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College of Business and Economics

Department of Logistics and Supply Chain Management

The Effect of Supply Chain Management Challenges on the Performances of Humanitarian Aid Organization: The case study of Addis Ababa City Administration.

BY
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Addis Ababa, Ethiopia

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A Master thesis submitted to the department of Logistics and Supply Chain Management in Partial Fulfillment of the Requirements for the Degree of Masters in Logistics and Supply Chain Management

Addis Ababa, Ethiopia

June, 2016

Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university, and that all the sources of materials used for the thesis have been duly acknowledged.

Declared by:

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Date of Submission: June, 2016

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This is to certify that the thesis prepared by Mr. Mebrahtom Tesfay, entitled "The effect of supply chain management on the performances of humanitarian aid organization": the case study of Addis Ababa City Administration, which is submitted in partial fulfillment of the requirements for the Degree of Masters in Logistics and Supply Chain Management, complies with the regulation of the university and meets the accepted standards with respect to originality and quality.

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Acronyms

AACA	Addis Ababa City Administration
C	Collaboration
CP	Cost Performances
CSCMP	Council of Supply Chain Management Professionals
DV	Dependent Variable
F	Flexibility
FDRECSA	Federal Democratic Republic of Ethiopia Charities and Societies Agency
GC	Government Challenges
HAO	Humanitarian Aid Organization
HL	Humanitarian Logistics
HSCM	Humanitarian Supply Chain Management
IC	Infrastructure Challenges
INC	Internal Challenges
IV	Independent Variable
KPI	Key Performances Indicators
NGO	Non-Governmental Organizations
R	Responsiveness
RSC	Relief Supply Chain
SCM	Supply Chain Management
SEC	Socio-Economic Challenges
UNDP	United Nation Development Program

Abstract

Humanitarian supply chain is the network created through the flow of services, supplies, information and finances between donors, beneficiaries, suppliers and different units of humanitarian organizations, in order to provide physical aid to beneficiaries. Both the number of natural and man-made challenges and the people affected by these challenges have increased substantially during the recent decades. There exists a limited body of empirical research within the field of humanitarian supply chain and this study is presented to address this limitation by utilizing an operations research technique to examine, how the SC performance can be improved. The research presented is builds on "The effect of supply chain management challenges on the performances of humanitarian aid organization". The study took a descriptive and causal cross-sectional survey research design to describe population characteristics and examine the effect of SCM challenges on the performances of humanitarian aid organization. The study also equipped spearman's correlation to determining the degree of correlation between the independent and dependent variables. For the purpose of testing the developed hypothesis, simple and multiple linear regressions analysis was used. The study was targeted to one hundred twenty three (123) humanitarian aid organizations at Addis Ababa City Administration. Data were collected through primary and secondary sources that were able to directly answer and fulfill the objective of the study, and cronbach's alpha was used to measure the internal consistency of items in the scale. The findings show that each dimension of supply chain management challenges has a negative effect on responsiveness, collaboration, flexibility and cost performances. Finally this study recommends that, it is advisable to closely working and collaboration with different partners and stakeholders is extremely essential to minimize the SCM challenges, and ensure service quality and sustainability. Therefore, this study is expected to fill the empirical gap in literature on effects of supply chain management challenges on the humanitarian aid organization, which need to be bridged to ensure that humanitarian supply chains are improved and managed on the basis of informed evidence.

Keywords: Humanitarian supply chain management, Supply chain challenges, Performances measurement

Chapter- One

1. Introduction

1.1. Background of the study

In today's global economy, organizations are faced with a variety of changes in the business environment (McIvor, R. 2000). Supply chain management deals with growth of multinational corporations and strategic partnerships; global expansion and sourcing and environmental concerns. Owing to these emerging issues in the internal and external environment of organizations, supply chain management is the most critical discipline in the world today (Chopra, S. 2007).

As stated by (Ganeshan and Harrison, 1995) a supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers as cited by (Matiwos Ensermu,2013, pp.5). The ultimate goal of any supply chain is to deliver the right supplies in the right quantities to the right locations at the right time. Humanitarian supply chain management is applicable within societal settings, including medical missions; disaster relief operations and other kinds of emergencies and it helps improve quality of life.

Giulia S. et al. (1998), defined performance as the accomplishment of a given task measured against preset known standards of accuracy, completeness, cost, and speed. According to Heasip et al. (2004), supply chain performance is the entire chain's ability to meet end customer needs through product availability, responsive, on-time delivery and flexible as cited by (Jane Kiende Kinyua, 2013). The performance of a supply chain depends on how its members coordinate their decisions. Sharing information is the most basic form of coordination especially in the today's globalized environment. Increased globalization and competition has made SCM a very important and critical issue for any company if they have to deliver quality and timely services and products to their customers. SCM ensures that organizations get the right things to the right places at the right time thereby creating time and place utility (Watcharavee Chandraprakaikul, 1997). The SC performance characteristics with the greatest value in a supply chain are accuracy, responsiveness,

cooperation, on time complete deliveries, reduction of inventory and mutual continuous improvement (Bonney, 2003).

The Oxford Dictionary defines challenges as a new or difficult task that tests somebody's ability and skill. Some of the challenges facing human beings include man-made and natural calamities, diseases, poverty, war, crimes, insecurity and poor governance. The term challenge in this context is used to refer to the barriers that hinder effectiveness of supply chain management in the humanitarian sector. In humanitarian supply chain environment humanitarian staff often has to confront with many stakeholders, including large number of donors, the media, government, the military and the final beneficiaries (Tomasini and van Wassenhove, 2004). Interconnected or interlinked networks and node businesses are involved in the provision of products and services required by end customers in a supply chain. Lack of coordination among humanitarian organizations at the scene of a disaster is ordinary, as there can be as many as several hundred humanitarian organizations at the scene to carry out relief operations, all with different political agenda, ideologies and religious beliefs and all fighting for media and donor attention (Van Wassenhove, 2006). Oloruntoba and Gray (2005), posits that the humanitarian supply chain often entails high level of uncertainty in terms of demands, supplies and assessments. Logisticians are often frustrated by the need to operate in volatile environment. The performance management particularly the performance of supply chain is equally a challenge for humanitarian organizations. As clearly stated by Kunz and Reiner (2011), the humanitarian supply chain factors categorized as socio-economic situational factors, environmental situational factors, funding status, government situational factors, organizational factors and supply chain decision as cited by (Jane Kiende Kinyua, 2013). As stated by (Graham E. Heaslip, 2012), the primary objective of humanitarian aid organizations is to save lives, alleviate suffering and maintain human dignity during and in the aftermath of man-made crises and natural disasters, as well as to prevent and strengthen preparedness for the occurrence of such situations as quoted by (Peter Nyandega Agwata, 2014:6).

The Charities and Societies Agency in Addis Ababa City Administration gather its members from international, regional and national humanitarian organizations operating in Ethiopia. There are several humanitarian organizations that currently operate in Addis Ababa City Administration. These humanitarian organizations are active in a cross section of sectors

including: Relief and Emergency, Agriculture, Peace and security, Water, Education, Environmental and natural resources protection, Health, Human rights, Energy, Justice, Micro finance support, Gender and development, Children's rights, Poverty alleviation, Population, Training, Counseling, Small scale enterprises, Biodiversity, Disability and Tourism among others. The reasons for the existence of such organizations are diverse. In humanitarian actions, delays in delivery or relief can cost lives. Therefore, efficiency and reliability in supply chain is a key success factor, because it ensures the smooth flow of goods and services. To save lives and alleviate suffering, the response must be timely, effective, appropriate, and well organized.

1.2. Problem statement

Today, organizations worldwide have to cope with very keen competition and a dynamic environment as market conditions are changing rapidly and customers are demanding better and better products and services (Reza Mohammady Garfamy, 2005). The humanitarian supply chain focuses on providing humanitarian assistance in the forms of food, water, medicine, shelter, and supplies to areas affected by large scale emergencies. Just like the business world, humanitarian organizations are required to adopt various supply chain concepts, to help in making informed decisions, and more importantly, to help them undertake their operations in more profound manner. SC Performance measurement in humanitarian logistics is crucial and critical element of successful humanitarian relief operations on strategic, tactical and operational levels. As stated by (Peter Nyandega Agwata, 2014) a disaster struck region, each supply chain has to be built up from the very beginning and usually very different to previous ones. Therefore, the necessary competencies need to be rapidly reconfigured. In addition, aid workers knowledge and skills are of utmost importance to guaranteeing a quick response.

Nowadays, Supply chain is becoming a vital entity to the organizations` performance measurement and metrics, and has received much attention from researchers and practitioners. However studies have established the factors affecting supply chain performance in manufacturing and commercial organizations whose focus is to deliver value to customers in order to make profit (Mingli Liu, 2013). One of the differences between supply chains for business and for humanitarian actions is the main focus. In

business, the focus is the final consumer, who is the input source of funds for the entire chain. In humanitarian, the focus is protection of civilians and those no longer taking part in hostilities, and the provision of food, water and sanitation, shelter, health services and other items of assistance, undertaken for the benefit of affected people and to facilitate the return to normal lives and livelihoods. There has been pressure on humanitarian organizations to respond to emergencies in organized, timely, effective and appropriate manner. A number of supply chain challenges are limited the humanitarian organizations in responding to disasters (Van Wassenhove, 2006).

Swafford (2006), Brewer (2000) carried out studies on humanitarian supply chain and measuring supply chain performance using balanced scorecard respectively, but the studies did not examine the challenges of supply chains management. Andreas Wieland and Carl Marcus Wallenburg, (2012), has conducted a study on supply chain risks and linking risk management practices and strategies to performance, but the study were focused on the supply chain risk management (SCRM) through the supply chain strategies (agility and leanness). Walton (2011) carried out study on factors affecting the experience of speed in humanitarian logistics and identified a relationship between decision making and perceptions of speed. These studies have left an obvious research gap on effects of supply chain management challenges on the humanitarian aid organization, which need to be bridged to ensure that humanitarian supply chains are improved and managed on the basis of informed evidence.

