

**SUPPLY CHAIN INTEGRATION AND SUPPLY CHAIN PERFORMANCE
OF INTERNATIONAL HUMANITARIAN ORGANISATIONS IN KENYA**

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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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DEDICATION

This research paper is lovingly dedicated to my mother who has been my constant source of inspiration. She gave and continues to give me the drive and discipline to tackle any task with enthusiasm, hard work and submission to the almighty's will. She pioneered tertiary education in the family, notably, as a young African student at Hokuriku Gakuin Junior College (Kanazawa) Tokyo, Japan in 1965 – 1966. Today, I bask in her glory for having lit the path for her children to travel. Her no-nonsense approach to education helped redeem the naughty me to be who I am today.

To my all time friend and mentor, who I have had the privilege to call him - Uncle Ken, I could never find the right words to thank you enough...It all began with you! Be blessed.

To my dear wife - Dr. Peris and our two daughters - Dulcie and Dayna, thank you for your 24/7 support and understanding. I couldn't ask God for anything more.

Lastly and most important, to the Almighty God – you have been very gracious to me and in the words of Don Moen, “I'm Forever Grateful”.

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ABSTRACT

This study was conducted to establish the relationship between S.C integration and S.C. performance among international Humanitarian organisations in Kenya. The objective of the study was to establish S.C. integration and S.C performance of international humanitarian organizations in Kenya. The research design adopted was a census survey. The population of study will comprise seventeen (17) international Humanitarian organizations operating in Kenya. The study used primary data which was collected through self-administered structured questionnaires. The data was analysed and presented using mean and percentages. Correlation was undertaken to establish the relationship of the variables. The study established that the humanitarian organizations in Kenya have integrated their S.C and this has helped the organizations to focus on their core competencies and particular areas of expertise, reducing cost and becoming more efficient. The study established that information sharing resulted in reduced lead-time in the organization, improving S.C. performance and easy order processing. Integration resulted in increased efficiency, leading to the use of KPIs to measure performance. Integration of the S.C is affected by poor infrastructure, high staff turnover in the field, inability to anticipate disaster, transportation of bulky materials, lack of resources due to earmarking of funds, acquisition cost of an ERP and uncertainty in terms of demand, supplies and assessment. The correlation analysis findings were that the performance of the humanitarian organizations was affected by sharing of information, faster decision making, supplier relationship management and efficiency in supply. The study accurately collaborates the findings by (Sweeney, 2005) that, given the pivotal role of the integration paradigm within SCM, any meaningful innovation in this area must focus heavily on this issue. Further research on the same study can be done in the Great lakes region (countries) to establish whether S.C. integration is able to yield the same effect on supply chain performance of Humanitarian Organisations. It would be prudent for other researchers to explore the remaining 47.93% of the changes in the Y, which need to be explained by other factors not found in the regression model used in this research.

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ABREVIATIONS

IP	Implementing Partners
MSRP	ManagementSystem Resource Planning
SCM	Supply Chain Management
VMI	Vendor Managed Information System
B2B	Business to Business
JIT	Just In Time
ERP	Enterprise Resource Planning
Kaizen	Japanese concept of continuous improvement
KPI's	Key Performance Indicators
ABC	Activity Based Costing
BSC	Balanced Scorecard
IDP	Internally Displaced Persons
SAP	Software Applications Products
SKU	Stock Keeping Unit
MRO	Maintenance Repair Operations
MRP	Materials and Requirement Planning
MRP II	Manufacturing Resource Planning
HA	Humanitarian Aid
CSCMP	Council of Supply Chain Management Professionals

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Since the 1980s, Supply Chain Management (SCM) has been primarily concerned with the integration of processes and activities both within and between organisations (Sweeney, 2012). The concept of supply chain integration is based on documented evidence that suggests that much of the wastage throughout businesses is a consequence of fragmented supply chain configurations. However, Sweeney asserts that there is also evidence to suggest that the achievement of higher levels of intra- and inter-firm integration presents an array of managerial challenges. The adoption of highly integrated supply chain structures ropes in customer and supplier relationships. The effective management of such relationships is key to creating organizations that are more responsive to customer needs and reduce operational costs to improve on performance (Sweeney, 2012).

Supply chain integration has also been defined as the use of technology to underpin the coordination of these business functions using a common platform to provide a way to connect the disparate systems at each business and the transactional workflow required to move raw materials to saleable products and the data interchange between each supplier in the process (www.celtrino.com).

Integration in this context refers to the extent to which various supply chain activities and processes work together in as seamless a manner as possible. According to

Sweeney(Sweeney, 2005), it has long been recognized that traditionally managed businesses and supply chains, often characterized by high levels of fragmentation, have failed to achieve their true potential in terms of profitability or lifesaving goalsand meeting customer expectations, with regard to Commercial and Humanitarian supply chains respectively.

1.2 Supply Chain Integration

In the past, every step of the supply chain required manual intervention to process and progress orders and generate study work required to keep track of each interaction. Suppliers of raw materials, finished goods and services would receive a manual purchase order from the buyer, and in return create a manual invoice. Several documents would then change hands at every point of the initial purchase process to keep everything on track and ensure an accurate audit trail of the transaction. This flurry of documentation is repeated every step along the supply chain right up to the final sale or delivery in the case of humanitarian supply chain (www.celtrino.com).

Supply chain integration reduces the amount of manual intervention processes, replacing them with electronic versions which are submitted directly to the accounts system of each supplier and buyer. Often the full details of each transaction are also available through business to business (B2B) supply chain management portal, allowing all parties in the supply chain to see the details of their interactions and allowing for historical analysis of the financial implications of the relationship (www.celtrino.com). This study seeks to review whether these practices are applied in the Humanitarian supply chain in Kenya.

1.3 Supply Chain Performance

Supply chain performance is defined as the entire chain's ability to meet end-customer needs through product availability and responsive, on-time delivery. Supply chain performance crosses both functional lines and organisational boundaries. Managers in many industries, especially those in manufacturing, are trying to manage supply chains more efficiently. Important techniques/methodologies like just-in-time (JIT), total quality management, lean production, computer generated enterprise resource planning schedule (ERP) and Kaizen have been embraced (Kenneth & Brian, 2012).

According to (Griffin, 1996), the concept of supply chain management (SCM), represents the most advanced state in the evolutionary development of purchasing, procurement and other supply chain activities. At the operational level, this brings together functions that are as old as commerce itself seeking goods, buying them, storing them and distributing them. At the strategic level, SCM is a relatively new and rapidly expanding discipline that is transforming the way that manufacturing and non-manufacturing operations meet the needs of their customers. The metrics used in performance measurement and improvement should be those that truly capture the essence of organizational performance. A measurement system should facilitate the assignment of metrics to most appropriate performance indicator. For effective performance measurement and improvement, measurement goals must represent organisational goals and metrics selected should reflect a balance between financial and non-financial measures that can be related to strategic, tactical and operational levels of decision making and control (Hausman, 1997).

Data visibility also allows an enterprise to identify cost drivers and take into account inflation and other factors for more accurate predictions in budgeting and planning. It allows the enterprise to execute informed supply management, sourcing decisions, and develop sourcing strategies to maximize buying leverage and ultimately achieve savings (Beamon B. M.). This integration is made possible through use of information technology such as Enterprise Resource Planning (ERP) systems that enable various departments in an organisation to link and share information (Beamon B. M.). Indeed, the same can also be integrated to a Vendor Managed Information (VMI) system.

