FACTORS AFFECTING SUPPLY CHAIN MANAGEMENT PERFORMANCE IN INTERNATIONAL NON-GOVERNMENTAL ORGANISATIONS IN KENYA

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ABSTRACT

Efficient supply chain management has an effect on the overall internal performance of any organisation. Current economic crisis and competitiveness of global organisation increases its importance even further. Organizations adopt numerous business improvement methodologies to improve the business performance. Manufacturers and researchers have noted a number of problems regarding supply chain activities in their research and practice. This research project was centred on a survey of the challenges facing effective implementation of supply chain management in Non-Governmental organisations and it has focused on International Humanitarian Non-governmental organisations in Kenya. Supply chain management efficiency and effectiveness has profound implications on any organization's ability to meet its customer's demands, its reputation, and its overall financial success. There is need for humanitarian organisation to adopt best supply chain management practises that will meet the overall strategy which is to achieve value for money and to develop world class procurement systems and practices and ensure quality and timely supplies to beneficiaries.The study is taken against the backdrop of the importance of non-governmental organisations in adopting efficient supply chain management systems bearing in mind the volume of goods and services purchased is continuously rising.The aim of this study is to access the factors affecting supply chain management performance within international non-governmental organisations in Kenya. The objectives of the study were; establishing the effect of strategic supplier partnerships, contract management and information communication technology on supply chain management performance. The study is descriptive by design. This study was conducted on a population of supply chain managers in 302 registered INGOs that have been active over the past 5 years to August 2014. Out of these, the researcher randomly sampled 172 supply chain management staff of INGO to which the questionnaires were administered. Data was collected through the questionnaire which was organized to answer set objectives in the study. Data was analysed using descriptive statistics i.e. frequency distributions and measures of central tendencies. The results of the survey were presented using tables, charts and graphs. The SPSS computer software was used to aid the analysis. Multiple regression analysis was also used to determine the relationships between the variables and the effective implementation of SCM. Key findings: the study revealed that supply relationship positively affects supply chain management performance though many Non-governmental organisations are challenged by the complexity of networks in managing flow.The study established that contract management affects supply chain management performance, few Non-governmental organizations use updated documented policy to monitor contracts. The researcher also noted that information sharing is a vital tool in supply chain management performance however some Non-governmental organizations are still using paper work as a mode of

communication while telephone is the most common mode of communication.

Key Words: *Supply Chain Management Performance, Strategic Supplier Partnerships, Contract Management, Information Sharing*

INTRODUCTION

Supply chain management (SCM) represents a significant change in the way that organizations view themselves and has witnessed values created through the integration and coordination of supply, demand and relationships in order to satisfy customers in an effective and profitable manner both in the private and public sectors. Supply chain management is applied by companies across the globe due to its demonstrated results such as delivery time reduction, improved financial performance, greater customer satisfaction, building trust among suppliers, and others. According to Ronnqvist and Weintraub (2008), companies resort to supply chain practices to improve their performance. Recently, Aid Agencies have become increasingly interested in how Supply chain and their stakeholders impact on the organizational strategy (Walker and Wendy, 2006).

Successful implementation of SCM is seen as closely dependent upon the need for breaking down barriers not only between internal departments and business processes, but also across companies within the whole supply chain (Vollman et al., 2005). Its success is also associated with the challenging development of a new culture based on empowerment on-going shared learning and continuous improvement. Projects implemented by NGO's involve the use of donor funds to achieve specific objectives for the benefit of the public. In Kenya, NGOs are licensed and regulated by the NGO Coordination Board. These organisations supplement government efforts to improve the living standards through implementation of diverse donor funded projects. However, majority of such donor funded projects often run into hurdles in the course of implementation. Most of these hurdles relate to supply chain management policies and the need to adhere to donor guidelines which do not necessarily result in effective utilization of funds and efficiency in service delivery (Kirugu, 2011).

There is need for humanitarian organisation to adopt best supply chain management practices that will meet the overall strategy which is to achieve value for money and to develop world class procurement systems and practices and ensure quality and timely supplies to beneficiaries Kovacs (2004). The study is taken against the backdrop of the importance of Non-governmental organisations in adopting efficient supply chain management systems bearing in mind the volume of goods and services purchased is continuously rising. For instance, the United Nations (UN) procured in the year 2000 around 40 % more than in 1996. The purchase of relief items (not services) at the UN amounts around 60 % of total procurement expenditures (Taupiac, 2001).