Therefore, this study is intended to examine the effect of supply chain management challenges on the performances of humanitarian aid organization in Addis Ababa City Administration. Finally, this study will be expected to fill the empirical gap in literature as there is lack of empirical studies in the area, as the researcher stated before.

1.3. Research questions

The vital research questions that have been addressed in this study are:

1. What are the experiences of the humanitarian aid organization in relation to supply chain management challenges?
2. What is the relationship between supply chain management challenges and the performance of humanitarian aid organizations?

3. What is the effect of supply chain management challenges on the performances of humanitarian organizations?

1.4. Objective of the study

In response to the above research questions, the associated research objectives are as follows:

1.4.1 General Objective

The main objective of this study is to examine the effects of supply chain management challenges on performances of humanitarian aid organization in Addis Ababa City Administration.

1.4.2 Specific Objectives

The specific objectives of this research are;

1. To determine the experiences of humanitarian aid organization in relation to supply chain management challenges.
2. To determine the relationship between supply chain management challenges and the performance of humanitarian aid organizations.
3. To examine the effects of supply chain management challenges on the performances of humanitarian aid organizations.

1.5. Research hypothesis

This study is an empirical research on the supply chain management challenges in relation to (government, infrastructure, socio-economic and internal organization) and HAO performances (responsiveness, collaboration, flexibility and cost performances). So, the following hypotheses are creating a clear picture of what will be investigate in this research work.

1. The effect of government challenges on HAO Performances

As stated by (VanWassenhove, 2006) governments hold main power over political and economic conditions and directly affect to supply chain processes as quoted in (Jane Kiende Kinyua,2013). So, the first hypothesis of this study is:

- H1: Government challenges may have a negative effect on HAO Performances

- H_{1a}: Government challenges may have a negative effect on responsiveness.
- H_{1b}: Government challenges may have a negative effect on collaboration.
- H_{1c}: Government challenges may have a negative effect on flexibility.
- H_{1d}: Government challenges may have a negative effect on cost performances.

2. The effect of socio-economic challenges on HAO Performances

Socio-economic challenges are associated with; uncompetitive market economy, absences of local suppliers, uncertainty in demand and supply, availability stiff competition, absences financial donors, the culture and language of the host country (Jahre, M. and Jensen, L.M. 2010). So, the second hypothesis of this study is:

- H2: Socio-economic challenges may have a negative effect on HAO Performances
  - H_{2a}: Socio-economic challenges may have a negative effect on responsiveness.
  - H_{2b}: Socio-economic challenges may have a negative effect on collaboration.
  - H_{2c}: Socio-economic challenges may have a negative effect on flexibility.
  - H_{2d}: Socio-economic challenges may have a negative effect on cost performances.

3. The effect of infrastructure challenges on HAO Performances

Infrastructure challenges are directly related to; inadequate availability of a road network, railway, airports, power supply, tends to disrupt and slow down the distribution of relief items (Andreas Wieland, Carl Marcus Wallenburg, 2012). So, the third hypothesis of this study is:

- H3: Infrastructure challenges may have a negative effects on HAO Performances
  - H_{3a}: Infrastructure challenges may have a negative effect on responsiveness.
  - H_{3b}: Infrastructure challenges may have a negative effect on collaboration.
  - H_{3c}: Infrastructure challenges may have a negative effect on flexibility.
  - H_{3d}: Infrastructure challenges may have a negative effect on cost performances.

4. The effect of internal organizational challenges on HAO Performances

According to (Thomas, A. S. and Kopczak, L. R., 2005); internal challenges are events that occur within an organization associated with inadequate resources, employee turnover, lack

of contingency plan, poor organizational structure and systems, lack of employee accountability, internal budget constraints among others.

So, the forth hypothesis of this study is:

- H4: Internal challenges may have a negative effect on HAO Performances
  - H_{4a}: Internal challenges may have a negative effect on responsiveness.
  - H_{4b}: Internal challenges may have a negative effect on collaboration.
  - H_{4c}: Internal challenges may have a negative effect on flexibility.
  - H_{4d}**:** Internal challenges may have a negative effect on cost performances.

Where; hypothesis letter subscribe: H_1 (H_{1a}, H_{1b}, H_{1c}, H_{1d}) H_2 (H_{2a}, H_{2b}, H_{2c}, H_{2d}) H_3 (H_{3a}, H_{3b}, H_{3c}, H_{3d}) H_4 (H_{4a}, H_{4b}, H_{4c}, $H_{4d)}$ represents alternative hypothesis. Whereas, hypothesis letter subscribe: H_{1o} (H_{1ao}, H_{1bo}, H_{1co}, H_{1do}) H_{2o} (H_{2ao}, H_{2bo}, H_{2co}, H_{2do}) H_{3o} (H_{3ao}, H_{3bo}, H_{3co}, H_{3do}) H_{4o} (H_{4ao}, H_{4bo}, H_{4co}, $H_{4do)}$ represents null hypothesis.

1.6. Significance of the study

The primary advantage of this study is for the researcher i.e. one of the fulfillments to get master's of Art degree in Logistics and Supply Chain Management. Secondly, this study will have a paramount importance to the humanitarian aid organization by furnishing valuable solution on the level of supply chain challenges. So that the humanitarian aid organization can design effective processes, policies, procedures and metrics on how to make minimize the supply chain challenges. Hence, financial donors, recipients of services, staff and volunteers will be benefited. Moreover, this study will help those interested in this area to have an insight on theoretical understanding of the issue under discussion and can serve as a base and as a reference for further and other related research works.

1.7. Delimitation and limitation of the study

The principal concern of this study is to examine the effect of supply chain management challenges on the humanitarian aid organization's responsiveness, collaboration, flexibility, and cost performances. It is geographically delimited at Addis Ababa City Administration in relief and emergency sectors, on the supply chain/procurement/ logistics managers of the humanitarian aid organization

The main limitation of this study is that the research is conduct only in Addis Ababa City Administration (AACA) in relief and emergency sector, and the findings may not indicate the general situation in Ethiopia. Unavailability of well documented and organized secondary data was the limitations. Moreover, the organizations are very scattered which was difficult to distribute and collect the data on time. Despite the limitation mentioned, the data were collected by probing respondents through clarifying the aim of the research.

1.8. Conceptual definition

The conceptual definitions of both dependent and independent variables of the study are defined below.

Supply Chain performances: supply chain performances is the entire chain's ability to meet end customer needs through planning and management of all activities related to material, information, financial flows, and co-ordination and collaboration with supply chain members, across humanitarian aid organizations (Daniel Willner and Stavros Zafeiridis, 2013*)*.

The predictor variables of the study, which are expected (hypothesized) to have association with supply chain performances, are selected based on previous study on the subject.

Government challenges: Governments hold the main power with the control they have over political and economic conditions and directly affect to humanitarian supply chain processes with their decisions and it may refuse to allow humanitarian agencies to assist their citizens and may object to conditionality of aid and development assistance, citing defense of their national sovereignty. Those challenges are associated with type of regime, the national regulations toward relief organizations, complex customs clearances procedure and security context (Van Wassenhove, 2006).

Socio-economic challenges: The socio-economic challenges are associated with the uncertainty in demand and supply, uncompetitive of market economy, the absences of local suppliers, availability stiff competition, absences financial donors, the culture and language of the host country, and lack of trust among the supply chain partners (Beamon, B. M. & Balcik, B., 2008).

Infrastructure challenges: mean those challenges associated with the absences of a road network, railway, airports, power supply, geographical dispersion, insufficient or inaccurate communication that hindering efficient delivery and distribution of relief cargoes to the needy (Van Wassenhove, 2012).

Internal organization challenges: Internal environmental challenges are events that occur within an organization associated with inadequate resources, employee turnover, lack of contingency plan, poor organizational structure and systems, lack of employee accountability, internal budget constraints and lack of top management support (Thomas, A. S. and Kopczak, L. R., 2005).

1.9. Structure of the study

To introduce and develop the arguments summarized here in detail, the thesis comprises five chapters. These chapters are constituted as follows.

Chapter -1 Introduction: In the first chapter all introductory parts of the study like background of the study, problem statement, research question, objective of the study, research hypothesis, conceptual frame work, significant of the study, delimitation and limitation of the study, as well as conceptual definitions are included.

Chapter -2 Literature review: The second chapter of the study comprises the theoretical framework, which is a compilation of other author‘s journals and articles, literature about the humanitarian supply chain challenges. This section also includes a review of various empirical studies that have been made on supply chain challenges and performances of humanitarian aid organization.

Chapter -3 Research methodologies: The methodology part of the thesis represents the processes to mapping out the study area, research design, target Population, method of data collection and research instruments, reliability test, methods of data analysis and ethical consideration.

Chapter -4 Results and discussions: The ranges of issues that bear, both directly and more peripherally, on the research approach adopted were discussed within this chapter. This section covers data analysis, results, interpretation and discussion. It also describes the

expected results and findings based on primary data gathered and secondary data collected. The research questions shall be answered.

Chapter 5: Summary, conclusion and recommendation: This section covers the summary of the finding, conclusion, recommendation and consideration for future research.

Chapter -Two

2. Review of Related Literatures and Conceptual Framework

The purpose of this paper is to examine the effects of supply chain management challenges on performances of humanitarian aid organization in Addis Ababa City Administration. The intention of this section is to explore previous work in the area of humanitarian supply chain challenges, performances dimension and to define the main elements in successful humanitarian supply chains. The literature review is structured into seven main sections.

2.1. Theoretical Framework

2.1.1 Supply Chain Management

Supply chain management encompasses the planning and management of all activities related to material, information and financial flows in supply chain operation (Karen M. Spens, 2012). The following most commonly used definition of SCM is provided by the Council of Supply Chain Management Professionals (CSCMP):

"Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all Logistics Management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, Supply Chain Management integrates supply and demand management within and across companies" (CSCMP, 2006).