1.4 Humanitarian Organisations in Kenya

There are basically four types of humanitarian organizations operating in Kenya. The first category includes government sponsored humanitarian organizations such as the KRCS which was established through an act of parliament in 1965(Kenya Red). The second category of humanitarian organizations are privately sponsored and are registered as NGOs with the NGO council. This category includes NCKK, Ahadi Kenya, Save the Children, MSF, just to mention but a few. Their responsibilities and functions are guided by the 1995 NGO Code of conduct (Kameri-Mbote, 2000 - 2002).

The third category of humanitarian organizations is those run and funded by religious groups such as churches and mosques. They include the Catholic Relief Services, Adventist Relief Association, the Lutheran World Relief and many others. The last category of humanitarian organizations are those affiliated with the United Nations Organisation (UNO). There are several humanitarian organizations under the umbrella of the UNO such as the UNICEF that

deals with children's rights, UNDP which addresses issues concerning development projects in various countries, WHO which handles global health development initiatives around the world and UNHCR which handles the concerns of refugees including resettlement(Coipuram, 2003).

As stated in their mission statement (UNHCR, 1949), UNHCR has a mandate to “lead and coordinate international action for the worldwide protection of refugees and the resolution of refugee problems.” It is estimated that UNHCR currently assists 32.8 million refugees, asylum-seekers, internally displaced persons (IDPs), returned refugees and stateless persons worldwide. 4% of this population are assisted with the provision of material goods while the remaining 96% are aided through legal and/or physical protection. These people live in camps, relying on UNHCR and other humanitarian organizations to provide them with basic items such as water, food, shelter, sanitation facilities and health care. In the Kenya country operation, UNHCR Representation in Kenya currently caters for 650,000 refugees, asylum seekers and stateless person (Llevat, 2009).

Profit is not a driving force for the Humanitarian Supply Chain sector; however donor fatigue is a huge threat to humanitarian organization revenues (Fritz, 2006). There is an increase in donor/stakeholder outcry for higher accountability and transparency in program spending to ensure the bulk of the funding contributed is not wasted on administrative services but rather reaches the intended recipients (Polman, 2011). It is imperative therefore that humanitarian organization find ways to reduce administrative expenses by streamlining operational spending to ensure more services/goods are delivered per dollar.

1.5 Statement of the Problem

Supply chain is the way to go in the 21st century. International Humanitarian organisations in Kenya are faced with a myriad of supply chain issues; key among them is the integration of the supply chain, given the nature of disaster responses. There is need to address the substantial opportunities “unknown” to the players in the International Humanitarian Supply chain, but which the commercial supply chain has perfected to create a competitive supply chain synergy that has significantly improved performance. This helps the organisation to better manage inventory, keep procurement procedures controlled, categorise suppliers using the supplier positioning model(www.celtrino.com) and therefore make strategic decisions on whom to engage in supplier collaboration, where to engage in early supplier involvement etc, This undoubtedly goes a long way in improving operational efficiency.

A study by Sweeney 2012 concluded that there is significant evidence that the effective implementation of integrated SCM has the potential to generate significant improvements in the performance of firms. However, this study did not address issues on supply chain performance in Humanitarian Organisations. Similarly, the work of Frohlich and Westbrook (2001) based on a survey of 322 global manufacturers strongly supported the hypothesis that “the companies with the greatest arcs of supplier and customer integration will have the largest rates of performance improvement” (p. 193). This is significant given the centrality of integration in SCM philosophy.

Kirstin et al., 2010 in their research concluded that the consistent message emerging from their exploratory data is that NGO supply chains are moving towards adopting the primary

concepts of agile supply chains, but that failure to invest in the required supporting IT is the primary obstacle. This was a generalized research and not dedicated to Humanitarian organisations.

Wanjiku(2013) concluded that, most banks embraced business integration over ten years ago and this has assisted them to enhance the performance of their supply chain. These findings are of significant value addition, with regards to evaluation of the same in International Humanitarian Organisations in Kenya. However, she restricted her research on the Banking sector in Kenya.

Abdifatah(2012)concluded that, supply chain management practices that are prevalent among humanitarian organisations in Kenya include: maintaining good suppliers relations, effective and efficient internal operations, continuous improvement, flexible production processes , use of technology to speed up humanitarian work, inter-organisation integration, and simplicity in internal operations”(Abdifatah, 2012). He recommended that Humanitarian organisation in Kenya should use technology to speed up their work. However, this research did not address the issue of Humanitarian Supply chain integration. A notable shortcoming in his work was that, he was limited to organisations operating from Nairobi; due to financial constraints.

Much of the earlier empirical research in this field has focussed on specific elements of the overall SCM concept rather than on wider cross-functional and inter-organisational integration. Generally, research in S.C integration and Performance in Kenya, have focused on the commercial supply chain, this research points at a specified case analysis. The research questions to be addressed are: What is the extent of S.C integration amongst International

Humanitarian organizations in Kenya? What is the relationship between Supply Chain Integration and Supply Chain Performance in Humanitarian organisations in Kenya? Lastly, what are the challenges of S.C Integration in International Humanitarian Organisations in Kenya?

1.6 Research Objective

This study sought to achieve three objectives:

- i. To establish the extent of S. C Integration amongst Humanitarian organizations in Kenya.
- ii. To identify the challenges of S. C Integration in International Humanitarian organisations in Kenya.
- iii. To identify the relationship between S. C Integration and Supply Chain Performance among international Humanitarian organizations in Kenya.

1.7 Value of the study

The findings of this study will enable Humanitarian Organisations in Kenya to have a clear understanding of the supply chain Integration and incorporate them in their daily operations for higher performance.

The study will also be beneficial to Supply Chain experts and Logisticians especially those undertaking the Fritz institute diploma in Humanitarian supply chain, since this study is based on one of the largest Humanitarian refugee operation in the world. Researchers and academicians interested in studying the Refugees Humanitarian Supply chain in Kenya will

also find this invaluable.

Lastly, this research is embedded in the live progression of UNHCR's efforts as the lead agency, to improve their mainstream supply chain. It is an opportunity to analyse a prominent humanitarian organization worldwide using the largest refugee camp operation in the world. The results should provide a framework for sustainable savings through streamlining of business processes to create efficiencies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this subsection, the researcher will review related literature and discuss how the literature informs this thesis. The intent is to sample what is found most relevant and discuss concepts they bring to bear on this work. The areas reviewed include: an overview of Commercial supply chain, Humanitarian supply chain, Supply chain integration, the challenges in supply chain integration, the role of integration in supply chain performance and its effects on performance in Humanitarian supply chain. The researcher will also provide research gaps identified and a conceptual framework to show the relationship between the dependent and independent variables.

2.2 Supply Chain Integration

Given its potential to reduce lead times and total costs of operations, increase delivery speed, responsiveness, flexibility, and ultimately customer satisfaction, supply chain integration can help to improve the competitiveness of the Humanitarian Supply chain. Integration is technology driven and numerous software programs available today, like SAP (Software applications products) and CAST Aurora 2.0(Chartered Institute of Logistics and Transport, 2013), provide complete facilities. Software features included can maintain supplier/customer databases, create picking lists, receipts, SKU inventory policy, instantaneous stock balance and automatic re-ordering, barcode reading, support grouping of inventory items, remove

barriers between suppliers and customers, enhance profitability and implement such approaches as JIT, MRO and VMI.