Non-governmental organizations (NGOs), like many other companies, are oftentimes faced with the challenge of managing their supply chains with dwindling financial resources, a lack of expertise, and insufficient personnel. Most of these companies are surprised to learn that use of best practices in procurement processes can actually help them operate more efficiently while reducing their operating costs by as much as 60%.An efficient but flexible humanitarian relief supply chains is the key subject in disaster relief, discussed from academics as well as practitioners (Kovác & Spens, 2007).

STATEMENT OF THE PROBLEM

Supply chain management efficiency and effectiveness has profound implications on any organization's ability to meet its customer's demands, its reputation, and its overall financial success (Ambe, 2009). Supply chain management inefficiency presents the single biggest opportunity for operational inefficiencies in any organization Feldman (2003). There has been a rise in complaints by the public, professionals and other stakeholder's about the supply chain management performance within the Non-Governmental organisations in Kenya. The opinion of many is that supply chain management within the institutions way below the stakeholders' expectations (Transparency International, 2014). A strategic partnership between a supplier and the buyer emphasizes direct, long-term association and encourages mutual planning and problem solving efforts (Gunasekaran et al, 2001).

Institutions in Kenya have for a long time been struggling with serious issues of poor supplier management where cases of malpractices have been reported since there the relationship existing is not based on trust and commitment which has affected the level of service delivery offered and more so efficiency and effectiveness of the supply chain management (World Bank, 2013). Institutions information sharing is rigid because of the bureaucratic structures and overreliance on manual ways of communication which has affected supply chain management performance because of delay of information from one entity to the other (KNBS, 2014). Whereas it is clear that execution of supply chain management has an impact on the outcome of donor funded projects in Kenya, the question still remains as to which specific factors affect the performance of the supply chain management that have the greatest effect. This study thus sought to investigate the factors affecting supply chain management in INGO's operating in Kenya. To address this question, the study specifically focused on the impact of strategic supplier partnership, contract monitoring and control, as well as information sharing.

OBJECTIVES OF THE STUDY

The general objective of the study was to assess the factors affecting supply chain management in international non-governmental organizations in Kenya.

SPECIFIC OBJECTIVES

1. To analyze the effect of strategic supplier partnership on supply chain management in international non-governmental organizations in Kenya

2. To establish the effect of contract management on supply chain management in international non-governmental organizations in Kenya

3. To determine the effect of information sharing on supply chain management in international non-governmental organizations in Kenya
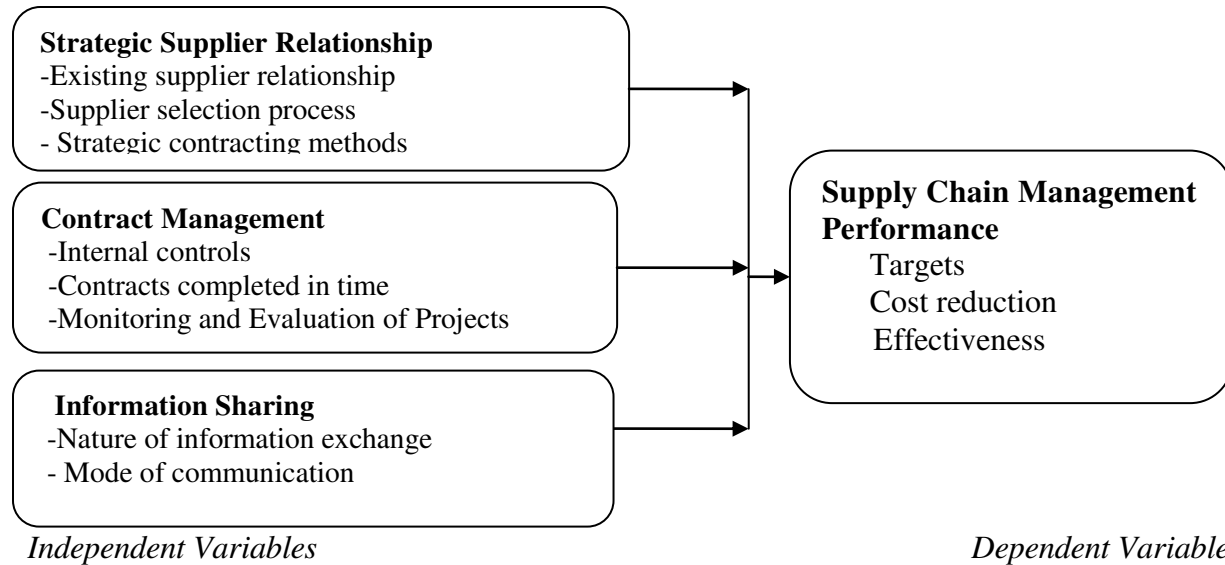
THEORETICAL REVIEW

