

# Supplier Selection Criteria and Supply Chain Performance in Non-Governmental Organizations in Kenya

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## ABSTRACT

The Non-Governmental Organization plays a key role in Kenya's development. That's why many NGO's have deployed strategies in the management of their supply chain. These strategies include the criteria in which the NGO's select their suppliers'. Selection of suppliers is a process that involves multi-objective decision, encompassing many tangible and intangible factors in a hierarchical manner and the applicability of the criteria used will depend on the product or service produced and the market for which these products or services is targeted. NGO's aim of making the best decisions in choosing a criterion is to optimized supply chain performance. The overall objective of this research was to determine the factors that affect supplier selection decisions and also to establish the relationships between supplier selection criteria and supply chain performance of NGO's in Kenya. The study focused on only. 48 highly active NGO's in Kenya from a population of 2,507 NGO's available in Kenya. Descriptive research design and proportionate random sampling were used to achieve the results. In this paper a set of supplier selection decision was adapted to design the questionnaire for practical survey. The results confirmed that supply chain decisions play a very important role in agreement with the criteria aligning with the NGO's strategy. Successful management of the supply chain is the key to the long term success of an organization. Suppliers have to be selected carefully, as they can have a very positive or a very adverse impact on the overall performance of the organization.

**Key Words:** Non-Governmental Organization; Supply Chain; Supplier selection; Performance

## 1.0 INTRODUCTION

### 1.1 Introduction

Supplier selection is one of the classic areas of research in supply chain management. In fact, past reviews of literature in supplier selection indicate a strong diversity in the systemic approaches in supplier selection methodology as well as in supplier selection criteria (Ho et al. 2010). Traditionally, vendors are selected from among many suppliers on their ability to meet the quality requirements, delivery schedule, and the price offered. The main purchasing objective was to obtain the lowest possible price by creating strong competition between suppliers, and negotiating with them. Selection of appropriate suppliers is one of the fundamental strategies for enhancing the quality of output of any organization, which has a direct influence on the company's reputation. Despite many multinational corporations' efforts to implement social and environmental issues in their supply chains, a gap exists between the desirability of supply chain sustainability in theory and its implementation in practice (Bowen et al.2001). Globally many companies and multinational corporations make their supply chains more socially responsible by implementing governance mechanisms and practices used by firms to manage relationships with their suppliers with the aim of improving their sustainability performance. This is by implementing the suppliers' assessment tools, codes of conduct and how to collaborate with suppliers (Keating et al, 2008; Anderson & Skjoett- Larsen, 2009).

NGO's in Kenya, and Africa as a whole, have taken gigantic steps to dedicate themselves towards the achievement of the goals outlined by the United Nations (United Nations, 2011). In order to achieve these objectives, NGO's have aspired to establish a competent structure that ensures efficiency and effectiveness in their service delivery mechanisms (Jordan, 2010). The growth of NGOs has been phenomenal in Kenya mainly because of the ability to deliver emergency relief to vulnerable areas. NGOs in Africa, particularly in Kenya, can reach groups that the government and other agencies cannot and the past development strategies have given NGOs the legitimacy to act on behalf of the poor.

### 1.2 Supplier Selection Criteria

Supplier selection process is a multi-objective decision, encompassing many tangible and intangible factors in a hierarchical manner. The applicability of the criteria used depends on the product or service produced and the market for which these products or services is targeted. In the past, mostly quantitative criteria were being

used for evaluating suppliers, after the 1990s, qualitative criteria also started getting prominence. With the further maturity of procurement processes and onset of global procurement, newer evaluation criteria like “culture”, “communication barriers”, “relationship”, “geographical location”, “foreign exchange rates”, “tariffs or customs duties”, “trade restrictions”, “quality management systems”, and “environmental factors” started gaining prominence. (Sarkis and Talluri, 2006). Suppliers have to be selected carefully, as they can have a very positive or a very adverse impact on the overall performance of the organization. It has been reported that a majority of quality problems of an organization are due to defective material (Heizer & Render, 2006) and carefully selected, competitive suppliers can go a long way in minimizing adverse impacts and in fact in enhancing positive impacts on the quality of output of an organization. Supplier selection decision is trivial because it involves a large number of closely interrelated decisions regarding financing, negotiations, distribution, procurements and product quality assurance at the source. Owing to the large number of factors affecting the decision, the decision should be made based on an orderly sequence of steps. Supplier selection criteria for a particular product or service category should be defined by a “cross-functional” team of representatives from different sectors of the organization (Rajan, 2006). The criterion to use in selecting suppliers has to be examined extensively. In Modern business world, many firms prefer a strategy of few suppliers (Chandra & Kumar, 2000). This implies that a buyer wants to have a long-term relationship and the cooperation of a few dedicated suppliers. According to Simpson et al. (2002) selecting and assessing suppliers involves both their information and process dimension. The information dimension focuses mostly on criteria to be used in selecting assessing decisions. While the process dimensions involves developing and implementing corresponding decision making processes. Re-configuration of the supply base helps NGO’s in finding ways to improve availability, quality, innovation, and accessibility of the product in a more secure market at lower prices for the developing nations.

