



DETERMINANTS OF LOGISTICAL FUNCTIONS OUTSOURCING IN PHARMACEUTICAL COMPANIES BASED IN NAIROBI, KENYA

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ABSTRACT

In today's highly competitive and dynamic global business environment with vastly extended supply chains, companies can often be confused by the many logistics options and sources available to them when seeking to implement a highly visible supply chain management (SCM) solution. It is therefore important for a company to know the determinants of logistics function outsourcing. The purpose of this study was to examine the determinants of logistics function outsourcing in Pharmaceutical Companies in Kenya. The study also sought to establish the effect performance metrics and suppliers' competence on logistics function outsourcing in Pharmaceutical Companies in Kenya.

This research study used a descriptive research design. The target population of this study was all the 231 staff working in supply chain departments in 31 Pharmaceutical Companies in Kenya. This research study used a purposive sampling method to select the head of supply chain departments and their assistants. The sample size of this study was therefore 62 respondents. The study used primary data which was collected by use of questionnaires. Content analysis was used in processing of qualitative data and results was presented in prose form. The quantitative data in this research was analyzed by use descriptive and inferential statistics by use of Statistical Package for Social Sciences (SPSS). Descriptive statistics such as mean, frequency, standard deviation and percentages was used to analyze the data. On the other hand, correlation analysis was used to establish the relationship between the dependent and the independent variables. Data was then presented in tables, charts and graphs.

The study established that suppliers' competence contributed most to logistics function outsourcing followed by performance metrics which had the least effect on logistics function outsourcing. To the top management of pharmaceutical companies, this study recommend that they should ensure that their organisations make use of performance metrics and consider suppliers' competence before outsourcing logistic functions. To the government of Kenya and policy makers, this study recommends that they should formulate policies on performance metrics standards.

Key Words: Logistics, Outsourcing, Dynamic, Global Business

INTRODUCTION

As competition in the 1990s intensified and markets became global, so did the challenges associated with getting a product and service to the right place at the right time at the lowest cost. Organizations began to realize that it is not enough to improve efficiencies within an organization, but their whole supply chain has to be made competitive (Williamson, 2006).

The understanding and practicing of supply chain management (SCM) has become an essential prerequisite for staying competitive in the global race and for enhancing profitably. SCM is the systemic, strategic coordination of the traditional business functions and tactics across these businesses functions within a particular organization and across businesses within the supply chain for the purposes of improving the long-term performance of the individual organizations and the supply chain as a whole (Were, 2011). SCM has been defined to explicitly recognize the strategic nature of coordination between trading partners and to explain the dual purpose of SCM: to improve the performance of an individual organization, and to improve the performance of the whole supply chain. The goal of SCM is to integrate both information and material flows seamlessly across the supply chain as an effective competitive weapon (Wallenburg, 2009).

Inbound and outbound logistics is a vital part of the supply chain process. Once a good is produced, it must be shipped to its final destination. For a consumer packaged goods company to be successful, they must find the most cost effective means to do so, while satisfying the customer (Vaidyanathan, 2005). The development of recent means of transportation, information systems, communication and telecommunication systems reveal great opportunities for rapid distribution of information, technologies, goods and financial resources. The competitive advantages, connected with the growth of globalization and innovations, begin to lose gradually their

originality, and new competitive advantages come up in front – flexibility, order-to-delivery lead-time reductions, reliable and quality deliveries, choice opportunities (Sohail & Sohail, 2003). The ability of manufacturers to join the individual consumer preferences together with their production process and system of planning will be a decisive factor in the field of competition. Quick changes in buyers' choices and their demand for quality production delivery lead to shortened lead-time and decreased amount of deliveries, contraction of retained reserves of time and materials. The solution of the problem with individual client orders is possible only by setting up of a flexible system of production management (Schary & Skjott-Larsen, 2001). One of the most developed markets of logistics providers and logistics outsourcing is the market in the USA and Europe. According to experts' estimates, the annual growth of 3PL services market in the USA is between 18% and 22% (Jiang & Qureshi, 2006).

The use of single sourcing and outsourcing to third-party logistics firms, or contract logistics as some prefer, is a noteworthy phenomenon even domestically in the US. Reagan (2001) indicated that about one-third of large manufacturing companies in the US use third-party logistics services and over 60 per cent of these firms have utilized these services for more than five years. The three most widely outsourced services were warehousing, shipment consolidation, and selected logistics information systems. All three activities are important in the context of international logistics as well and our study indicates that, due to its critical role, information systems can also influence the outsourcing decision itself.

Pharmaceutical Companies in Kenya

Kenya is currently the largest producer of pharmaceutical products in the Common Market for Eastern and Southern Africa (COMESA) region, supplying about 50% of the regions' market. Out of the region's estimate of

50 recognized pharmaceutical manufacturers; approximately 30 are based in Kenya. Kenya's pharmaceutical industry is on a rebound, riding on the back of increased expenditure in healthcare and general economic growth over the years (Muthiani & Wanjau, 2012). The rapid growth of the pharmaceutical market in the region has presented the need to increase quantity of production, and also increase the export ratio for quality products. The country's pharmaceutical and consumer health market is estimated to be worth an estimated USD 160 million each year (Moi, 2003).

The industry compounds and packages medicines, repacking formulated drugs and process bulk drugs into doses using predominantly imported active ingredients and recipients. The bulk of locally manufactured preparations are non-sterile, over-the-counter (OTC) products (K'oreje et al., 2012). The number of companies engaged in manufacturing and distribution of pharmaceutical products in Kenya continue to expand, driven by the Government's efforts to promote local and foreign investment in the sector. The country exports its medicinal and pharmaceutical products to Tanzania, Uganda, DRC, Rwanda, Burundi, the Comoros, Ethiopia and Malawi among other destinations (Parker, 2010).

Statement of the problem

The outsourcing of logistics functions to partners, known as "third-party logistics providers", has increasingly become a powerful alternative to the traditional, vertically-integrated firm. However, firms should consider the key determinants of logistics function outsourcing before signing contracts with the suppliers (Kuhlmeier & Knight 2010). Firstly performance metrics are crucial in logistics function outsourcing. According to Sanders and Autry (2010) organizations often experience difficulties with performance measurement. Performance objectives and measurement criteria should be established at the outset of the outsourcing relationship. Clearly the

sourcing organization must establish performance measures and a formal system to ensure that such performance objectives are being met.

