOVA result for all variables indicates that there was a highly significant relationship between the variables at F = 2.729 and P = 0.000. This implies that there is a strong relationship between the four variables and the performance of manufacturing firms in Nairobi City County.

**Keywords:** Warehousing services, Transport services, Inventory services, Information management services, Manufacturing firms

**INTRODUCTION**

With the resources integration and the growth of globalization, logistics has become more and more important in today’s business environment. In order to find out an effective logistics management for the company to gain the competitive strength, companies should understand how to effectively manage logistics and understand its role in giving an organization competitive advantage. Christopher (2005) defines logistics management as the process of managing the procurement, movement and storage of information flow, materials, semi-finished and finished products and distributing the finished products to the marketing channels. Outsourcing can be defined as the means through which an organization contracts out activities which were previously performed in-house or activities that the organization deems necessary to be performed by another independent organization that has more expertise and more importantly can provide the same service at a relatively lower cost (Lysons & Farrington, 2006). Outsourcing allows a company to concentrate on its core competencies, save money, increase flexibility and manage effective growth. Outsourcing has become a part of many organizations' business model with people working interdependently with shared purpose across space, time and organizational boundaries using technology to communicate and collaborate. This practice is becoming increasingly common and driven by global competition, increased need for flexibility, access to global resources and substantial financial gains. Moreover, the internet and availability of electronic communication infrastructures makes this global distribution feasible to organize.

The complexity of outsourcing operations assumes several dimensions, which all project managers should keep in mind when involved with these projects (Quelin & Duhamel 2003). The number of stakeholders influenced by the outsourcing decision becomes more numerous than when the projects were primarily done in-house; the selection criteria are not limited to cost savings; contracts are becoming denser, as agreements become more sophisticated in terms of measurements procedures, financial management of transferred assets and re-sourcing clauses. Managing the transition involves shifting more complex interfaces between customer and the outsourcing company and managing the relationship under more detailed service level
agreements (SLAs) entails more complex operations in terms of control and performance reporting.

The strategic perspective would determine how to get and sustain a competitive advantage by acquiring the valued resources from outside. Stevenson and Spring, (2007) perceive outsourcing as a growing aspect of supply chain management whilst Lyson and Farrington, (2006) perceives it as a management strategy by which non-core functions are transferred to specialist, efficient, external providers. The two attribute the development of outsourcing as a reaction to over diversifications. This over diversifications led many enterprises to review their core activities and concentrate on their core-competencies. Outsourcing goes beyond the mere common purchasing and consulting contracts because not only are the activities transferred, but also resources that make the activities occur. The resources include people, facilities, equipment, technology, and other assets.

An entire function may be outsourced or some elements of an activity may be outsourced, with the rest of the activities being kept in-house. Identifying a function as a potential outsourcing target, and then breaking that function into its components, allows decision makers to determine which activities are strategic or critical and should remain in-house and which can be outsourced.

Reasons why companies decide to outsource logistics functions vary greatly. Outsourcing may be used to gain competitive advantage and has been adopted widely. Companies are increasingly seeking outside firms to perform activities previously conducted in-house in order to achieve time, progress and cost advantage. The act of outsourcing makes sense for firms that lack the necessary economies of scale, skills or technology to perform certain functions quickly and efficiently (Jacobs, 2009). Manufacturing firms have had to outsource their logistics activities to the third party logistics service providers (3pls). Third party logistics companies are specialist companies that provide logistics services on behalf of other companies. Their activities include inventory management, material handling, information management and customer service. Hong et al (2004) claims that basic and added services of third party logistics companies can reduce costs and improve the supply chain efficiency for their clients who can be left to concentrate on their core competencies. Effective logistics services have become a critical issue for companies' performance.

The highly competitive environment along with customers' demands for tailored products and services has forced companies to continuously evaluate, improve and reengineer their logistics operations. These operations have a noticeable contribution in companies' efforts to meet customers' expectations. Their outcomes, such as place convenience, waiting time convenience, delivery time convenience, and after sales convenience, are easily visible and assessable by the final customer and consequently delineating its purchasing behaviour. The close relationship between logistics and customer service dictate that companies handle their logistics function prudently so as to receive its full potential benefits.

**STATEMENT OF THE PROBLEM**

Although, the 3PL sector is a fast growing sector, the competition in the industry and the needs of the customers are increasing as well. Customers claim that the 3PL should provide a broad comprehensive set of service offerings. Therefore, providers are under constant pressure to expand and differentiate their services. There are several different directions and strategies for 3PL providers to follow in order to be more competitive. In order to expand their activities, some 3PL companies create alliances with other 3PLs and transportation companies. There is also the
trend of companies to reduce their suppliers and focus on a full product service provider. This is the reason why some 3PL providers prefer to implement the strategy “everything for everyone”, and offer all kinds of services to all kinds of customers. However, this strategy is not always successful as it might lead to a situation of losing the company focus and competence. Another strategy is to focus on a specific industry and try to offer more customized services. Major Service providers in the 3PL sector have become more “customer selective”. This customer selective approach has led the providers to focus on long-term relationships and on a tendency to reply to fewer requests for quotation (RFQ).