### **1.3 Supply Chain Performance**

According to Green & Inman (2005) supply chain performance is the ability to deliver quality products and services in precise quantities and at precise times with the aim to minimize total cost of the products and services to the ultimate customers of the supply chain. Supply chain performance depends upon the agility, adaptability, and alignment of the supply chain partners in which supply chain strategy is positively related to overall performance of the supply chain (Lee, 2004). Strategies that strengthen the competitive position of the supply chain serve to directly enhance supply chain performance, which will, in time, positively impact performance at the organizational level for each supply chain partner. According to Vanderhaeghe and de Treville (2003) Supply chain performance is dependent on the supply chain partners’ ability to adapt to a dynamic environment. Although organizational managers are ultimately held accountable for organizational performance; organizational success first depends upon the performance of the supply chains in which the organization functions as a partner. Supply chain performance is optimized only when an “inter-organizational, Inter-functional strategic approach is adopted by all partners operating within the supply chain (Chopra & Meindl. 2004). Strategies that strengthen the competitive position of the supply chain serve to directly enhance supply chain performance, which will, in time, positively impact performance at the organizational level for each supply chain partner. Supply chain performance is relatively difficult to measure by its nature but it can be identified by the satisfaction of immediate rather than the ultimate customers (Green et al. 2008). According to Beamon (1996) he has placed emphasis on three separate types of supply chain performance measures and these are resource, output, and flexibility measures. Resource measures inventory levels, personnel requirements, equipment utilization, energy usage, and cost. Resources are generally measured in terms of the minimum requirement (quantity) or a composite efficiency measure. Efficiency measures the utilization of the resources in the systems that are used to meet the system's objectives. Output measures customer responsiveness, quality, and the quantity of final product produced. Flexibility, which is seldom used in supply chain analysis, can measure a system's ability to accommodate volume and schedule fluctuations from suppliers, manufacturers, and customers.

### **1.4 Non-Governmental Organizations in Kenya**

In the past two decades, governments throughout the developing world have seen an explosion in the number of both foreign and local non-governmental actors (NGOs) providing social services in their territory. In Kenya, NGO growth has truly been increasing 1974; there were only 125 NGOs in Kenya. By 1990, there were over 400 registered with the government, soaring to nearly 3000 in 2007 (NGO Coordination Bureau 2006). While most of these non-governmental actors are not directly hostile to the state, they are providing

welfare and other services that are traditionally associated with and often explicitly promised by governments in Africa such as education, health care, child and women's assistance, agricultural extension services, employment, and even in some cases, roads, wells and other infrastructure. Moreover, NGOs have influenced governance strategies within public administration. Individuals and departments in government have learned from NGOs, and have begun to mimic the tools they have seen NGOs use successfully for years, calling for participatory development and civic education so that their agencies can better serve the community (World Bank, 2014). Most NGOs in Kenya are involved in one or more of the following eight types of activities: agriculture, education, environment, general development, peace and governance, health, emergency or refugee relief, and programs directed at disadvantaged communities (specifically women, children, youth, the disabled and the elderly). Indeed, most NGOs in Kenya – whether established within the country by Kenyan citizens or abroad and are funded via international sources or local private sources.