Enterprise Resource Planning (ERP) is the latest and possibly the most significant development of Materials and Requirement Planning (MRP) and Manufacturing Resource Planning (MRP II) (Kenneth & Brian, 2012). While MRP allows manufacturers to track supplies, work-in-progress and the output of finished goods to meet sales orders, ERP is applicable to all organizations and allows managers from all functions to have a consolidated view of what is/not taking place throughout the enterprise. Most ERPs are designed around a number of modules, each of which can be standalone or combined with others. These modules can be Finance, Logistics, Manufacturing, Supplier management and Human Resources. Thus ERPs are business management systems supported by multimodule application software which integrate all the departments of functions of an enterprise (Kenneth & Brian, 2012)

2.3 Commercial Supply Chain

Evolving from flexible manufacturing systems, the concept of commercial supply chain captures the integration of the organisation's suppliers, business processes, customers, product use and disposal (Power, 2001). It was originally focused on achieving reduced set up times and greater responsiveness to changes in product mix, volume and agility; then extended into wider business context (Nagel, 1991). The concept of commercial S.C captures how an organisation can synthesize new productive capabilities from the expertise of its members, through knowledge and skill development, promoting innovative thinking, emphasizing management, and providing appropriate physical facilities (Aitken, 2002). However,

according to Christopher and Towill(Christopher M. &, 2000), commercial S.C transcends flexibility as it is a business wide capability that embraces organisational structures, information systems, logistics processes and overall mind-sets. All departments within a supply chain network need to be integrated to achieve an impact beyond the individual unit. On-going integration - both upstream and downstream - is achieved through building appropriate information technology platforms/systems, leading to virtual integration of all players (Christopher M. &, 2000).

The key difference between commercial supply chain and Humanitarian supply chain is the approach. Commercial supply chains aim for low cost operation and high efficiency to realize higher profits while maintaining customers' taste and preferences. On the contrary, Humanitarian supply chains by their very nature are centred on saving lives and alleviating suffering hence speed of delivery is paramount at whatever cost. Nonetheless, in today's competitive global market, niche differentiation is based on supply chain to supply chain competition, and not businesses to business competition.

2.4 Humanitarian Supply Chain

In the humanitarian organisations, the term supply chain is used to describe the process of getting aid, in the form of goods and services, to the beneficiaries requiring the goods. According to Fritz institute, (Fritz Institute, 2006), the term Humanitarian supply chain can be defined as: "A process that integrates coordinates and controls the movement of

materials, goods and related information; from suppliers and donors to meet beneficiary requirements in a timely manner”.

Humanitarian supply chain is an umbrella term for a mixed array of operations. It covers disaster relief as well as continuous support for developing regions. According to Thomas (Thomas A. , 2004), humanitarian supply chain entails the processes of planning, implementing and controlling the efficient, cost effective flow and storage of goods and materials as well as related information from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking and tracing, customs and clearance. Natural or man-made disasters of a sufficient scale to warrant an extraordinary response from outside of the affected area are on the increase.

The complexity of a supply chain is often not understood by those working in humanitarian aid organizations as they often do not realise the actions necessary to ensure the right goods are available in the right place at the right time (Tomasini, 2009). In essence, humanitarian supply chains share some common drivers with their business counterparts. It is critical to get the most out of scarce resources and limited budgets. It is also important to reach more beneficiaries in need and serve them more quickly.

Donors increasingly demand accountability, transparency and value for money in return for their sponsorship of Humanitarian Aid (HA) agencies. Meeting these higher challenging performance and accountability standards requires Humanitarian Aid agencies to be more

professional in their approach to managing their operations (Thomas & Kopczak, 2005). As 80% of Humanitarian Aid operations comprise Supply Chain Management activities (Van Wassenhove, 2006), the application of commercial SCM techniques could at least address this problem.

To date Humanitarian (Agarwal, Shankar, & Tiwari, 2006) Aid agencies continue to rely on outdated standards used in the for-profit sector in the 1970s and 80s (Fenton, 2003) and largely ignore emerging techniques developed to help businesses respond to an increasingly challenging environment. From a theoretical perspective the application of SCM principles to Humanitarian Aid has been largely overlooked, despite the stakes and size of the aid industry and the increasing flow of Humanitarian Aid funding to the developing world (Beamon B. &, 2008). This is particularly problematic given the nature of managing humanitarian aid supply chains.

In the corporate sector, well-founded research exists in the area of commercial supply chain and logistic analysis, and strategic inter-corporation collaboration has demonstrated significant improvement in effectiveness and efficiency. However, the applicability of these commercial supply chain methods and other corporate logistics and related research to humanitarian operations is not fully understood (The Fritz Institute, 2004). The challenges faced by Humanitarian supply chain in Kenya and indeed the horn of Africa can be sufficiently addressed once integration from point of origin of goods and services to point of distribution to persons of concern is achieved.

2.5 Challenges in Supply Chain Integration

Companies using supply chain integration have to overcome a number of complicated obstacles in order to recognise their goal of a unified management system. Significant planning and investment of time, as well as money, is required for this transition to be successful. Because of these initial demands, many smaller businesses shy away from taking the leap, choosing instead to do things the way they always have.

It is evident that the concept of integration lies at the heart of SCM philosophy (Christopher M. , 1992). Cooper et al in their paper “Supply Chain Management: More Than a New Name for Logistics” specifically describe SCM as “an integrative philosophy”. In their discussion of the interlocking ideas and propositions of SCM, Storey et al, declare that, “the central underpinning ideas relate to alignment and integration”(Storey, 2006). Perhaps most tellingly, Pagell declares that “in its essence the entire concept of SCM is really predicated on integration”(Pagell, 2004).

If, as Mentzer et al suggested, SCM can be regarded as a management philosophy, then this philosophy is concerned first and foremost with integration (Mentzer, 2001). The widely cited work of Bowersox and his collaborators at Michigan State University (Bowersox, 1999), which describes a framework of six competencies (the Supply Chain 2000 Framework) that lead to world class performance in logistics and SCM, supports this view. The six competencies, grouped into three areas (operational, planning and relational) are all concerned with integration. The work of (Fawcett, 2002) identified four levels of integration in practice: these were internal cross-functional integration, backward integration with valued first-tier

suppliers, Forward integration with valued first-tier customers and complete backward and forward integration('from the supplier's supplier to the customer's customer').

Furthermore, Harland classifies research in this area according to the level of integration between supply chain activities (Harland, 1996). The four levels are: Internal level, which considers only on those activities which are entirely internal to the focal company. Second is Dyadic level, which considers single two- party relationships (between, for example, supplier and manufacturer or manufacturer and distributor/retailer).Thirdly, Chain level which encompasses a set of dyadic relationships including a supplier, a supplier's supplier, a customer and a customer's customer. And lastly, Network level, which concerns a wider network of operations.

In each of these cases, the first level relates to integration of activities and processes which are carried out within a single organisation (i.e. internal or micro or intra-firm supply chain integration). The others describe varying degrees of integration of activities which span the boundaries of organisations (i.e. external or macro- or inter-firm supply chain integration), with the last one of Fawcett and Magnan often being viewed as the theoretical ideal (Fawcett, 2002).

Virtually all contemporary definitions of SCM place a strong emphasis on the need for a shift from traditional supply chain architectures, which were often characterised by fragmentation, to more effective configurations, which need to replace fragmentation with integration. This is true both in relation to internal and external chains. The achievement of high levels of integration has implications for the design of organisational structures and supply chain

architectures. Kemppainen and Vepsalainen(Katariina & Vepsalainen, 2004) suggest that in the future this is “expected to result in a new structure of demand-supply networks, in this study called the encapsulated network, with shared technology and systems, extended decision rights and non-territorial services”. While ‘leading edge’ companies may well have adopted this philosophy to varying degrees, there is a need to understand its role and impact in the wider business community. Finally, moving from fragmented to more integrated approaches inevitably requires changes to the ways in which both internal and external customer and supplier relationships are created and managed.