Humanitarian supply chain is the network created through the flow of services, supplies, information and finances between donors, beneficiaries, suppliers and different units of humanitarian organizations, in order to provide physical aid to beneficiaries (Mentzer et al., 2001). Humanitarian supply chain is delivering the right supplies, in the right quantities to the right location at the right time. Tasks such as managing relationships with donors, planning for supplies required, performing needs assessments, and monitoring and evaluating the impact of distributed supplies, are usually the responsibilities of non-logistics units. Humanitarian logistics is essential for disaster relief operations because it is characterized by effectiveness and speed in supplying beneficiaries with health, food,

shelter, water, medicines and sanitation in case of disaster (Thomas and Kopczak, 2005). The field of humanitarian logistics and relief supply chain management is receiving increasing attention among academics, as well as practitioners (Kovács & Spens, 2012).

Hella Abidi and Matthias Klumpp, (2005, p.2) defines Humanitarian logistics as:

"... the process of planning, implementing and controlling the 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, and customs clearance".

2.1.2 Humanitarian supply chain structure, objectives and characteristics

The operational structure and characteristics of humanitarian supply chains differ, depending on the type of the disaster and the actors involved.

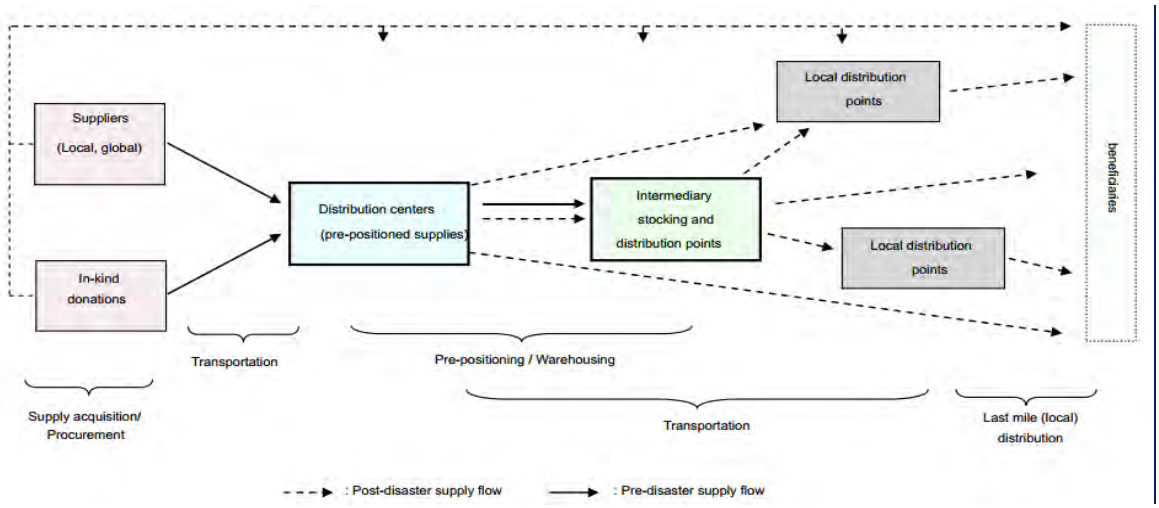

Figure 2.1: Relief supply chain structure

Source: (Beamon and Balcik, 2008)

The first step of the humanitarian relief supply chain is the supply acquisition and procurement. Supplies can be procured locally and/or globally. Another source for relief supplies is in-kind (non-financial) donations, which usually come available after a disaster occurs. After the supply acquisition, the supplies will be transported to distribution centre. According to Beamon and Balcik and (2008), pre-positioned stock may be held by relief organizations at multiple intermediary levels, such as global, regional and in country levels.

The relief organizations, however, usually have difficulty finding secure, affordable, undamaged warehousing / storage accommodation in areas affected by disaster. Transportation is also a major issue for humanitarian relief operations. Post disaster transportation can be challenging for the humanitarian organizations, due to the damaged infrastructure at the site, limited transportation resources, and the large quantities of supplies to be imported. According to *UNDP* signed resolution in 2003, humanitarian relief aims are described in three steps.

1. It aims to save lives, alleviate suffering and maintain human dignity during and in the aftermath of man-made crises and natural disasters, as well as to prevent and strengthen preparedness for the occurrence of such situations.

2. Humanitarian action should be guided by the humanitarian principles:

- Humanity: The centrality of saving human lives and alleviating suffering wherever it is found.
- Impartiality: The implementation of actions must solely on the basis of need, without discrimination between or within affected populations.
- Neutrality: The humanitarian action must not favor any side in an armed conflict or other dispute where such action is carried out. Autonomy of the humanitarian objectives from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented.

Humanitarian action includes the protection of civilians and those no longer taking part in hostilities, and the provision of food, water and sanitation, shelter, health services and other items of assistance, undertaken for the benefit of affected people and to facilitate the return to normal lives and livelihoods. Rolando Tomasini and Van Wassenhove, (2009, pp. 9-11) identified the major characteristics of humanitarian supply chain as ambiguous objectives, limited resources, high uncertainty, urgency and politicized environment.

2.1.3 Humanitarian supply chain Actors

Humanitarian supply chain management engages very different players, who may have a high degree of heterogeneity in terms of culture, purposes, interests, mandates, capacity, and logistics expertise. As stated by Kovács and Spens (2007) there are six actors that are

involved in the humanitarian aid supply network as cited by Daniel Willner and Stavros Zafeiridis (2013). Key players can be categorized as follow: governments, the military, aid agencies, donors, non-governmental organizations (NGOs), and private sector companies-among which logistics service providers are preeminent. Thus, typically, no single actor has sufficient resources to respond efficiently to a major disaster.

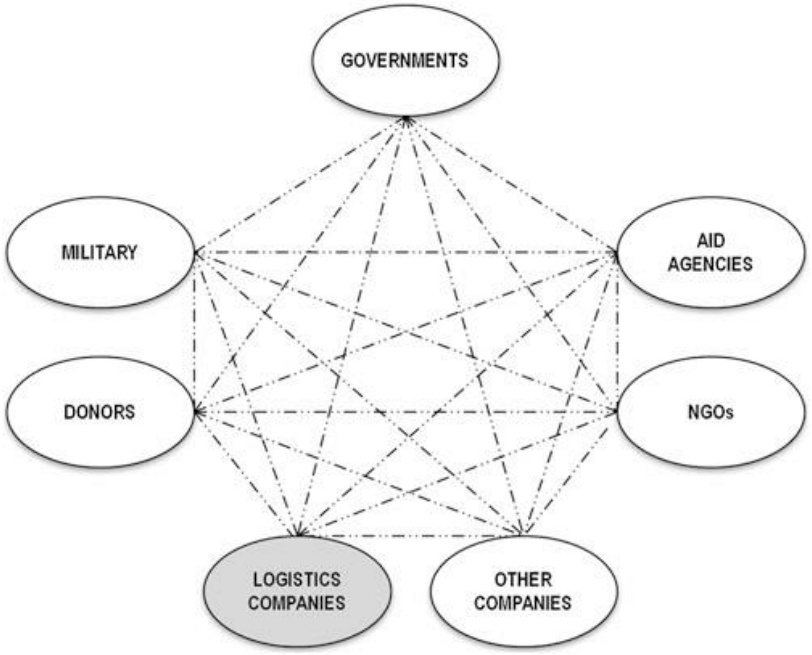

Figure 2.2: Humanitarian supply chain Actor

Source: Kovács & Spens, (2007) as cited by Daniel Willner and Stavros Zafeiridis, (2013).

Donors are important actors in the humanitarian supply chain as they provide funding for major relief activities. In recent years, in addition to country specific funding, individual donors, foundations and the private sector have become important sources of funds for aid agencies (Daniel Willner and Stavros Zafeiridis, 2013).

2.1.4 Humanitarian versus Business supply chains management

Humanitarian organizations are non-profit organizations and differ from the commercial (private) sector in terms of revenue sources, strategic goals, stakeholders and performance measurements. According to Kovács and Spens (2007) discuss several important differences between business logistics and humanitarian logistics. While business logisticians work with predetermined actors or partners and predictable demand, humanitarians deal with

unknown or changing actors and unpredictable demand. Aid agencies receive many unsolicited and sometimes even unwanted donations, such as: drugs and foods past their expiry dates, where infrastructure has been destroyed; and heavy clothing not suitable for tropical regions. Compared to their business counterparts, humanitarian logisticians have greater challenges in collaboration and coordination with different aid agencies, suppliers, and local and regional actors. McLachlin, Larson and Muna Mohamed Adan (2015) offer the differences between business and humanitarian logistics.

Table 2.1: Humanitarian versus Business supply chains

	Logistics context	
Aspect	Commercial	Humanitarian
Purpose	Economic profit	Social impact
Environment	Uninterrupted	Interrupted
Perspective on time	"Time is money"	Time is life (or death)
People Served	Paying customers	Beneficiaries
Source of funds	Paying customers	Donors
Workforce	Paid Staff	Volunteers; Staff

Sources: McLachlin, Larson and Muna Mohamed Adan (2015:13)

According to Beamon and Balcik (2008), defined the humanitarian organization as:

"NFP (Not for Profit) sectors which serves multiple stakeholders, including two fundamentally different types of customers: beneficiaries or recipients (those in need of food, material and services); and donors (those who provide funding, material and/or service support)".

Donors are customers since their wishes and mission statements can mean restrictions on the use of funds or loss of funds altogether. NFPs face stiff competition for donor support, rather than competition for paying customers. NFPs typically deploy volunteers, in addition to paid staff. More effective supply chain management can be the difference between life and death.

2.2. Humanitarian supply chain challenges

The literature illustrates several challenges relating to the humanitarian supply chain that are specific to disaster response contexts. These include a lack of coordination between government and humanitarian actors at the operational level and in pre planning and after action reviews/evaluations, weak structures and processes to facilitate regular and appropriate interaction and substantive gaps in existing guidance on specific issues. According to Peter Nyandega Agwata (2014), classified humanitarian supply chain challenges as natural and man-made. The major categories of the humanitarian supply chain barriers covered in this research dealt with governmental related challenges, socio-economic challenges, infrastructure challenges and internal challenges. Each of the major categories had multiple subcategories. The subcategories address individual facets of the major categories which pose more specific problems for the humanitarian supply chain.