### **1.5 Statement of the Problem**

Review of supplier selection criteria makes it a very good topic for operations and management science disciplines. In fact in Kenya NGO's, there has been no such studies, of which has focused on a multi-industry review of supplier selection criteria and their importance, even with a different approach. This is due to lack of literature with a similar objective and high complexity of analysis with evolving theories often not suitable to accommodate the modifications and the analysis needs. According to Ho et al. (2010) indicates the presence of over 60 evaluation criteria, the usage of which have been done selectively across different studies based specific requirements. The objective of this study was to identify and then estimate the relative importance of the critical evaluation during the supplier prequalification stage. The challenge faced was that the scholars did not attempt to identify the supplier evaluation criteria which are important across industries and across purchasing contempt's. The highlighted literature clearly points out that a gap exists between desirability of supply chain sustainability in theory and its implementation in practice. The researchers have not taken enough perspective into the dimensions of suppliers' selection criteria within the context of Non-Governmental Organizations (NGO's) in an African setting. Despite the many techniques that have been developed, researchers admit that there are still major challenges affecting the selection process. The underlying challenges facing the selection of suppliers and criteria used are far from being fully enumerated and thus much is yet to be researched and the gap remains very large. The main purpose of this study was to examine criteria used by NGO's in Kenya in selection of suppliers.

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical Frame Work**

#### **2.1.1 The analytic hierarchy process (AHP) Theory**

The analytic hierarchy process was developed by Saaty (1980), which is a powerful tool in solving complex decision problems. The AHP helps the analysts to organize the critical aspects of a problem into a hierarchical structure similar to a family tree. By reducing complex decisions to a series of simple comparisons and rankings, then synthesizing the results, the AHP not only helps the analysts to arrive at the best decision, but also provides them with a clear rationale for the choices made. In the AHP approach, the decision problem is structured hierarchically at different levels with each level consisting of a finite number of decision elements. The upper level of the hierarchy represents the overall goal, while the lower level consists of all possible alternatives.

#### **2.1.2 Multiple Attribute Utility Theory**

As indicated in the previous section, international supplier selection is a complex decision-making problem. The complexity stems from a multitude of quantitative and qualitative factors influencing supplier choices as well as the intrinsic difficulty of making numerous tradeoffs among these factors. Multiple attribute utility theory enables the decision maker to structure a complex problem in the form of a simple hierarchy and to subjectively evaluate a large number of quantitative and qualitative factors in the presence of risk and uncertainty. The major strength of Multiple Attribute Utility Theory is its ability to deal with both deterministic and stochastic decision environments (Zionts, 1992).

## **2.2 Supplier Selection Decision**

Supplier selection is the process by which the buyer identifies, evaluates and contracts with the suppliers. Suppliers are considered the best tangible assets of any organizations that have varied strengths and

weaknesses that require careful assessment before order placed (De Boer, 2001). The ability to analyze both the quantitative and qualitative criteria the organization is able to arrive at a robust decision. Supplier selection decisions are often complicated by the fact that multiple criteria, such as price, quality, flexibility, delivery, and service, must be considered in the decision-making process (Dickson, 1966; and Talluri, 2002; Li et al., 2006). Trade-offs among criteria has to be made to align the final sourcing decision with competitive priorities and business plans (Hedderich et al. 2005). Sourcing location selection is the first, and thus an important, step in the supplier selection process. Critical factors such as infrastructure, market attractiveness, and cost levels are typically characteristics of regions or countries rather than of specific suppliers. Thus, suppliers within the same area share all the location-specific attributes, which avoids the need to rank these suppliers on those attributes. After determining where to source, a supplier selection decision within the chosen area can be made. Supplier selection decisions must include strategic and operational factors as well as tangible and intangible factors in the analysis (Sarkis & Talluri, 2002). That's why decision maker can analyze the supplier selection decision in a systematic and scientific approach by means of utilizing the proposed model. Competition necessitates selecting carefully suitable suppliers for collaboration. It is critical that supplier selection process be able to bring together all of the stakeholders into a common collaboration that generates buy-in and their judgments', comments and evaluation be captured through the process as well. Decision is made from the suppliers who have passed the qualification requirements and are eligible for contracts award.