The customer selective approach has benefited the large 3PL providers and their customers, but has left many small to medium-size enterprises (SMEs) with fewer alternatives for 3PL services. Moreover, a large amount of 3PL providers’ focus on value-adding services such as packaging, labeling etc. Even though, the return on investment is low, some 3PL providers invest a lot in IT assets and services (Lieb, 2005). Furthermore, moving to more complex and advanced services has increased the cooperation between 3PL and fourth-party logistics providers (4PLs) (Hertz & Alfredsson, 2003). Finally, there are supporters who claim that the more costs a 3PL provider takes from its clients business the more the 3PL provider will earn (Hertz & Alfredsson, 2003). According to Berglund, et al. (1999), in the end of the 1990’s the 3PL industry had not yet reached its mature stage and would continue growing. According to Lieb (2005), even though a lot of 3PL providers have gone out of business, the revenues of the remaining companies have increased. On the other hand, competition has forced 3PL companies to try to find more advanced services in order to differentiate themselves and be more competitive. In a global competitive environment 3PL providers should differentiate themselves and offer better services to their customers, compared with their competitors, in order to stay in business. Despite the adoption of 3PL services in manufacturing sectors today with its numerous objectives, observation has however shown that, not all the objectives have been realized and felt by users. It is highly disheartening to observe that, some among many undertaken are not working to standard thereby causing more harm than good to shareholders, potential investors among other users and traders.

RESEARCH OBJECTIVES

i. To determine the extent to which warehousing services influence the performance of manufacturing firms in Nairobi City County.

ii. To establish the effect of transport services on the performance of manufacturing firms in Nairobi City County.

iii. To assess the influence of inventory services on the performance of manufacturing firms in Nairobi City County.

iv. To determine the extent to which information management services affects the performance of manufacturing firms in Nairobi City County.

LITERATURE REVIEW

Theoretical Framework

Transaction Cost Economies

Transaction cost economics (TCE) is at the core of nearly all discussions of the “make or buy” decision and has generally received strong empirical support across a range of different economic situations (Kamann & Van Nieulande, 2010). In the case of logistics outsourcing, TCE argues that the buyer or customer will, once they have made the choice to outsource
logistics generally, choose that provider offering the greatest efficiency in terms of “planning, adapting, and monitoring” costs (Williamson, 2005). Additionally, TCE notes that in transaction environments where performance is unpredictable such as that commonly found within the third party logistics industry, buyers will seek safeguards to minimize uncertainty in outcomes. Therefore, according to TCE theory, differences in the costs and risk prevention competencies amongst the group of competing third party logistics providers are likely to provide robust determinants for why a buyer selects a particular third party logistics provider. However, an exclusive focus on TCE as an explanation of the third party logistics provider selection process offers an incomplete picture of the complexity of the decision being made.

The Agency Theory

The principal agent theory assumes a relationship in which an agent has information advantage and special training over the principal and takes action that can affect both. Due to separation of ownership and control of economic activities between the agent and the principal various agency problems may arise such as asymmetric information between agent and principal, conflicting objectives and differences in risk aversion. The aim of this theory is to design a contract that can mitigate an agency problem. The theory provides a formal agreement and close relationship between organizations and service providers (Logan, 2000). The alliances will mitigate some of the agency problems that may occur. Logan (2000) states that the most efficient formal agreement should have incentives to motivate the agent to act in the interest of the principal. Manipulation of the agent’s incentives seeks to minimize the agency costs. Use of incentives makes it possible for the principal to take over part of the driver risk. According to Narayan and Raman (2004), creating credible commitments with supply chain parties that balance rewards and penalties, agency problems can be mitigated.

Empirical Review

Wambui (2010) conducted a study on the “Analysis of logistics outsourcing at Kenya Armed forces” found out that the concept of outsourcing in the Kenyan armed forces is so much limited due to the secretive nature of their work such that adoption of the strategy is on supply and warehousing of non-essential services such as stationery. She observed that in the developed world maintenance of military hardware is in some cases outsourced. Muiruri, (2015) carried out a study on “The effects of outsourcing logistics services on operational efficiency in manufacturing industry: case study of Del Monte Kenya ltd”. He established that Outsourcing warehousing was also practiced by majority of the departments and was also practiced for a period less than two years ago. The practice was not detrimental to the organization and instead had built operational efficiency in the organization. The employee attitude was also beefed up since the introduction of the same. Del Monte Kenya Limited had monitored well the outsourcing of warehousing and this had enhanced operational efficiency.

A study conducted by Mwanzia (2014) on “Determinants influencing strategic performance of indigenous third party logistic businesses in transport sector in Kenya”. Indicated that the most important drivers for retailers to outsource logistics activities were to decrease costs in transportation and warehousing, and to improve company focus, delivery times and the competitiveness of the company. In the study conducted by Mwangangi (2015) “Influence of transport management on performance of manufacturing firms in Kenya “concluded that transport management does not significantly influence market performance, financial performance and customer satisfaction. The study also found that logistics performance does not
moderate the relationship between transport management and performance of manufacturing firms in Kenya. This study recommends that the government of Kenya should promote the development of multimodal transport. This can be done by reducing control over container transport.

