



THE UNIVERSITY OF NAIROBI

**SUPPLY CHAIN MANAGEMENT INTEGRATION AND THE
PERFORMANCE OF INTERNATIONAL HUMANITARIAN
ORGANIZATIONS IN EAST AFRICA**

BY

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DECLARATION

I declare that this research project is my original work and has never been submitted to any other University for assessment or award of a degree.

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This project has been submitted with my authority as the university supervisor.

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LIST OF ABBREVIATIONS AND ACRONYMS

CSCMP	–	Council of Supply Chain Management Professionals
ERP	–	Enterprise Resource Planning
GB	–	Great Britain
ICRC	–	International Commission of the Red Cross /Crescent
IT	–	Information Technology
LA	–	Los Angeles
NGO	–	Non Governmental organization
OHRP	–	Office of Human Research Protection
SCM	–	Supply Chain Management
UNHCR	–	United Nations High Commission for Refugees
WFP	–	World Food Program

ABSTRACT

A research study to establish the relationship that exists between SCM integration and the performance of international humanitarian organizations in East Africa was carried out. The study had three key objectives; to determine the extent of SCM integration; the relationship between SCM integration and the performance of humanitarian organizations; and to determine the challenges of SCM integration in humanitarian organizations in East Africa. The research design involved a cross sectional survey of all international humanitarian organizations in East Africa. Data was collected using a questionnaire that was administered through on-line method. Percentages and frequencies were used to analyze objective one and three, whereas regression analysis was used to analyze the relationship between SCM integration and organizational performance. The findings were presented in tables and pie charts and the study established that most of the international humanitarian organizations in East Africa have integrated their SCM functions. It was also clear that there was a very significant relationship between SCM integration and organizational performance represented by the R^2 value of 0.789 which translates to 78.9% variance as explained by the four independent variables of Joint planning; IT and ERP Tools; Functional coordination and SCM activities reporting into one functional unit. It is recommended that all humanitarian organizations and other entities should embrace the concept of SCM integration so that they can reap its benefits. The concept, among other benefits, will lead to faster and efficient goods, works and services to the beneficiary. Even though the study was completed in within the required time, it was an uphill task for the researcher to convince the respondents to participate in the study in good time. Further research on the same study can be done in other regions to establish whether SCM integration is able to yield the same effect on international humanitarian organizational performance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

A number of firms have found that organizational costs can be reduced by integrating SCM functional activities such as procurement, logistics, warehousing, inventory management, distribution, transport management, order processing and information and communication technology. The imperative to integrate throughout the supply chain is very real and as observed by Christopher (2010), the concept of integration within business and between is not new, but the acceptance of its validity by managers is.

The need for SCM integration has thus resulted from the need to make organizations more responsive to reduce operational costs and to ensure that each functional activity is linked with others so that the flow of information can be faster and efficient. SCM, its capabilities and limitations should never by itself dictate to the business. It is by weaving the supply chain into the fabric of the business that a company can wring the most value from its internal workings. (Verlezza, 2012). A business that therefore integrates its SCM directly into its operating model stands the best chance to optimize its overall costs by improving communication and forecasting, while buying, scheduling and utilizing its operational network most efficiently. Therefore, the best model for organizational performance is to fully integrate all its SCM components into one comprehensive set of intimately linked processes.

A humanitarian is an individual or an entity that has a concern for or helps to improve the welfare of people. Malerba (2013) defines humanitarian organizations as an organizations designed to save lives, alleviate suffering and maintain and protect human dignity during and in the aftermath of emergencies. Such organizations include the UNHCR and the WFP which is supported entirely by voluntary contributions, mainly by governments both in cash and in kind. (Therein & Lloyd, 2000). It also includes the ICRC as well as a wide range of NGOs both national and international such as Save the Children International, Care International and Oxfam GB among others.

Humanitarian organizations continuously seek to avoid a situation where various functions have to run separate applications that cannot add value. SCM integration is therefore one of the ways through which such organizations can be more competitive to achieve their goals and thus better performance. When the SCM functions of an organization are integrated, there is an element of cost. Verlezza (2012) argues that putting SCM at the core of organizational operations allows the right combination of understanding and cost control while optimizing service delivery and satisfaction.

1.1.1 Supply Chain Management

SCM encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and logistics management activities. It includes coordination and collaboration with channel partners such as suppliers, intermediaries, third-party service providers, and customers. (CSCMP, 2005). In essence, SCM integrates supply and demand management within and across companies.

Logistics management is defined by the CSCMP (2005) as the part of SCM that plans, implements and controls the efficient, effective forward and the reverse flow of goods, services and related information between the point of origin and the point of consumption in order to meet customer requirements. Procurement on the other hand has been defined by Arjan (2010) as the acquisition of goods, services or works from an external source at the best possible cost to meet the needs of the intended user in terms of quality and quantity, time, and location.

SCM therefore encompasses all procurement and logistics management activities as well as warehousing and distribution. According to Pienaar and Vogt (2009), SCM touches major issues, including the rapid growth of multinational corporations and strategic partnerships; global expansion and sourcing; fluctuating gas prices and environmental concerns, disaster mitigation and crisis management. Each of these issues dramatically affects livelihoods, corporate strategy and the bottom line.

Basically, the world is one big Supply chain and because of these emerging trends, SCM is the most critical discipline in the world today. These, among other similar contributions, qualifies for the need for SCM to be fully integrated and recognized as a key that can promote and increase the level of performance for humanitarian organizations in East Africa and the world at large.

1.1.2 Supply Chain Management Integration

SCM refers to a wide range of functional activities that are coordinated to ensure delivery of goods, works and services from the point of requisition to the point of delivery to the end-user or beneficiary. These include SCM related activities such as inbound and outbound transportation, warehousing, and inventory control. Sourcing, procurement, and logistics management fall under the supply-chain umbrella, too. Forecasting, production planning and scheduling, order processing, and customer service all are part of the process as well. Wang and Miller (2005) define business integration as the process of merging elements from two or more similar processes to create a single process that can be used to replace the original processes.

According to Fabbe-Costes and Jahre (2008), integrated SCM concept hence refers to administering these various SCM functional activities into a unified program. Successful SCM then coordinates and integrates all of these activities into a seamless process. It embraces and links all of the partners in the chain. In addition to the departments within the organization, these partners include vendors, carriers, third-party companies, and information systems providers. To humanitarian organizations that have not adopted an integrated systems approach, SCM is often a fragmented and uncoordinated set of activities spread throughout various organizational functions, with each individual function having its own budget, set of priorities and measurement systems. Within the fast moving and unpredictable humanitarian emergency response sector, SCM activities and processes must be integrated into strategic level thinking and planning.

1.1.3 Performance of Humanitarian Organizations

Humanitarian organizations are at the frontline of a given response whenever disasters strike. When such organizations respond fast enough, they are seen to be efficient and effective in disaster response. As Davidson (2006) states, when such organizations do not however respond fast enough in the eyes of the media and the local government, then the blame that is placed on such organizations tarnishes their names and reputation. This hence affects the organization's base and donors. Without donor funding, a humanitarian organization's entire ability to continue its operations is in serious danger.

The question of how to measure the performance of humanitarian organizations has recently become a hot topic mainly because of the disasters that have occurred and the ever-evolving nature of humanitarian aid. Davidson (2006) continues to argue that the lack of centrally captured data, limited information, organizational culture and lack of coordination are the key factors for the inability to answer such a question.

Humanitarian organizations heavily rely on such SCM functions procurement, logistics, distribution and warehousing in the delivery of the required goods, works and services to the beneficiary. In 2005, Hurricane Katrina flooded New Orleans, LA, leaving residents without access to food or clean water. As a result, a massive rescue of the inhabitants had to be made. During the first weekend of the rescue effort, 1.9 million meals and 6.7 million liters of water were delivered by humanitarian aid agencies and NGOs. (Gravois, 2012).

A humanitarian organization's ability to improve the lives of the world's most vulnerable communities therefore relies heavily upon its ability to integrate and coordinate its SCM functions so as to get the desperately needed goods, works and services to the targeted communities. Rodman (2004) states that without sustainable, efficient, transparent and well coordinated procurement and logistics processes, the humanitarian sector is at risk of unnecessary costs and delays which put their vision, efforts and determination to better the lives of the less fortunate, at risk, hence poor performance.

1.1.4 International Humanitarian Organizations in East Africa

Natural disasters and wars are the cause of indescribable human suffering. Hundreds of people have been killed in various conflicts and tribal clashes in Kenya. Thousands of people have been killed in wars and natural disasters such as Floods, Landslides and post election violence.

In 2011 and part of 2012, a severe drought affected Kenya and the entire East Africa. It was actually, said to be "the worst in 60 years", and it threatened the livelihood of 9.5 million people. Humanitarian Aid agencies were able to respond to the crisis by delivering food and relief supplies. (Wooldridge, 2011). Humanitarian aid has assisted victims of disaster in rebuilding and getting back to normal livelihoods and even save lives. It has become a necessity for those affected by disaster and a response for those not affected in the various disastrous situations. Thousands of people make their contributions to the relief effort, thus ensuring that humanitarian aid workers would be able to spend years repairing damage, rebuilding infrastructure and reviving societies affected by the crises. (Dok et al., 2005).