As pointed out by Oloruntoba and Gray(Oloruntoba, 2005), humanitarian supply chain often entails high levels of uncertainty in terms of demand, supplies and assessment. This makes them clearly unpredictable, turbulent and requiring flexibility. This irregularity presents unique challenges to relief fulfilment system as the number, magnitude, and complexity of global emergencies continue to increase.

Another challenge to the humanitarian supply chain field is the extent to which logisticians can be equipped with the tools they require to perform optimally. There is a high turnover of logisticians in the field, in part due to the high pressure environment but also perhaps due to the absence of clear career paths, associated training and experience transfer. Logisticians are often frustrated by the need to operate in volatile environments

2.6 Supply Chain Relationship Management

The need to replace fragmentation with integration and the holistic approach to flow management requires a re-appraisal of the way in which both internal and external customer/supplier relationships are created and managed. As noted by Sweeney (2005): “SCM is not a ‘zero-sum’ game based on adversarial relationships. Rather, it needs to be a ‘win-win’ game based on partnership approaches”. This point is relevant to the interactions between the key internal supply chain functions of buy, make, store, move and sell, as well as to relationships between an organisation and its external customers and suppliers.

Several of the SCM definitions in the literature highlight the importance of relationship management. For example, Monczka et al. refer to the requirement for “joint relationships with suppliers across multiple tiers”(Monczka, 1998). La Londe et al suggest that supply chain strategy includes, “... two or more firms in a supply chain entering into a long-term agreement; ... the development of trust and commitment to the relationship; ... the integration of logistics activities involving the sharing of demand and sales data”(La Londe, 1994). The CSCMP definition of SCM (CSCMP, 2009) specifically embraces the concept of “co-ordination and collaboration with channel partners”. Lambert et al. goes even further by suggesting that: “Increasingly the management of relationships across the supply chain is being referred to as supply chain management (SCM)”(Lambert, 1998).

2.7 Benefits of Integration in Supply Chain Performance

Improving supply chain performance is a continuous process that requires both an analytical performance measurement system, and a mechanism to initiate steps for realizing key performance indicator (KPI) goals. The mechanism to achieve KPI goals can be referred to as "KPI accomplishment", which connects planning, execution, and incorporates steps for realization of performance goals into routine daily work (Cai, Xiangdong, & Zhihui, 2008). To measure supply chain performance, there are a set of variables that capture the impact of actual working of supply chains on revenues and costs of the whole system.

These variables as drivers of supply chain performance are always derived from supply chain management practices. After identifying KPIs, managers have to achieve improvement in them, through continuous planning, monitoring and execution. According to the results of selected KPIs' accomplishment, managers may create current reports on KPIs, to compare multiple plans of supply chain management. In this performance management cycle, there are many challenges, both in performance measurement and its improvement (Cai, Xiangdong, & Zhihui, 2008).

According to the Supply Chain Council, Supply Chain Performance can be measured in the context of the following supply chain activities/processes modelled around the Supply Chain Operations Reference-model (SCOR)(Supply Chain Council, 2005): Plan, Source, Make, Delivery and Return. SCOR is thus used to describe (standard process definitions allow virtually any supply chain to be configured), measure (standard metrics enable measurement and benchmarking of supply chain performance) and evaluate (supply chain configurations

may be evaluated to support continuous improvement and strategic planning) supply chain configurations.

Individual measures of supply chain performance have usually been classified into four categories: quality, time, cost and flexibility (CIP, 2006). However, since many measurement systems lacked strategy alignment, a balanced approach and systemic thinking, they had difficulty in systematically identifying the most appropriate metrics. To address this problem, the Balanced Scorecard (BSC) and Activity Based Costing (ABC) methods have been used to evaluate supply chain performance (Shepard & and Gunter, 2006).

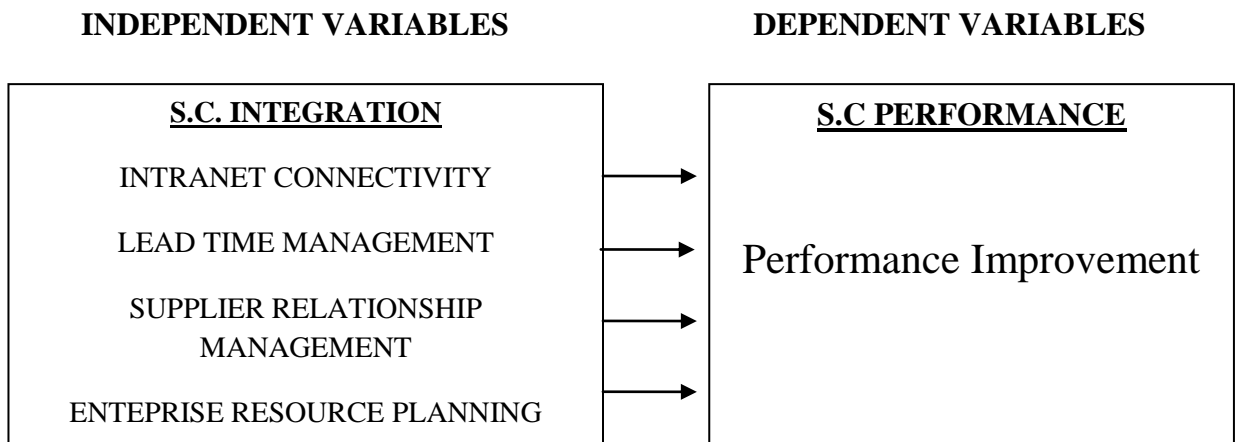
An inter-Agency emergency Prepared & Response working group, working under the University of Washington's Interdisciplinary Program in Humanitarian Supply; with facilitation by Fritz Institutewas formedin July of 2004, (The Fritz Institute, 2004). The main task was to look into attempts to improve Humanitarian supply operations by exploring and better understanding the potential benefits of adopting improved supply-chain management systems, supporting information systems, and inter-agency collaboration. They hoped to accomplish this goal by applying commercial modelling methods to the work of agencies that participate in the Cross-Border Logistics/Supply Chain Sub-Group chaired by George Fenton of World Vision, which is part of a broader group on emergency preparedness and response. Participants included WVI, IFRC, CRS, Merlin, SCF-UK, CARE, FAO, IOM, Oxfam GB, VSF-B, MSF-H, RedR, IRC, UNICEF (including OLS), UNHCR, OCHA and WFP(The Fritz Institute, 2004).

2.8 Research Gap

The literature review confirms that substantial research has been done on supply chain integration and its benefits to the organisation. The concept of supply chain integration is based on documented evidence which suggests that much of the wastage throughout business processes is a consequence of fragmented supply chain configurations. Any meaningful innovation in this area must focus heavily on this issue. This study reviews options available to provide integration of all supply chain activities in the Humanitarian supply chain, for cost saving purposes and higher operational efficiencies. It is therefore clear that there was need to find out the effect of integration on Humanitarian supply chain performance.

2.9 Conceptual Framework

Figure 2.1: Conceptual Framework



Source: Research Data

This study sought to identify whether full adoption of S.C integration by Humanitarian organisations would improve S.C Performance leading to reduced costs, reduction in bottlenecks, flat structures as opposed to silos and timelier receipt-distribution of aid.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology applied in conducting the study. It covers the research design, target population, sampling design, data collection methods and data analysis techniques.