Secondly, suppliers' competence evaluation is essential in logistics function outsourcing. Good suppliers allow enterprises to achieve good manufacturing performance and make the greatest benefits for practitioners. According to Current and Benton (2008), in supply chain management, improving product quality is no longer merely the responsibility of the manufacturer, but is also the responsibility of the suppliers who provide the parts and components. Further, Weber, Current and Benton (2009) argue that in supplier selection, a high quality and high-price supplier is undesirable because of cost considerations.

Several studies have been conducted in relation to outsourcing. For instance, Chelang'at (2011) conducted a study on factors influencing the level of outsourcing of non-core services as a cost reduction strategy in public universities in Kenya and Marete (2011) assessed outsourcing decision-making in star-rated hotels in Nairobi-Kenya. However, these studies did not outline the determinants of logistics function outsourcing. This study sought to fill this research gap by investigating the determinants of logistics function outsourcing in Pharmaceutical Companies in Kenya

Objective of the study

The general objective of this study was to examine the determinants of logistics function outsourcing in Pharmaceutical Companies in Kenya. The specific objectives of this study were; to examine the effect of performance metrics and suppliers competence on logistics function outsourcing in Pharmaceutical Companies in Kenya.

Research questions

- i. What is the effect of performance metrics on logistics function

outsourcing in Pharmaceutical Companies in Kenya?

- ii. What is the effect of suppliers' competence on logistics function outsourcing in Pharmaceutical Companies in Kenya?

Scope of the study

This study was limited to two variables which include performance metrics, and suppliers' competence. The study was conducted in Pharmaceutical companies in Kenya. The study was limited to employees working in the Supply Chain department. Further, the study used questionnaires to collect data from then respondents.

Conceptual Framework

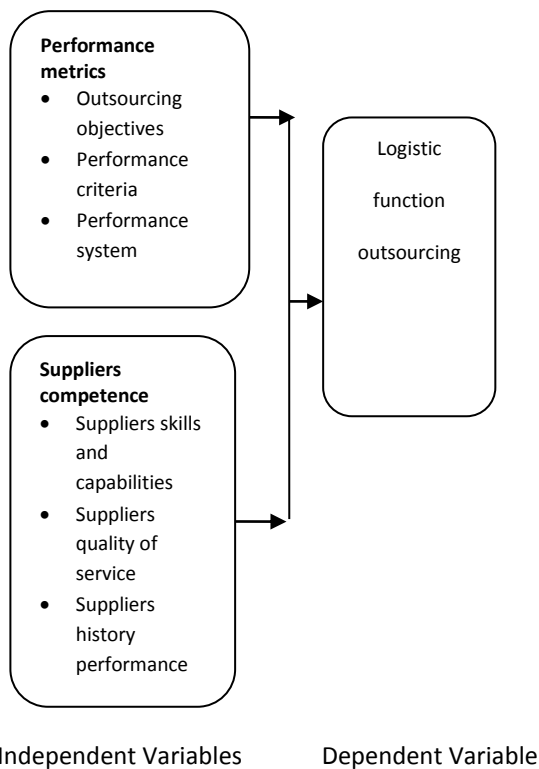


Figure 1 Conceptual Framework

Theoretical Framework

A theory is a set of statements or principles devised to explain a group of facts or phenomena, especially one that has been repeatedly tested or is widely accepted and can be used to make predictions about natural phenomena (Kothari, 2004). This section

presents theories that are related to logistics functions outsourcing.

a) Transaction cost economics theory for Logistics Function Outsourcing

The foundations of the Transaction Cost Economics (TCE) theory have been enhanced mainly in Williamson's seminal works: "Markets and Hierarchies" and "The Economic Institutions of Capitalism" (Williamson, 2008). The analysis suggested by this theory makes it possible to define whether some specific activities of a firm are to be carried out in-house or outside by resorting to the market.

The transaction is the basic unit of analysis in TCE. Williamson writes that a transaction may thus be said to occur when a good or service is transferred across a technological separable interface. This transaction may create costs that result to the "frictions" in the economic system. Williamson (2008) calls this costs "transaction costs" and divides them into three main categories: information costs, which correspond to seeking information on a potential partner; bargaining costs, related to negotiating and establishing the contracts where all possible situations in future transactions are considered, enforcement costs, i.e. costs to enforce and control performance, resolve conflicts and renegotiate contracts.

The amount of the transaction costs may be used as an indicator for the decision of outsourcing. When the transaction costs are low it is recommended to outsource the activity whereas when they are high, it is preferable to perform the activity in-house. However, in Williamson's perspective the transaction costs must be thought through together with the production costs (Wang, 2002). Transaction cost economics is grounded of two key behavioral assumptions bounded rationality and opportunism. Williamson regards bounded rationality as 'a flexible form of rationality' which accounts for the individuals' incapacity to make entirely rational decisions. Opportunism is

concerned with the economic actors' self-interest-seeking tendency, which makes allowances for guile (Wang, 2002). Logistics outsourcing occurs when the cost of purchasing a good or service externally is more cost efficient than producing it internally. This is why cost savings was identified above as the main reason for outsourcing within the industry.

b) Categorical Model for Suppliers Competence

Supply management is about creating and leading the supply chain to ensure continuity of supply with better service and more involvement for suppliers to provide our customers unexpected results. Many authorities agree that supplier evaluation is a critically important element of supply management processes and that we ought to be able to do it better, faster and with fewer resources (Handfield & Bechtel, 2007).

There are several supplier selection methods available in the literature. Some authors propose linear weighting models in which suppliers are rated on several criteria and in which these ratings are combined into a single score. These models include the categorical, the weighted point and the analytical hierarchical process. Total cost approaches attempt to quantify all costs related to the selection of a vendor in monetary units, this approach includes cost ratio and total cost of ownership (Wang, 2002).

Of all the methods, categorical method is considered the best as it relies heavily on the experience and ability of the individual buyer. People in charge of purchasing, quality, production, and sales all express their opinions about the supplier's performance on the basis criteria which are important to them. These departments assign either a preferred, unsatisfactory, or neutral rating for each of the selected attributes for every contending supplier. At periodic evaluation meetings, the buyer discusses the rating with department members. The buyer then determines the

supplier's overall scores (Nicholson, Compeau & Sethi, 2009).