Wassenhove (2006) argues that since disaster relief is about 80% of SCM activities, it would follow then that the only way to achieve on time and quality delivery to the beneficiary is through slick, efficient and effective operations, and more precisely, integrated SCM.

1.2 Statement of the Problem

The rapid growth and development of SCM is an important factor changing the humanitarian sector. It is a driving force for structural change and growth of organizations in conjunction with globalization. A study by Zailani and Rajagopal (2005) concluded that SCM integration enabled companies to perform well, however its findings are limited to the public and private sector organizational performance. McAdam and McCormack (2001) also concluded that businesses are gaining competitive advantage by maximizing the efficiency of their "global" supply chains. The study does not however consider efficiencies within the humanitarian sector.

Even though Zeichick (2004) found that revenue enhancement through real time processing; cost reduction through elimination of manual processes and improved efficiency in the functioning of departments in the firm are some of the benefits that a firm gets from SCM integration, he does not consider similar benefits with respect to humanitarian organizations.

As a SCM practice, Van Wassenhove (2006) states that logistics is the most important element in any disaster relief effort, and it is the one that makes the difference between a successful and a failed operation. There is therefore need for humanitarian organizations in East Africa to realize and fully understand SCM integration and its impact on their performance and delivery for the donor and to the beneficiary.

A study by Wanjiku (2013) found that business integration among Kenyan Banks has enhanced the performance of their supply chains. However, it does not mention if the same would apply to the humanitarian sector. A study by Mohammed (2012) on the other hand found that maintaining good supplier relationship, effective and efficient internal operations, flexible production processes and simplicity in internal operations are among the Key SCM practices within humanitarian organizations in Kenya. He also found that the main challenges for SCM in humanitarian organizations include customs and habits in the relief area, lack of financial resources, inability to anticipate disaster, bulky materials to be transported, demand and supply uncertainty. The study was however noted to be limited to the humanitarian organizations in Kenya.

It is evident from the studies that the main focus has been on integration of business functions within the private and public sector companies and not the integration of SCM functions within the humanitarian aid sector. Businesses that aim at profit maximization integrate their functions in order to achieve real time and efficient processes for the maximization of shareholder wealth. Humanitarian organizations on the other hand would want to integrate their SCM function in order to deliver to the beneficiary within the required time and at the least possible cost.

This research project therefore sought to bridge this gap by answering the following questions; what is the extent of SCM integration within international humanitarian organizations in East Africa? What is the relationship between SCM integration and the performance of international humanitarian organizations in East Africa? What are the challenges of SCM integration within the international humanitarian organizations in East Africa?

1.3 Research Objectives

This study consisted of three main objectives as follows;

- i. To determine the extent of SCM integration within humanitarian organizations in East Africa.
- ii. To determine the relationship between SCM Integration and the performance of humanitarian organizations in East Africa.
- iii. To determine the challenges of SCM Integration in humanitarian organizations in East Africa.

1.4 Value of the Study

Policy, decision makers and donors of humanitarian organizations in East Africa will make use of the findings of this research project in understanding the extent and relationship of SCM integration on the performance of humanitarian organizations.

This paper also seeks to advance the body of knowledge so that future managers can build upon the concept of SCM integration and organizational performance. The result of the study puts forth a simple framework of SCM solutions that enhance cost savings and explain why managers should consider their use.

This is a growing profession that has not been widely looked into and therefore other researchers and academicians in institutions of higher learning will use the findings of this study to answer and gather more information or knowledge about the SCM integration and its contribution to the economy.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the literature review as conducted by the researcher. It includes a review of the various studies that have been conducted by other researchers relating to the need for integration of SCM functions and the performance of humanitarian organizations. Among the areas reviewed include: SCM integration in humanitarian aid organizations, the drivers of SCM integration, the benefits as well as the challenges of SCM integration. The chapter also provides the research gaps identified and a comprehensive conceptual framework.

2.2 SCM Integration

The best companies around the world are discovering a powerful new source of competitive advantage. It is called integrated SCM which encompasses all those activities that bring products to market and create satisfied customers. New opportunities are created by integrating with partners and suppliers, bringing goods and services from the market more quickly, and creating new distribution channels through better capabilities of working together.

Harrison and Hoek (2008) found that a number of firms have determined that flow of inventory can be improved and costs reduced by integrating such SCM activities as customer service, procurement, warehousing, inventory management, order processing and logistics. Without this integrated approach, inefficiencies can result, such as the build-up of inventory at critical business interfaces. In addition to improving the flow of inventory, an integrated SCM improves transport and warehouse asset utilization, and often eliminates the duplication of effort. For example, rather than having the purchasing department negotiate with inbound carriers and the logistics department negotiates with outbound carriers, one integrated SCM function can negotiate with both inbound and outbound transportation. (Rushton et al., 2000).

Integration of SCM is developed through improved coordination of functions and activities upstream and downstream. Co-ordination is concerned with establishing the “rules of the road” whereby material and information flows work in practice. (Thomas & Kopczak, 2005).

2.3 SCM Integration in International Humanitarian Organizations

The humanitarian aid community has developed since the Second World War. Each decade has brought extensive changes in this environment and the ways in which humanitarian action is deployed. The humanitarian aid of the early twenty-first century thus differs notably from the aid provided in the previous decade, which itself was radically different from the humanitarian action of the 1980s. (Ryfman, 2007).

SCM is one of the most strategic functions of an organization which can be exploited to gain a sustainable competitive advantage in the marketplace. The revolutions in technology and business practices have also brought a revolution in the world of SCM for humanitarian organizations. The integration of technology, people, business and processes is crucial for survival and a competitive edge in the current digital age and this is not important only within a firm but also across extended enterprises. (Awad & Nassar, 2010).

According to McLachlin et al. (2009), humanitarian SCM tends to be unstable, prone to political and military influence, and inefficient due to lack of joint planning and inter-organizational collaboration. They deal with inadequate logistics infrastructure, along with shifting origins of and /or destinations for relief supplies without warning. Further, donors often request their funds to be spent on direct materials and food, and even at a particular disaster location, rather than on crucial but indirect services such as information systems, staff training, and/or disaster preparedness. (Kovacs & Spen, 2007). Therefore, humanitarian SCM does not only deal with delivering goods, materials or information to the point of consumption for the purpose of alleviating the suffering of vulnerable people, but also need to manage value to donors and other stakeholders. (Oloruntoba & Gray, 2006).

Wassenhove (2006) states that SCM functions are the most important elements in any disaster relief effort, and the ones that make the difference between a successful and a failed operation. They involve the procurement of items, the sourcing of works and services, the storage, packaging and distribution of goods to the end user among other significant activities.

2.4 Drivers of SCM Integration

The SCM functions of planning and coordinating procurement, inventory management and logistics can be viewed as a mechanism that has allowed goods and commodities to be distributed flexibly across space, time and institutional framework. Competitive advantage requires making the end-to-end process across the value chain from requisition to payment as fast and as efficient as possible.

Accelerating SCM processes requires automation, although some processes will require human intervention at certain points, especially authorizations and exception handling, increasing the velocity of business requires automating as much as possible; even after automating processes, companies need to monitor and manage them in real time to continually improve and optimize the processes. (Fabbe-Costes & Jahre, 2008).

Fabbe-Costes and Jahre (2008) continue to argue that another important driver for SCM integration is the need for SCM agility. SCM agility requires an integrated infrastructure that enables rapid deployment of new solutions while leveraging existing IT investments. An agile SCM within humanitarian aid can't afford to rip and replace the existing systems. It requires real-time connectivity between people, systems, and functional entities.

The need for cost reduction is also a very important driver of SCM integration. SCM integration reduces wastages and costs and increases value addition. Two other important benefits that organizations gain from integrating their SCM functions are increasing successful delivery to the end user and improving overall quality and efficiency through optimization of organizational processes. (Power, 2005).

Zailani and Rajagopal (2005) state that businesses are forced to integrate so that they can be able to increase their revenue. Enterprise integration can increase revenue by increasing market share and creating new market opportunities. The same applies to humanitarian organizations, where they are forced to integrate their SCM functions in order to maximize on their ability to utilize more funds into saving more lives and enhancing the welfare of more men, women and children.

According to Power (2005) customer satisfaction is also one of the reasons why businesses seek to integrate their processes. Customer satisfaction is increasingly becoming an important area of focus and spending for many organizations. SCM integration can increase end-user satisfaction by making information easily available and responding to requests more quickly. For example, through an integrated online SCM system such as SAP or MS Dynamics, the procurement function of the SCM can easily receive requisitions and tender for the purchase, and immediately upon delivery, this can be dispatched to the end-user.

Organizations also integrate their SCM functions because they need to collaborate with other organizations and better their relationships with key suppliers. Collaboration enables a SCM to focus on joint planning, coordination, and process integration between the firm and its suppliers, customers, and other partners such as the logistics providers. In addition to cost reduction, collaboration offers the advantages of reduced lead times, increased reliability and responsiveness.