### **2.3. Factors Affecting Supplier Selection decision**

#### **2.3.1 Organization Performance**

According to Matook et al. (2009) the operational success of organizations policies will often depend on the development of a network of reliable and trustworthy suppliers and consequently, making the right supplier selection decisions are important. According to Slack and Lewis (2002) if there is a gap of unsatisfactory performance it's assumed the relief organization will adapt their strategies thus dealing with operational decision areas in allocation of resources, level of cooperation and outsourcing in order to be strategic fit between the enablers and requirements of the beneficiaries'. NGO's have to check on their financial capabilities since financial stability is crucial to their missions and survival their success cannot be measured by how closely their spending matches their budgeted amounts. Financial capabilities of the suppliers are crucial since it will indicate the procurement cost to be incurred by the organization. The firm must therefore find a low-cost supply base where it can minimize its purchase price, import duties, documentation cost, transport cost, communication cost and cost of investigating the potential supplier's past performances and financial background. In this regard, financial stability of the supplier is a necessary requisite for long-term partnership programmes. Orders should be placed by the national governments depending on their allocated budgets for the product as well as on the epidemiological justifications of the country. On the other end of the chain, competition is quite limited, with only a few manufacturers available. This is due to the strict regulations and high standards for manufacturers to enter the market. These regulations are due to the nature of the product being a preventative means towards global health, and thus quality is a critical factor. In evaluating the market of supplies, the quality standards should be first checked. Thereafter, the availability of a purchasing and delivery infrastructure should also be evaluated to see whether sourcing is feasible from the region. Finally, suppliers meeting infrastructure and quality standards should be evaluated and selected according to previously set criteria of humanitarian aid being of a unique nature implies different motives. Even though achieving lower price is still an important motive in order to make the products affordable for the buyer governments, availability and quality are also of critical importance.

#### **2.3.2 Environmental Performance**

Environmental challenges, such as global warming, have demanded greater concern by organizations regarding their environmental management (Boiral, 2006; Lin et al. 2001). However, in order to improve their relations with the environment, these organizations must contribute towards a reduction in environmental impacts from their supply chains, stimulating improvements in their suppliers' environmental performance. The insertion of environmental criteria in the supplier selection process for a given firm will be proportional to the environmental demand of final consumers (Vachon & Klassen, 2006) Firms have recognized the need to develop strategies that extend their traditional corporate governance processes beyond the firms' boundary to their supply chain partners. The most visible indicator of this extension is the

emergence of corporate social responsibility oriented purchasing strategies, such as laying down standards that suppliers must meet in order to win business (Keating et al., 2008). Environmental performance is often related to energy efficiency and the reduction of waste, pollution, emissions, environmental accidents, etc.; social sustainability to labor conditions, diversity, connectedness within and outside the community, quality of life. Svensson (2007) proposed that supply chains should be considered in order to enhance sustainability of on governance mechanisms which extend corporate social responsibility practices to suppliers. Accordingly, by governance mechanism are those practices used by firms to manage relationships with their suppliers with the aim of improving their sustainability performance.

### **2.3.3 Government Performance**

In making the decision on which supplier to choose from in the market, infrastructure availability and compatibility, political stability, and cultural compatibility also become important for government performance. Political stability of governments across the globe affects the performance of businesses operating in that country and therefore their profitability. Before going global organizations should understand the stability of a government with regard to wars, civil regulations that directly impact trade across borders. Managers of global companies should develop a learning strategy to guide both short and long-term professional development, which includes basic knowledge of how different cultures work, what makes them unique, and how managers can work successfully across such environments. The organization should develop effective, cross-cultural communication skills and negotiating skills across cultures. Should understand how cultural differences can influence the nature and scope of employee motivation, as well as what global managers might do to enhance on-the-job participation and performance. Government regulations have also played a part in speeding up the globalization process. Favorable trades policies between various governments have doubtlessly promoted international trade Poister (2003). Without the emergence of liberal regulatory environments and protective policies, the globalization of corporate activities such as production sites, research and development would not have occurred. While local labor costs may be significantly lower, companies must also focus on the costs of space, tariffs, and other expenses related to doing business overseas.

### **2.3.4 Information Technology Performance**

Integration of supply chain activities and the technologies have become competitive necessities in most organizations. Accordingly, the trend toward greater use of supply chain technologies is on a clear path forward. With almost daily technology advancement globally in every facet of the business, organizations need to synchronize by adopting and implementing new electronic commerce and supply chain technology in order to protect market share, not to mention improve market penetration. Better information exchange between supply chain partners, is the key advantage of an integrated supply chain provides more up-to-date information and allows for more accurate inventory responses to changes in demand and thus more appropriate inventory levels throughout the supply chain. However, the use of inadequate technology is a major challenge for NGO's supply chain management. Relatively high investment requirements of information technology are not generally justified by NGO budgets. NGO's face challenges in implementation of information technology skills. Kassim and Hussin (2010) noted that the difficulties faced by suppliers are due to tedious procedures and lack of IT skills to perform e-procurement transactions. NGO's may outsource and use various modern technologies for cost savings and quality improvements in which the outsourcing vendor could achieve its return on investments and make sure that the system is performing effectively and efficiently.