2.2.1. Governmental challenges

The government related challenges category has subcategories associated to political, collaboration, security, earmarking fund, interferences and customs clearances challenges etc.

According to Van Wassenhove (2012), *"host governments, neighboring country governments, and other country governments within the international community are the activators of humanitarian logistics stream after a disaster strikes since they have the power to authorize operations and mobilize resources".* In fact, without the host government authorization, no other player with the exception of national aid agencies and the military can operate in the disaster theater. Host governments have the responsibility to put into place protocols and take action to reduce the probability of disasters (Mingli Liu., 2013).

2.2.1.1 Political challenges

The politics play a great role on donor and government influence. Governments hold the main power with the control they have over political and economic conditions and directly affect to humanitarian supply chain processes with their decisions and it may refuse to allow humanitarian agencies to assist their citizens and may object to conditionality of aid and

development assistance, citing defense of their national sovereignty (Van Wassenhove, 2006). Another major problem faced by logistics managers in humanitarian organizations is that the donor has significant influence over where and how aid is distributed while the victim is a third party with little voice in the matter (Long and Wood, 1995:225). Funding for organizational support and infrastructure is often neglected under donor demands that as much aid as possible is pushed to victims. Thus, distribution channels may suffer as warehouses, equipment, communications infrastructure, and training remain unimproved or deteriorating. Donors have become particularly influential in prompting humanitarian organization to think in terms of greater donor accountability and transparency of the whole supply chain.

2.2.1.2 Collaboration challenges

The major difficulty in coordinating the humanitarian supply chain has strong ties to the political interests and military forces of donors and recipient countries (Oloruntoba and Gray, 2007). The supply network is huge and complicated with numerous players (donors, NGOs, government, military, and privates), and it is hard to coordinate all of them along with all the items that need to be delivered. Lack of Coordination is usually seen in a negative light. Each situation faced by organizations working in relief options is unique. According to Jane Kiende Kinyua (2013), the ever changing shape of natural disasters and man-made conflicts continuously presents new challenges and coordination issues often arise. Many authors argue that coordination is important due to possible gains in program effectiveness. If there is a lack of collaboration, there is not found pooling information and resources and in forming alliances that allow each organization to contribute its core competence.

2.2.1.3 Security challenges

The security context in a country is also dependent from the government (or its absence), and strongly impacts the performance of the logistics response. Despite humanitarian workers efforts to strengthen operational security in insecure environments, attacks that have led to death, kidnapping or serious injury, continue to exact a heavy toll on humanitarian personnel (Walton, et al., 2011). Kidnappings and the use of explosive weapons in populated areas became the most frequent means of violence against aid

workers. As stated by Karen M. Spens (2012), member states, the United Nations and its partners need to identify policy and operational options that might be taken to protect civilians from the short and long-term effects of such weapons as cited by (Jones, A. 2000). In spite of special protection afforded by international humanitarian law and applicable international human rights law for health care and health care providers, in many countries attacks or threats directed against health care personnel, facilities, vehicles, and services are continuing to prevent the wounded and sick from receiving the care and protection they require. Local health care providers were directly affected by violence, primarily in the form of threats. Host states possess clear formal responsibility for the safety and security of aid workers. Protection encompasses all activities aimed at securing full respect for the rights of individuals in accordance with international humanitarian law, human rights, and refugee law (Van Wassenhove, 2012). In addition to the above, McLachlin and Muna (2015) identified others challenges associated with the government as; the government bureaucracy, stuck national regulations toward relief organizations, Lack of government support, highly government interferences, restrictions of entry of staff and goods, complex customs clearances procedure, high level of corruption, higher taxes, which influence organizations' operational decisions and their ability to conduct humanitarian logistics operations.

2.2.2. Socio-economic challenges

Economic issues can lead to humanitarian crises or humanitarian crises can lead to economic downfalls. If it occurs after a humanitarian crisis affects a nation, it is imperative to return the livelihoods in the economic settings of the nation and the society would have been in a state of civil insecurity and economic shortfalls, which could cause the government to collapse. This can also result from food insecurity, famines, corruptions and various other issues and direct effects of this situation on human rights violations. According to (Gary P Ramsden, 2014), the socio-economic challenges described as, uncertainty in demand and supply, uncompetitive of market economy, the absences of local suppliers, availability stiff competition, absences financial donors, the culture and language of the host country, high inventory and transportation cost and lack of trust among the supply chain partners. In a well-developed economy, some basic supplies can be purchased from local suppliers, and staff can be hired locally for logistical activities. In a less developed

context, all supplies have to be imported and most tasks must be managed by expatriate staff (Zhi Cao et al. 2015).

2.2.2.1 Uncertainty in demand and supply

In the category of uncertainty, there are subcategories for unpredictable supply and demand, and inconsistent processes. Unpredictable supply problems include issues such as inconsistent quantity, quality, and lead time. The customers in a disaster supply chain include the population at the affected area, as well as intermediate customers at local or global storage facilities. Their needs change significantly according to disaster types and the phases in the disaster timeline (Jahre, M. and Jensen, L.M. 2010). Unlike logisticians in the private sector, humanitarian workers are always faced with the unknown: when, where, what, how much, where from and how many times; in short, the basic parameters needed for an efficient supply chain setup are highly uncertain (Van Wassenhove, 2006). Disaster demand forecasting is also difficult due to the lack of historical data. Even though there do exist some databases from the past experiences prepared by both NGOs and governments, they are occasionally inadequate because of inconsistent and/or insufficient data collection and reporting problems. Hence, historical data is not always very useful for predicting future demand. Inconsistencies within the process include problems initiated by poor organization, variability in lead time, and agency culture. The distribution process may not provide attention to investment in safety/anticipatory stock to prevent stock outs, transshipment or direct shipment to keep the process from failing at the retail end, or hiring a third party logistics to facilitate logistics so that partners can concentrate on core competencies (Jones, A. 2000). Development assistance can promote conflict when it is administered without considering social and political conditions. Problems arise primarily due to the institutional cultures and organizational dynamics of donor agencies, which are not geared to dealing with the needs of deeply divided societies. Success is often measured in terms of the amount of money disbursed, rather than the outcome of programs. The mandate of these donor agencies is to promote economic growth and development "without regard to political or other non-economic influences or considerations (Tomasini, R.M. and van Wassenhove, L.N. 2004).

2.2.3. Infrastructure challenges

An effective and timely humanitarian relief operation has the capacity to save thousands of lives. Within the category of infrastructure, there are subcategories for degraded infrastructure. Those are inefficiencies' information flow, degraded/inadequate logistics infrastructure, distances problems and chaotic environment. The degraded infrastructure concerns on road network, railway, airports, power supply, warehouses, communications lines, etc. that are damaged in the disaster or were non-existent to begin within the affected region (Rolando Tomasini and Luk Van Wassenhove,2009). Indeed, the existence of a well- developed road infrastructure will, facilitate the logistical operations, while a poor road network tends to disrupt and slow down the distribution of relief items. The presence of an airport close to the disaster location will facilitate, for delivery of relief aid.

2.2.3.1 Communication and information challenges

During a disaster, communication is as important as food and water. According to Long and Wood, (1995) the communications Problems categorize as, lack of standard terminology, absence of media for institutional learning and relaying best practices, and lack of information intra- and inter-agency information sharing. Also communications problems might concern the reliability of information and poor coordination. Across the community of humanitarian organizations, different languages and word definitions act as a barrier to carrying out the mission. During a crisis, humanitarian agencies require information relating to the disaster situation, the affected population and the availability of resources (Gary P. Ramsden, 2014). The participating agencies will have their own operating methods and sometimes there is competition amongst them for the limited resources. However, collecting information may be very difficult because of inaccessibility to the affected areas due to the destruction of infrastructure and in some cases the remoteness of disaster affected areas.

2.2.3.2 Transport challenges

Transportation makes it possible for assistance to reach those in need. Transportation can involve global sourcing, drop shipment, military transport, commercial transport, non commercial transport, third-party logistics firms, freight forwarders, charter aircraft, or even local transportation such as mules and donkeys (Saunders N., 2004). Goods are often brought into a country at an entry point and then moved to collection sites run by relief

organizations. In relief work, both in disasters and complex humanitarian emergencies, damaged infrastructure, inaccessible, and the lack of infrastructure needed for large scale assistance lead to bottlenecks, delays, and congestion at entry points to the disaster area. According to (Beamon, B. M. 1999) in an emergency situation coordinating the efforts and activities of different national and international organizations requires strong leadership. However, in practice, the various organizations normally tend to work independently. The emergency preparedness and response stages are driven by information. As goods flood into a region, they can be held up at the ports, border crossings, and airports due to lack of transportation, permission to enter certain areas, or even.

Emergency humanitarian logistics operations frequently require the involvement of several governments and independent NGOs, as well as the use of a number of transport modes (GlobeScan, 2009). International humanitarian operations may be hindered by administrative and logistical bottlenecks because of poor infrastructure in the aid-receiving region and the multiplicity of agencies and governments are often in conflict zones, thus hindering efficient delivery and distribution of relief cargoes to the needy (Van Wassenhove and Samii, 2003). Coordination may be inadequate because of geographical dispersion, insufficient or inaccurate communication between the field and the head offices of humanitarian organizations, and between different organizations.

2.2.4. Internal challenges

The internal organization challenges category has subcategories associated to: inadequate resources (in terms of supply, people, technology), high employees turnover, corruption, lack of contingency plan, poor organizational structure and systems, lack of employee accountability, internal budget constraints, excessive inventory, lack of top management support and complexity of performances measurement etc. Relief organizations' enablers (resources, processes and capabilities) are influenced by the availability of donations, which in turn is influenced by the requirements of the beneficiaries and by performance as well.