2.5 SCM Integration and Organizational Performance

Different multinational organizations can gain a sustainable competitive advantage internationally if they integrate their SCM in different regions and boundaries. SCM integration enables knowledge sharing and innovation across the organization and to manage uncertainty expected in different geographical boundaries caused by the diverse international political, economic, social and technological contexts. (Abdullah & Maryam, 2011).

Trkman and Groznik (2006) stated that SCM integration enhances the process of information sharing within and outside the organization; these include suppliers, channel partners, customers and other stakeholders. Literature review has also revealed that SCM integration has enhanced organizational performance in different ways as presented by several other researchers. Nathan et al. (2006) state that SCM integration has enabled the organization to gain a sustainable competitive advantage in the marketplace as it enhances organizational performance by enabling it to reach its goals and objectives effectively and efficiently.

Rosenzweig et al. (2003) state that supply chain integration enables an organization to satisfy the needs and wants of target customers “superiorly” relative to competition and thus customer satisfaction/loyalty increases. This provides a sustainable competitive advantage to the organization.

Vickery et al. (2003) also explained that SCM integration has enhanced financial performance of organizations. They further exclaimed that SCM integration has directly impacted sales. Sales were thus increased because the firm was in a position to satisfy the needs and wants of customers. This increased customer loyalty that boosted sales revenues. As a result, the firm performed well financially.

SCM integration has also been seen to increase the level of availability of products to the consumers and hence more sales. The total service is improved, total costs are reduced (including inventory, waste and resources), and capacities can be reduced owing to the reductions in uncertainty achieved. Processes that span two or more functions become more integrated and hence simple, speedy and certain. Trading partners become more committed to the shared plans and objectives. (Zigiaris, 2000).

2.6 Challenges of SCM Integration

Awad and Nassar (2010) explain that world markets are moving towards globalization, thus making it difficult for organizations to cut costs and integrate their SCM processes internationally. They further state during the industrial age, companies would look for new markets and production processes but now they look for economies of scale. It is difficult for organizations to rely solely on SCM integration to cut costs because it is not easy to integrate different supply chains systems globally or internationally, hence making, globalization a challenge for SCM integration.

While SCM is a significant part of organizational operational strategies, it is important to note that for different organizations to fully integrate their SCM, they have to make sure that their operations are flexible enough to allow for this integration. Karkkainen and Ala-Risku (2003) state that each and every organization has an organizational culture that is unique.

SCM integration may call for the need to change everything such as the structure, the values, the mission, strategy and relationships, one of the most difficult challenges that confront every corporation. Boxall (1992) explains that customer needs and wants have become dynamic as well as diverse. The basic purpose of a SCM strategy is to identify and satisfy the needs and wants of customers effectively and efficiently, but when they continuously change, it makes it difficult to integrate SCM for a longer period of time as market dynamics also change rapidly, hence SCM integration may seem like a short term orientation.

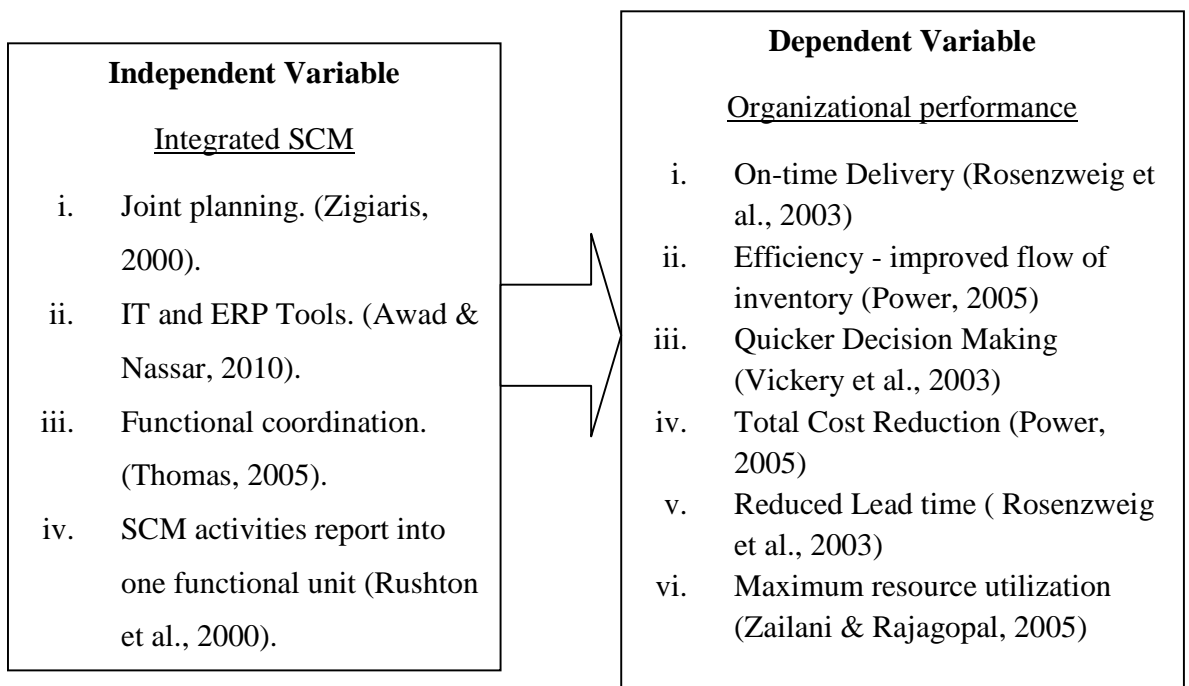
2.7 Research Gap

From the literature review, it is evident that the main focus has so far been on SCM integration within the private and public sector companies and not within the humanitarian aid sector. Businesses that aim at profit maximization integrate their functions in order to achieve real time and efficient processes for the maximization of shareholder wealth.

Humanitarian organizations also need to integrate their SCM activities in order to deliver to the beneficiary within the required time and at the least possible cost in order to save more lives.

2.8 Conceptual Framework

Figure 2.1: SCM Integration and Organizational Performance Relationship



A fully integrated SCM function consists of joint planning, all activities reporting into one unit, the use of IT and ERP tools and the efficient coordination and metrics reports. This will result into better organizational performance with indicators such as on-time delivery, maximum resource utilization, reduced lead time and quicker decision making.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that was applied in conducting the study. It discusses the research design, the target population, the data collection method and the data analysis techniques.

3.2 Research Design

The function of a research design is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible. The OHRP (2013) defines a descriptive study as one in which information is collected without changing the environment and conducted to demonstrate relationships between things. OHRP (2013) continue to elaborate that a descriptive study can involve a one-time interaction with groups of people also known as cross-sectional study or a study that might follow individuals over time, also known as longitudinal study.

This study therefore sought to provide a better understanding of the relationship between SCM integration and its challenges on the performance of humanitarian organizations in the East African region. The research study involved a descriptive research design of cross sectional type.

3.3 Population and Sampling

The population of the study involved all the 40 international humanitarian organizations based in East Africa, as identified by the Relief Web (2013). With this number, it was proposed that a census be carried out, with one respondent from the SCM, logistics, procurement or related functions, as participants.

3.4 Data Collection

The researcher collected primary data from Supply Chain Managers /officers or their equivalents from all the 40 organizations. They were considered appropriate since they understand better, the effect of SCM integration on the functions they carry out. OHRP (2013) states that descriptive studies, in which the researcher interacts with the participant, may involve surveys or interviews to collect the necessary information. The data was therefore be collected by use of a structured questionnaire that was in the form of a Likert scale where respondents were required to indicate their views on a scale of 1 to 5.

The questionnaire was administered using an online method. It was composed of four sections: The first section enquired about the general organizational profile; the second and third sections sought data on the extent of SCM integration and the relationship between SCM integration and organizational performance respectively, while the final section sought data on the challenges of SCM integration.

3.5 Data Analysis

The data analyzed and the frequencies identified were used to explain the extent and the relationship between SCM integration and its challenges on the performance of humanitarian organizations. The following model was used to show the relationship between SCM integration and organizational performance; $P = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + e$. Where: P= Organizational performance; a= the S intercept when x is zero; b_1 , b_2 , b_3 , and b_4 , are regression weights attached to the variables; x_1 = Joint planning, x_2 = IT and ERP Tools, x_3 = Functional coordination and x_4 = SCM activities report into one functional unit. Descriptive studies provide simple summaries about the sample and the observations that have been made. (Prem, 1995). This was thus used to determine the challenges of SCM integration. The findings were hence presented in tables, pie charts and histograms and a summary, conclusion and recommendations of the same provided in the following chapter.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This study was carried out to establish the relationship that exists between SCM integration and the performance of international humanitarian organizations in East Africa. Data was collected from Supply Chain, Procurement, Logistics managers and those who were in charge of the supply chain functions in their respective organizations. The findings are presented below.