According to the research conducted by Coltman, (2010). “What drives the choice of a third party logistics provider”? The results reveal that three distinct decision models populate the data where the preferences for different logistics service attributes – such as price and delivery performance – vary greatly between customer groups represented by these models. Strategically, the findings provide the management of a third party logistics provider with a logistical starting point from which to determine the goals that are set for their operations, particularly in choosing the customer segments to service. A research study “Inventory management by in third party logistics firms” by Sparks (2004) concluded that with appropriate logistics, retailers’ products can achieve better presentational quality, possibly be cheaper, and have a longer shelf life. Moreover, there should be significantly less instances of stock outs. By using information transmissions and dissemination technologies, retailers can radically improve their reaction time to fluctuations in demand. Thus, if the logistics system operates properly, a company can both reduce costs and improve service quality, and therefore create competitive advantage.

In a research conducted by Evangelista, p.et al (2012) on “Analysis of Information technology adoption and third party logistics performance”, the results indicate strong relationships among data gathering technologies, transactional capabilities and firm performance, in terms of both efficiency and effectiveness. Moreover, a positive correlation between enterprise information technologies and 3PL financial performance has been found. In a research “The information technology capability of third-party logistics providers: a resource-based view and empirical evidence from (China.Lai,fujun et al 2008) .The results show that technology orientation has a significant impact on resource commitment to information technology and managerial involvement in developing modern information technology capability of third party logistics firms. It also indicates that information technology capability significantly affects three important dimensions of the competitive advantage of these firms, namely reducing costs, providing innovative and customized services, and improving service quality. This research provides valuable insights for third party logistics managers, and emphasizes the importance of technology orientation in the development of strong information technology capability among third party logistics firms.

**RESEARCH METHODOLOGY**

The study employed a descriptive study design. The target population was the firms logistics managers. According to the Kenya association of manufacturers there are 455 large scale manufacturing firms in Nairobi as illustrated in appendix 3. Due to the high numbers they were sampled according to the sectors in which they operate and out of the 455, 45 manufacturing firms which represents 10% of the total number of manufacturing firms were chosen. Companies in Nairobi are targeted because Nairobi being the Capital city of Kenya has attracted many investors both local and international in the different sectors in the manufacturing industry. The study applied random sampling procedures to obtain the respondents for questionnaires. The study used 1respondent from the 45 selected manufacturing firms. At least 10% of the total population is representative (Borg & Gall, 2003). Thus, 10% of the accessible population is enough for the sample size. Out of 455 manufacturing firms in Nairobi, the researcher used 10% of the total population. Thus 10/100* 455 = 45
Where $nf = \frac{n}{1 + \frac{n}{N}}$

$nf = \frac{50}{1 + \frac{50}{450}} = 45$

Nf = Desired sample size (population less than 10,000)
N = desired sample size (population more than 10,000)
N = estimate of the population size

The study used both primary and secondary data. The primary data was collected using research questionnaire. The questionnaire to be used consisted of both closed and open-ended questions. The secondary data was collected through published reports and other past research papers and paper review on the topic of the study. Quantitative data was analyzed through descriptive statistics in the form of frequencies tallies and percentages. The statistics was generated using statistical package for social sciences (SPSS) and data obtained was communicated through pie charts and tables. Qualitative data was analyzed by organizing them in accordance with the research questions and objectives. To establish the effect of third party logistics providers services on performance of manufacturing firms in Nairobi County regression analysis with the equation $(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon_i)$ was used. Where; $Y$ is the dependent variable (performance in manufacturing firms), $X_1$-$n$ are independent variables i.e. $X_1$ is Warehousing services, $X_2$ Transport services, $X_3$ Inventory services, $X_4$ is the information management services. $\epsilon_i$ is a random variable, error term that accounts for the variability $\beta_0$ is a constant, $\beta_1$-$p$ are the regression co efficient.

RESULTS

Response Rate

Table 1: Response Rate

<table>
<thead>
<tr>
<th>Population</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>40</td>
<td>88.8%</td>
</tr>
</tbody>
</table>

From table above, the response rate was 88.8%. According to Mugenda & Mugenda (2003), a response rate of 60% is good, and above 70% is perfect. 88.8 % response rate is excellent.

Result of the Pilot Study

The study involved random selection of a pilot group of 3 individuals from 2 manufacturing firms each. The findings are recorded below.