Bounded Rationality Theory

Economics of organizations recognize that individuals are subject to bounded rationality (Simon, 1951, 1955, 1957, 1961). This means that individuals are limited in their scope to act fully rationally because of limitations relating to both information at their disposal and their computational skills. This makes the writing of complete contracts impossible - hypothetically such contracts perfectly solve the coordination and motivation problems. Put another way, in the real world, contracts are incomplete, being costly to create and implement, and imperfect in solving the coordination and motivation problems. These limitations mean that new contracts are being continually determined and old ones adapted, sound project contract management that includes monitoring and control systems that are necessary for effective supply chain management in any successful institution.

The Principal - Agent Framework

This approach classifies the people or parties involved in transactions. Transactions can be characterized by an imbalance of information, so there is likely to be a dependency relationship between the parties involved. In particular, one party to the transaction often has either more information and/or better bargaining power than the other. On this basis the theory identifies two types of parties to a transaction. The principal is a party who wishes to secure provision of some good or service but does not have the necessary specialized knowledge, skills or assets. The principal employs an agent to undertake this task and in the process delegates some control to that party (Grossman & Hart, 2001). In their study Zhenxin et al., (2001) illustrates the benefits of supply chain partnerships based on information sharing that is effective through use of information systems in organisation such as the INGOs. The study further found out that a close relationship means that channel participants share the risks and rewards and have willingness to maintain the relationship over the long term through formulation of strategic supplier relationship.

CONCEPTUAL FRAMEWORK

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┌─────────────────────────────────────┐
│ Strategic Supplier Relationship     │
│ -Existing supplier relationship     │
│ -Supplier selection process         │
│ - Strategic contracting methods     │
└─────────────────────────────────────┘         ┌──────────────────────────────┐
                                                 │ Supply Chain Management      │
┌─────────────────────────────────────┐         │ Performance                  │
│ Contract Management                 │          │    Targets                   │
│  -Internal controls                 │  ──────▶ │    Cost reduction            │
│  -Contracts completed in time       │          │    Effectiveness             │
│  -Monitoring and Evaluation of      │          │                              │
│   Projects                          │          └──────────────────────────────┘
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│  Information Sharing                 │
│  -Nature of information exchange     │
│  - Mode of communication            │
│                                      │
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Independent Variables   *Dependent Variable*

SCM performance is defined as the operational excellence to deliver leading customer experience (Simchi-Levi et al., 2003). Theoretically, as described by Mentzer et al (2001), a supply chain can be defined as "a set of three or more organizations directly linked by one or more of the upstream and downstream flows of products, services, finances, and information from a source to a customer." The main goal and important aspect of supply chain is leveraging the expertise, experience, skills and capabilities of the supply chain professionals who comprise this competitive network (Mentzer et al, 2001). Beamon (2006) mentions some features present in effective performance measurement systems and these include the following: inclusiveness (measurement of all pertinent aspects), universality (allows for comparison under various operating conditions), measurability (data required are measurable), and consistency (measures consistent with organization goals). Also, the strategic goals include key elements such as the measurement of resources (generally cost), output (generally customer responsiveness) and flexibility. Stevens (2001) states that to build up an integrated supply chain requires the management of material flow from three perspectives: strategic, tactical, and operational.

From these perspectives, the use of systems, facilities, and people must be seen as a whole and work in a coordinated manner. He also mentions that a company can measure the supply chain performance by inventory level, service level, throughput efficiency, supplier performance, and cost. Lear-Olimpi (2001) also stated that logistics play an important role in pursuing supply chain excellence which will lead to improved business performance (Oliver, 2004). Logistics is defined as the responsibility to design and administer systems to control movement and geographical positioning of raw materials, work-in process, and finished inventories at the lowest total cost (Bowersox et al., 2007). The research of Autry, Zacharia and Lamb (2008) establish that logistics must be focused on the coordination and collaboration of activities, logistics social

responsibility, strategic distribution planning, and technology and information systems. Supply Chain Management aims to link all the supply chain agents to jointly cooperate within the firm as a way to maximize productivity in the supply chain and deliver the most benefits to all related parties (Finch, 2006). Adoption of Supply chain management practices in industries has steadily increased since the 1980s.