2.2.4.1 Organizational resource

Before the response to a disaster begins, an organization obtains and sets into motion resources. Financial resources must be mobilized to begin procurement, to send personnel across the globe, and to acquire vehicles, warehouses, and other tangible parts of the relief

supply chain (Thomas, A. S. and Kopczak, L. R., 2005). Human resources play an important part in the success of the relief mission. The scarcity of trained and experience logistics personnel lead to significant organizational reassignments. With no local capacity or staff, organizations pulls logistics people from other programs and disasters. This possibly reduces the effectiveness of relief efforts. Further, organizations may have ineffective processes to develop logistics skills in local staff. Limited human resources are the result of high staff turnover and a scarce pool of qualified and readily deployable personnel, whereas capital resources are subject to unpredictable donations that limit the liquidity of managers in the field.

2.2.4.2 Procurement

Emergency supplies enter the relief chain through different sources, forms, and locations. They can be given as donations, grants, or gifts in kind (non-monetary goods or services). These donations can be solicited or unsolicited. Often unsolicited donations are goods that are not a priority and have not been requested. Aid can be multilateral, administered by international institutions which collect resources from countries and redistribute them, or bilateral, given directly from a donor government to a recipient country (Lars Gustavsson, 2002). Procurement can be done at the local level or sourced globally. Goods can be acquired in many different ways such as in bulk or stored at the vendor until needed.

2.2.4.3 Emergency Planning/ Preparedness

Before a disaster, logistical procedures and activities must be planned. Improvised procurement and transportation activities are less effective. A plan includes what tasks are to be done, what part of the organization will be responsible, and how to procure needed resources. They must also have a national or regional plan based on the vulnerabilities of the infrastructure, the logistical support in the area, and governmental emergency response abilities. It is not possible to anticipate how crises evolve, but it is advantageous to have a plan. If proper planning is in place with realistic if then else cases, implementation can be less challenging (Julien Balland and Neda Angela Sobhi, 2013). When disaster strikes and the needs peak, it is already too late to develop solutions that were not in place before. Embracing supply chain management as a central function to respond to disasters is a

process humanitarian agencies only formally started in the last decade. Focusing on supply chain structures and processes to respond to disasters is important to improve preparedness.

2.3. Humanitarian supply chain performance measurement

Performance measurement and its application continue to grow and encompass both quantitative and qualitative measurements and approaches (Hervani and Helms, 2005). The variety and level of performance measures depends greatly on the goal of the organization or the individual unit's characteristics. The field of performance measurements and metrics, at an organizational level, has been the focus of many researchers and practitioners. The measurement of performance in humanitarian supply chains has become vital for all humanitarian aid organizations. According to Beamon and Balcik (2008), the effective performance measurement systems can assist humanitarian relief supply chains in their decisions, to improve their efficiency and effectiveness, and increase the accountability and transparency of their response in disaster situations. Kovács and Spens (2007) define performance measurement as the process of quantifying the effectiveness and efficiency of an action. The system can be used as a basis to measure performance of humanitarian organizations in terms of response time, service quality, and technical and cost efficiency. According to (Giulia S. et al. 1998, pp.1-9) defined the performance measurement in an extended view: through four performances dimensions; responsiveness, flexibility, collaboration and cost performances and for each of them several key performances indicators (KPI) are stated.

a) Responsiveness; in a humanitarian supply chain, time is the most critical measure of performance. Many factors can contribute to relief chain response time, including relief organizations assessment, supplier location, procurement, delivery strategies, and transportation choice.

b) Collaboration: in humanitarian supply chain the cooperation and exchange of data between actors involved in a disaster are indispensable in order to effectively respond to the emergency. Moreover, the standardization of procedures could accelerate and improve the resolution of the disaster.

c) Flexibility: in humanitarian supply chain the ability to change according to external conditions (e.g. number and different typologies of goods to deliver, delivery time of goods, etc.) as well as the reliability in delivery date and quality, assumes a fundamental role.

d) Cost performance: although the costs are not the predominant resource metrics for humanitarian supply chain. Due to the unpredictable demand, the evaluation and control of costs are difficult. This kind of performance indices can be evaluated only after the disaster occurrence and restoration of normalcy. Beamon (1999) suggest a supply chain measurement system must place emphasis on three separate types of performance measures: resource measures, output measures, and flexibility measures.

Hella Abidi and Matthias Klumpp (2005) propose to use the four perspectives of the Balanced Scorecard for supply chain entities' measurement which are: financial, customer, internal business processes, the organization's learning and growth perspectives. The performance of a supply chain depends on how its members coordinate their decisions and sharing information is the most basic form of coordination especially in the today's globalized environment. Increased globalization and competition has made supply chain management a very important and critical issue for any company if they have to deliver quality and timely services and products to their customers. Humanitarian supply chain management performances measurement ensures that organizations get the right things to the right places at the right time thereby creating time and place utility. Keebler and Plank (2009) categories the logistics performance measurement into effectiveness measures involving trading partner, effectiveness measures internal focus, efficiency measures, productivity and utilization.

Inline to the above key dimensions of supply chain performance of the humanitarian supply chain management, the study were equipped responsiveness, collaboration, flexibility and cost performances to measure the performances of humanitarian aid organization found in Addis Ababa City Administration in relief and emergency sector.

2.4. Synthesis of empirical study

This section of the study includes a review of various empirical studies have been made on supply chain challenges and performances of humanitarian aid organization. Managing the

supply chain can become very complex with the presence of different stakeholders and large quantity of materials to be distributed.

Daniel Willner and Stavros Zafeiridis (2013) investigated the challenges and the use of performance measurements in humanitarian supply chains on Sweden and Greece that concentrates on humanitarian organizations which have activities in more than one crisis zone and are active in international supply chain coordination. The research strategy were employed the holistic multiple case study and empirical data were collected through interviews. The sample sizes were used total 3 organizations' representatives and 2 volunteers were interviewed. The collected data were analyzed by combining theories and previous studies in the literature. The variables have been used to measure supply chain performances were responsiveness, flexibility, reliability, cost efficiency and collaboration. The main findings of the study were, humanitarian organizations face different challenges in their supply chains.

Jane Kiende Kinyua (2013) studied the status and factors that affect humanitarian supply chain performance in Kenya. The researcher was equipped a descriptive research design and selected 40 respondents out of total population 70 humanitarian organizations through systematic sampling. The variables have been used to measure humanitarian supply chain were organizational factors, socio-economic factors, environmental factors, supply chain Decisions, funding status, and government situational factors. The performances was measured by used four variables of supply chain responsive, meets deadlines, flexible and reliable. The data was collected through structured questionnaire and key informant interviews and analyzed using through application of descriptive statistics, cross – tabulations and binary logistic regression. As a result, using cross tabulation and chi-square revealed that financial limitations, government bureaucracy, infrastructure challenges, environmental challenges, procurement delays showed statistically significant association with supply chain performance.

Peter Nyandega Agwata (2014) investigated the supply chain management challenges and supply chain performance of humanitarian organizations in Nairobi, Kenya. The studies was equipped a descriptive survey research design and selected 142 respondents out of total population 708 humanitarian organizations through stratified sampling. The study were

employed the key performances indicators; cost, supply chain reliability, improvement, collaboration and timeliness to measure the performances of humanitarian organization. The study were used questionnaires as the instrument of data collection and quantitative data was analyzed through descriptive statistics and correlation analysis while qualitative data was analyzed through content analysis. As a result the findings showed that, the SCM challenges highly contributed to supply chain inefficiency in delivery of the relief supplies and negatively affected the operations of the humanitarian organizations. The SCM challenges results SC cost increment, lead to failure to deliver relevant humanitarian aid materials, and lack of reliability and efficiency in the humanitarian supply chain.

Andreas Wieland, and Carl Marcus Wallenburg, (2012): investigated the effects of supply chain risk management (SCRM) on the performance of a supply chain on Germany, Austria and Switzerland on 270 manufacturing companies. Survey data collection method was used to collect the quantitative data through structural equation modeling. Additionally, qualitative data were used to explore the nature of non-hypothesized findings. Business performances has been measured based on the dimension of supply chain risk management and supply chain performances (agility, robustness). The finding of this study indicates, agility has a strong positive effect only on supply chain performance, but not directly on business performance, robustness has a strong positive effect on both performance dimensions. The studies provide insights to the fact that robustness can be considered a basic prerequisite to deal with supplier-side risks, while agility is necessary to deal with customer-side risks. The amount of agility and robustness needs to fit to the competitive strategy.

Zhi Cao et al. (2015) studied the impact of organizational culture on supply chain integration: a contingency and configuration approach. This study establishes a conceptual model for the relationships between organizational culture and supply chain integration and uses both a contingency approach and a configuration approach to examine relationships by data collected from 317 manufacturers across ten countries. The study is measure the organization culture by the variable of development culture, group culture, rational culture and hierarchical culture and supply chain integration by supplier integration, internal integration and customer integration. According to the finding of this research, the contingency results indicate that both development and group culture are positively related

to all three dimensions of supply chain integration. However, rational culture is positively related only to internal integration, and hierarchical culture is negatively related to both internal and customer integration.

2.5. Humanitarian aid organizations in Ethiopia

2.5.1. Historical Background

Charities and societies, national and international Non-Governmental Organizations (NGOs) have been operating in Ethiopia for a long time. The laws governing their registration and operations were first drawn up in the early 1950s and were based on the 1952 Ethiopian Civil Code and Regulation 321/1959. However, by the turn of the Millennium, this no longer provided a workable environment due to the many legislative and other changes that had taken place in Ethiopia and elsewhere. Hardly surprisingly, legislation that had existed for more than five decades had become ineffective. It was incapable of ensuring the maximum benefits for the country from NGO activities. Indeed, some charities and societies repeatedly requested the government for more up-to-date regulations to enable them to carry out their operations smoothly, and put an end to unclear procedures and bureaucratic hindrances. Another significant factor that needed to be taken into account was that, after the demise of the former military regime and the introduction of a democratic federal government allowing for full freedom of association in the country, the number of humanitarian aid organization dramatically increased and their areas of activity multiplied. The government therefore issued a new proclamation of charities and societies in 2009 in order to facilitate and strengthen the effective contributions of humanitarian organization to the socio-economic development of the country. The proclamation made the necessary amendments to reflect new realities and incorporate the best practices from the similar regulations of other nations. There were also extensive public discussions during the drafting process with all aid organization operating in the country and with other stakeholders. The newly enacted Proclamation No.621/2009 for the registration of Charities and Societies came into force on February 13th 2009, and on November 9th 2009, the Council of Ministers also issued Regulation No.168/2009 to ensure its implementation in a transparent manner.