4.2 Response Rate

Of the 40 questionnaires that were distributed to international humanitarian organizations in the East African region, 29 useable questionnaires were returned in good time, giving a response rate of 72.5%. This was considered a sufficient response rate for further analysis.

4.3 General Information

The researcher sought to determine whether the respondents were indeed SCM practitioners and the period the organizations they represent had been in operation in the East African region. This is so as to ensure that the survey results were valid and reliable. Questions as to the position of the respondents and the period of their organization's existence and operation within the East African region were fronted and the results were received and analyzed as follows;

4.3.1 Position in the Organization

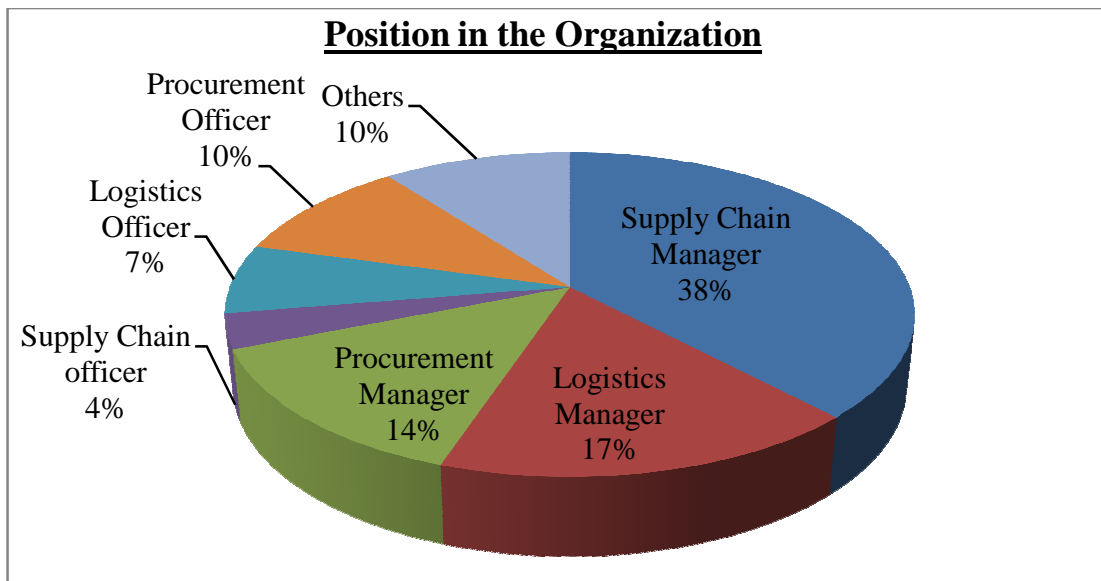
The respondents were asked to indicate the positions they held in their respective international humanitarian organizations in East Africa. They were provided with options to choose from and asked to specify any other positions. The findings in Table 4.1 and Figure 4.1 indicate that Supply Chain, Logistics and Procurement Managers combined, account for a total 69% of the respondents. This confirms that the respondents of this study were SCM professionals who were well conversant with SCM integration and organizational performance issues.

Table 4.1: Position in the Organization

Position in the Organization		
Answer Options	Response Percent	Response Count
Supply Chain Manager	37.9%	11
Logistics Manager	17.2%	5
Procurement Manager	13.8%	4
Supply Chain officer	3.4%	1
Logistics Officer	6.9%	2
Procurement Officer	10.3%	3
Other (please specify)	10.3%	3
Answered Question		29
Skipped Question		0

Source: (Research data, 2013)

Figure 4.1: Position in the Organization



Source: (Research data, 2013)

4.3.2 Duration of Operation

The research also sought to establish the duration that the respective humanitarian organizations had been in operation in East Africa by the time of the study. The results as illustrated in Table 4.2 confirm that 65.5% of the international humanitarian organizations have been in operation for 10 years or more. This is an indication that most of the organizations have had more than 10 years to interact with SCM functions and thus can be in a good position to measure the relationship that exists between SCM integration and their organizational performance.

Table 4.2: Duration of Operation

Duration of operation in East Africa.		
Answer Options	Response Percent	Response Count
Less than 10 years	34.5%	10
10 years or more	65.5%	19
Answered Questions		29

Source: (Research data, 2013)

4.4 Extent of SCM Integration

The study sought to establish the extent to which international humanitarian organizations in East Africa had integrated their SCM functions. A number of questions were fronted to the respondents who gave their responses on a scale of 1 to 5 where 1 represented “does not occur” and 5 represented “very large extent”. The results are presented as follows;

4.4.1 Joint Planning

Joint planning is one of the key indicators of an Integrated SCM function. The study therefore sought to establish the level of occurrence of joint planning among the different SCM functions within the various organizations. Results in Table 4.3 indicate that 85% of the respondents carry out joint planning for their SCM functions at a medium to a very large extent. This confirms that joint planning exists at a relatively large extent among the SCM functions for most of the humanitarian organizations in East Africa.

Table 4.3: Joint Planning

The Extent of Joint Planning		
Scale	Response Percentage	Frequency
does not occur	0%	0
small extent	15%	4
medium extent	42%	11
large extent	31%	8
very large extent	12%	3
Answered Questions		26
Skipped Questions		3

Source: (Research data, 2013)

4.4.2 Single Strategy for all SCM functions

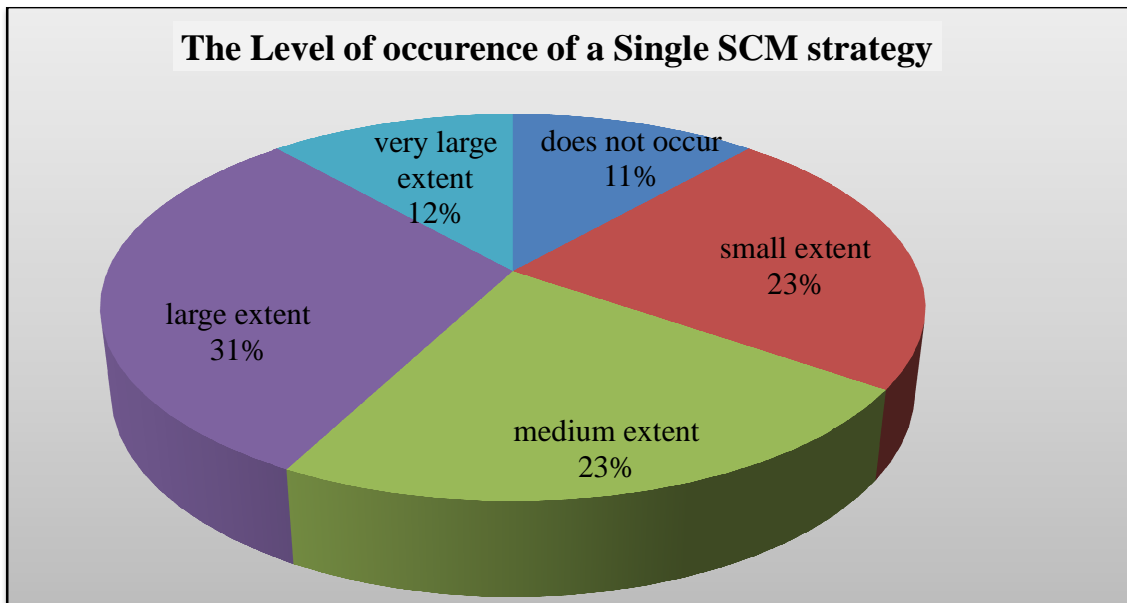
The research sought the views of the respondents on the level of occurrence of a single SCM strategy within the organizational SCM functions. The results as illustrated in figure 4.2 indicate that there is a 66% medium to very large extent of occurrence of a single strategy for all its SCM functions. This is an indication that most of the international humanitarian organizations in East Africa have a single strategy that oversees all the SCM functions.

Table 4.4: Single Strategy for all SCM functions

A single SCM Strategy		
Scale	Response Percentage	Frequency
does not occur	12%	3
small extent	23%	6
medium extent	23%	6
large extent	31%	8
very large extent	12%	3
Answered Questions		26
Skipped Questions		3

Source: (Research data, 2013)

Figure 4.2: Single Strategy for all SCM functions



Source: (Research data, 2013)

4.4.3 Information Sharing among SCM Functions

The respondents were also requested to provide information on the extent of information sharing among all the existing SCM functions within their respective organizations. The findings in Table 4.5 establish that 80% of the participating respondents indicated that SCM functions share information at a 23%, 38%, 19% medium, large and very large extent respectively. This confirms that most of humanitarian organizations have integrated their SCM, which has enabled them share information across each function.

Table 4.5: Information Sharing among SCM functions

Information Sharing		
Scale	Response Percentage	Frequency
does not occur	4%	1
small extent	15%	4
medium extent	23%	6
large extent	38%	10
very large extent	19%	5
Answered Questions		26
Skipped Questions		3

Source: (Research data, 2013)

4.4.4 Reports into One Functional Unit

The study sought to determine the extent to which all SCM functions have a reporting line into one functional unit. As seen in table 4.6 above, 80% of the respondents have their SCM activities reporting into a single function at a medium and to a very large extent. This implies that a good number of humanitarian organizations in East Africa have been able to integrate their SCM activities into one SCM function.