Table 2: Results of the Pilot Study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warehousing services</td>
<td>0.701</td>
</tr>
<tr>
<td>Transport services</td>
<td>0.769</td>
</tr>
<tr>
<td>Inventory services</td>
<td>0.731</td>
</tr>
<tr>
<td>Information management services</td>
<td>0.720</td>
</tr>
</tbody>
</table>
The findings of the pilot study showed that the level of transport services scale had a Cronbach’s reliability of 0.769, inventory services had a reliability alpha value of 0.731, information management services had a reliability alpha value of 0.720 and lastly warehousing services had a reliability alpha value of 0.701. Therefore according to Mugenda and Mugenda(2003) the research tool was sufficiently reliable and valid and needed no amendment.

**Background Information**

This section begins with demographic data of the research responses, gender, age and ownership of the companies.

**Gender of the Respondents**

The respondents were asked to indicate their gender

![Gender Distribution](image)

**Figure 1: Respondents Gender**

From the above results out of the 40 respondents, 59 % were male while 41% were female this results reveal that most of the logistics managers are male.

**Respondents age bracket**

The respondents were asked to indicate their age bracket and the findings are presented below

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>31-40</td>
<td>18</td>
<td>45</td>
</tr>
<tr>
<td>41-50</td>
<td>17</td>
<td>42.5</td>
</tr>
<tr>
<td>Over 50</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

The findings in Table 3 indicates that 42.5% of the respondents were 41 to 50 years of age, 45% of the respondents indicated that they were 31 to 40 years old while 5% of the respondents indicated that they were over 50 years old and the other 7.5% indicated that they were less than 30 years. The results indicated that majority of the respondents were above 30 years.
Length of continuous service with the organization

The study sought to find out the length of continuous service of the respondents with the organization. The results are indicated below.

![Graph showing length of continuous service](image)

**Figure 2 Length of continuous service with the organization**

The results in Figure 2 show that 55.3% of the respondents had worked in their respective organizations for 5 to 10 years, 36.8% of the respondents indicated that they had worked in the organization for over 10 years while 7.9% of the respondents said they have worked in the organization for less than 5 years. The results indicates that majority of the respondents have worked in their organization for more than 5 years an indication that they understand the effect of third party logistics services on the performance of their respective manufacturing firms.

Duration of existence of manufacturing firms

The respondents were to indicate the duration the manufacturing companies have been in existence. The results are presented in Table 4.

**Table 4: Duration of manufacturing company existence**

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>11-16</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Over 16</td>
<td>27</td>
<td>67.5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

The results show that 67.5% of the companies had existed for more than 16 years 25% had been in existence for 11-16 years while only 7.5% existed for 6-10 years. The results indicates that majority of the companies had been in existence for more than 16 years an indication that the companies have gone through several stages of logistics transformation.

Operations outside the country

The respondents were to indicate if their respective companies had operations outside the country. The results are indicated in the figure 3.
From the results above, 80% of the respondents agreed that the company had operations outside the country while 20% do not have operations outside the country. The results are a reflection of development that have taken place whereby due to intense global competition and diversification, companies can no longer operate in isolation therefore need for expansion and extension to other countries. Most of the manufacturing firms operating in Kenya are multinationals with presence of other companies in most parts of Africa and the rest of the world.

**Warehousing Services**

One of the objectives was to determine the extent to which warehousing services influence the performance of manufacturing firms in Nairobi City County. The results are recorded below.

**Table 5: Warehousing Services**

<table>
<thead>
<tr>
<th>Statement</th>
<th>strongly agree</th>
<th>Agree</th>
<th>Not Sure</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Total percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third party logistics providers offer warehousing services for the company</td>
<td>75%</td>
<td>15%</td>
<td>5%</td>
<td>5%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Third party logistics providers perform all the warehousing services</td>
<td>78%</td>
<td>5%</td>
<td>0%</td>
<td>8%</td>
<td>9%</td>
<td>100%</td>
</tr>
<tr>
<td>The third party logistics provider has introduced warehouse automation</td>
<td>52%</td>
<td>13%</td>
<td>7%</td>
<td>15%</td>
<td>13%</td>
<td>100%</td>
</tr>
<tr>
<td>The organization considers using third party providers warehousing services important.</td>
<td>45%</td>
<td>25%</td>
<td>4%</td>
<td>20%</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>Warehouses owned by third party logistics providers are in accessible locations</td>
<td>0%</td>
<td>0%</td>
<td>15%</td>
<td>35%</td>
<td>50%</td>
<td>100%</td>
</tr>
<tr>
<td>Warehousing is a strategic activity to top management of the company</td>
<td>42%</td>
<td>21%</td>
<td>10%</td>
<td>23%</td>
<td>4%</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the findings, majority of the respondent (75%) strongly agreed that third party logistics providers offer warehousing services for the company, (15%) of respondents agree with the same statement, while (5%) were not sure and disagreed with the same statement respectively. The findings support the findings by Caldeira & Ward, 2002 that third party logistics providers are always leading in ensuring efficient warehousing service delivery. It further reveals that third party logistics providers perform all the warehousing services (78%) of the respondent strongly.
agreeing with the same statement and only (17%) disagreed which means that most companies have entrusted their warehousing services to third party logistics service providers. Around (70%) of respondents agreed that the organization considers the use of third party warehousing services important (4%) of the respondents were not sure while (20%) disagreed with the same statement. This means majority of the companies take warehousing services as critical. Around (85%) strongly disagreeing that warehouses owned by third party logistics providers are in accessible locations while only (15%) of respondents agreed with this statement. This result should be of great concern to the third party logistics providers. Around (63%) agreed that warehousing is considered a strategic activity 10% were not sure while (27%) disagreed. Of the respondents (65%) agreed that third party logistics warehouse providers have introduced warehousing automation while (28%) disagreed with this statement.