3.2 Research Design

The study employed descriptive survey design. The study was a census type. This design was the most convenient since it ensured that the data obtained gave appropriate answers to the research questions. Descriptive study is used to describe characteristics of a population or phenomenon under study. The survey data collection was undertaken by asking the target representative population structured and pre-determined questions. It is important to emphasize that descriptive research methods can only describe a set of observations or the data collected. It cannot draw conclusions from that data about which way the relationship goes — Does A cause B, or does B cause A? (Jackson, 2009)

3.3 Population and Sampling

The population of study comprised seventeen (17) international Humanitarian organisations operating in Kenya (See appendix A). The researcher involved two respondents from each organisation, namely: The Supply Chain Officer(s) & the Procurement / Logistics Officer(s) in

the aforementioned organisations. This was geared towards increasing the survey response rate, but where both officers responded, the response from the senior most person in the S.C would be used for analysis.

3.4 Data Collection

This study used primary data that was be collected by use of questionnaire. The researcher targeted the aforementioned managers from supply chain units. In their absence the deputy manager or any other senior manager who was actively engaged in making supply chain decisions for the organisation responded to the questionnaire. The questionnaire had two sections. Section A dealt with the profile of the company, section B and C contained information on research objectives. The questionnaire design was in the form of Likert scale where respondents were required to indicate their views on a scale of 1 to 5. The questionnaire was administered via email and drop-off to the respective Officers and collection at an agreed time and place.

3.5 Data Analysis

The data collected was reviewed for completeness and accuracy upon completion of the data collection process. Thereafter, the data was sorted & coded, then entered into the Statistical Package for Social Sciences (SPSS). Percentages, means and frequency scores were calculated as seen in chapter four. Descriptive statistical analysis was employed in order to enable the researcher to summarize, organize, evaluate and interpret the numeric information.

The following model was used to show the integration and supply chain performance relationship:

$S = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + e$. Where: S= Supply chain performance; a= the S intercept, I.e value of S when x=0; b₁, b₂, b₃, and b₄, are regression weights coefficients of variables; x₁ = Information sharing (Intranet connectivity); x₂ = faster decision making (ERP); x₃ = Supplier relationship management (SRM), x₄=efficiency in supply (LTM) and e = error term. To achieve objective one and two, the researcher used descriptive survey. While a multiple linear regression function was used to test the relationship between the independent variables and the dependant variable.

SUMMARY OF METHODOLOGY USED

Table 3.1: Summary of Methodology Used

Objectives	Data to be collected	Data collection tool	Analysis to be done using
To establish the extent of S. C Integration amongst Humanitarian organizations in Kenya	Primary data	Questionnaire	Descriptive Statistics
To identify the challenges of S. C Integration in International Humanitarian organisations in Kenya	Primary data	Questionnaire	Descriptive Statistics
To identify the relationship between S. C Integration and S.C. Performance among Int. Humanitarian organizations in Kenya	Primary data	Questionnaire	Regression analysis

Source: Research Data (2013)

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis and findings with regard to the objective and discussion of the same. The findings are presented in percentages and frequency distributions, mean and standard deviations. A total of 17 questionnaires were issued out. The completed questionnaires were edited for completeness and consistency. Of the 17 questionnaires issued out, only 13 were returned. This represented a response rate of 77%, which is adequate.

4.2 Organizational Profile

The organizational profile considered in the study was the respondent's designation, area of operation and how long the organisation had embraced integration.

4.2.1 Respondents Designation

The respondents were asked to indicate their designation in the organization and the senior most responder in the organisation was considered. The results are presented in table below;

Table 4.1: Respondents Designation

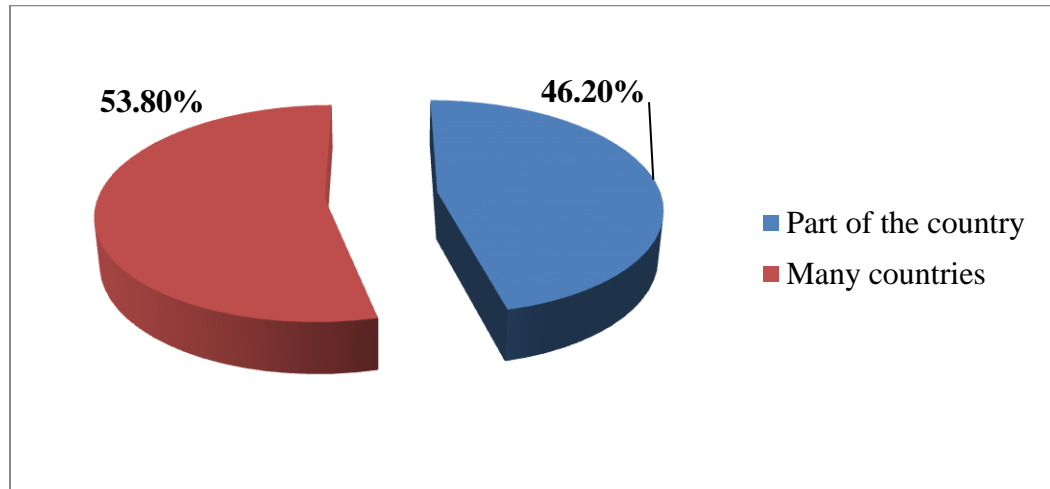
Respondents Designation	Frequency	Percentage	Cumulative Percentage
Procurement officer	6	46.2	46.2
Supply chain officer	4	30.8	76.9
Logistics/warehouse officer	3	23.1	100.0
Total	13	100.0	

Source: Research Data (2013)

The results indicate that 46.2% of the respondents were procurement officers, 30.8% of the respondents were supply chain officers while 23.1% of the respondents indicated that they were logistics/warehouse officers. The results indicate that the respondents were from different designations and thus they will give an independent view of supply chain integration and supply chain performance.

4.2.2 Area of Operation

Figure 4.1: Area of Operation



Source: Research Data (2013)

The respondents were asked to indicate the areas in which their organization operates in. The findings indicate that 53.8% of the international humanitarian organizations operate in many countries while 46.2% of the organizations operate in part of the country. The results indicate that the organizations need an effective supply chain order to be able to achieve the objectives due to their large size of operation.

4.2.3 Business Processes Integration

The respondents were asked to indicate the period in which they integrated their business process.

Table 4.2: Business Process Integration

Business processes Integration	Frequency	Percent	Cumulative Percent
Two years	5	38.5	38.5
Four years ago	2	15.4	53.8
Six years ago	6	46.2	100.0
Total	13	100.0	

Source: Research Data (2013)

The results indicate that 46.2% of the organizations integrated their business processes six years ago, 38.5% of the organizations integrated the business processes two years ago while 15.4% of the organizations integrated within the last four years. The results indicate that the duration in which the international organizations integrated their processes differed though this would help the organization to better manage inventory, keep procurement procedures controlled, and categorize suppliers using the supplier positioning model.

4.3 Supply Chain Integration

Given its potential to reduce lead times and total costs of operations, increase delivery speed, responsiveness and flexibility, and ultimately customer satisfaction, supply chain integration can help to improve the competitiveness of the humanitarian supply chain.