## **2.4 Empirical Review**

A study by Koh et al. (2007) cooperation between buyer and supplier is the starting point to establish a successful supply chain management and a necessary, but insufficient condition. Collaboration between buyer and supplier includes specified work-flow, sharing information through electronic data interchange and the internet, and joint planning and other mechanisms that permit to carry out the just in time system and total quality management in the company (Spekman et al. 1998). Leenders et al. (1993) NGO's have started developing strategic partnerships or alliances with their suppliers based on long-term contracts, mutual support, non-adversarial negotiations, and information and risk sharing. To maintain long-term partnerships with the supplier, they are motivated to use the following attributes: Financial stability of the supplier regardless of cost savings. Supplier's shaky financial situation will gradually weaken the long-term business relationship with the buyer.

Recent studies by Tomasini and Van Wassenhove (2009) which was done in Canada suggest that

collaboration with businesses (e.g. logistics service providers) and local communities can make a difference in delivering the goods, developing capabilities, and reducing vulnerabilities. Buyers should carefully consider the supplier's negotiation flexibility when making sourcing decision. Vonderembse and Tracey (1999) observed that supplier selection tactics positively impact a buying firm's manufacturing performance. They also demonstrated that high performing companies attach greater importance to key supplier selection criteria such as quality and delivery performance than low performing companies. They did not however attempt to relate supplier selection to broader measures of business performance. While Cruz (2009) found that some believe that regulation of social and environmental performance should be carried out by government, others believe that it should be carried out by customers. Based on the findings from this study, we suggest that there are significant differences between institutional pressures and Government pressures because of the highly established regulatory frameworks in developed countries in terms of factors such as health and safety, taxation, insurance, etc. Bowersox and Daugherty (1995) observed that lately, as firms realize the advantages gained from efficient and effective supply chain operations, managers begin to incorporate supply chain strategy into their overall corporate strategy which then leads to greater technology adoption and electronic integration. Previous research suggests that better performing firms have a tendency of strategic persistence and adopt fewer strategic changes than poorer performing firms. Considering information management systems have become essential components of firm strategy, poorer performing firms would be more likely to adopt new technology.

### 3.0 RESEARCH METHODOLOGY

#### 3.1 Research design

A descriptive survey design was used for the purpose of this study. With such a study, information's were obtained to meet the underlying purposes and objectives of the study. This kind of design well suits the study as it presents the situation as it is and the researcher has no control over the variables. According to (Orodho, 2009), descriptive survey design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. The objective of descriptive research is to answer who, what, when, where, which, why and how of the subject under study

#### 3.2 Sampling Procedure and Sample Size

Proportionate random sampling method was be used to select a sample size, since the population is of different Non-Governmental Organizations was considered heterogeneous, implying that a simple random sample will not be a true reflection of the study population (Cooper & Schindler, 2006). The study picked head of logistics department from each of the active Non-Governmental Organization (The one in operation since some were deregistered by the government).

**Table 1: Population and Sample size of NGO's in Kenya**

Sectors	NGO's Per sector	Sample Size
Educational based	120	9
Agriculture and water	560	5
Gender	260	3
Humanitarian	480	10
Environmental	220	7
Culture	330	4
Poverty Elevation	480	2
ICT	197	5
Conflict Resolutions	340	3
Total	2,507	48

### 3.3 Data Collection Method

After the validity and reliability of the instruments were assessed, the researcher proceeded to the field. A permission letter to carry out the study in the area was sought from the National Council of Science and Technology. These letters helped the researcher to access the Organization, brief the head of operations on the purpose of the study and remove any important information by the managers. The researcher then sought to administer the questionnaires to the respondent and a drop and pick later method was used.

### 3.4 Data Analysis

According to Orodho (2005), data analysis procedure includes the process of packaging the collected information putting in order and structuring its main components in a way that the findings can be easily and effectively communicated. Regression will be used to show the relationships between the supplier selection criteria and supply chain performance. In order to meet the objectives, data was analysed and tested so as to draw on the conclusion on the variables in the study. After the fieldwork, before analysis, all questionnaires were adequately checked for reliability and verification. Multiple regressions were conducted to assess the combined effects of supplier selection criteria on Supply chain performance of NGO's. The regression model appeared as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where: Y = Supply chain performance

$\beta_0$  = Autonomous factors

$X_1$  = Organizational Performance

$X_2$  = Environmental Performance

$X_3$  = Governmental Performance

$X_4$  = Information Technological Performance

e = Error term

The random term represent either all the factors that affect the dependent variable but are not included in the model because they were difficult to measure like the effect of decisions made by the management or others that the researcher was not aware of. These deterministic components plus the error variable were able to produce the above probabilistic model. Presentation of the results was done with the aid of bar charts, frequency tables, percentages, standard deviation and mean score.