Table 4.6: Reporting line into one functional Unit

Reporting line into one functional Unit		
Scale	Response Percentage	Frequency
does not occur	12%	3
small extent	8%	2
medium extent	23%	6
large extent	38%	10
very large extent	19%	5
Answered Questions		26
Skipped Questions		3

Source: (Research data, 2013)

4.4.5 IT and ERP tools for SCM

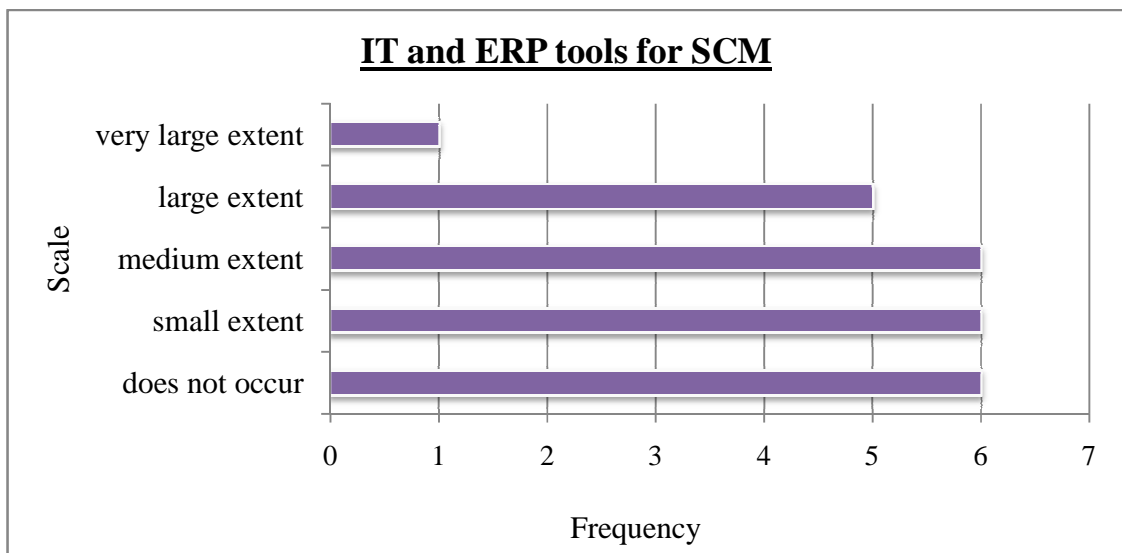
An ERP system is the primary tool that assists organizations to integrate their SCM functions. It was thus necessary for the researcher to establish the extent to which SCM is made possible by IT and ERP tools in their respective organizations. The results as seen below indicate that there is a 50% medium to a very large extent of occurrence. This implies that the international humanitarian organizations in East Africa have not started making use of IT and ERP tools to integrate their SCM functions.

Table 4.7: IT and ERP tools in SCM

The use of IT and ERP tools in SCM.		
Scale	Response Percentage	Frequency
does not occur	25%	6
small extent	25%	6
medium extent	25%	6
large extent	21%	5
very large extent	4%	1
Answered Questions		24
Skipped Questions		5

Source: (Research data, 2013)

Figure: 4.3: IT and ERP tools for SCM



Source: (Research data, 2013)

4.4.6 Employee IT and ERP Tools Awareness

IT and ERP tools play an important role in providing relevant information and enhancing SCM efficiency. The researcher sought to determine whether employees of humanitarian organizations in East Africa are well aware about IT and ERP tools.

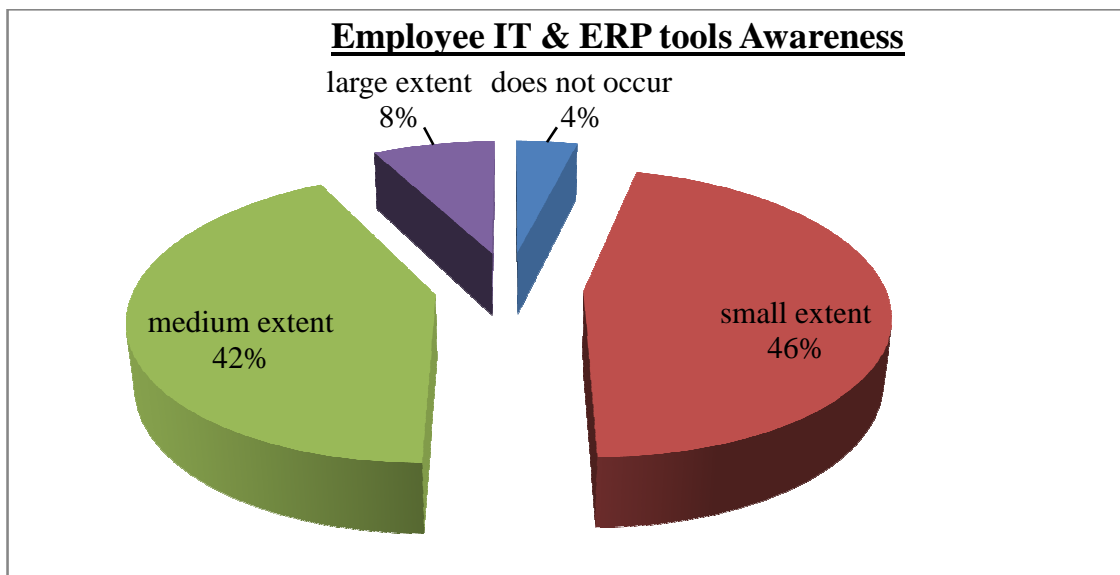
The results below show that there is a 46% and 42% small and medium extent of awareness about IT and ERP tools among. This is a clear indication that not all employees of international humanitarian organizations have access to information or are aware about ERP tools.

Table 4.8: IT and ERP tools Awareness

IT and ERP tools awareness		
Scale	Response Percentage	Frequency
does not occur	4%	1
small extent	46%	12
medium extent	42%	11
large extent	8%	2
very large extent	0%	0
Answered Questions		26
Skipped Questions		3

Source: (Research data, 2013)

Figure 4.4: Employee IT and ERP tools awareness



Source: (Research data, 2013)

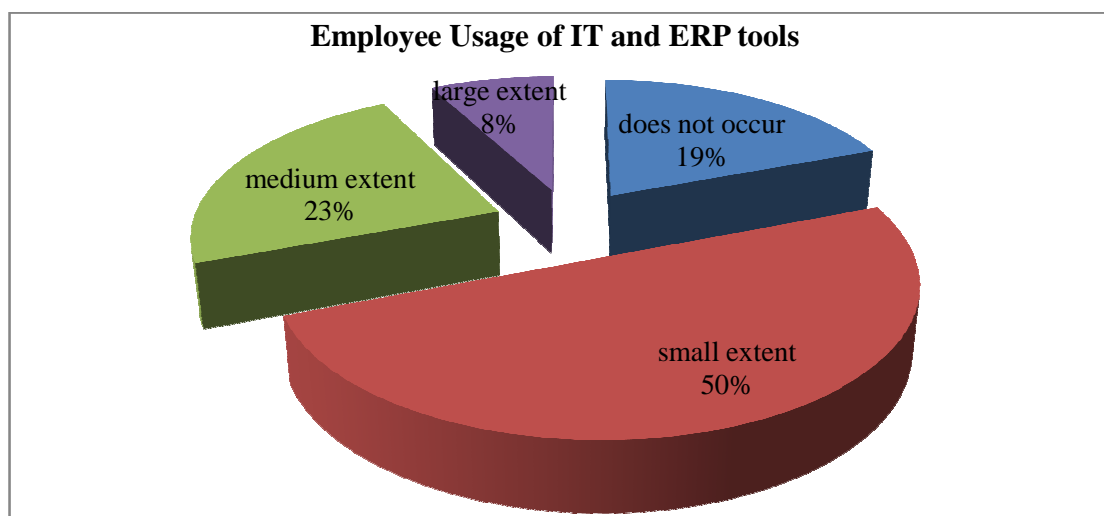
4.4.7 Employee Usage of IT and ERP tools

An efficient and effective SCM integrated system requires the use of IT and ERP tools. The researcher therefore saw the need to enquire from the respondents whether employees of international humanitarian organizations in East Africa make use of IT and ERP tools. It is evident from the results in Table 4.9 and Figure 4.5 below that 92% of the organizations in question have employees who either do not (19%) make use of IT and ERP tools or do so at a small (50%) and medium (23%) extent. This implies that most of the humanitarian organizations in East Africa have not implemented the use of IT and ERP tools as a method of SCM integration.