4.3.1 Extent of Supply Chain Integration

The respondents were requested to indicate the extent to which international humanitarian organizations have integrated their supply chain in a five point Likert scale. The range was ‘very large extent (1)’ to ‘very small extent’ (5). The scores of very large extent/large extent have been taken to represent a variable which had mean score of 0 to 2.5 on the continuous Likert scale; ($0 \leq S.E. < 2.4$). The scores of ‘moderate extent’ have been taken to represent a variable with a mean score of 2.5 to 3.4 on the continuous Likert scale: ($2.5 \leq M.E. < 3.4$) and the score of both small extent and very small extent have been taken to represent a variable which had a mean score of 3.5 to 5.0 on a continuous Likert scale; ($3.5 \leq L.E. < 5.0$). A standard deviation of >0.9 implies a significant difference on the impact of the variable among respondents. The results are presented in table below;

Table 4.3 Extent of supply chain integration

Extent of supply chain integration	Mean	Std. Deviation
There is an intranet that provides all the necessary internal information	1.1498	.3755
Each staff has a password that enables them to log into the intranet	1.1576	.3843

All inventory and asset are visible in real-time	1.6923	0.4803
Organization maintains a vendor database of all potential suppliers	1.7692	0.4385
Processing of transactions is real time	1.8243	0.5773
There is an ERP in place to link all departments	2.0143	1.3821
Vendor data base is reviewed annually and is up to date	2.0769	0.9540
All sub offices are interlinked on the same platform	2.1538	0.6887
Dashboard reports can be generated from the Systems from anywhere	2.2546	0.8549
All employees access same information regardless of where they are	2.3077	0.9473
Authorization of transactions is done online	2.3584	0.7679
All departments/units share same information	2.3846	0.9607
No manual delivery of information is done	2.9231	1.1151

Source: Research Data (2013)

The results indicate that in the humanitarian organizations, there is an intranet that provides all the necessary internal information (mean 1.1498), staff has a password that enables them to log into the intranet (mean 1.1576), all inventory and assets are visible in real-time (mean 1.6923), organization maintains a vendor database of all potential suppliers (mean 1.7692), processing of transactions is real time (mean 1.8243), ERP is in place to link all departments

(mean 2.0143), Vendor data base is reviewed annually and is up to date (mean 2.0769), all sub offices are interlinked on the same platform (mean 2.1538), dashboard reports can be generated from the systems from anywhere (2.2546), no manual delivery of information is done (mean 2.9231), employees access same information regardless of where they are (mean 2.3077), authorization of transactions is done online (mean 2.3584) and that all the departments/units share same information (mean 2.3846).

The results indicate that the humanitarian organizations have integrated their supply chain and this would lead to the organizations improving their performance. The results are in support of Stank et al., (2001) findings which revealed that industry leaders increasingly build competences to integrate with suppliers and customers and find that these competencies lead them to supply chain excellence. Supply chain integration throughout the product life cycle is an effective strategy for reducing supply uncertainty. Narasimhan and Kim (2002) on the other hand emphasize the roles of supply chain integration on firm performance suggesting that supply chain integration enhances a firm's performance through moderating the relationship between product diversification (developing different products) and international market diversification.

4.3.2 Effect of Information Sharing On Supply Chain Performance

The respondents were asked to indicate the effect of sharing information on the performance of the supply chain and the results are presented in table 4.4.

Table 4.4: Effect of information sharing on supply Chain Performance

Effect of information sharing on supply chain performance	Mean	Std. Deviation
Information moves faster and this reduces lead time in the organization	1.6923	0.48038
Sharing of information improves Supply Chain Performance	1.8462	1.14354
Orders are easily processed to avoid delays	2.1538	0.89872
Our suppliers share proprietary information	2.1538	0.89872
Our suppliers share business knowledge of core business processes with us	2.3458	0.9835

Source: Research Data (2013)

The results indicate that information sharing result in information moving faster thus reducing lead time in the organization (mean 1.6923), improves supply chain performance (mean 1.8462), assist in easy processing of orders thus avoiding delays (mean 2.1538) and that suppliers share business knowledge of core business processes with the humanitarian organizations (mean 2.9458). The results indicate that information sharing is being practiced by the organizations and this would assist in the management and coordination of the supply chain. The results are consistent with Chopra and Meindl (2004) who found that the right information exchanged between the members at the right time can help improve the

performance of all members in a supply chain by reducing the bullwhip effect. On the other hand Smaros et al., (2003) states that information sharing brings out many benefits to both the suppliers and buyers such as inventory reduction and reduced manufacturing costs however, the impact of information sharing on supply chain management depends on what information is shared, quality of shared information and companies capability in using and translating the information into a supply chain strategy and operational activities.

4.3.3 Effect of Faster Decision Making on Supply Chain Performance

The respondents were asked to indicate the effect of faster decision making on supply chain performance of the international humanitarian organizations.

Table 4.5: Effect of faster decision making on supply chain performance

Faster decision making and supply chain performance	Mean	Std. Deviation
Leads to better supplier relationship management	1.8462	0.6887
Organization is able to contact suppliers instantly	1.9112	0.8165
Database of suppliers can easily be maintained	2.0769	0.8151
Supply chain decisions are made in time	2.3077	0.9473

Source: Research Data (2013)

As shown in table 4.5, faster decision making results in better supplier relationship management (mean 1.8462), organization is able to contact suppliers instantly (mean 1.9112),

database of suppliers can easily be maintained (mean 2.0769) and that supply chain decisions are made in time (mean 2.3077). The results indicate that decision making in the organizations is a key driver of supply chain performance in terms of responsiveness and efficiency and these, in turn, have a direct impact on the competitiveness of a firm.

4.3.4 Effect of Supplier Relationship on Supply Chain Performance

The respondents were requested to indicate the effect of supplier relationship on supply chain performance.

Table 4.6: Effects of supplier relationship on supply chain performance

Supplier relationship and supply chain performance	Mean	Std. Deviation
There is efficiency in the entire supply chain	1.6154	0.7679
It assists in improving the quality of services offered to the victims	1.9231	0.6405
Deliveries are easily processed to avoid delays	2.0769	0.4935
The supplier partnership can create unique knowledge that can be applied to improve business knowledge	2.1468	0.8462
Monitoring stock movement and distribution is made easier	2.3077	0.9473

Source: Research Data (2013)

The results indicate that supplier relationship result in efficiency in the entire supply chain (mean 1.6154), assists in improving the quality of services offered to the victims (mean 1.9231), easy processing of deliveries to avoid delays (mean 2.0769), creation of unique knowledge that can be applied to improve business knowledge (mean 2.1468) and easy monitoring of stock movement and distribution (mean 2.3077). The results indicate that the humanitarian organizations have developed relationship with their suppliers and this would enables the organizations to be more responsive in fulfilling customers' demand and satisfaction by proactively seeking customers' needs and requirements. The results are consistent with Graham et al.,(1994) findings which established that supplier partnership improves the quality of supplier operations and improves the quality of parts that are supplied, which results in better product quality. Thus, partnerships will encourage suppliers to be involved and participate in quality certification programs. This will help in eliminating the waste and scrap among suppliers.

4.3.5 Effect of Efficiency on Supply Chain Performance

The respondents were requested to indicate the effect of efficiency on supply chain performance in international humanitarian organizations and the results are presented in table 4.7.

Table 4.7:Effect of Efficiency on supply chain performance

Efficiency and supply chain performance	Std.	
	Mean	Deviation
In general integration has enhanced the performance of our supply chain	1.5385	0.5188
Integration lead to performance measurement using KPIs	1.9437	0.6218
Integration has lead to cost reduction	2.0769	0.7595
Integration has ensured relevant humanitarian aid is delivered at the right place at the right time	2.0925	0.4935
Integration has led to timeliness in humanitarian aid delivery	2.1538	0.6887

Source: Research Data (2013)

The results indicate that integration has enhanced the performance of our supply chain (mean 1.5385), result in performance measurement using KPIs (mean 1.9437), lead to cost reduction (mean 2.0769), ensured relevant humanitarian aid is delivered at the right place at the right time (mean 2.0925) and that it leads to timeliness in humanitarian aid delivery (mean 2.1538). The results are in tandem with the findings of Kumar and Phrommathed (2006) who asserted that increasing operations efficiency eventually improves adaptability and customer service level of the organization. These have a direct impact on the competitive position of the firm.