## 4.0 EMPIRICAL RESULTS AND DISCUSSION

### 4.1 Response rate

A total of 48 questionnaires were distributed to the selected respondents from NGOs in Kenya. A total of 44 questionnaires were duly filled and collected making a 91.6% response rate. This was an acceptable rate and could be attributed to the fact that the questionnaires were physically dropped to the respondents and collected at an agreed date. The response rate was as follows;

**Table 2: Response Rate**

Job Title	Frequency	Percentage
Managers	13	30
Procurement Officers	31	70
Total	44	100

This revealed that 70 % of the respondents were working as the procurement officers while 30% as the managers of the NGO's. This implies that the researcher was able to collect information from the two levels/ job titles of the respondents.

## 4.2 Supplier Selection decisions

### 4.2.1 Organizational Performance

The study was interested in finding out the relationship between organization performances in relation to supply chain. To achieve this objective, the questionnaires were structured according to the performance on the organization. This is in terms of: policies of the organization, financial stability, supplier's partnership with the organization, contracting the suppliers and challenges experienced with the structures of the organization.

**Table 3: Organizational performance**

No	Indicators	N	Mean	Sd
1	How do you rate the level of organization policy in the organization?	44	2.8	2.5
2	To what extent does organization policy affect supplier selection criteria?	44	2.6	2.33
3	Financial stability of the supplier is it a necessary requisite for long term partnership within the organization?	44	3.1	2.98
4	Is the organization able to adopt supplier partnership in order to improve business knowledge and performance?	44	2.9	2.83
5	Is the organization able to analyze suppliers before contracting them	44	2.5	2.2
6	Do you experience any challenges in the selection of the suppliers?	44	2.6	2.33
7	Does the organization experience challenges as a result of the structures and systems within the organizations?	44	2.9	2.83

Table 3 shows that majority of the respondents rated the influence of organization performance on supply chain has moderate. This evident by a mean of approximately 3, In a scale of 1 to 5, the research can multiply each value by 20 to convert the mean in the percentage. In this case almost all the respondents (>50% )rated the influence has moderate. The smaller the standard deviation of the mean the better the estimate. Therefore, the organization able to analyze suppliers before contracting them was ranked the best in assessing the influence of organization performance on supply chain.

### 4.2.2 Environmental Performance

The extent on which NGO's may manage their environmental performance. To achieve this objective, the questionnaires were structured according to the organization performance in terms of effective procurement processes, insertion of the environmental criteria, modern management practices, and environmental fit governance mechanism, self-satisfaction in the preservation of the environment, attainment of the ISO and also challenges in the environment.

The extent on which environmental performance has on supply chain

**Table 4: Environmental Performance**

NO	Indicators	N	Mean	Sd
1	Has the attainment of ISO by the organization has it increased its loyalty with its suppliers?	44	3.6	4.3
2	Does the organization have environmental fit governance mechanism in managing relationships with their suppliers?	44	2.8	3.84
3	Do you experience challenges from the employees and the internal environment?	44	2.5	3.44
4	The insertion of environmental criteria in the supplier selection process is it proportional to the environmental demand of final consumers?	44	3.0	3.97
5	Is there self satisfaction in the preservation of the environment?	44	2.9	3.9
6	Suppliers with more modern management practices, such as lean production, do they have the propensity to become environmentally fit?	44	2.9	3.9
7	To what extent do you consider environmental performance on supplier selection criteria to effective on procurement processes?	44	3.1	3.87

The study sort to establish the extent on which the environmental performance may have on the supply chain in the selection of their suppliers. Majority of the respondents (3.6 x 20=72%) on the great extent was due to attainment of the ISO by the organization and this was mainly due to increase of its loyalty with its suppliers (Mean=3.6~4). A number of the respondents (3.1 x 20=62%) recommended that environmental performance on supplier selection criteria its effective on the processes of procurement process. It has a mean of 3.1: std=3.87. (3= Moderate extent). This was mainly due to recognize the need to develop strategies.

#### **4.2.3. Governmental Performance**

The study was interested in finding out the relationship between the governments and NGO's in relation to supply chain performance. Aspects focused on this section were: Political stability, trade regulations, provision of enough security, globalization processes, support of the smooth operations of the NGO's and free and fair trade .