According to a research by Rajesh et al (2011), it is found that 3PL companies depend on its professional warehousing service to provide values to their clients. As mentioned above, the reasons that 3PL companies exist in the market is because they can create cost or value advantages to clients. When they can provide competitive cost or value advantages to clients, they can have a competitive position in the marketplace. For instance, through warehouse management, 3PL companies can help their clients reduce the cost. Through cooperation with their clients who are the manufacturing firms, they can help these clients achieve strategic objectives and improve their organizational performance. Both of the achievement of these performances needs the support of service. Kumar (2007) also agrees with the importance of warehouse service of third party logistics providers to manufacturing company’s success. He claims that the competition in this industry is increasingly intense and only the 3PL companies which can reduce cost and increase customer satisfaction can make a success. In order to increase customer satisfaction, it must depend on service. Kumar (2007) claims many successful 3PL companies have established a good customer relationship with their clients. However many third party logistics providers firms lack the necessary technological infrastructure which is compatible with that of the client’s. This is evident from the results which indicate the warehousing automation has not been adopted by 35% of the companies. This may have a negative impact on the level of communication and information transfer between the partner organizations. In developing countries for example multinationals have had to re-design their internal logistics systems so as to fit in the environment. The benefits of a good technological investment may fail to add value due to lack a supportive external environment (Luck, 2004).

**Transport Services**

The study sought to establish the effect of transport services on the performance of manufacturing firms in Nairobi City County. The results are recorded below.

**Table 6: Transport Services**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not Sure</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Total Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company uses the best third party logistics providers for transport services.</td>
<td>42%</td>
<td>15%</td>
<td>6%</td>
<td>19%</td>
<td>18%</td>
<td>100%</td>
</tr>
<tr>
<td>Proper selection criteria of transport logistics companies</td>
<td>56%</td>
<td>10%</td>
<td>2%</td>
<td>17%</td>
<td>15%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Constant evaluation and evaluation of the third party transport companies

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company has invested in its own vehicles</td>
<td>28% 42% 0% 15% 15% 100%</td>
</tr>
<tr>
<td>Selection of the third party logistics transport provider is a strategic activity.</td>
<td>15% 23% 12% 31% 19% 100%</td>
</tr>
<tr>
<td>All supply chain embrace third party provider</td>
<td>34% 45% 0% 5% 16% 100%</td>
</tr>
</tbody>
</table>

From the findings above, Majority of respondent (42%) strongly agreed that the company uses the best third party logistics providers for transport services (6%) were not sure with the same while (37%) disagreed. Majority of the respondent (56%) strongly agreed that the company uses proper selection criteria for third party logistics transport providers hence improving the performance of the logistic firms. Majority further (34%) agreed that selection of third party logistics transport providers is a strategic activity. Majority of the logistics managers (70%) interviewed agreed that the company constantly reviewed and evaluated the third party logistics transport providers while (30%) disagreed with the same statement. Majority of managers (50%) disagree that the company had invested in their own vehicles while (38%) agreed with this statement.

The findings affirms the findings by Long & Long (2009) report which concluded that there was a need for firms to fully integrate and support the third party transport logistics providers services in order to achieve maximum efficiency and productivity. Based on the regression method, logistics performance construct was interacted with transport management and the finding shows that transport performance moderates the relationship between logistics management and performance of manufacturing firms in Kenya. Some of the reasons that may make transport management to be influencing manufacturing firms in Kenya are that, most of manufacturing firms in Kenya do outsource transport due to its cost implications hence not very much bothered in transport management. Another factor may be due to what is called buyer seller relationship. Manufacturing firms in Kenya have managed to form agreements with the third party logistics transport providers to collect products from the factories instead of manufacturers distributing them to their customer’s premises.

The finding agrees with Bowersox, et al. (2010) who acknowledges that good transport management provides better logistics efficiency reduces operation costs and promotes services quality on firm. Researches done by Gunasekaran, (2003) found transportation be the major factor in logistics processes as it was the one which joined the separated activities in logistics. It agrees with the findings of (Tseng, Yue &Taylor, 2005) which found that transport management was the most important economic activity among the components of business logistics system and do influence firm performance. Consequently an analysis can be used in this case to encouraged logistics managers’ to identify what is preventing transport providers not to fully influence manufacturing firm performance and moving towards making goals as well as necessary conditions in finding solutions to overcome the limitation (Cyplik, et al., 2009).
Inventory Services

The study sought to assess the influence of inventory services on the performance of manufacturing firms in Nairobi City County. The results are indicated below.