The Proclamation had two main objectives. One of these was to ensure the realization of citizens' rights to association as enshrined in the Constitution of the Federal Democratic Republic of Ethiopia, and secondly to support and facilitate the role of Charities and Societies, and of NGOs, in the overall development of Ethiopian peoples. The Charities and Societies Agency was established under the Proclamation as an autonomous administrative body to handle the registration of Charities, Societies and NGOs properly and assist them to achieve their goals with transparency and accountability (Federal Democratic Republic of Ethiopia Charity and Societies Agency).

2.5.2. Types of Charities in Ethiopia

The Ethiopia Charities and Societies Agency gather its members from international, regional and national humanitarian organizations operating in Ethiopia. There are more than three thousand humanitarian organizations that currently operate in Ethiopia. These humanitarian organizations are active in a cross section of sectors including: Relief and Emergency, Agriculture, Peace and security, Water, Education, Environment, Health, Human rights, Energy, Justice, Micro finance support, Gender and development, Children's rights, Poverty alleviation, Population, Training, Counseling, Small scale enterprises, Disability, Tourism among others. The reasons for the existence of such organizations are diverse.

Proclamation No. 621/2009 introduced three forms of charities and societies. The first one is "Ethiopian Charities" or "Ethiopian Societies" formed under the laws of Ethiopia, all of whose members are Ethiopians and generate their income from Ethiopia and wholly controlled by Ethiopians. However, according to the proclamation No. 621/2009, they may be deemed as Ethiopian Charities or Ethiopian Societies if they use not more than 10% of their funds which is received from foreign sources. The second form is "Ethiopian Residents Charities" or "Ethiopian Residents Societies": formed under the laws of Ethiopia and which consist of members who reside in Ethiopia and who receive more than 10% of their funds from foreign country sources. Finally the third forms are "Foreign Charities" formed under the laws of foreign countries or which consist of members who are foreign nationals or are controlled by foreign nationals or receive funds from foreign sources. Assessing the content of the provisions of the proclamation suggests that the grounds for

classification are place of registration nationality or residence of members, and source of income (Federal Democratic Republic of Ethiopia Charity and Societies Agency).

2.6. Literature review Summary

This section of the study focused on, review of various previous studies have been made on the area of humanitarian supply chain challenges and performances of humanitarian aid organization. According to different supply chain scholars, the humanitarian supply chain management defined as, the network created through the flow of services, supplies, information and finances between donors, beneficiaries, suppliers and different units of humanitarian organizations, in order to provide physical aid to beneficiaries. The general objective`s of the HAO is to save lives, alleviate suffering and maintain human dignity during and in the aftermath of man-made crises and natural disasters, as well as to prevent and strengthen preparedness for the occurrence of such situations. Humanitarian supply chain management engages very different players, who may have a high degree of heterogeneity in terms of culture, purposes, interests, mandates, capacity, and logistics expertise. The key players categorized as follow: governments, military, aid agencies, donors, non-governmental organizations (NGOs), and private sector companies among which logistics service providers are preeminent.

Humanitarian organizations are non-profit organizations and differ from commercial organizations in the sector in terms of revenue sources, strategic goals, stakeholders and performance measurements. The literature illustrates several challenges relating to the humanitarian supply chain that are specific to disaster response contexts and those challenges are associated with the governmental, socio-economic, infrastructure, internal organization operation. There are different peer reviews classified the Performance measurement in to quantitative and qualitative measurements and greatly depends on the goal of the organization or the individual unit's characteristics. There are many empirical studies which focused on the humanitarian supply chain management challenges and performances measurement on HAO which conducted throughout the world. There are more three thousand humanitarian aid organizations that currently operate in Ethiopia. These HAO are classified as; Ethiopian Charities, Ethiopian Residents Charities and

Foreign Charities. The overall skeleton of the study indicated; supply chain management challenges as independent variables and supply chain performances as dependent variables.

2.7. Conceptual Framework

According to Alan S. Kaufman and Nadeen L. Kaufman, (2005) a Conceptual Framework is a basic structure that consists of certain abstract blocks which represent the observational, the experiential and the analytical/synthetically aspects of a process or system being conceived. This study has four dependent and four independent variables. The dependent variables are; responsiveness, collaboration, flexibility, cost performances and the independent variables are; government related challenges, infrastructure challenges, socio-economic challenges and internal challenges. The model demonstrates that a number of challenges are associated with the supply chain performance. The variables of each are outline in the framework as follows**.**

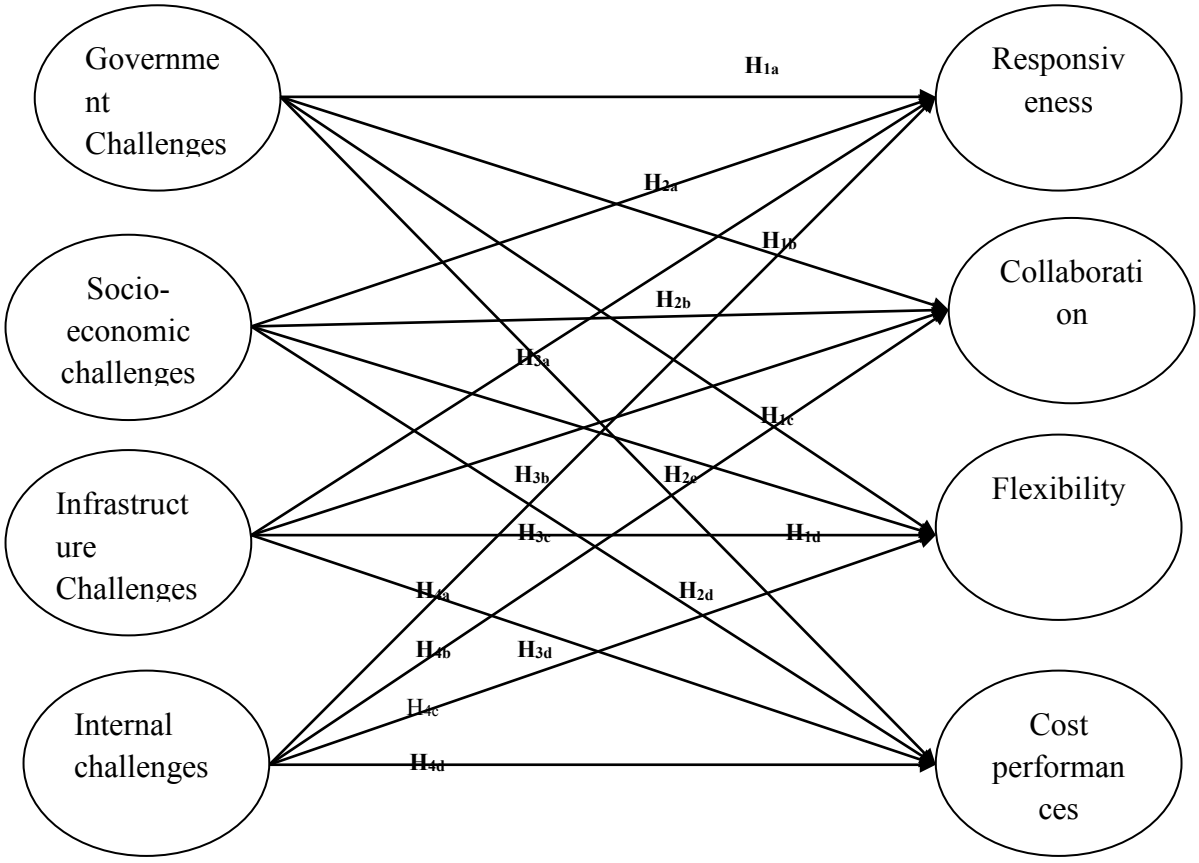

Figure 2.3: Conceptual Framework

Source: Adopted and modified from Jane Kiende Kinyua (2013)

Chapter -Three

3. Research Design and Methodology

This chapter provides a discussion of the research methodology that was used in this study. It discusses effective approaches equipped throughout the research process and structured into study area, research design, target population, method of data collection and research instruments, reliability test, data analysis techniques and ethical consideration. This is important in ensuring that the study addresses the set objectives and in turn answered the research questions on which it is founded.

3.1. Study area

The purpose of this study is to examine the effect of supply chain management challenges on the humanitarian organization's responsiveness, collaboration, flexibility and cost performances in Addis Ababa City Administration. Addis Ababa City Administration is selected for the study as majority of the humanitarian aid organizations "headquarters" were based in Addis Ababa. Therefore, the areas of study were the humanitarian aid organization on relief and emergency sectors, in Addis Ababa City Administration.

3.2. Research design

This study took a descriptive and causal cross-sectional survey research design. Descriptive research design was used in order to describe data and characteristics about the population or phenomenon being studied, in the form of table and frequency statistics. Causal research design was used to examine the effect of supply chain challenges on performances humanitarian aid organization. A cross-sectional design as a framework for the collection and analysis of data was the preferred design for this study, because it entails the collection of data at single point in time. According to (Neuman, 1997) note worth survey techniques are often used in descriptive or explanatory research as cited by (Reza Mohammady Garfamy, 2005). According to John W. Creswell (2009) survey is used to generalize from a sample to a population that inferences can be made about some characteristic, attitude or behavior of the population.