**Table 5: The extent on which governmental performance has on supply chain**

No	Indicators	N	Mean	Sd
1	Does the government support free and fair trade regulations that will facilitate procurement process?	44	3.55	0.52
2	How can you rate political stability of Kenya?	44	4.8	0.81
3	Is the government able to support the NGO's in their operation and the challenges that they face?	44	3.9	0.61
4	Is the government able to support the NGO's in their operation and the challenges that they face?	44	4.67	0.76
5	Do the government regulations play part in speeding up the globalization process?	44	3.8	0.59
6	To what extent is the prevalence of the government involvement in international trade much greater than in the home trade?	44	4.5	0.76
7	Is there enough security provided for all residents and non-residents in the country?	44	3.50	0.53

From the table above it shows majority of the respondents (96%) (mean=4.8, std=0.81), recommended that political stability in Kenya is Key to NGO's growth since majority of them will be able to provide their humanitarian support in the country. They further suggested that the government should be involved in global trade to enhance a learning strategy to guide both short and long-term professional development. A significant number suggested that the government should support the operations of the NGO's by solving and controlling currency exchange rate fluctuations and use of free trade zones by joining member nations and duty regulations to solve local taxation complexities. While the lowest ranked suggestion was that the government does not support free trade regulation that may facilitate procurement process.

#### 4.3.4 Information Technological Performance

Aspects focused on this section were technical knowledge, better information exchange, and level of technological advancement, facilitation of information flow, sufficient resources and sufficient resources to monitor the process of supply chain. The objective of this aspects will enable us know the extent to which information technological advancement will have on the performance of the procurement processes.

**Table 6: Technological Performance**

No	Indicators	N	Mean	Sd
1	To what extent does lack of technical knowledge and resource inhibit technological adoption?	44	4.0	0.70
2	Is there better information exchange between the suppliers and the organization?	44	3.8	0.82
3	How do you rate the level of technological advancement in your organization?	44	3.79	0.81
4	Does the NGO have sufficient resources to monitor the process of supply chain?	44	3.9	0.90
5	Has adoption of IT facilitated information flow within the departments thereby improving quality of information sharing?	44	3.79	0.81
6	Integration of technology into business operation facilitates opportunities for the organization faster process?	44	3.3	0.70

The result on the extent on which information technology may have on the performance in the selection of suppliers is as summarized. Majority of the respondents (80%) (mean=4.0; std=0.71) rated that lack of technological knowledge may inhibit NGO's to adopt it in the organization. Since this may require the donors to spend more funds in the training of the staff in the organizations. A number of respondents think that when there is better information exchange there will be easier and better procurement process. It's also easier for NGOs to monitor their procurement processes since majority of the organizations has sufficient resources provided by the donors to monitor the supply chain.

### 4.3 Regression Analysis

In this study, multiple regression analysis was conducted to test the influence among the predictors. Regression analysis shows the relationships supply chain performance and supply chain decisions.

**Table 7: Regression Analysis Results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.760	.578	.572	2.05858		
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t-value	
					P-Value	
SCP (Constant)		1.014	0.142		2.10	.000
Organizational Performance		.481	.355	-.201	.249	.003
Environmental Performance		.223	.102	.102	-.245	.002
Governmental Performance		.051	.104	.417	.109	.001
Information Technology Performance		.002	.110	.691	.131	.005
a. Dependent Variable: Supply Chain Performance						

Source: Author (2014)

R – Squared is commonly used statistic to evaluate model fit. The  $R^2$  also called the coefficient of multiple determinations is the percent of the variance in the dependent or jointly the independent variables. 76% of variance in the supply chain performance and this seen as the variables of supplier selection decision as a result of supplier selection criteria in the performance of the NGO's. It's therefore true to conclude that the criteria selected is crucial in making supplier selection decision. The equation associated with the above results is given by

$$Y = 1.014 + 0.481 X_1 + 0.223 X_2 + 0.051 X_3 + 0.002 X_4$$

According to the regression established the researcher was interested in comparing the contribution of each variable that is taking all factors (Organizational, Environmental, Governmental, and Technological performance) it was noted has 1.014. In this case the researcher uses the Beta values and chooses the highest of them which is 0.481. This indicates the variable that makes the strongest unique contribution in explaining the relationship between suppliers selection decision and its performance vice versa to access in its organization when the variance explained by all other variables in the model are controlled leading to an improvement in supply chain performance in NGO's.