Table 4.9: Employee Usage of IT and ERP tools

Usage of IT and ERP tools		
Scale	Response Percentage	Frequency
does not occur	19%	5
small extent	50%	13
medium extent	23%	6
large extent	8%	2
very large extent	0%	0
Answered Questions		26
Skipped Questions		3

Figure 4.5: Employee Usage of IT and ERP tools



Source: (Research data, 2013)

4.4.8 Supplier IT and ERP Tools Awareness

Suppliers and buyers collaborate and work together to effectively benefit from each other. This is a result of SCM integration that includes information sharing. The researcher therefore sought to determine whether suppliers of humanitarian organizations in East Africa are aware about IT and ERP tools existence within the organizations they work with. The result in Table 4.10 below shows that there is a total of 84% lack of awareness, small and medium extent. This is a clear indication there is little knowledge among suppliers about the existence of IT and ERP tools among international humanitarian organizations in the East African region.

Table 4.10: Supplier IT and ERP Tools Awareness

Supplier IT and ERP tools awareness		
Scale	Response Percentage	Frequency
does not occur	24%	6
small extent	44%	11
medium extent	16%	4
large extent	16%	4
very large extent	0%	0
Answered Questions		25
Skipped Questions		4

Source: (Research data, 2013)

4.4.9 Consolidation of Functional Reports

The essence of SCM integration is to provide employees of all departments within an organization the opportunity to access uniform information for the purpose of real time processing of transactions. The researcher sought the views of the respondents on whether there was uniformity of information and reporting into one functional unit. From Table 4.11, it is evident that 84% of the respondents were between medium to very large extent, with 56% of the respondents indicating a large extent. This is an indication that there is uniformity of information in the international humanitarian organizations within the East African region.

Table 4.11: Consolidation of Functional Reports

Consolidation of functional reports		
Scale	Response Percentage	Frequency
does not occur	0%	0
small extent	16%	4
medium extent	20%	5
large extent	56%	14
very large extent	8%	2
Answered Questions		25
Skipped Questions		4

Source: (Research data, 2013)

4.4.10 Duplication of Effort among Functional Units

The study sought to establish from the respondents whether there was a noted duplication of effort among functional units within the international humanitarian organizations in East Africa. The results in Table 4.12 show evidence that 76% of the respondents believe that a duplication of effort does not occur, or when it does, it occurs at a small or medium extent. This is an indication that all information is effectively relayed across the organization among the different functional units.

Table 4.12: Duplication of Effort among Functional Units

Duplication of effort among functions		
Scale	Response Percentage	Frequency
does not occur	20%	5
small extent	36%	9
medium extent	20%	5
large extent	12%	3
very large extent	12%	3
Answered Questions		25
Skipped Questions		4

Source: (Research data, 2013)

4.5 Relationship between SCM Integration and Organizational Performance

The study sought to determine the relationship that exists between SCM integration and the performance of international humanitarian organizations in East Africa. The researcher conducted a regression analysis to assist explain this relationship.

The study adopted the following linear regression model to depict the expected relationship between the above variables: $P = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + e$. Where: P= organizational performance which was measured using the responses on the effect of SCM integration. ; a= the P intercept, that is the value of P when x is zero; $b_1, b_2, b_3,$ and b_4 are the regression weights attached to the variables; $x_1 =$ Joint planning; $x_2 =$ IT and ERP Tools.; $x_3 =$ Functional coordination and $x_4 =$ SCM activities report into one functional unit. All the four independent variables were measured using the responses of each of the variables obtained from the respondents. The results are illustrated and explained below.

4.5.1 T Test for Coefficients

To determine the significance of the independent variable where: $x_1 =$ Joint planning; $x_2 =$ IT and ERP Tools; $x_3 =$ Functional coordination and $x_4 =$ SCM activities report into one functional unit and using a significance level of 5%, it is known that any variable having a significant value or P value greater than 5% is not statistically significant.

Therefore according to the results in Table 4.13, only x_4 is statistically significant at 0%. This means that SCM activities reporting into one functional unit are the suitable predictor of P, thus implying that for every unit increase in measure of the x_4 there is a performance increase by 0.62 units.

Table 4.13: Coefficients

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	-.011	.185		-.061	.952			
x ₁ = Joint planning	.277	.174	.271	1.592	.124	.743	.298	.143
x ₂ = IT and ERP Tools	-.030	.144	-.031	-.208	.837	.615	-.041	-.019
x ₃ = Functional coordination	.137	.123	.138	1.117	.274	.490	.214	.101
x ₄ = SCM activities report into one functional unit.	.620	.154	.620	4.031	.000	.870	.620	.363

Source: (Research data, 2013)

4.5.2 Coefficient of Determination R²

Table 4.14 indicates that there is an R² value of 78.9%, which explains 78.9% of the variance in the performance of international humanitarian organizations. It is clear that they significantly contribute to the level of performance that is achieved among the international humanitarian organization in East Africa.

Table 4.14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.888(a)	.789	.757	.250	.789	23.801	3	25	.000

Source: (Research data, 2013)

4.5.3 F Test for the Full Model

For a 5% level of significance, the numerator $df = 3$ and denominator $df = 25$, critical F value is 2.74. Table 4.15 shows computed F value as 23.801. Hence, the regression model is statistically significant in that, all the independent variables put together are significant. This implies that it is a suitable prediction model for explaining how SCM integration impacts on the performance of international humanitarian organization in East Africa.

Table 4.15: Anova Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.057	3	1.514	23.801	.000(a)
Residual	1.620	25	.062		
Total	7.677	28			

Source: (Research data, 2013)

4.6 The challenges of SCM integration

As a final objective, the researcher sought to determine the perceived challenges that exist when SCM integration is implemented among and within international humanitarian organizations in East Africa. A number of statements representing challenges were presented to the respondents who had the option to agree or disagree. They gave their responses on a scale of 1 to 5 where 1 represented “strongly disagree” and 5 represented “strongly agree”. The results were as illustrated in table 4.16 below, where it is observed that the biggest challenge among the respondents per the average rating is the fact that they do not have the resources (financial /human) to effectively integrate SCM functions.

Table 4.16 Challenges of implementing SCM integration

Answer Options	strongly disagree	disagree	undecided	agree	strongly agree	Rating Average
We do not have the amount of resources (financial /human) we would need in order to effectively integrate our SCM functions.	5	6	5	8	2	2.85
Our operations are not flexible enough to allow for effective SCM integration.	4	10	4	8	0	2.62
The cultural set up (the way we do things here) has made it difficult for SCM integration.	6	8	4	6	2	2.62
The number of projects and the nature of work has made it difficult to implement an integrated SCM system.	5	9	5	5	1	2.52
It is expensive to share information across the different functions of SCM.	4	13	4	4	1	2.42
We cannot fully rely on SCM integration to cut costs for the organization.	4	12	5	5	0	2.42
It is difficult for SCM functions to integrate.	2	17	3	4	0	2.35
Changes in the environment and the market have made it impossible to integrate our SCM activities.	4	13	5	4	0	2.35
The donor requirements do not allow for SCM integration within our organizational set up.	9	9	2	4	1	2.16

Source: (Research data, 2013)

4.7 Discussion of the Results

The results of the study were presented according to the three objectives relevant to the study. The first objective was to determine the extent of SCM integration within humanitarian organizations in East Africa. The results confirmed that SCM activities reporting into one function and joint planning of the SCM Activities as key variables of SCM integration exist at a large extent among most of the humanitarian organizations in East Africa. Humanitarian organizations in East Africa have thus integrated their activities into one SCM function in order to achieve the benefits that come with it. This is in agreement with Harrison and Hoek (2008) who found that a number of firms have determined that flow of inventory can be improved and costs reduced by integrating such SCM activities as customer service, procurement, warehousing, inventory management, order processing and logistics.

The results also indicated that IT and ERP tools have not been used by the international humanitarian organizations in East Africa to enhance or promote SCM integration. This is consistent with Trkman & Groznik (2006) who described different benefits of SCM integration and stated that SCM integration enhances the process of information sharing within the organization and outside the organization (suppliers, channel partners, customers and other stakeholders). The integration of technology, people, business and processes is crucial for survival and a competitive edge in the current digital age and this is not important only within a firm but also across extended enterprises. (Awad & Nassar, 2010).

The researcher also sought to determine the relationship between SCM integration and the performance of humanitarian organizations in East Africa as a key objective. According to the results of the regression analysis, SCM activities reporting into one function is the most significant factor for SCM integration, because according to the results of the analysis, for every unit increase in measure of SCM reports into one function, there is a performance increase by 62%. This is in line with the position held by Powell (2003) who indicates that organizations integrate to reap the benefits of real time transactions.

Nathan et al. (2006) state that SCM integration has enabled the organization to gain a sustainable competitive advantage in the marketplace as it enhances organizational performance by enabling it to reach its goals and objectives effectively and efficiently. SCM integration also enables an organization to satisfy the needs and wants of target customers “superiorly” relative to competition and thus customer satisfaction/loyalty increases. (Rosenzweig et al., 2003). This provides better performance and hence a sustainable competitive advantage to the organization.