4.4 Regression Analysis

The determinants of a firm supply chain performance resulting from integration of the supply chain were investigated from the results of the respondents. From the computation table below, the established multiple linear regression equation becomes:

$$Y = 24.835 + 15.052X_1 + 5.313X_2 + 0.726X_3 + 9.961X_4$$

Table 4.9: Results of the Least Square

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig. P value	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	24.835	12.878		0.940	0.350		
X ₁	15.052	9.435	0.094	0.916	0.363	0.902	1.109
X ₂	5.313	2.324	-0.100	-0.998	0.321	0.934	1.071
X ₃	0.726	0.469	0.009	0.086	0.932	0.833	1.201
X ₄	9.961	2.902	0.075	0.717	0.476	0.854	1.171

Source: Research Data (2013)

The coefficient of intercept C has a value (24.835) and is not significant, since none of them is a good predictor. The coefficient of all the independent variables is positive at $\alpha = 5\%$ except,

and implies that the increase in the independent variables results in an increase in the supply chain performance of a firm. From the coefficients, it can be deduced that the most critical factor which affects an organizations supply chain performance is the information sharing and the level of efficiency in the supply chain. At $\alpha = 5\%$, none of the independent variables is significant since all have P value greater than 5% ($X_1 = 36.3\%$, $X_2=32.1\%$, $X_3=93.2\%$ and $X_4=47.6\%$). This is supported by the low values of t (all are below 1.00). This does not collaborate the literature findings by Agarwal et al(2006).

Table 4.10: Model summary for Supply Chain performance with control Variable

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F -statistic
1	0.726	0.5207	0.439	0.2296886	49.4

Source: Research Data (2013)

The R^2 , also called the coefficient of multiple determinations, is the percentage of the variance in the dependent variable explained uniquely or jointly by the independent variables and is 52.07% (satisfactory). This means that 52.07% of the changes in the firm's supply chain performance is explained by the changes in the independent variables in the model. The remaining 47.93% of the changes in the Y is explained by other factors not in the model.

4.5 F Test for the Full Model

To ascertain the extent of difference in supply chain integration across various international humanitarian organizations regarding their performance, ANOVA Test was applied. ANOVA is carried out for each S.C integration drivers (independent variable) versus the organizations Performance (dependant variable) at F0.05.

Table 4.11: ANOVA

Model	Sum of Squares (SS)	df	Mean Square (MS)	F	Signif. F
Regression(ESS)	120	3	93.33	3.4903	7.002
Residual(RSS)	160	12	13.33		
Total(TSS)	280	18	106.66	3.4903	7.002

It is observed from Table 4.11 that the calculated F- value is less than the table value (F value = 3.4903 at 5% significance level). This means that there no significance difference in the supply chain integration process between the humanitarian organization in Kenya.

4.6 Supply Chain Integration Challenges

Companies using supply chain integration have to overcome a number of complicated obstacles in order to recognize their goal of a unified management system. Significant planning and investment of time, as well as money, are required for this transition to be successful. The respondents were asked to indicate supply chain integration challenges within the international humanitarian organizations.

Table 4.8: Supply chain integration challenges

Supply chain integration challenges	Mean	Std. Deviation
Inability to anticipate disaster	1.9846	.8165
Poor infrastructure poise a barrier to integration	2.1538	1.2142
Higher staff turnover in the field	2.1648	1.3445
Transportation of bulky materials	2.2308	1.4232
Lack of resources due to earmarking of funds	2.3077	1.4367
Acquisition cost of an ERP	2.3615	1.4500
Uncertainty in terms of demand, supplies and assessment	2.3846	1.2608
Local customs legislation	2.6154	1.3867
Duplication of effort hinder integration	2.7692	1.3008

Source: Research Data (2013)

The results indicate that the supply chain challenges were poor infrastructure (mean 2.1538), high staff turnover in the field (mean 2.1648), inability to anticipate disaster (mean 1.9846), transportation of bulky materials (mean 2.2308), lack of resources due to earmarking of funds (mean 2.3077), acquisition cost of an ERP (mean 2.3615) and uncertainty in terms of demand, supplies and assessment (mean 2.3846). The respondents noted that local customs legislation (mean 2.6154) and duplication of effort hinder integration (mean 2.7692) hindered S.C

integration to a moderate extent. The results are consistent with Oloruntoba (2005) findings which indicated that humanitarian supply chain often entails high levels of uncertainty in terms of demand, supplies and assessment. This makes them clearly unpredictable, turbulent and requiring flexibility. This irregularity presents unique challenges to relief fulfilment system as the number, magnitude, and complexity of global emergencies continue to increase.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings and Discussions

The study established that the areas of operation for the humanitarian organizations differed as some operate in many countries while others operate only in part of the country and thus in order to effectively deliver on its mandate, these organizations need an effective supply chain integration.

The study found out that the humanitarian organizations have integrated their supply chain in the last four years, though at different period(s) of time and this has helped to focus on their core competencies and particular areas of expertise, reducing cost and becoming more efficient, while creating value for the organisation, its supply chain partners, and its stakeholders.

Supply chain integration in the organizations was achieved through password enabled intranets that provide all the necessary internal information, visible inventory and asset in real-time, vendor database of all potential suppliers, real time transaction processing, ERP linkages across all departments, annually reviewed vendor data base that is up to date, interlinked sub-offices on the same platform with generation of dashboard reports from the system made possible from anywhere. No manual delivery of information is done, employees access same information regardless of where they are, authorization of transactions is done online and all the departments/units share same information.

Information sharing is an important aspect in achieving seamless integration in a supply chain. The study established that information sharing in the humanitarian organizations resulted in information moving faster thus reducing lead time in the organization, improving supply chain performance, assisting in easy processing of orders thus avoiding delays and that supplier's share business knowledge of core business processes with the humanitarian organizations. The study found out that faster decision making was necessary in the organizations as it results in better supplier relationship management, organization is able to contact suppliers instantly, database of suppliers can easily be maintained and that supply chain decisions are made on time. Integration with suppliers throughout the product life cycle is an effective strategy in reducing supply chain integration and this was found to be the case in the humanitarian organizations as it results in efficiency in the entire supply chain, assists in improving the quality of services offered to the victims, easy processing of deliveries to avoid delays, creation of unique knowledge that can be applied to improve business knowledge and easy monitoring of stock movement and distribution. These collaborates the findings by Fabbe-Costes&Jahre (2008) that, without enterprise integration, companies will continue to be constrained by the inability to communicate and manage the flow of information and business processes across the enterprise.

The study established that supply chain integration in the organizations resulted in increased efficiency as it enhanced the performance of our supply chain, result in performance measurement using KPIs, led to cost reduction, ensured relevant humanitarian aid is delivered at the right place at the right time and that it led to timeliness in humanitarian aid delivery.

Integration of the supply chain is affected by several factors and the study established that the organizations integrations was affected by poor infrastructure, high staff turnover in the field, inability to anticipate disaster, transportation of bulky materials, lack of resources due to earmarking of funds, acquisition cost of an ERP and uncertainty in terms of demand, supplies and assessment. The study accurately collaborates the findings by (Sweeney, 2005) that, given the pivotal role of the integration paradigm within SCM, any meaningful innovation in this area must focus heavily on this issue.