The primary advantage of the categorical approach is that it helps structure the evaluation process in a clear and systematic way. This method is quite simple; it is not supported by objective criteria, and rarely leads to performance improvements. This method can therefore be used to evaluate suppliers' competence in manufacturing companies.

c) Balance Scorecard for Performance Metrics

Perhaps the most widely used performance metric framework is the balanced scorecard. Introduced by Kaplan and Norton in 1992, balanced scorecards have found widespread adoption in Fortune 1000 companies. Initially focused on finding a way to report on leading indicators of a business's health rather than traditional accounting measures which are lagging indicators, the balanced scorecard was refocused to measure the firm's strategy. Instead of measuring anything, firms should measure those things that directly relate to the firm's strategy (Kaplan & Norton, 2001).

With the balanced scorecard, objectives address the issue of what is needed for strategies to be successful. Performance metrics or balanced scorecard metrics address the measuring and controlling of progress to ensure that everything stays on course to deliver the desired outcome in the future (Jensen & Sage, 2000). Balanced scorecard is a team effort both in decision making and responsibility. Participants within the different sectors, departments etc bear responsibility for some portion of the pie and know how their portion contributes to overall success. Generating willing participation is likely to produce better outcomes hence the appeal of the balanced scorecard approach for implementing change. Key to balanced scorecard implementation is the ability to manage performance and control progress by measuring and recording results on a regular basis which means that every scorecard

objective needs to be measurable (Lebas & Euske, 2002).

Before outsourcing its logistics function, a company develops the main objectives it would want to achieve and aligns the contract with its strategic plan. This helps the company to determine whether outsourcing is helping in achieving its objectives or not.

Logistics function outsourcing

The outsourcing of logistics functions to partners, known as "third-party logistics providers", has increasingly become a powerful alternative to the traditional, vertically-integrated firm. A growth in the number of outsourcing partnerships has contributed to the development of more flexible organizations, based on core competencies and mutually beneficial longer-term relationships (Lieb, Millen & Wassenhove, 2004).

The market and firm characteristics influence the decision to contract multiple combinations of third-party logistics services. These services range from single transportation activities to integrated warehousing, distribution, and information management activities. Also several authors have indicated that across many industries logistics outsourcing has become a rapidly expanding source of competitive advantage and logistics cost savings. For example, Lieb and Randall, (2001) reported that some firms routinely have achieved up to 30 per cent to 40 per cent reductions in logistics costs and have been able to greatly streamline global logistics processes as a consequence of outsourcing. Other studies, however, have indicated that some logistics outsourcing arrangements are not successful. These unsuccessful relationships have been generally led to unclear goals and unrealistic expectations, internal sabotage by managers at the firms engaging in outsourcing, and flaws in the contractual agreements linking the parties involved.

Authors such as Lieb, Millen and Wassenhove, (2004) have indicated that the success of outsourcing agreements depends heavily on the management skills of the firms engaging the services of third-party logistics providers. These authors also suggested that the strategic outsourcing of integrated functions across the supply chain will be more effective than the gradual or piecemeal outsourcing of supply chain activities.

The overall trend in logistics outsourcing is moving in two directions: increase in the number of buyers of logistics services, and increase in the extent of usage of logistics services. The extent of usage includes number of activities or business process outsourced, geographical coverage, nature and length of contract, percentage of total logistics budget allocated to 3PL companies and level of commitment (Min, 2005).

In a typical 3PL arrangement, the 3PL provider sits in the middle between the manufacturers or suppliers (the buyers of the 3PL service, known as shippers) and the end customers (the consumers of the products). In this position, the 3PL provider will need to balance the dynamic pulls generated by the upstream and downstream entities, and thus faces challenges which are unique to its operations (Sink, Langley & Gibson, 2003).

With the positive outlook for the 3PL business and the immense competition which is likely to follow, it is critical that 3PL companies recognize that low price is not longer a sure-win strategy. In a study by Sink, Langley and Gibson (2003), it was found that the most important selection criterion for 3PL provider was core competencies.

Influence of Performance metrics on Logistics Function Outsourcing

Performance measurement is widely considered in the literature to be one of the key points for facilitating the success of any organization as it produces essential knowledge about

performance for enabling competitive results to be achieved. At the same time, the growing trend towards outsourcing makes it increasingly necessary for the focus of performance measurement to take into account the fact that companies are part of supply chains rather than consider them as separate entities (Mclvor & Wall, 2012).

Logistics services stand out among the activities that are usually outsourced as it seems to provide many advantages: improved customer service and cost savings. Performance has to be measured for these advantages to be guaranteed with the goal of confirming that the objectives being pursued are being achieved (Momme & Hvolby, 2009). This must be done through a set of indicators that can be measured using both objective financial and operational data.

Performance improvement is typically the most often-cited motive for outsourcing. Therefore, one would assume that organizations would give considerable attention to both identifying and measuring the short and long term performance gains derived from outsourcing. However, organizations often experience difficulties with performance measurement (Sanders & Autry, 2010). Performance objectives and measurement criteria should be established at the outset of the outsourcing relationship (Momme & Hvolby, 2009). For instance, the motivations for outsourcing are often the pursuit of service-related improvements. Clearly the sourcing organization must establish performance measures and a formal system to ensure that such performance objectives are being met. According to Mclvor and Wall (2012) employees in the sourcing organization must also be clear on what the objectives of outsourcing are and how they are aligned with business strategy. This performance system should be an integral part of the contract management process. Effective contract management requires reliable information that can assist in tracking performance. Although the

complexity of the performance management system will be related to the nature of the contract, the effectiveness of the outsourced activity must be assessed (Harland et al., 2010). In some instances, contracts involving expensive and complex services that require evaluation mechanisms designed specifically for that one contract. Performance measurement should not be focused solely on the outsourced activity. For instance, many organizations competition and the further development of the internet as a channel for communication and trading in many markets will continue to further empower the consumer (Franceschini & Varetto, 2009).