Awad and Nassar (2010) state that it is difficult for organizations to rely solely on SCM integration to cut costs because it is not easy to integrate different supply chains systems globally or internationally, hence a lack of sufficient resources becomes a challenge for SCM integration. This is in line with the results of the final objective which sought to determine the challenges of SCM Integration in humanitarian organizations in East Africa. It was observed that the biggest challenge among the respondents per the average rating is the fact that they do not have the resources (financial /human) to effectively integrate SCM functions.

The results also indicate that most organizational operations are not flexible enough to allow for effective SCM integration. However, SCM integration calls for the need to change everything such as the structure, the values, the mission, strategy and relationships, one of the most difficult challenges that confront every corporation. This is in agreement with Boxall (1992), who explains that customer needs and wants have become dynamic as well as diverse, and thus the need to align the operations of the organizations according to the customer needs.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study was carried out to establish the relationship that exists between SCM integration and the performance of international humanitarian organization in East Africa. The study had three objectives: to determine the extent of SCM integration; the relationship between SCM Integration and the performance of humanitarian organizations in East Africa; and the challenges of SCM Integration. This chapter therefore presents the summary of findings of the study, conclusions, recommendations and the suggestions on areas for possible further research.

5.2 Summary of the Findings

In an effort to determine the extent of SCM integration in international humanitarian organization in East Africa, the study was able to first of all establish that most international humanitarian organization that operate in East Africa have been in existence for more than ten years. This is an indication that most of the organizations have had significant experience in interacting with SCM functions and are thus in a good position to measure the relationship that exists between SCM integration and their individual organizational performance.

The study also found that most of the international humanitarian organizations in East Africa have a single strategy that oversees all the SCM functions and joint planning exists at a relatively large extent among the SCM functions for most of the humanitarian organizations in East Africa. This confirms that there is a relatively high level of SCM integration among these organizations in East Africa.

An ERP system is the primary tool that assists organizations to integrate their SCM functions. It was thus necessary for the researcher to ask the respondents to provide information as to whether SCM is made possible by IT and ERP tools in their respective organizations.

The results indicated that this was not necessarily the case, hence implying that IT and ERP tools have not been used by the international humanitarian organizations in East Africa to enhance or promote SCM integration. This is consistent with Trkman & Groznik (2006) who described different benefits of SCM integration and stated that SCM integration enhances the process of information sharing within the organization and outside the organization (suppliers, channel partners, customers and other stakeholders). They further argued that information technology had made it possible for organizations to integrate their supply chains while it was also an advantage in terms of cost because information technology solutions for any business process were always cost effective.

The study also sought to determine the relationship that exists between integration of SCM functions and the performance of international humanitarian organizations in East Africa. The findings indicate that SCM integration has significantly contributed to the level of performance that is achieved among the international humanitarian organization in East Africa.

It was also clear from the study that the four independent variables of joint planning; IT and ERP Tools; Functional coordination and SCM activities reporting into one functional unit explain 78.9% of the variance in SCM. However, SCM activities reporting into one functional unit explains the highest variance because of its slope and a significant value that is equal to zero.

The study has also revealed that SCM can be fully relied upon to cut costs since humanitarian organizations' operations are flexible enough to allow for SCM integration. It is further noted that humanitarian organizations in East Africa cannot attribute a lack of SCM integration to the donor requirements, their culture, nor to the nature of their operations. They however are seen to agree that they do not have the amount of resources (financial /human) needed in order to effectively integrate their SCM functions.

The ability to have SCM activities reporting into one functional unit has largely assisted the international humanitarian organization in East Africa to be able to make faster decisions that render timely and quality delivery for the donor and to the beneficiary. Functional coordination has enabled the organizations to do real time processing of almost all the transactions they carry out. This is in line with the position held by Powell (2003) who indicates that organizations integrate to reap the benefits of real time transactions.

5.3 Conclusion

The study concludes that most international humanitarian organization in East Africa have been embracing SCM integration, which has assisted them to enhance their performance. This is supported by the results from the regression analysis conducted that indicated that there is a strong relationship between SCM integration and international humanitarian organizational performance in East Africa.

5.4 Recommendations

The study has confirmed that SCM integration is very significant in enhancing the performance of international humanitarian organizations. All such organizations should be advised to embrace the concept so that they can be able to reap the benefits of an integrated SCM function.

It is also evident that SCM integration has enabled international humanitarian organizations achieve better performance. Other organizations should also be encouraged to adopt the same in order to provide faster and efficient goods, works and services to the beneficiary.

5.5 Limitations of the Study

Humanitarian organizations are known to work under immense pressure in response to emergency situations. It was therefore an uphill task for the researcher to convince the respondents to participate in the study in good time. Most of the respondents agreed to participate only after being advised that the survey would not take more than 5 minutes of their time. The findings of this study and application thereof may not be applicable directly to other organizations operating outside the East African region. It is therefore important to note that they can only be used for comparative purposes and not any direct application in any other region.

5.6 Suggestions for further Research

A comparative study can be carried out to establish whether SCM integration in other regions is able to yield the same effect on the performance of humanitarian organizations. This will assist in comparing with the East African experience and provide concrete facts upon which reliable conclusions can be made.

It is also suggested that a longitudinal study can be carried out to establish the trend that exists for a given period of time on the relationship between SCM integration and the performance of Humanitarian Organizations in East Africa.

REFERENCES

- Abdifatah, H. Mohamed (2012). "Supply chain management practices and their impact on performance among humanitarian organizations in Kenya" *Project Research presented to the University of Nairobi, School of Business.*
- Anne Leslie Davidson (2006) "Key performance indicators in Humanitarian Logistics". A *thesis presented to Engineering Systems Division at the Massachusetts Institute of Technology.*
- Awad, H. A., & Nassar, M. O. (2010). "A Broader view of the Supply Chain Integration Challenges". *International Journal of Innovation, Management and Technology*, 1 (1), 51-56.
- Boxall, P. F. (1992). "Strategic human resource management: Beginning of a new theoretical sophistication?" *Human Resource Management Journal*, 2 (3), 60-79.
- Danielle Malerba (2013). "Defining Humanitarian Aid" *a development initiative article.* (Extracted on 21/07/13) <http://www.globalhumanitarianassistance.org/data-guides/defining-humanitarian-aid>
- Dr. Abdullah A. & Maryam A. (2011). "Impact Of Supply Chain Integration On Business Performance and Its Challenges". *International Business & Economics Research Journal* – December 2011 Volume 10, Number 12.
- Draper, N.R. and Smith, H. (3rd Ed.). (1998). *Applied Regression Analysis*. JW. ISBN 0-471-17082-8
- .Fabbe-Costes, N., & Jahre, M. (2008). "Supply chain integration and performance: a review of the evidence". *The International Journal of Logistics*, 19 (2), 130-154.

- Geert van Dok & Christian Varga (2005). "Humanitarian Challenges; the Political Dilemma of Emergency Aid". *Caritas Switzerland: Position Paper 11*.
- Harrison A. & Hoek R (3rd Ed.) (2008). *Logistics Management and Strategy, competing through the Supply Chain*. FT, Prentice Hall.
- John Gravois (2012). "Looking for Meaning in the Detritus of Hurricane Katrina". *The New York Times* 12/08/2012).
- Joseph A. Maxwell (3rd Ed.) (2011) *Qualitative Research Design: An Interactive Approach*. Sage Publications.
- Karkkainen, M., & Ala-risku, T. (2003). "Facilitating the Integration of SMEs to Supply Networks with Lean IT Solutions". *The International Journal of Logistics Management*, 8 (1), 88-93.
- Kovacs, G. & Spens, K. M. (2007), "Humanitarian logistics in disaster relief operations", *International Journal of Physical Distribution & Logistics Management*, vol. 37, no. 2, pp. 99-114.
- Larry Minear (2002). *The Humanitarian Enterprise: Dilemmas and Discoveries*. West Hartford, CT: Kumarian Press.
- Mann, Prem S. (1995) (2nd Ed.) *Introductory Statistics*. JW. ISBN 0-471-31009-3
- Martin Christopher (2010). *Logistics and Supply Chain Management*, 4th Ed.
- Mary Wanjiku Gichuhi (2013) "Business integration and Supply Chain Performance among Commercial Banks in Kenya" *Project Research presented to the University of Nairobi, School of Business*.

- McAdam, R. and McCormack, D. (2001). "Integrating business processes for global alignment and supply chain management". *Business Process Management Journal*, Vol. 7 No. 2, pp. 113-130.
- McLachlin, R., Larson, P. D., & Khan, S. (2009), "Not-for-profit supply chains in interrupted environments: the case of a faith-based humanitarian relief organisation". *Management Research News*, vol. 32, no. 11, pp. 1050-1064.
- Mike Wooldridge (2011). "Horn of Africa tested by severe drought". BBC News – 4th July 2011.
- Office of the Coordination of Humanitarian Affairs (2011). "Eastern Africa Drought Humanitarian Report No. 3". *Reliefweb.int*. (extracted on 18th July 2013)
- Oloruntoba, R. & Gray, R. (2009), "Customer service in emergency relief chains", *International Journal of Physical Distribution & Logistics Management*, vol. 39, no. 6, pp. 486-505.
- Pettit, S. J., & Beresford, A. K. C. (2009). "Critical success factors in the context of humanitarian aid supply chains". *International Journal of Physical Distribution & Logistics Management*.
- Philippe Ryfman (2007). *Non-governmental organizations: an indispensable player of humanitarian aid*. Volume 89 No.865 March 2007
- Pienaar W. J. and Vogt J. J. (3rd Ed.) (2009). *Business Logistics Management, A Supply Chain Perspective*. Oxford University Press.
- Power, D. (2005). "Supply chain management integration and implementation". *Supply Chain Management: An International Journal*, 17 (1), 252-263.