Table 7: Inventory services

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not Sure</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company engages third party logistics providers in managing its inventory systems.</td>
<td>32%</td>
<td>13%</td>
<td>6%</td>
<td>24%</td>
<td>25%</td>
<td>100%</td>
</tr>
<tr>
<td>The company has introduced vendor managed inventory system.</td>
<td>25%</td>
<td>21%</td>
<td>5%</td>
<td>30%</td>
<td>16%</td>
<td>100%</td>
</tr>
<tr>
<td>The company shares inventory information with third party providers</td>
<td>62%</td>
<td>18%</td>
<td>0%</td>
<td>13%</td>
<td>7%</td>
<td>100%</td>
</tr>
<tr>
<td>The company’s inventory systems are computerized</td>
<td>58%</td>
<td>12%</td>
<td>4%</td>
<td>18%</td>
<td>8%</td>
<td>100%</td>
</tr>
<tr>
<td>The rate of stock outs and overstocking have been managed by third party logistics providers.</td>
<td>31%</td>
<td>16%</td>
<td>6%</td>
<td>21%</td>
<td>26%</td>
<td>100%</td>
</tr>
<tr>
<td>The company shares inventory management with third party providers as an important element</td>
<td>65%</td>
<td>21%</td>
<td>0%</td>
<td>15%</td>
<td>9%</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the findings in the table, majority (49%) disagree with the statement that the company engages third party logistics providers for managing its inventory systems, while smaller percentage (45%) agree with the same statement. This supports the findings by Bolumore (2001) that very few companies allow third party providers to handle their inventory systems in third world countries as compared to developed countries. Majority of respondents (80%) agreed with the statement that the company shares its inventory information with third party providers. This is in line with Christopher (2005) that argues that use of IT by third party logistics providers is more efficient. Majority of respondent (70%) of respondents agreed that the company’s
inventory systems are computerized. The respondents were 50-50 on whether the rate of stock outs and overstocking have been managed by third party inventory providers.

From the above results organization’s inventory is an important component and its management is vital to the success and cost reduction of the firm’s expenditure. Wild, (2002) confirms that there should be, proper warehousing of inventory so that when goods are ordered, they are held at the warehouse for the least time possible minimizing holding cost of inventory. Consequently, other operational costs may increase inventory management costs like through the balance of ordering costs, holding costs, safety stock and stock outs (Palevich, 2012). Most third party logistics organization have developed online inventory management tool to monitor its inventory information by breaking it down into groups by correlating the categories with its customers as indicated From the results most manufacturing organizations have resulted to vendor managed inventory (VMI) systems which aid the third party logistics provider to monitor customer’s inventory usage. Through this VMI system, customers will avoid stock outs because the third party logistics inventory provider will have already replenished their inventory. Moreover, we now have Joint Managed Inventory (JMI) which is an advance level of vendor managed inventory (VMI). It seeks to integrate the third party inventory provider more firmly into the customer’s organization by using the point of sale (POS) which allows the provider to see the real time data of its customer’s inventory (Frahm, 2003). A study undertaken between 1981 and 2000 in the US to analyze inventory management and was found out that organizations that kept too much inventory in their warehouse operated an inefficient supply chain, while those that kept minimal inventory in their warehouse were very efficient (Lai & Cheng 2009). Keeping moderate inventory is good and it enables an organization operate minimal expenses of holding and setup costs, eliminate unwanted lead time and produce goods as per customers order.

**Information Management Services**

Lastly, the study sought to determine the extent to which information management services affects the performance of manufacturing firms in Nairobi City County. The results are indicated below.

**Table 8 : Information Management Services**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of Electronic Data Interchange by third party logistics companies</td>
<td>43%</td>
<td>23%</td>
<td>12%</td>
<td>10%</td>
<td>12%</td>
<td>100%</td>
</tr>
<tr>
<td>Adoption of modern information technology structures by third party logistics providers</td>
<td>54%</td>
<td>13%</td>
<td>5%</td>
<td>23%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>Modern information technology in integrating the supply chain</td>
<td>70%</td>
<td>15%</td>
<td>0%</td>
<td>10%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>The third party logistics providers utilize modern information technology in</td>
<td>13%</td>
<td>45%</td>
<td>2%</td>
<td>14%</td>
<td>26%</td>
<td>100%</td>
</tr>
</tbody>
</table>
coordinating its activities with customers

From the findings, majority of respondents (66%) agreed with the statement the company has adopted electronic data interchange which enables faster transactions, (67%) of the respondents also agreed there is adoption of modern information technology structures by third party logistics providers. Majority of respondent (70%) strongly agree that modern information technology is used in integrating the supply chain (15%) of the respondent agree and only (10%) of the respondent disagree. Lee and Wang (2001) addressed the possibilities of reducing the bull whip effect in logistics through Internet based collaboration and integration.