The first step in an outsourcing framework is the process importance analysis. This involves determining the level of importance for processes that have to be performed to satisfy customer needs. A major part of outsourcing evaluation involves determining whether an organization can achieve superior performance levels internally in critical processes on an ongoing basis (Feeny & Wilcocks, 2005). Organizations considering outsourcing must evaluate their capabilities internally and in relation to both their suppliers and competitors. It is important to carry out this analysis from a process perspective, given that organizations are increasingly positioning themselves in specific parts of the industry chain to gain competitive advantage. This allows an organization to concentrate on whether it will be detrimental to their competitive position to outsource research and development, design, engineering, manufacturing or assembly processes, both in the short and long term (Busi & Mclvor, 2006).

Determining the capability of the sourcing organization in relation to competitors or suppliers involves use of cost analysis and benchmarking. Cost analysis involves comparing the costs of sourcing the process internally and from an external supplier. An assessment of the relative cost position of the sourcing organization in relation to suppliers in the

processes should also be made (Feeny & Wilcocks, 2005). On the other hand, benchmarking assist in determining performance levels in the processes under scrutiny. It involves considering the cost position and a number of other dimensions such as quality, flexibility and service relative to competitors and suppliers (Franceschini & Varetto, 2009).

Influence of Suppliers' competence on Logistics Function Outsourcing

As a consequence of an increasing trend toward the outsourcing of logistics activities, shippers have been faced with an inevitable need to select the best suitable 3PL provider. The use of 3PL providers can yield important benefits such as reduced logistics costs and fixed logistics assets, improved order fill rates, and shortened average order-cycle lengths and cash-to-cash cycles (Dickson, 2011). If an appropriate 3PL provider is not selected, serious problems can occur, such as low-quality logistics services and contract non-fulfillment. This may then lead to the damaged reputation, image, and trust of the shipper. Hence, the selection of a suitable 3PL provider is an important factor that determines the logistics performance (Weber, Current & Benton, 2008).

Evaluating and selecting 3PL providers can be regarded as a multi-criteria decision making (MCDM) process in which a decision maker chooses, under several selection criteria, the best option among alternatives. One of the extensively used methods for MCDM is the analytic hierarchy process (AHP). Many researchers have applied AHP to solve MCDM problems in a number of different areas such as economic planning, energy policy, project selection, and budget allocation (Pearson & Ellram, 2006). However, the standard AHP has often been criticized for its inability to precisely handle the inherent uncertainty or vagueness associated with the mapping of a decision maker's judgment to a number. In many practical cases, decision makers can be

imprecise about their own level of preference because of incomplete information or knowledge, the vagueness of the human thought process, and the inherent complexity and uncertainty of the decision environment

Information gained from formalized supplier evaluation processes should be the foundation for all actions concerning a supplier' favorable or remedial, from selection to dismissal. Favorable actions include supplier selection, development, recognition and the award of additional business at the expense of less satisfactory suppliers (Pearn, Chen & Chen, 2010). Remedial actions include all our efforts to expedite performance through communication, corrective action aimed at improving performance, to the ultimate cancellation of contracts and removal from the list of approved suppliers. From this definition, it is clear that supplier evaluation should be a formal supply management program and our suppliers should know how it works and be involved with the process (Pearson & Ellram, 2006).

Clearly, careful supplier evaluation and selection is essential. Good suppliers allow enterprises to achieve good manufacturing performance and make the greatest benefits for practitioners. Supplier selection is complicated by the need to consider various criteria. Dickson (2011) examined the importance of supplier evaluation criteria and presented 23 supplier attributes that managers consider in such an evaluation, including quality, delivery, price, performance history and others, following a survey of industrial purchasing managers.

Good quality is essential to corporations in maintaining competitiveness and customer loyalty. In supply chain management, improving product quality is no longer merely the responsibility of the manufacturer, but is also the responsibility of the suppliers who provide the parts and components. Supplier manufacturing capability determines finished product quality and customer satisfaction. Supplier manufacturing capabilities thus are the

key consideration in supplier selection. Dickson (2011) identified price, quality and delivery performance as the three most important criteria in supplier evaluation. Moreover, Weber, Current and Benton (2008) concluded that quality was the most important factor, followed by delivery performance and price on supplier evaluation, with quality being of “extreme importance” and delivery being of “considerable importance”. In the Just-In-Time (JIT) manufacturing system, quality and delivery are still the two most important criteria for supplier selection. Pearson and Ellram (2006) examined supplier selection and evaluation criteria in small and large electronics firms and concluded that quality was the most important criterion in supplier selection and evaluation for both small and large electronic firms (Pearn, Chen & Chen, 2010). Price is another important factor that practitioners place a heavy emphasis on. Low cost is one competitive advantage that enterprises can use in a competitive market, because manufacturers would like suppliers to be able to provide components with process capability that satisfies the expected quality level and is also affordable. Restated, buyers want high-quality products at a cheap price. Consequently, price and quality are the two key considerations (Weber, Current & Benton, 2009). In supplier selection, a high quality and high-price supplier is undesirable because of cost considerations. Buyers prefer suppliers that offer products with adequate quality but at a lower cost.

Critical Review of Empirical studies

Management of logistics functions in modern organizations involves decision making for the complete distribution of goods and services in the marketing function with a view to maximize value and minimize cost. A growing awareness that competitive advantage comes from the delivery process as much as from the product has been instrumental in upgrading logistics from its traditional back-room function to a strategic boardroom function.

Various studies have been conducted on outsourcing services. Kagunyi (2011) conducted a study to investigate factors that influence outsourcing of noncore services in Kenyatta University. The study established that changes in technology, competition, changing consumer preferences and cost were affecting outsourcing of noncore services in Kenyatta University. On the other hand, Ofafa (2013) did an analysis of effects of outsourcing strategies on organizational performance in Kenya Revenue Authority. Outsourcing of services may lead to reduction of operational cost and achievement of efficiency. Other benefits that accompany outsourcing strategies include: gain access to world-class capabilities, creating a rich environment of resources that might have been insufficient internally and sharing risks with a partner company. Further, Were (2011) conducted a study on determinants of outsourcing of information technology services by focusing on firms listed at the Nairobi Stock Exchange. Research findings revealed that all the companies outsource information technology services and it was mainly influenced by the need to focus on core business and access to expert services. In addition, Mukiri (2011) did a study to find out factors influencing outsourcing of services in selected state corporations in Kenya. Corporations hire other firms to provide some of the non-core services. Some of the critical factors that influence outsourcing of services in state corporations include competition for professional services; operational costs; nature of business; changing working environment; management policies; Government rules and regulations; and procurement processes and policies.