3.3. Target Population

According to Alan S. Kaufman and Nadeen L. Kaufman, (2005), population is a group of individuals, objects, items or it is an entire group of persons, or elements that have at least one thing in common. The target population of this study was the one hundred twenty three (123) humanitarian aid organizations in relief and emergency sectors at Addis Ababa City Administration. The researcher was employing a census survey method; because, everyone has an opportunity to participate, and it use to obtain reliable and accurate information than sampling. Conducting a census can be very time-consuming and costly. However, the advantage is that it allows the researcher to gain accurate information (John W. Creswell, 2009). The study was targeted both local and international humanitarian organizations which were engaged in humanitarian aid. The questionnaires were distributed to supply chain/ logistics/ procurement manager of the humanitarian aid organization.

3.4. Method of data collection and research instruments

The method of data collection depends mainly upon the nature, purpose, and the scope of research conduct. Data were collected through primary and secondary sources that were able to directly answer and fulfill the objective of the study. From the primary source of data instrument, structured questionnaire was used in the study to collect crucial information from the humanitarian aid organization. The secondary sources of data collection method were used from the written materials which include peer review articles, books, published and unpublished materials. This enabled the researcher to compare the data from the questionnaires with the written materials.

In order to meet the objective of the study, questionnaires were prepared based on the survey of different literature (Bonney, J. 2003; Chopra, S. & Meindl, P. 2007; Jane Kiende Kinyua, 2013; Jahre, M. and Jensen, L.M. 2010; Mingli Liu, 2013; Peter Nyandega Agwata, 2014; Beamon, B. 2004; Oloruntoba and Gray, 2005; Daniel Willner and Stavros Zafeiridis, 2013; Vickery et al. 2003 and Saunders, N. 2004). These were empirical literature where the researcher used and the questionnaire was implemented by modifying to the humanitarian aid organization context. Each humanitarian aid organization was represented in the study by one respondent. John W. Creswell (2009) suggests that pre-testing allows errors to be discovered. Expert validity views and suggestions of the advisor initially incorporated in the questionnaire and Pre-

testing was conducted on 5 respondents to increase the validity of the responses; however these respondents were not included in the study. As a result of the pilot test, changes in words selection and instructions were made to the questionnaire. Regular cross-checking and follow ups were conducted to ensure accuracy, relevance, completeness, consistency and uniformity of the data collect. The questionnaires were administered using drop and pick later method with a time lapse of one month with a view to enhance the response rate. For the purpose of simplicity and understandability of the questionnaire to all respondents and to get valid answer for the questions, the researcher was prepared questionnaires in English. The questions were measure on a five point Likert-type scale as observed from different related literature review.

3.5. Reliability test

The questionnaires were pilot test in the five humanitarian aid organizations to ascertain its validity and reliability, while those organizations do not participate in the main study. Cronbach's alpha is the most common measure of internal consistency. It is most commonly used when you have Likert questions in a survey questionnaire that form a scale and you wish to determine if the scale is reliable and in order to understand whether the questions in the questionnaire are all reliable (Fornell and Lacker, 1981). Cronbach's alpha was calculated by the application of SPSS for reliability analysis. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. The closer Cronbach's alpha coefficient to 1 is the greater the internal consistency of the items in the scale.

3.6. Methods of data analysis

The analysis part of the study were carried out in clear and better manner as much as possible to examine the effect of supply chain management challenges on the humanitarian aid organization`s responsiveness, collaboration, flexibility, and cost performances. After collection of the data using the appropriate instrument i.e. questionnaire, it was properly edited, coded, measured by nominal, ordinal and ratio scale. For the purpose of testing the developed hypothesis, spearman's correlation, simple and multiple linear regression was used. According to Kothari (2004), Spearman's correlation is the technique of determining the degree of correlation between two variables in case of ordinal data where ranks are given to the different values of the variables. Simple Linear regression was used to examine the relationship between one predictor variable and one outcome variable. Therefore the

four independent and four dependent variables were measured separately and examine the effect of different (predictor/independent) variables on a single outcome (dependent) variable. Multiple regression analysis was used to measure the effect of supply chain management challenges (government related, socio-economic, infrastructures and internal) on the performance of humanitarian aid organizations. Finally, the data were analyzed using Statistical Package for Social Sciences (SPSS V 20.0).

3.7. Ethical Considerations

Ethical clearance and permission was obtained from the College of Business and Economics, Department of Logistics and Supply Chain Management, Addis Ababa University. Before the data collection, permissions from the concerned organizations and institutions are asked. During the distribution of the questionnaire, respondents were informed about the purpose and the benefit of the study along with their full right to refuse or completely reject in participation. The respondents` were told their response would be kept confidential and their identity shall not be exposed.

Chapter- Four

4. Results and Discussion

This chapter presents analysis, results and discussion of the study on the supply chain management challenges and the performance of humanitarian aid organizations in Addis Ababa City Administration. The findings were analyzed and presented in the form of descriptive statistics, correlation and linear regression. The analysis and interpretation of data was guided by the research objectives from which a discussion of findings has been made.

4.1. Response rate

The study was targeted to one hundred twenty three (123) humanitarian aid organizations in Addis Ababa City Administration. The five humanitarian organizations were excluded from the study, because these organizations were selected for the pilot test. The questionnaire was distribution for one hundred eighteen (118) supply chain/ procurement /logistics managers and one hundred six (106) filled and returned the questionnaire to the researcher. The response rate was 89.8%. This response rate was sufficient and representative, and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good while a response rate of 70% and over is excellent. This commendable response rate was due to extra efforts that were made via follow-up visits to remind the respondents to fill-in and return the questionnaires.

4.2. Reliability test

Table4.1: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.733	.792	39

To assess the internal consistency of each factor obtained, a reliability test was conducted. Table 4.1 indicates results of reliability analysis. Reliability test evaluate the stability of measures, internal consistency of measurement instruments and interpretation of reliability of instrument scores. The Cronbach's alpha coefficient for the 39 items is between 0.733-0.792, suggesting that the items have relatively high internal consistency. A reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations (Joseph A, et al, 2003). Therefore, all variables used in this research are highly reliable for data analysis.

4.3. Descriptive Analysis

4.3.1 Respondents general information

The study initially sought to ascertain the general information on the supply chain/ procurement/ logistics managers involved in the study with regards to the age, level of education and working experiences in the respective humanitarian aid organization. The general information points at the respondents' suitability in answering the questions on supply chain management challenges and the performance of humanitarian organizations in AACA.

- Respondents age bracket

The number of years that an individual has been in the organization and his or her age determines the level of dealing with challenges in the supply chain management. The supply chain/ procurement/ logistics managers were asked to indicate their age bracket.

Table 4.2: Respondents age bracket

Age Bracket	Frequency	Percentage
25-35years	60	56.9
36-45years	32	31.9
46-60 years	10	7.5
61 and above	4	3.7
Total	106	100.0

Source: Survey Data, 2016

From the findings, the majority of the supply chain/ procurement/ logistics managers (56.9%) were between 25-35 years old, (31.9%) were 36-45 years old, (7.5%) were between 46-60 years old, while (3.7%) were 61 and above years old. The findings indicate that majority of the respondents were aged between 25-35 years and could therefore handle the labor intensive supply chain management works owing to their youthful age.

- Respondents level of education

The level of education that an individual has acquired determines their competence in executing their mandate in dealing with challenges in the management of their organization supply chain. The supply chain/ procurement/ logistics managers were required to indicate their level of education. The results are as tabulated in the table 4.3 below.

Table 4.3: Respondents level of education

level of education	Frequency	Percent
High school	1	.9
Diploma	17	16.0
Degree	49	46.2
Master and above	39	36.8
Total	106	100.0

Source: Survey Data, 2016

From the findings, the majority (46.2%) of the respondents had a bachelor`s degree as their highest level of education, (36.8%) had master`s degree and above as their highest level of education, (16%) had diploma, while (0.9%) had high school level of education. This shows that most of the respondents have attained university education and thus had required skill and knowledge on how to handle supply chain management challenges and measure the performance of humanitarian organizations in AACA.

- Working experiences

The number of years that an individual has worked in the humanitarian sector determines their level of experience in dealing with supply chain management challenges in their organization in order to enhance the supply chain performance. The supply chain/logistics managers were asked to indicate the number of years that they had worked in their respective humanitarian organizations. Table 4.4 illustrates the study findings.

Table 4.4: Working experiences

Working experiences	Frequency	Percent
1-5 years	18	19.8
6-10 years	60	55.7
over 10 years	28	24.5
Total	106	100.0

Source: Survey Data, 2016

From the findings, most of the respondents (55.7%) had worked in their respective humanitarian organizations for 6-10 years, (24.5%) for over 10 years, while (19.8%) had worked in their respective humanitarian organizations 1-5 years. These findings mean that most of the supply chain/procurement/logistics managers in humanitarian organizations were highly experienced as they had worked for a long duration of 6 -10 years in the humanitarian sector and hence had required experiences on supply chain management challenges and the performance of humanitarian organizations in Addis Ababa City Administration.

4.3.2 Supply chain management challenges

The first objective of the study is to determine the experiences of the humanitarian aid organization in relation to supply chain management challenges in AACA. The supply chain/ procurement/logistics managers were requested to indicate their level of agreement on the extent to which various SCM challenges were experienced in their humanitarian organizations. Their responses were rated on a five point Likert- type scale where: 5-To a very great extent, 4-To a great extent, 3-To a moderate extent, 2-To a little extent, and 1-To no extent. The findings were presented in the subsequent sub themes.