Over the past decade, the traditional purchasing and logistics activities have emerged and shifted into broader strategic approach to materials and distributions management known as supply chain management. It is currently a major issue as organizations realize the substance of developing an integrated connection with their suppliers and final users. The performance of a firm depends not only on how efficiently it cooperates with its direct partners, but also on how well these partners cooperate with their own business partners. Network theory (NT) can be used to provide a basis for the conceptual analysis of reciprocity in cooperative relationships (Oliver, 2004). Here, the firm's continuous interaction with other players becomes an important factor in the development of new resources (Haakansson and Ford, 2002). Relationships combine the resources of two organizations to achieve more advantages than through individual efforts.

There are apparently significant gaps in the academic area of supply chain management in Kenya on how supply chain can be effectively managed in order to satisfy customers in an effective and profitable manner by INGOs. No conclusive study has been carried out yet that has established on the factors affecting supply chain management in INGOs. There seems to exist a congruence of ideas on the whole phenomenon of supply chain management. As pointed out by Kimani (2013), Mwirigi (2014), Quesada (2007), among other scholars on the subject under study, the key factors affecting supply chain management are supplier partnership, Contract management, and information technology communication. There is no standardized prescribed form through which INGO incorporate these practices while executing the supply chain management. It should be however noted that there could be other factors other than these that also impact on supply chain performance of INGOs. This provides room for further research in this area to provide a comprehensive body of knowledge that can profoundly benefit donors, implementing partners' policy makers and academicians.

RESEARCH METHODOLOGY

Research Design

This study adopted a descriptive survey design. Descriptive research design was used as it had merits such a researcher having no control over the variables and only reported what was happening. Descriptive design was found appropriate because it involved collecting data in order to answer pertinent questions concerning the current status of subjects under study. The research design provides facts and suggestions on major connections between the variables. This design

therefore adopted for this study as it enabled the researcher to obtain a cross-referencing data and some independent confirmation of data, as well as arrange the options.

Population of the Study

The population of the study comprised of the supply chain managers in 302 INGOs registered by the NGO Coordination Board to operate in Kenya as at 30th August 2014. Respondents were supply chain managers in the INGOs.

Sample Size and Sampling Techniques

This study was conducted on a population of supply chain manager in 302registered INGOs that have been active over the past 5 years to August 2014. Specific respondents were selected through the random sampling technique. This research used the cluster random sampling technique to yield the study's sample size using the formula described by Israel (1992). This formula was used for calculating the sample size so as to ensure 95% confidence level, 5% error margin and a precision rating of 0.5. The sample size thus comprised 172 supply chain managers in INGOs.

Data Collection

The study used both primary and secondary data. Data collection was be done through sending questionnaires via email to respondents, then following up with a phone call to ensure receipt of the questionnaire by the respondents. The questionnaires were self-administered, whereby respondents completed the questionnaires by themselves and then submit their responses via email. Secondary data was obtained to supplement primary data by referring to existing official reports and document form the named entities, journals, other empirical researches in the area and any other relevant document from the libraries and internet. Questionnaires were used to obtain information about the population because they save time, are economical in terms of money, convenient in that respondents can respond based on the contents, and easier to administer. The questionnaire consisted of both closed and open ended questions to address the specific objectives of the study. The open ended questions gave the respondents freedom to express their opinions. Prior to the actual study, a pilot survey was done to determine the feasibility of the data collection instrument. The pilot survey brought out the weaknesses if any of the questionnaire and the survey techniques (Kothari, 2004). It enables the researcher to assess the questions validity and reliability of data that was collected. It also helped to determine whether the method of data analysis is appropriate. The number of people to pilot test the questionnaire depends on the research question(s), the objectives and size of the research project. This number is also dependent on the variations in the population; different scholars have divergent views on the number to pretest the questionnaire. Saunders et al (2012) postulates that number of 10 for a small survey are ideal. While Mugenda and Mugenda (2008) argue that the number the number should be large and a pretest sample of between 1% and 10% is good

depending on the sample size. A sample of 5 % respondents that is 7 was selected to pilot test the questionnaire for this research.