The same arguments were advanced by the management of the manufacturing firms within Nairobi. According to the research of Gupta et al (2013), it is confirmed that information technology system can make contribution to the success of 3PL companies. Lai et al. (2006) demonstrates that information technology system does not only optimize the enterprise internal resource allocation, but also improve management efficiency during the whole logistics activities. What is more, it is argued that logistics companies are weak in technologies (Jiang, 2002). However, in this research, it is evident that many manufacturing firms in Nairobi City County have adopted many information systems. Although they are less than the ones internationally adopted they are still many enough to show manufacturing companies are using information technology systems to gain advantages, rather than low cost labors. Increasing information technologies are applied by third party logistics providers. The development of the 3PL is based on logistics low operation cost and high efficiency. By using information technology can not only expand logistics enterprise profit space, but also make the 3PL have more advantages in the logistics competition, thereby promote the development of the 3PL industry is very important (Alshawi, 2001).

Accelerate technology innovation and standardization, introduce information network technology are the guarantee for improve the efficiency of manufacturing firms (Bourlakis & Bourlakis, 2006). 3PL information management strategy not only optimizes the enterprise internal resource allocation, but also unite the network and users, manufacturers and suppliers to achieve resource sharing, information sharing, real-time tracking, control and management efficiency during the whole logistics activities (Lai et al., 2006). However, Jiang (2002) argues that most third party logistics companies are weak in technology integration as these results reveal.

**Performance of Manufacturing Firms**

This study also sought to determine the extent to which logistics services provided by third party logistics providers’ influences performance. The results are indicated in table

| Table 9 : Performance of Manufacturing Firms |

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third party logistics services leads to organizational</td>
<td>43%</td>
<td>23%</td>
<td>10%</td>
<td>10%</td>
<td>12%</td>
<td>100%</td>
</tr>
</tbody>
</table>
effectiveness        
Third party logistics services resulted increased productivity 60% 13% 5% 17% 5% 100%
The organization profits increased as a result of third party services 60% 20% 0% 15% 5% 100%
The third party logistics service resulted to continuous improvement 50% 30% 0% 10% 10% 100%

From the findings, majority of respondents (66%) agreed with the statement that third party logistics providers leads to organizations effectiveness while (22%) disagree with the statement, (73%) of the respondents also agreed the third party logistics services have led to productivity while (22%) of the respondents disagreed with the same statement. Majority of respondent (80%) agree that the profit level of the organization increased because of the services provided by third party logistics providers while only (20%) disagreed with this statement. Third party logistics services leads to improved quality (58%) of the respondent agree and only (40%) of the respondent disagree. The studies found out that majority of the large manufacturing firms were outsourcing the transportation management, warehouse management information management and inventory management.

The study showed that third party logistic providers services resulted in technology, proper inventory flow, inventory accuracy, good inventory turns/proper space utilization, efficiency due to the use of modern material handling equipment, the quality of checks on raw materials (quality raw material), enhanced quality of products delivered and efficiency and less damage to products due to adoption of modern storage. The third party logistics services being adopted by the manufacturing firms resulted in increased productivity, organizational effectiveness, increased profits, continuous improvement, improved quality and improved quality of work life and thus use of third party logistics providers services was an ideal solution that helps the firm expand internationally and operate on a much larger scale. At the same time, third party logistics services resulted in decreased operating costs, improved customer satisfaction, increased productivity, timely delivery of services to clients, reduced lead time and improved profits, faster response to customer demands and use of modern technology in offering of services. This would spur the performance of the firms as it would enable the firm to concentrate on the basic activity (core competence) and use best methods and experiences. By joining forces, both partners improve efficiency, profitability and customer service. Firm performance varies according to various elements of the organization, including strategy, structure, environment, organizational learning, and resource (Cho et al. 2007). Accordingly, different measurements have been adopted by different researchers for measuring performance. Jiang and Qureshi (2006) measure performance as operational performance, which include cost efficiency, profitability and productivity.

**Regression Analysis**

Table 10 indicates that the value of the adjusted r squared R2 amount to 0.791 which is 79.1%. This shows that the factors that are not covered amount only to 20.9%. It is therefore, means the
four factors have a big role to play on the performance of manufacturing firms in Nairobi City County.

**Table 10 Model Summary for all the Variables**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.828a</td>
<td>.686</td>
<td>.791</td>
<td>.388</td>
<td>1.851</td>
</tr>
</tbody>
</table>

Table 10 indicates that the value of the adjusted r squared R2 amount to 0.791 which is 79.1%. This shows that the factors that are not covered amount only to 20.9%. It therefore, means the four factors have a big role to play on the performance of manufacturing firms in Nairobi City County. This study supports the findings of Lee and Wang (2011) showing the role of third party logistics services on the performance of manufacturing firms.

**Table 11: ANOVA for All Variables**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1646.01132</td>
<td>4</td>
<td>.412</td>
<td>2.729</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>75432.123</td>
<td>35</td>
<td>.151</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>77078.13432</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ANOVA result for all variables indicates that there was a highly significant relationship between the variables at F = 2.729 and P = 0.000. This implies that there is a strong relationship between the four variables and the performance of manufacturing firms in Nairobi City County. In support of these findings, Livercore & Rippar (2011) investigated the relationship between third party logistics providers and performance in manufacturing firms. They found high correlation among the variables.