However, none of these studies focused on the determinants of logistics function outsourcing. In addition, these studies did not focus on the pharmaceutical industry in Kenya. Further, none of these studies focused on the variables of this study. This research seek to fill this gap by focusing on the determinants of logistic function

outsourcing in Pharmaceutical companies in Kenya.

In relation to performance metrics, Sanchis-Pedregosa, Machuca and Gonzalez-Zamora, (2011) conducted a study on logistics outsourcing: performance models and financial and operational indicators and identified four performance measurement models: LogistiQual, RelPerf model, Benchmarking-related model and Balanced Scorecard (BSC). However, their study did not outline how performance metrics influence logistics function outsourcing.

On the other hand, Weimer and Seuring (2009) did a study on performance measurement in business process outsourcing decisions: Insights from four case studies. Major findings of the cross-case analysis are that almost only performance measurement systems based on the business process perspective were found. This structure is primarily determined by the underlying contract and compensation model. Links to the strategic objectives of the outsourcing project are missing. This study did not link performance measurement to logistics function outsourcing. Further, this study used secondary data of four case studies. Further, the study did not focus on the Kenya case, a research gap that this study seeks to fill. On the other hand, Sheikh (2012) did a study on the role of third party logistics providers with advanced to increase customer satisfaction in supply chain integration. The study revealed that third party logistics service providers bring together different processes of supply chain to make it much more efficient and effective with the help of advanced information technology. They 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. Nevertheless, this study was not conducted in Kenya and it did not link performance metrics to logistics function outsourcing. This research sought to fill this gap

by investigating how performance metric and improved information technology affect the logistic function outsourcing in Pharmaceutical companies in Kenya.

RESEARCH METHODOLOGY

Research design

Research design refers to the method used to carry out a research. This research study was used a descriptive research design. This design involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data. According to Zikmund et al. (2010) the major purpose of descriptive research is to describe characteristics of objects, people, groups, organizations, or environments. In other words, descriptive research tries to “paint a picture” of a given situation by addressing who, what, when, where, and how questions.

Target population

Cooper and Schindler (2011) described population as, the entire group of individuals or items under consideration in any field of inquiry and have a common attribute. The target population of this study was all the staff working in supply chain departments in Pharmaceutical Companies in Kenya. According to Waruingi (2009), there are 31 pharmaceutical companies in Kenya. All the pharmaceutical companies had varying number of staff in the supply chain departments. The target population of this study was therefore 239.

Sampling procedure and sample size

This research study used a purposive sampling method to select the head of supply chain departments and their assistants. The study was also used stratified random sampling to select 30% of the target population. In stratified random sampling, the strata are formed based on members' shared attributes or characteristics. A random sample from each stratum is taken in a number proportional to the stratum's size when compared to the population. These subsets of the strata are then pooled to form a random sample (Mehta, 2011).

The sample size of this study was therefore 72 respondents. According to Kothari (2004) a sample size of between 10 and 30% is a good representation of the target population.

Data collection instruments

The study used primary data which was collected by use of questionnaires; the questionnaires included structured and unstructured questions. The structured questions were used in an effort to conserve time and money as well as to facilitate an easier analysis as they are in immediate usable form; while the unstructured questions were used as they encouraged the respondent to give an in-depth and felt response without feeling held back in revealing of any information.

Methods of data collection

This refers to the means the study used to gather the required data or information (Kothari, 2004). The study used questionnaires to collect primary data. The study administered the questionnaire individually to all respondents. In addition, the study exercised care and control to ensure all questionnaires issued to the respondents are received and to achieve this, the study maintained a register of questionnaires, which was sent, and which was received. The questionnaires were administered by use of a drop and pick later method to the sampled respondents.

Data Processing and Analysis

Data analysis was done after data collection. The type of data analysis tool used is dependent on the type of data, that is; is the data qualitative or quantitative? (Mehta, 2011). Qualitative data was checked for completeness and cleaned ready for data analysis. Content analysis was used in processing of the data and a result was presented in prose form. Content analysis is a summarizing, quantitative analysis of messages that relies on the scientific method (including attention to objectivity, intersubjectivity, a priori design, reliability, validity, generalisability, replicability, and hypothesis testing) and is not limited as to the

types of variables that may be measured or the context in which the messages are created or presented (Cooper & Schindler, 2011).

The quantitative data in this research was analyzed by use of descriptive and inferential statistics by use of Statistical Package for Social Sciences (SPSS). Descriptive statistics such as mean, frequency, standard deviation and percentages were used to profile sample characteristics and major patterns emerging from the data. On the other hand, correlation analysis was used to establish the relationship between the dependent and the independent variables. Data was then presented in tables, charts and graphs.

FINDINGS AND DISCUSSION

The Response Rate

The sample size of this study was 72 staffs who were working in the supply chain departments of pharmaceutical companies in Kenya, out of which 71 responses were obtained which represents a 98.61% response rate. According to Babbie (2002) any response of 50% and above is adequate for analysis thus 98.61% is even better.

Validity and Reliability

The study sought the opinions of experts in the field of study especially the supervisors. The study also made corrections according to the supervisor's guidelines and ensured that the questions were in accordance of the objectives of the study.

A construct composite reliability co-efficient (Cronbach alpha) of 0.6 or above, for all the constructs, is considered adequate. The acceptable reliability coefficient is 0.6 and above, if the Cronbach alpha is below 0.6 the reliability of the questionnaire is considered too low and thus the research tool should be amended.

Four constructs were studied. In order to ascertain the extent to which the data collection instrument was reliable in measuring the study constructs (or factors), reliability tests were carried out on measures of performance metrics, suppliers' competence, supplier-firm relationship and information systems. The findings of the pilot test showed that 'performance metrics' scale had a Cronbach's reliability alpha of 0.713, and 'suppliers' competence' scale had an Alpha value of 0.732, 'This implies that the scales measuring the objectives met the reliability criteria ($\alpha > 0.6$). This therefore indicated that the research tool was sufficiently reliable and valid and needed no amendment.

Table 1 Cronbach's Alpha Values

Construct	Cronbach's Alpha
Performance metrics	0.713
Suppliers' competence	0.732

General Information

The general information in this study included the understanding of the respondents on logistic function, the age of organizations as well as the percentage market share of the organizations nationally.