Data Analysis and Presentation

After the data collection, the data obtained from the research instruments was analysed by use of descriptive statistics (frequencies and percentages), as well as inferential statistics. Pearson correlation coefficient and bi-variate correlation coefficient were used in this study to indicate one-on-one association between each of the independent variables to the dependent variable, while holding other factors constant. Multiple regression analysis was used to determine the relationships between the variables and the effective implementation of SCM. The coefficient of determination (R-Square) resulting from the linear regression was used to determine the goodness of fit. Percentages were used to determine sample distribution across various demographic variables while mean scores of the variables were used to determine the extent to which certain factors are challenges to effective implementation of the SCM. Quantitative data was presented in form of frequencies distribution tables, percentages and bar graph to present the information. While qualitative data, common items was obtained in data collected and clustered in a patterned order so as to identify variables that depict general concepts and differences and was presented descriptively.

RESEARCH RESULTS

The analysis was based on 138 out of the 172 questionnaires received from the respondents fully filled which accounted to 80.2% response rate. A pilot survey was done to determine the feasibility of the data collection instrument. Chronbach alpha was used to test reliability of the data collection instrument. A Chronbach alpha 0.76 was obtained after pilot testing the research instrument this was considered to be sufficient.

Strategic Supplier Partnership

All the respondents (100%) unanimously agreed that indeed, supplier relationship with the organisation affect supply chain management performance. majority of the respondents agreed that early supplier involvement is practised to develop the supplier expertise as shown by a mean score of 3.6875, suppliers are paid promptly to enhance good relationship with the organisations as shown by a mean score of 3.5729, long term relationships with suppliers improves supply chain performance as shown by a mean score of 3.5521 and that long term relationship with supplier has yielded better quality of goods and services to the organisation as shown by a mean score of 3.5208. However, the respondents neither agreed nor disagreed that new suppliers are subjected to an intensive supplier appraisal during their selection as shown by a mean score of 3.4896 and vendor rating for existing suppliers is done to assess their performance regularly as shown by a mean score of 3.4583. These findings concur with Matthew (2008) who established that as global markets grow increasingly efficient, competition no longer takes place between

individual businesses, but between entire value chains. The challenges that hinder supplier's long term relationship with the International Non-Governmental in Kenya include managing flows in a network like a supply chain is a major challenge due to the complexity of the network, the proliferation of products that flow through this network, and the presence of multiple decision makers who each own and operate a piece of this network and optimize a private object function. The international NGOs also experience challenges of framework contracting, proficiency in IT applications, negotiation skills and records management.

Contract Management

All (100%) of the respondents reiterated that indeed the contract management systems in international NGOs affect supply chain management performance. Majority of the respondents indicated agreement with that all the suppliers of goods and services are contracted through approved contracting tools as shown by a mean score of 3.6354, supply chain staffs are involved in contract monitoring and control processes as shown by a mean score of 3.5729 and the organization always monitor and control the contracts execution as shown by a mean score of 3.5313. On the other hand the respondents remained neutral on that the contact and monitoring control processes used in the organizations are reviewed and updated regularly as shown by a mean score of 3.4651 and that documented policy determines decision making on contract performance and monitoring as shown by a mean score of 3.4583. On other aspects of contract management that in their opinion that can affect performance of supply chain management in their organization, the respondents indicated that the departments of supply chain management have made integration of man power and changes reflecting the change grounds for letting many contracts which are very conversant in various categories of skills, which vary from time to time depending on the demand. Department require INGOs to supply data on their manpower for various purposes, such as data compliance, or competence to execute certain contracts while providing this data, companies have led to develop inventories of their personnel by various category classifications.

Information Sharing

All the respondents unanimously agreed that information sharing in their organisation affects supply chain management performance in the international NGOs in Kenya. This is a clear indication that supply chain management includes coordination and collaboration with channel partners such as suppliers, intermediaries, third-party service providers and customers. Majority of the respondents agreed that the organization is connected to efficient internet network as shown by a mean score of 3.5104 and the supply chain staffs are conversant with the use of material requirement planning in the organization as shown by a mean score of 3.5104. In addition, the respondents indicated neutrality with that Electronic Data Interchange is used in the organization, telephone is the most common mode of communication in the organization, payment of suppliers is done electronically, communication in the organization is purely

electronic with no paper work and delays in communication mostly affects supply chain management performance in the organization as shown by mean score of 3.4583, 3.3953, 3.0930, 3.0698 and 3.0698 respectively. These results are in agreement with those of Brynjolfsson and Hitt, (2000) who indicated that successful implementing of strategies results from integrating and coordination of information technologic innovations, production processes, marketing, financing and personnel. The respondents indicated that supply chain collaborative efforts should reach across the entire supply chain to help streamline essential processes such as product development and pricing, as well as reduce costs and improve responsiveness to customer demand.