5.2 Conclusions

Today's business competition is moving from among organizations to between supply chains partners and organizations are increasingly adopting supply chain integration, in the hope for generating S.C responsiveness and competitive advantage of the firm. Research finding showed that all the humanitarian organizations have embarked upon a program aimed at implementing supply chain management integration though within a few years ago. The findings indicate that supply chain integration is an effective way of competing, and the implementation of S.C integration does have a strong impact on S.C responsiveness and competitive advantage of the firm.

The integration of S.C and has proven to be a critical success factor for a company's supply chain and performance. When strategy and practice are properly combined, the supply chain and firm performances will improve. The results highlight that information sharing, faster decision making, supplier relationship management and efficiency in a supply chain influence the humanitarian organizations performance. The study established that the higher extent of

efficiency and agility, the better the supply chain performs and enable a firm to achieve its' goals. Information sharing was found to affect supply chain performance and therefore managers should improve information sharing effectively, so that supply chain responsiveness can be increased and generate higher performance.

Building long term relationship with suppliers enhances the ability of the supply chain to eliminate waste and improve the leanness of their own operations and thus helps in improving the supply chain performance. The support of the appropriate practice (strategic supplier partnership) helps in executing lean supply chain and is expected to lead to cost efficiencies along the supply chain. This means that the support form strategic supplier partnership facilitates and allows lean production concepts to be more fully applied. Supply chain integration in the organizations was found to be facing challenges emanating from poor infrastructure, high staff turnover in the field, inability to anticipate disaster, transportation of bulky materials, lack of resources due to earmarking of funds, acquisition cost of an ERP and uncertainty in terms of demand, supplies and assessment.

However, the adoption of S.C Integration concepts and principles is not without its challenges. For example, Fabbe-Costes and Jahre (2008), based on a systematic review of 38 papers on the subject of S.C Integration note that; even though half of the papers of our total sample conclude that S.C integration has a positive effect on the performance, the variety of empirical bases and the research design of the studies suggest that caution be advisable.

5.3 Recommendations

Firstly, the study established that all the humanitarian organizations have integrated their supply chain performance but it is recommended that the organizations should build and continuously improve their employee skills and capacity in facing the changing competitive environment. The implementation of supply chain integration requires enhanced skills to utilize the shared information from its partners in order to work collaboratively with many different functions within a company and with their supply chain partners.

Secondly, the study established that the humanitarian organizations supply chain performance is influenced by supplier relationship and it is recommended that the organizations should continually seek effective deployment of information technology into their supply chain activities with suppliers and their internal operations. The effective use of information technology can greatly increase coordination of activities within the supply chain partner. The advancement in such as the internet allows each supply chain member to increase integration with relatively low cost. Information technology would also facilitate companies to share more information with their partners.

Thirdly, the study found out that supply chain integration in the humanitarian organizations was affected by several factors and it is recommended that in order to achieve full benefits of the integration the organizations should ensure that they find solutions to the challenges so that it does not affect their operations.

5.4 Recommendations for Further Research

The study was undertaken on international humanitarian organizations operating in Kenya. However, due to specific security threats that were issued after the Westgate terrorist attacks in Kenya, all UN agencies undertook specific security precaution, which inevitably affected the response rate from the field. Nevertheless, it is recommended that the study can be replicated in the Great Lakes countries to establish the effect of supply chain integration and supply chain performance.

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APPENDIX I: Research Questionnaire

Section A: Organizational Profile

1. Your designation Procurement Officer
- Supply Chain Officer
- Logistics Officer

2. Areas the organization operates in

- a) Part of the country
- b) All parts of the country
- c) Many countries

3. When did you first integrate your business processes

- Two years ago Four years ago Six years ago

NB: Integration is defined as the use of technology to underpin the coordination of these business functions using a common platform where various supply chain activities and processes work together in as seamless a manner as possible.

Section B: Extent of S.C. Integration among International Humanitarian organisations in Kenya

Please indicate the extent to which you agree with the following statements on the extent of supply chain integration in your organisation. The scale below will be applicable:

1= To a very large extent 2= Large extent 3= moderate extent 4= small extent 5=very small extent.

No	Statement	1	2	3	4	5
1	All departments/units share same information					

2	Processing of transactions is real time					
3	There is an ERP in place to link all departments					
4	There is an intranet that provides all the necessary internal information					
5	Each staff has a password that enables them to log into the intranet					
6	No manual delivery of information is done					
7	Authorization of transactions is done online					
8	Organisation maintains a vendor database of all potential suppliers					
9	Vendor data base is reviewed annually and is up to date					
10	All sub offices are interlinked on the same platform					
11	All inventory and asset are visible in real-time					
12	All employees access same information regardless of where they are					
13	Dashboard reports can be generated from the Systems from anywhere					

Please indicate the extent to which you concur with the following statements concerning the relationship that exists between S.C Integration and the S.C Performance of your supply chain.

1= To a very large extent 2= Large extent 3= moderate extent 4= small extent 5=very small extent.

No	Statement	1	2	3	4	5
1	Sharing of information improves Supply Chain Performance					

2	Information moves faster and this reduces lead time in the organization					
3	Orders are easily processed to avoid delays					
4	Supply chain decisions are made in time					
5	Organization is able to contact suppliers instantly					
6	Database of suppliers can easily be maintained					
7	Leads to better supplier relationship management					
8	Monitoring stock movement and distribution is made easier					
9	It assists in improving the quality of services offered to the victims					
10	There is efficiency in the entire supply chain					
11	Is your inventory owned by your organisation or by suppliers					
12	Deliveries are easily processed to avoid delays					
13	If yes, does the improve restocking and distribution accountability					
14	In general integration has enhanced the performance of our supply chain					
15	Does integration lead to cost reduction					
16	Does integration lead to timeliness in humanitarian aid delivery					
17	Does integration lead ensure relevant humanitarian aid is delivered at the right place at the right time					
18	Does integration lead to performance measurement using KPIs					
19	Does integration lead to collaboration with suppliers					

Section C:Supply Chain Integration Challenges

State the extent to which you agree with the following statements concerning Challenges in integrating Humanitarian Supply Chain in Kenya.

Use the scale of: 1. strongly agree 2. Agree 3. Not certain 4. Disagree 5. Strongly disagree

	CHALLENGES					
1	Does poor infrastructure poise a barrier to integration					
2	Does transportation of bulky materials poise a barrier to integration					
3	Does lack of resources due to earmarking of funds poise a problem					
4	Are local customs legislation a hindrance to integration					
5	Inability to anticipate disaster					
6	Higher staff turnover in the field					
7	Uncertainty in terms of demand, supplies & assessment					
8	Does duplication of effort hinder integration					
9	Is the acquisition cost of an ERP a barrier to integration					

14. Any other? Please indicate.

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Much obliged

APPENDIX II:

WVI	World Vision International
IFRC Societies	International Federation of the Red Cross & Red Crescent Societies
CRS	Catholic Relief Services
Merlin	Medical Emergency Relief International (UK)
SCF-UK	Save the Children Fund-United Kingdom
Oxfam GB	Oxford Committee for Famine Relief Great Britain
UNHCR	Office of the United Nations High Commissioner for Refugees
CARE International	Cooperative for Assistance and Relief Everywhere
FAO	Food and Agricultural Organisation
VSF-BELGIUM	Vétérinaires Sans Frontières Belgium
MSF	Médecins Sans Frontières International
CWS	Church World Services
IRC	International Rescue Committee
UNICEF	United Nations International Children's Emergency Fund
OCHA	Office for the Coordination of Humanitarian Affairs
NRC	Norwegian Refugee Council
LWF	Lutheran World Federation

(www.reliefweb.int)