- Rosenzweig, E. D., Roth, A. V., & Jr., J. W. (2003). "The influence of an integration strategy on competitive capabilities and business performance: An exploratory study of consumer products manufacturers". *Journal of Operations Management*, 21 (4), 437-456.
- Rushton A. Oxley J & Croucher P (2nd Ed.) (2000). *The Handbook of Logistics and Distribution Management*. The Institute of Logistics & Transport.
- Sotiris Zigiariis (2000). "Dissemination of innovation and knowledge management techniques". *A report produced for the EC funded project INNOREGIO*.
- Council of Supply Chain Management Professionals (2005) .Supply Chain Management professionals. Retrieved from http://www.cscmp.se/CLMSite/CLM_logistik.html
- The Office of Human Research Protection (2013). Basic Research Concepts. Retrieved from http://ori.hhs.gov/education/products/sdsu/res_des1.html
- The ReliefWeb (2013). Humanitarian implementation Plan. Retrieved from <http://reliefweb.int/report/kenya/humanitarian-implementation-plan-hip-echo-flight-last-update-26072013-version-2>
- Therien, J and Lloyd, C. (2000), "Development assistance on the brink", *Third World Quarterly*, Vol. 21 No. 1, pp. 21-38.
- Thomas, A. S. & Kopczak, L. R. (2005), "From Logistics to Supply Chain Management: The Path Forward in the Humanitarian Sector" Fritz Institute, San Francisco, CA.
- Trkman, P., & Groznik, A. (2006). "Measurement of Supply chain integration benefits". *Interdisciplinary Journal of Information, Knowledge, and Management*, 1, 37-45.

- Van Wassenhove, L. N. (2006). "Humanitarian aid logistics: Supply Chain Management in high gear". *Journal of the Operational Research Society*, 57(5), 475–489.
- Venkatesh Shankar (2001). "Integrating Demand and Supply Chain Management". 76th *Supply Chain Management Review*.
- Verlezza, T. (2012) "Wringing Value from the Supply Chain the Case for Business Integration". *Industry Week, June 2012 Edition*.
- Vickery, S. K., Jayaram, J., Droge, C., & Calantone, R. (2003). "The effects of an integrative supply chain strategy on customer service and financial performance: an analysis of direct versus indirect relationships". *Journal of Operations Management*, 21 (5), 523-539.
- Wang, G. & Miller, S. (2005), "Intelligent aggregation of purchase orders in e-procurement". *Enterprise Computing Conference, 2005 Ninth IEEE International*, pp. 27-36.
- Weele, Arjan J. van (5th Ed.) (2010). "Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice". *Andover: Cengage Learning*.
- William K. Rodman (2004). "Supply Chain Management in Humanitarian Logistics". *Thesis presented to the Graduate School of Engineering and Management, Air Force Institute of Technology*.
- Zailani, S. & Rajagopal P. (2005). "Supply chain integration and performance: US versus East Asian companies". *Supply Chain Management: An International Journal*, 10 (5), 379-393.
- Zeichick, A. (2004). "The Business Benefits of Integration". *Report on Business integration*. Camden Associates 2004

APPENDICES

Appendix I: Research Questionnaire

Introduction

This questionnaire has been designed for academic use only, with the sole purpose of collecting data to determine the relationship between Supply Chain Management (SCM) integration and the performance of international humanitarian organizations in East Africa.

Please note that the data you provide will be treated with utmost confidentiality.

Your response is highly appreciated.

Instruction: Please Mark X where necessary.

Section A: General Information

1. What is your position in this organization?
 - a) Supply chain Manager / Logistics Manager /Procurement Manager
 - b) Supply Chain officer/ Logistics Officer /Procurement Officer
 - c) Others (please specify)

-
2. How long has your organization been in operation in East Africa?

Less than 10 years 10 years or more

Section B: Extent of SCM integration

Please indicate the extent to which the following statements concerning the level of SCM integration within your organization occur.

Use the scale of:

1= does not occur 2= small extent 3= medium extent 4= large extent 5= very large extent

No	Statement	1	2	3	4	5
1.	All SCM activities /functions of procurement, logistics /distribution, Warehouse / inventory management among others carry out joint planning.					
2.	There is a single strategy for all the SCM activities /functions.					
3.	All SCM activities share information across the organization.					
4.	All SCM activities have a reporting line into one functional unit.					
5.	SCM is made possible in our organization by the use of Information Technology and Enterprise Resource Planning (ERP) tools.					
6.	All the staff members are well aware about Information Technology and ERP tools.					
7.	All staff members make use of Information Technology and ERP tools.					
8.	Suppliers are aware about the existence of IT and ERP tools.					
9.	Suppliers are aware about the use of IT and ERP tools.					
10.	Reports from different sub-units /activities are consolidated into one report for the senior management.					
11.	There is a duplication of effort for the different SCM activities.					

Any other; (please specify)

Section C: Relationship between SCM integration and organizational performance

Please indicate the extent to which the following statements concerning the relationship that exists between your SCM function and the performance of your organization occurs.

Use the scale of:

1= does not occur 2= small extent 3= medium extent 4= large extent 5= very large extent

No	Statement	1	2	3	4	5
1.	Sourcing and tendering decisions are easily made due to SCM integration and information sharing.					
2.	A database of suppliers is easily maintained as a result of SCM integration.					
3.	SCM integration has provided the organization ability to quickly and easily relate with suppliers.					
4.	SCM integration leads to better supplier relationship management and thus better performance for the organization					
5.	Orders are easily processed as a result of SCM integration, thus avoiding delays.					
6.	Monitoring stock movement has been made easier as a result of the collaboration between procurement, logistics and warehouse/ inventory management.					
7.	With an integrated SCM function, information moves faster and this reduces lead time in the organization					
8.	Distribution and delivery is made at the right time and place due to SCM integration, information sharing and coordination					
9.	SCM integration has assisted in improving the quality of goods, works and services offered to the beneficiary					
10.	There is efficiency in the entire supply chain management function.					
11.	In general SCM integration has enhanced the performance of our organization					

Any other; (please indicate below)

Section D: The Challenges of SCM integration

Please indicate the extent to which you agree with the following statements on the challenges of SCM integration in your organization.

The scale below will be applicable:

1= strongly disagree 2= disagree 3= undecided 4= agree 5= strongly agree

No	Statement	1	2	3	4	5
1.	It is difficult for SCM functions to integrate.					
2.	It is expensive to share information across the different functions of SCM.					
3.	We cannot fully rely on SCM integration to cut costs for the organization.					
4.	Our operations are not flexible enough to allow for effective SCM integration.					
5.	The cultural set up (the way we do things here) has made it difficult for SCM integration.					
6.	The donor requirements do not allow for SCM integration within our organizational set up.					
7.	The number of projects and the nature of work has made it difficult to implement an integrated SCM system.					
8.	We do not have the amount of resources (financial /human) we would need in order to effectively integrate our SCM functions.					
9.	Changes in the environment and the market have made it impossible to integrate our SCM activities.					

Please state any other challenges;

Thank you for your time.

Appendix II: International Humanitarian Organizations in East Africa

1. Action Against Hunger
2. African Development Solutions (ADESO)
3. Care International
4. Caritas International
5. Chemonics International
6. Catholic Relief Services (CRS)
7. Danish Refugee Council (DRC)
8. Feed the Children
9. Feed the Hungry
10. Food and Agriculture Organization (FAO)
11. Food For The Hungry International (FHI)
12. GOAL International
13. Help-Age International
14. Hunger Plus
15. International Committee of the Red Cross (ICRC)
16. International Organization for Migration (IOM)
17. International Medical Corps (IMC)
18. International Rescue Committee (IRC)
19. Islamic Relief
20. Lutheran World Federation
21. Liverpool HIV
22. Médecins San Frontiers (MSF)
23. Mercy Corps (MC)
24. Norwegian Church Aid (NCA)
25. One Acre Fund
26. Overseas Development Institute (ODI)
27. Oxfam GB
28. Plan International
29. RED R - UK
30. Refugees International

31. Relief International
 32. Save the Children International
 33. Tear-fund International
 34. The Office of U.S. Foreign Disaster Assistance (OFDA)
 35. United Nations Children's Fund (UNICEF)
 36. United Nations High Commissioner for Refugees (UNHCR)
 37. United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA)
 38. United States Agency for International Development (USAID)
 39. World Vision International (WVI)
 40. World Food Program (WFP)
- Source: The Relief Web (2013)