According to Maskell (1991) suggests that the types of performance measures required for an organization are directly related to its strategy chosen by the company. This is by establishing and maintaining its relationship in determining if its performance is meeting its strategic goals; and the people in the

organization will concentrate on what is measured; thus the performance measure will steer company direction. Information technological performance which has a Beta value of 0.002 indicates that it makes the least contribution in the model. This fitted model was diagnosed and found that regression was statistically significant. The study sought to establish the relationship between supplier selection criteria as a result of supplier selection decision in supply chain performance in NGO's in Kenya. The study found that supplier selection decision had a great effect on the criteria which NGO's may choose as shown by the adjusted  $R^2$  which shows that 76% could be attributed to the combined effect of the predictor variables. This means that the context of NGO's being of a unique nature implies different motives on how well performance is also altered and is alleviated to the beneficiaries. This is confirmed by researchers, and De Boer and Van der Wegen (2003) rightly argue that the quality of supplier selection decision making is directly dependent on decisions already made in the earlier phases and in the formulation of criteria and prequalification. Fraering and Prasad (1999) noted, the proper sourcing strategy should result in lower purchasing costs and improved financial performance for the firm hence improved supply chain performance in the NGO's. The operational success will depend on the organization performance in the development of a reliable network and trustworthy suppliers and consequently, making the right supplier selection decisions.

The coefficient of organizational performance on the supply chain was 0.48 which was significant ( $P = 0.003$ ). This indicates that there is a positive relationship between supplier selection decision and supply chain performance in NGO's in Kenya. But the results are inconsistent with those of Slack and Lewis (2002) if there is a gap of unsatisfactory performance it's assumed the relief organization will adapt their strategies thus dealing with operational decision areas in allocation of resources, level of cooperation and outsourcing in order to be strategic fit between the enablers and requirements of the beneficiaries' and this may not be a benefit in their performance. Most of the respondents reported that organizational policies affected the supplier selection practices in the organization. Majority said that most of the organization policies put in place actually encouraged or hindered the supplier selection influencing both subjective and objective decision making. They argued that policies were typically instituted to avoid some negative effects that has been noticed in the organization and also to seek some positive benefit hence to improve effectiveness of the procurement process. They all concluded that organization policies had an influence both positively and negatively. It was suggested that the principle, protocols, rules and procedures used should be made clear in order to come up with decisions that will help achieve rational outcome in the organization. The policies should be developed and adopted at all levels despite the hierarchy. This will increase transparency within the organization in every decisions take by their senior consider contribution from the juniors. The coefficient of environmental was 0.23 which was significant ( $P= 0.002$ ). The finding shows that the environmental performance is significant determinant to the supply chain. Studies shows that buyers tend to choose their suppliers in a geographical proximity to one another due to various reasons such as raw materials, knowledge, transportation hubs and potential partners. The results are in agreement with findings of Deane et al. (2009) found that risks faced by both the external environment and by the geographic proximity of the selected supplier as an important factor in making sourcing decisions. They further noted that each different location, due to its natural, political, cultural, and economic situation has a different risk proximity that has to be accounted for in choosing the source of supply.

Government performances in term of regional trade agreements, tariff system, trade protection mechanisms, local content requirement, voluntary export restrictions and government procurement policies are also important in maintain NGO's in Kenya due to their openness in the government rules and regulations. Government policies put in place actually encourages or hinders the supplier selection decision. The influence government in the supply chain is important since it can either have both positive and negative effect.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1. Conclusions**

Organizations are increasingly faced with the reality that they cannot exist in isolation but are one piece of a complex chain of business activity. The results indicate well defined linkages between specific practices and performance. Successful management of the supply chain is the key to the long term success of an organization. Suppliers have to be selected carefully, as they can have a very positive or a very adverse impact on the overall performance of the organization. During the supplier selection process, the managers should take into consideration strategic and operational factors as well as tangible and intangible factors which may enhance the performance of the organization. Additionally, the decision maker can analyze the supplier selection decision in a systematic and scientific approach by means of utilizing the proposed model. Since an extensive analysis is needed in the entire decision making process, the proposed

comprehensive and systematic approach would help purchasing managers in the evaluation of supplier selection.

## 5.2 Recommendations

Given the increasing importance of outsourcing, one would expect that how suppliers are selected and assessed, and in particular, the criteria used to guide these decisions, will impact the buying organization's performance. A greater onus would exist when suppliers can create value for the buying organization, and that once selected, supplier performance is consistent with the buying organization expectations. Expanding the use of outsourcing will imply that organizations are increasingly becoming reliant on suppliers and must therefore manage them effectively.

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