Respondents' Understanding logistic function

From the findings, most of the respondents indicated that logistic function involves transportation of raw material, employees or products. Others indicated that logistic function generally means transportation. These findings are in line with Current and Benton (2008) argument that logistic functions are operations dealing with the procurement, supply, and maintenance of equipment, with the movement and evacuation, with the provision of facilities and services, and with related matters.

Age of the Organizations

The respondents were requested to indicate the age of their organizations. According to the findings, 46.48% of the respondents indicated that their organizations were aged between 9

and 12 years, 30.99% were aged between 3 and 9 years and 22.54% were above 12 years in age. These findings show that most of the organizations were aged between 9 and 12 years.

Percentage Market Share of the Organizations

The respondents were asked to indicate the percentage market share of their organizations nationally. From the findings, 42.25% of the respondents indicated that their organizations had between 20 and 40 percent market share nationally, 32.39% indicated that their organizations had between 0 and 20 percent market share nationally and 25.35% indicated that their organizations had between 40 and 60 percent market share. These findings clearly show that most of the organizations had between 20 and 40 percent market share nationally.

Logistics Function Outsourcing

The respondents were further asked to indicate whether their organizations outsourced their logistic functions. From the findings, 91.55% of the respondents indicated that their organizations outsourced logistic functions while 8.45% indicated that their organizations were not outsourcing their logistic functions. From these findings we can deduce that most of the pharmaceutical companies in Kenya were outsourcing their logistic functions. These findings agree with Noah and Waithaka (2007) argument that the industry imports over 95% of the raw materials and outsources logistic functions like importation of raw material and distribution of products to third parties.

Logistic Services Outsourced

The respondents were further asked to indicate the logistic services that their organizations were outsourcing. From the findings, 78.87% of the respondents indicated that their organizations were outsourcing supply of raw materials while 21.13% disagreed. Additionally, 64.79% indicated that their organizations were outsourcing the distribution of their products

while 35.21% indicated that their companies were distributing their products. Lastly, 16.90% of the respondents indicated that their organizations were outsourcing other services. From these findings we can deduce that most of the pharmaceutical companies in Kenya were

Benefits of Logistics Function Outsourcing

The respondents were also asked to indicate the extent to which they agreed with the stated benefits of logistics function outsourcing. From the findings, the respondents agreed with a mean of 4.092 and a standard deviation of 0.723 that logistics function outsourcing makes capital fund available for other purposes. The respondents also agreed with a mean of 4.091 and a standard deviation of 0.672 that logistics function outsourcing helps to share risks. Further, the respondents agreed with a mean of 4.091 and a standard deviation of 0.762 that logistics function outsourcing helps to gain access to world class capabilities. In addition, the respondents indicated with a mean of 4.027 and a standard deviation of 0.726 that logistics function outsourcing helps to gain a competitive advantage in the global economy.

The respondents also agreed with a mean of 3.873 and a standard deviation of 0.762 that logistics function outsourcing helps organization to focus on its core competencies. These findings agree with Lieb, Millen and Wassenhove (2004) argument that a growth in the number of outsourcing partnerships has contributed to the development of more flexible organizations, based on core competencies and mutually beneficial longer-term relationships. In addition, the respondents agreed with a mean of 3.872 and a standard deviation of 0.562 that logistics function outsourcing is a cost effective business practice. These findings are in line with Randall (2001) who reported that some firms routinely have achieved up to 30 per cent to 40 per cent reductions in logistics costs and have been able to greatly streamline global logistics processes as a consequence of outsourcing. Further, the respondents agreed with a mean of

outsourcing supply of raw materials and distribution of products. These findings agree with Noah and Waithaka (2007) argument that pharmaceutical companies outsource import of raw materials and distribution of their products.

3.872 and a standard deviation of 0.728 that logistics function outsourcing leads to development of more flexible organizations to the needs of consumers. Additionally, the respondents indicated with a mean of 3.872 and a standard deviation of 0.623 that logistics function outsourcing frees resources for other purposes. The respondents further agreed with a mean of 3.782 and a standard deviation of 0.623 that logistics function outsourcing takes advantage of resources not available internally. Finally, the respondents agreed with a mean of 3.672 and a standard deviation of 0.672 that logistics function outsourcing helps in non-core functions that are too complex to manage. These findings agree with Dickson (2011) argument that the use of 3PL providers can yield important benefits such as reduced logistics costs, improves cost-effectiveness of doing business, and shortened average order-cycle lengths and cash-to-cash cycles.

Table 2 Benefits of Logistics Function Outsourcing

	Mean	Std Deviation
It's a cost effective business practice	3.872	0.562
To gain access to world class capabilities	4.091	0.762
It free resources for other purposes	3.782	0.623
It helps organization to focus on its core competencies	3.873	0.762
Helps to share risks	4.091	0.672
To gain competitive advantage in the global economy	4.027	0.726
Take advantage of resources not available internally	3.872	0.623
Non-core functions that are too complex	3.672	0.672

to manage		
Make capital fund available for other purposes	4.092	0.723
It leads to development of more flexible organizations to the needs of consumers	3.872	0.728

Discussion and Analysis of Logistic Function Outsourcing

With regard to logistic function outsourcing, the study established that one of the benefits of logistics function outsourcing is that it makes capital fund available for other purposes. This is very beneficial to pharmaceutical companies in Kenya as they use the capital to invest in other activities which include expansion. In addition, logistic function outsourcing was found to help an organization to gain access to world class capabilities, it helps to share risks, helps an organization to gain competitive advantage in the global economy, frees resources for other purposes and helps organization to focus on its core competencies, helps. Further, logistic function outsourcing was found to help an organization to take advantage of resources not available internally and to lead to development of more flexible organizations to the needs of consumers. These benefits stress the need for pharmaceutical companies to outsource their logistics function.

Effects of Supplier’s Competence on Logistics Function Outsourcing

The respondents were requested to indicate the effects of supplier’s competence logistics function outsourcing in their organization. According to the findings, the respondents indicated that suppliers’ competence influence an enterprise manufacturing performance and make the greatest benefit for practitioners. Additionally, suppliers’ competence affects the products quality, price and performance history. Good quality is essential to corporations in maintaining competitiveness and customer loyalty. In supply chain management, improving

product quality is no longer merely the responsibility of the manufacturer, but is also the responsibility of the suppliers who provide the parts and components.