Supply Chain Management Performance

An overwhelming majority (60.1%) of the respondents reiterated that the performance of supply chain management in their organisations was satisfactory, while 39.9% of them opined that the performance of supply chain management in their organisations was not satisfactory. The respondents agreed that supply chain management have led to increase in costs to the organization due to inefficiency as shown by a mean score of 3.5116 and that more need to be done to improve on supply chain management performance as shown by a mean score of 3.5116, while they remained neutral on that supply chain department meets its annual target as shown by a mean score of 3.4186 and that the supply chain department adequately staffed with qualified staff as shown by a mean score of 3.0930. It is clear that the effective supply chain risk management has become an important enabler to improve organizations performance and valuable way of securing competitive advantage. Other than the mentioned factors, knowledge management, reverse logistics and green supply chain also affect the supply chain management performance in international non-governmental organizations.

INFERENTIAL ANALYSIS

The coefficients indicate that the correlation coefficient (R) between the independent variables and supply chain performance is 0.832 which is a positive strong relationship.

Table 1: Coefficients of Determination

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.837	.112		4.358	0.000
Strategic supplier relationship	0.637	.075	0.235	1.379	0.020
Contract management	0.753	.088	0.167	2.793	0.015
Information sharing	0.553	.146	0.330	2.276	0.024

The data used for this multiple regression analysis was collected from employees working with the international NGOs. The explanatory variables that were used in this study were strategic supplier relationship, contract management and information sharing. The Beta coefficients indicate the extent to which supply chain performance changes due to a unit change in the independent variable. The positive Beta coefficients indicate that a unit change in the independent variable leads to a positive change in supply chain performance. Using the coefficients established in the regression model above, the regression equation becomes:

$$Y = 2.837 + 0.637X_1 + 0.753 X_2 + 0.553 X_3$$

The results also indicate that strategic supplier relationship contributes 0.020 increase in supply chain performance, a unit increase in contract management accounts for 0.015 increase in supply chain performance in the INGOs and information sharing contributes to 0.024 units of supply chain performance each when the other factors are kept unchanged. As such, contract management contributes to the most in supply chain performance, followed by strategic supplier relationship, then information sharing while communication contributes the least to supply chain performance.

CONCLUSIONS

The study concludes that strategic supplier relationship with the international NGOs affect their supply chain management performance significantly. The study also deduces that contract management systems affect supply chain management performance of international NGOs. The study also concluded that information sharing affects supply chain management performance in the international NGOs in Kenya and finally it also concluded that the international NGOs in Kenya have a satisfactory performance of supply chain management.

RECOMMENDATIONS

The study recommends that not all INGOs have effective/satisfactory supply chain management and at the same time those which practice it have not embraced it fully due to the initial cost incurred in setting up the supply chain division of the firm. supply chain management have led to increase in costs to the organization due to inefficiency and that more need to be done to improve on supply chain management performance, while there was neutrality on that supply chain department meets its annual target and that the supply chain department adequately staffed with qualified staff.

The study recommends that strategic supplier relationship and supply chain management efforts should reach across the entire supply chain to help streamline essential processes such as product development and pricing, as well as reduce costs and improve responsiveness to customer demand. This would be a cutting edge since non-governmental organizations that utilize

sustainable supply chain management as a strategic tool in business management are likely to have a competitive edge over others.

The study recommends that there is need for the supply chain actors to manage contracts. Executives should develop supply chain contract management in an attempt to reduce costs, improve service, organizational performance and to gain competitive advantage. The best supply chains have stakeholders' relationships that are based on value and consistent delivery of this value. A well management supply chain contract that encompasses relevant members of the value chain – from the organization to its most distant trading partners and suppliers – requires continuous and careful monitoring and evaluation.

The study further recommends that information sharing is a new level of visibility into the work order status is also essential to ensure seamless visibility across all supply chain processes in the INGOs. The study recommends that there is need for adoption of improved technology so as to ensure efficiency in information flow. For a supply chain to achieve its maximum level of effectiveness and efficiency, material flows, money flows and information flow throughout the entire chain must be managed in an integrated and holistic manner, driven by the overall service and cost objectives. When automating these processes, the relevant stakeholders must support the information-sharing, collaboration, and monitoring activities that are needed to effectively manage the relationship with other stakeholders in the supply chain.

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