**Conclusion of the Study**

The study concluded that the services of third party logistics providers among manufacturing firms in Nairobi City County contributed to the performance. Use of warehousing services affected the performance of the manufacturing firms positively. Inventory services offered led to the reduction in inventory levels and the related costs. Transport services have reduced the time customers have to wait for deliveries to be made thus satisfying them and improving the performance of the manufacturing firms. Lastly information management services contributed to the performance of manufacturing firms in Nairobi City County. This study affirms that third party logistics providers really have important position in manufacturing company. Third party logistics providers are really helpful to enhance the performance of the firms and to integrate the different processes of logistics by using advanced technology.
Logistics services can be outsourced to reduce the capital investments and to concentrate towards other important issues of the company. 3PL has significant role in manufacturing firms’ performance and has greater impact on customer satisfaction with the help of advanced technology tools. This study reflects that manufacturer’s satisfaction level can be increased by using 3PL with advanced technology. Also the study concludes that third party logistics service providers are really helping in improving the company’s logistics efficiency to enhance the customer satisfaction and to integrate manufacturing firms. It means putting together different processes of logistics to make it much more efficient and effective with the help of third party logistics companies. Third party logistics service providers also help companies in their transportation/distribution, customer services, warehousing, IT support, route planning, reduction in operational budget and providing value added services to enhance customer satisfaction level.

**Recommendations for the Study**

**Warehousing Services**

The manufacturing firms should adopt the use of third party warehousing in their service delivery in order to improve their efficiencies as the higher the level of usage, the more efficient firms become and the more profitable it is. The management should be in the four fronts in enhancing the level of usage with all activities being integrated. Warehousing activities whether in Finished Goods logistics or Plant logistics, are very critical to the entire supply chain. Take the example of an automobile manufacturer who depends upon a 3PL to manage complete inbound activities including vehicle unloading, inventory management, and JIT supplies to the plant. The manufacturing facility completely is dependent upon the 3PL service provider. Both the buyer and 3PL co-exist together at the same location, over a period the systems and operations get enmeshed and integrated into the process of localization and finding practical solutions. In such cases, any non-performance on the part of 3PL due to any reason will affect the plant output. It is not possible to make a sudden switch to another 3PL overnight. Hence, the marriage has to be lived through and managed. Therefore choosing a 3PL partner for warehouse operations needs thoughtful considerations and evaluation. Collaborative and partnership approaches are encouraged because they yield very good results in the relationship. Where ever buyers have invested time and interest in engaging directly with 3PL operations, with helping in training and periodic assessments coupled with motivational exercises, have helped 3PL operations remain focused on the deliverables and maintain efficiencies.

**Transport Services**

Transport boosts customer confidence and reduces lead time and transport costs hence improve the company profitability. The manufacturing firms should adopt transport services of third party logistics providers in their service delivery. These services further helps in cost reduction and enhances security of the cargo through transit. The firms should adopt this as it will improve the firm’s effectiveness. This study also recommends that the government of Kenya should promote the development of multimodal transport and encourage the growth of the third party logistics transport industry. This can be done by reducing control over container transport. The study also recommends that the government should gradually relax control and institute structural reforms to allow reduction on container and goods transport rates which are a challenge to the third party transport providers. Fuel price fluctuation is also another problem to transport management which needs to be considered by the government in order to make transport cost low and predictable, this may encourage manufacturing firms to entrust third party logistics providers.
with the entire distribution of their products. To the management of third party logistics firms, the study recommends that they should provide latest training and development to the transport services in their firms so as to improve the financial performance and create customer satisfaction of the manufacturing firms.

**Inventory Services**

Firms should adopt third party inventory services in their service delivery like MRP and JIT. The government could also support the logistic by embarking on initiatives to improve accessibility of relevant information. Transparency in inventory management techniques is absolutely important because it eliminate corruption, biased procurement process, procuring substandard good for the organization that proof to be extremely costly (Githui, 2012). Inventory techniques management by third party logistics providers needs ethical as well as transparency and fairness that promotes good corporate governance among third party logistics managers. Manufacturing organizations ought to ensure that their inventory is monitored from time to time to avoid stock outs. Due to the manual system of checking and validating, the stochastic nature of demand and lead time is not achieved. Also due to lack of automated systems, stock outs are experienced often and replenishment is done hurriedly leading to costly inventory management and likewise low performance standards.

**Information Management Services**

Manufacturing firms should integrate their systems and those of their third party logistics providers, key suppliers and payment system to make it easy for processing of documents which shall result into efficiency hence improved performance. Organizations with integrated information systems, performs much better than the organizations that are not integrated. The study findings recommend that, integrated system should be used since they enhance communication and information exchanges within the organization, with third party logistics providers and other customers hence more efficient and effective services.

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