These findings agree with Pearn, Chen and Chen (2010) argument that supplier competence affects products price which is an important factor that practitioners place a heavy emphasis on. Low cost is one competitive advantage that enterprises can use in a competitive market, because manufacturers would like suppliers to be able to provide components with process capability that satisfies the expected quality level and is also affordable. Additionally, Weber, Current and Benton (2009) argue that suppliers’ competence influences quality of products. In supplier selection, a high quality and high-price supplier is undesirable because of cost considerations which subsequently affect logistics function outsourcing.

Discussion and analysis of Suppliers’ competence

The findings of this study show that the competence of the suppliers is an important aspect to consider during a logistic function outsourcing. In evaluating the competence of a supplier, a organization should consider suppliers relationships with other stakeholders most, followed by supplier’s reliability, supplier’s feedback mechanism, supplier’s performance history, supplier’s compliance with the organization’s standards, supplier’s compliance with the laws and regulations, supplier’s quality of services, supplier’s skills and capabilities, suppliers outsourcing cost and lastly supplier’s delivery performance.

If a supplier proves to be incompetent an organization can take various actions beginning with removal from the list of approved suppliers. The organization should also consider ultimate cancellation of contracts, expedite performance through communication or

corrective action aimed at improving performance.

Other Benefits logistics function outsourcing

The respondents also indicated that other benefits of outsourcing include reduction of costs, to increase efficiency, improve service quality, accountability, value, decrease lead counts and cash infusion and gain access to world class capability and sharing. The respondents also indicated that to reduce operational costs, to reduce labor costs and to reduce overheads like indirect expenses. These findings are in line with Momme and Hvolby (2009) argument that logistics services stand out among the activities that are usually outsourced as it seems to provide many advantages: improved customer service and cost savings.

Influence of Performance metrics on Logistics Function Outsourcing

The study sought to examine the effect of performance metrics on logistics function outsourcing in Pharmaceutical Companies in Kenya.

Performance Metrics as an Important Aspect of Outsourcing

The respondents were asked to indicate whether their organizations were considering performance metrics as an important aspect of outsourcing its logistics functions. According to the findings, 64.79% of the respondents indicated that their organizations were considering performance metrics as an important aspect of outsourcing its logistics functions while 35.21% of the respondents indicated that their organizations were not considering performance metrics as an important aspect of outsourcing its logistics functions. From these findings we can deduce that most of the pharmaceutical companies in Kenya were considering performance metrics as an important aspect of outsourcing its logistics functions. These findings are in line with Mclvor & Wall (2012) argument that the growing trend

towards outsourcing makes it increasingly necessary for the focus of performance metrics.

Aspects of performance metrics and outsourcing of logistics services

The respondents were asked to indicate the extent to which their organizations considered the stated aspects of performance metrics before outsourcing their logistics services. From the findings, the respondents indicated with a mean of 4.282 and a standard deviation of 0.782 that objectives of outsourcing must be established and aligned to business strategy before outsourcing logistics functions. These findings agree with Momme & Hvolby (2009) argument that performance has to be measured for the advantages of logistics function outsourcing to be guaranteed with the goal of confirming that the objectives being pursued are being achieved. The respondents also indicated with a mean of 4.212 and a standard deviation of 0.625 that performance criteria must be established at the onset of the outsourcing relationship. These findings agree with Momme and Hvolby (2009) findings that performance objectives and measurement criteria should be established at the outset of the outsourcing relationship. Further, the respondents indicated with a mean of 4.092 and a standard deviation of 0.524 that outsourcing objectives must be clear and must be agreed upon before establishment of outsourcing relationship. Additionally, the respondents indicated with a mean of 4.019 and a standard deviation of 0.837 that organizations strategic plan is considered before outsourcing logistics functions. According to Lebas and Euske (2002), before outsourcing its logistics function, a company develops the main objectives it would want to achieve and aligns the contract with its strategic plan.

The respondents also indicated with a mean of 3.982 and a standard deviation of 0.524 that process importance analysis is the first step in an outsourcing framework. These findings agree with Franceschini and Varetto (2009) findings

that the first step in an outsourcing framework is the process importance analysis. Further, the respondents indicated with a mean of 3.827 and a standard deviation of 0.525 that organization must determine its capability in relation to its competitors/suppliers through cost analysis and benchmarking. The findings agree with Feeny and Wilcocks (2005) argument that organizations considering outsourcing must evaluate their capabilities internally and in relation to both their suppliers and competitors. In addition, the respondents indicated with a mean of 3.827 and a standard deviation of 0.625 that performance system should be an integral part of the contract management process. Additionally, the respondents indicated with a mean of 3.782 and a standard deviation of 0.463 that efficiency of the supplier is considered before outsourcing. The respondents also indicated with a mean of 3.672 and a standard deviation of 0.524 that bench marking of such aspects as cost position and other dimensions such as quality, flexibility and service relative to competitors and suppliers. These findings agree with Franceschini and Varetto (2009) argument that benchmarking involves considering the cost position and a number of other dimensions such as quality, flexibility and service relative to competitors and suppliers. Lastly, the respondents indicated with a mean of 3.625 and a standard deviation of 0.652 that effectiveness of the outsourced activity must be evaluated.

Table 3 Aspects of performance metrics and outsourcing of logistics services

	Mean	Std Deviation
Organizations strategic plan is considered before outsourcing logistics functions	4.019	0.837
Objectives of outsourcing must be established and aligned to business strategy before outsourcing logistics functions	4.282	0.782
Performance criteria must be established at the onset of the outsourcing relationship	4.212	0.625

Outsourcing objectives must be clear and must be agreed upon before establishment of outsourcing relationship	4.092	0.524
Process importance analysis is the first step in an outsourcing framework	3.982	0.524
Organization must determine its capability in relation to its competitors/suppliers through cost analysis and benchmarking	3.827	0.525
Efficiency of the supplier is considered before outsourcing	3.782	0.463
Performance system should be an integral part of the contract management process	3.827	0.625
Bench marking of such aspects as cost position and other dimensions such as quality, flexibility and service relative to competitors and suppliers	3.672	0.524
Effectiveness of the outsourced activity must be evaluated	3.625	0.652

Effects of Performance Metrics on Logistics Function Outsourcing

The respondents were asked to indicate the effects of performance metrics on logistics function outsourcing. The respondents indicated that performance metrics helps an organization to ensure that such performance objectives are being met. In addition, the respondents indicated that performance metrics are used in logistics function outsourcing to track performance. Further, organizations considering outsourcing must evaluate their capabilities internally and in relation to both their suppliers and competitors by using performance metrics. Additionally, performance metrics assist in determining performance levels in the processes under scrutiny. It involves considering the cost position and a number of other dimensions such as quality, flexibility and service relative to competitors and suppliers. These findings correlate with Harland et al. (2010) argument that effective contract management requires reliable information that can assist in tracking performance which can only be acquired by used of performance metrics. Further, Franceschini & Varetto (2009) indicate that performance metrics assist firms in determining performance levels in the processes under scrutiny.

Discussion and analysis of Performance metrics

With regard to performance metrics, the study established that objectives of outsourcing must be established and aligned to business strategy before outsourcing logistics functions. This implies that the pharmaceutical company must ensure that the objectives for outsourcing are well outlined to measure the outcome so as to establish whether outsourcing is a viable choice economically. The findings of this study also show that before making a decision to outsource an organization should put into consideration outsourcing objectives, organizations strategic, performance system, efficiency of the supplier, process importance analysis as well as cost analysis.

SUMMARY OF THE FINDINGS

The study also found that most of the pharmaceutical companies in Kenya were outsourcing their logistic functions such as supply of raw materials and distribution of products. The benefits of outsourcing were found to include making capital fund available for other purposes, helping to share risks, helping to gain access to world class capabilities, helping to gain a competitive advantage in the global economy, helping organization to focus on its core competencies, ensuring cost effective business practice, frees resources for other purposes, helps in non-core functions that are too complex to manage and takes advantage of resources not available internally leads to development of more flexible organizations to the needs of consumers.

In relation to performance metrics, the study found that most of the pharmaceutical companies were considering performance metrics as an important aspect of outsourcing its logistics functions. The study also found that the objectives of outsourcing must be established and aligned to business strategy before outsourcing logistics functions; performance objectives and measurement criteria should be established at the outset of the outsourcing relationship; process

importance analysis is the first step in an outsourcing framework and an organization must determine its capability in relation to its competitors/suppliers through cost analysis and benchmarking.

The study also found that suppliers' competence is an important factor in logistic function outsourcing. The study also found that aspects of suppliers' competence to consider in logistic function outsourcing include suppliers relationships, supplier's feedback mechanism, supplier's reliability, supplier's compliance with the organization's standard and supplier's performance history, supplier's quality of services, suppliers' outsourcing cost, supplier's skills and capabilities and supplier's delivery performance. The pharmaceutical companies should therefore ensure that they are well knowledgeable in matters pertaining to their suppliers so as to identify situations that call for logistics function outsourcing.

Conclusion

Effect of Performance metrics on Logistics Function Outsourcing

The study concludes that performance metrics influence logistic function in pharmaceutical companies in Kenya positively and significantly. The growing trend towards outsourcing makes it increasingly necessary for the focus of performance metrics so as to ensure efficiency and effectiveness. In considering performance metric before establishing the outsourcing relationship helps the organization to gain competitive advantage in the global economy, gain access to world class capabilities, share risks as well as focus on its core competencies.

The study indicated that performance metrics helps an organization to ensure that performance objectives agreed upon at the onset of establishing the outsourcing relationship are being met. In addition, performance metrics are used in logistics function outsourcing to track the suppliers' performance. Further, organizations considering

outsourcing must evaluate their capabilities internally and in relation to both their suppliers and competitors by using performance metrics. In so doing such aspects like clear outsourcing objectives must be established and aligned to business strategy and organisation's strategic plan, performance criteria must also should be agreed upon to track suppliers' performance. This agrees with, Franceschini & Varetto (2009) who indicate that performance metrics assist firms in determining performance levels in the processes under scrutiny.

Further, an organization must determine its capability in relation to its competitors/suppliers through cost analysis and benchmarking. In addition, benchmarking of such aspects as cost position and other dimensions such as quality, flexibility and service relative to competitors and suppliers is important in making a decision to outsource.

Effect of Suppliers' competence on Logistics Function Outsourcing

The study indicates that supplier's competence affects logistics function outsourcing in the pharmaceutical organizations. The findings indicated that suppliers' competence influence an enterprise manufacturing performance and make the greatest benefit for practitioners. In considering suppliers' competence in outsourcing logistics function an organization stands to gain a competitive advantage by providing high quality products at low cost thus increasing its effectiveness as well as its efficiency. Good quality is essential to corporations in maintaining competitiveness and customer loyalty. In supply chain management, improving product quality is no longer merely the responsibility of the manufacturer, but is also the responsibility of the suppliers who provide the parts and components.

Before making a decision to outsource logistic functions, a pharmaceutical company should consider various aspects of suppliers'

competence like suppliers' relationships, supplier's feedback mechanism, supplier's reliability, supplier's compliance with the organization's standard and supplier's performance history to evaluate suppliers. Other factors to be considered include compliance with the laws and regulations, supplier's quality of services, suppliers' outsourcing cost, supplier's skills and capabilities and supplier's delivery performance.

Recommendations

This study established that most of the pharmaceutical companies in Kenya were not using performance metrics before outsourcing its logistics functions. Since performance metrics helps an organization to ensure that performance objectives are being met and in tracking of performance, this study recommends that all pharmaceutical companies in Kenya should make use of performance metrics.

The study revealed that supplier's experience, communication, reliability, compliance and performance history affect logistic function outsourcing. This study therefore recommends that pharmaceutical companies should evaluate suppliers experience, reliability compliance, and performance history while making a decision to outsource logistic functions.

To researchers and academicians, the study provides information on the effect of performance metrics and suppliers competence on logistic function outsourcing. They should therefore explore on others than the two stated that influence logistic function outsourcing.

Recommendation for Further Studies

This study recommends further studies on other factors that were discovered during the research that influence logistic function outsourcing. These factors include internet connectivity, top management support, creation/expansion of a potential niche and risk control

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