Table 4.5: SCM challenges experienced in humanitarian organizations

	Mean	Std Dev
1. Government related challenges		
1.1. Government bureaucracy	4.82	0.385
1.2. Stuck national regulations toward relief organizations	4.75	0.474
1.3. Absence of security	4.22	0.956
1.4. Highly government interferences	4.92	0.312
1.5. Restrictions of entry of staff and goods	3.50	0.801
1.6. Complex local customs clearances procedure and habits in the relief area	4.52	0.679
2. Socio-economic challenges		
2.1. Unpredictable demand	4.81	0.537
2.2. Absences of local suppliers	3.81	0.885
2.3. Availability stiff competition	4.65	0.756
2.4. Absences financial donors	4.90	0.336
2.5. Culture and language of the host country	3.16	0.862

2.6. Lack of trust among the supply chain partners	4.51	0.733
3. Infrastructure challenges		
3.1. Inadequate logistics infrastructure	4.94	0.232
3.2. Inefficiencies' information flow	4.91	0.241
3.3. Geographical dispersion problems	4.65	0.756
3.4. Chaotic environment	4.56	0.744
3.5. Lack of transportation mode to the relief areas	3.52	0.810
4. Internal challenges		
4.1. Inadequate resources to supporting and execution of supply chain processes	4.94	0.232
4.2. Lack of coordination among the supply chain partners	4.92	0.240
4.3. Lack of managerial commitment	4.37	0.797
4.4. Earmarking fund	4.74	0.431
4.5. High employee turnover	4.92	0.312
4.6. Lack of contingency plan	4.78	0.414
4.7. Organizational culture and resistance to change	4.42	0.894
4.8. Lack of employee empowerment	3.75	0.944
4.9. Internal budget constraints	3.88	0.452
4.10. Poor procurement procedure	4.92	0.280

Source: Survey Data, 2016

- Government related challenges

According to Table 4.5, the majority of the supply chain/ procurement/logistics managers were agreed to a very great extent in relation to; highly government interferences (Mean=4.92), government bureaucracy (Mean=4.82), stuck national regulations toward relief organizations (Mean=4.75), complex local customs clearances procedure and habits in

the relief area (Mean=4.52) respectively and to a great extent on; absence of security (Mean=4.22) and restrictions of entry of staff and goods (Mean=3.50) respectively. The above result indicated that, the humanitarian aid organizations are highly experienced with the government challenges

- Socio-economic challenges

From the findings in Table 4.5 above for the socio-economic challenges, the majority of the supply chain/ procurement/logistics managers agreed to a very great extent with; absences financial donors (Mean=4.90), unpredictable demand (Mean=4.81), availability stiff competition (Mean=4.65), lack of trust among the supply chain partners (Mean=4.51) respectively and to a great extent on absences of local suppliers (Mean=3.81) and culture and language of the host country (Mean=3.16) respectively. This indicates that there is high level of socio-economic challenges.

- Infrastructure challenges

The above results revealed that, the majority of the supply chain/ procurement/logistics managers agreed to a very great extent on; inadequate logistics infrastructure (Mean=4.94), inefficiencies' information flow (Mean=4.91), geographical dispersion problems (Mean=4.65) and chaotic environment (Mean=4.56) respectively and to a great extent on the lack of transportation mode to the relief areas (Mean=3.52). The above result indicated that, the humanitarian aid organizations are highly experienced with the infrastructure challenges

- Internal challenges

According to the summary on Table 4.5 above for the internal challenges, the majority of the supply chain/ procurement/logistics managers agreed to a very great extent on; inadequate resources to supporting and execution of supply chain processes (Mean=4.94), lack of coordination among the supply chain partners (Mean=4.92), employee turnover (Mean=4.92), poor procurement procedure (Mean=4.92), lack of contingency plan (Mean=4.78) and earmarking fund (Mean=4.74) respectively and to a great extent on; organizational culture and resistance to change (Mean=4.42), lack of managerial commitment (Mean=4.37), internal budget constraints (Mean=3.88), and lack of employee empowerment (Mean=3.75) respectively. The above result indicated that, there is high level of internal challenges on humanitarian aid organizations.

The findings are similar to Van Wassenhove (2012) which states that SCM challenges facing humanitarian organizations related to government bureaucracy, lack of coordination, high turnover of logisticians, high level of uncertainty in terms of demands, lack of adequate financial resources, lack of proper SC planning, and inadequate information sharing among partners.

Table 4.6: Levels of supply chain

	Mean	Std Dev
Leads to lack of reliability in the humanitarian SC	4.69	0.638
Deter the humanitarian organization to achieve timeliness in humanitarian aid	4.52	0.784
Leads to failure to deliver relevant humanitarian aid materials organization's warehouse in relief and emergency area	4.39	0.932
Create discrepancy information sharing between actors belonged to the organization and involved in the supply chain	4.64	0.679
Creates disharmony in the humanitarian organization between actors belonged to the organization and involved in supply chain	4.49	0.819
Leads to use un standardization procedures during the resolution of the emergency	4.33	0.953
Leads to reduces organization's ability to match demand and supply	4.29	0.936
Leads to reduces organization's ability to change the variety of goods	4.23	0.949
Lead to reduces the humanitarian SC efficiency	4.98	0.137
Lead to increment cost of goods	4.92	0.280
Leads to increment transportation cost	4.85	0.385
Lead to increment the warehousing cost	4.92	0.265

Source: Survey Data, 2016

According to the summary on Table 4.6 above, the majority of the supply chain/ procurement/logistics managers agreed to a very great extent on; leads to lack of reliability in the humanitarian SC (Mean=4.69), deter the humanitarian organization to achieve timeliness in humanitarian aid (Mean=4.52), create discrepancy information sharing between actors (Mean=4.64), lead to reduces the humanitarian SC efficiency (Mean=4.98), lead to increment cost of goods (Mean=4.92), leads to increment transportation cost of the supply chain (Mean=4.85) and lead to increment the warehousing cost for storing goods in the surroundings of the relief and emergency area (Mean=4.92), respectively and to a great extent with; leads to failure to deliver relevant humanitarian aid materials organization's warehouse in relief and emergency area (Mean=4.39), creates disharmony in the humanitarian organization between actors belonged to the organization and involved in supply chain (Mean=4.49), leads to use un standardization procedures during the resolution of the emergency (Mean=4.33), leads to reduces organization's ability to match demand and supply (Mean=4.29) and leads to reduces organization's ability to change the variety of goods (Mean=4.23), respectively. The finding implies that, the SCM challenges highly contributed to supply chain inefficiency in delivery of the relief supplies as well as negatively affected the operations of the humanitarian organizations. The findings are similar to Daniel Willner and Stavros Zafeiridis,(2013*),* stipulated that supply chain management challenges in the humanitarian sector negatively impacted on the supply chain performance through; SC cost increment, reduces the humanitarian SC efficiency, reduces organization's ability flexibility, lack of reliability in the humanitarian SC, and increase discrepancy information sharing between SC actors.

4.4. Correlation of constructs

The second objective of the study is to determine the relationship between supply chain management challenges and the performance of humanitarian aid organizations. The findings are as shown in the subsequent section.

Table 4.7 Correlation of variables

	Mean	S.D	GC	SEC	IC	INC	R	C	F	CP
GC	4.4272	.2948	1							
			.							
SEC	4.3632	.4160	.802**	1						
			.000	.						
IC	4.3245	.3769	.820**	.791**	1					
			.000	.000	.					
INC	3.9717	.8333	.511**	.537**	.620**	1				
			.000	.000	.000	.				
R	4.5315	.4627	-.579**	-.655**	-.423*	-.354**	1			
			.007	.000	.021	.009	.			
C	4.4874	.4173	-.502**	-.524**	-.266**	-.289**	.898**	1		
			.009	.000	.006	.003	.000	.		
F	4.4987	.4223	-.373**	-.405**	-.227*	-.337**	.218**	.304**	1	
			.000	.001	.019	.000	.007	.005	.	
CP	4.8963	.2812	.259**	.308*	.240*	.212*	.249**	.222*	. 201*	1
			.007	.032	.017	.029	.009	.022	. 035	.
			106	106	106	106	106	106	106	106

Source: Survey Data, 2016

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

GC: Government challenges, SEC: Socio-economic challenges, IC: Infrastructure challenges, INC: Internal challenges, R: Responsiveness, C: Collaboration, F: Flexibility, and CP: Cost Performances

The descriptive statistics i.e. mean and standard deviation and correlation matrix of elements of research variables are shown in Table 4.7. The research tool has predictive validity because according to correlation matrix, supply chain management challenges have

a negative correlation with dimensions of supply chain performances. In the above table, the government and socio-economic challenges have a negative and statistical significant correlation with responsiveness, collaboration, and a negative correlation with flexibility. The infrastructure and internal challenges have a negative correlation with the supply chain performances dimension (responsiveness, collaboration and flexibility). In general, there is a negative relationship between supply chain challenges (government, socio-economic, infrastructure, internal) and the performances of HAO (responsiveness, collaboration, flexibility); while there is a positive relationship between the supply chain management challenges and cost performances.

4.5. Hypothesis test

The third objective of the study is to determine the effect of supply chain management challenges on the performance of humanitarian aid organizations. Multiple linear regressions analyses helps to analysis more than two variables simultaneously used to understand fully the relationship between two or more variables. At this level simple and multiple linear regressions analysis were used to test the research hypothesis. The findings are as shown in the subsequent section.

H_1: Government challenges may have a negative effect on HAO Performances

Table 4.8: Effect of government challenges on HAO performances

	Model	R^2	Un standardized Coefficients B	Un standardized Coefficients Std. Error	Standardized Coefficients Beta	Sig.
H_{1a}	Government challenges Responsiveness	.187	8.769	.689	-.412	.001
			-.496	.178		
H_{1b}	Government challenges Collaboration	.151	7.610	.703	-.325	.003
			-.427	.157		
H_{1c}	Government challenges Flexibility	.137	6.846	.579	-.370	.000
			-.530	.130		
H_{1d}	Government challenges Cost performances	.040	4.055	.407	.199	.041
			.190	.092		
H_1	Government challenges HAO performances	.315	8.290	.360	-.439	.000
			-.381	.094		

Source: Survey Data, 2016

Note: $P \leq 0.05$,

H_{1a}**:** Government challenges may have a negative effect on responsiveness.

The government related challenges that were studied, explain only 18.7% the responsiveness of humanitarian organizations in Addis Ababa City Administration as represented by the R^2. The significance value is 0.01 which is less than 0.05. As a result, the model is statistically significant in predicting the effect of government challenges on

responsiveness. The F critical at 5% level of significance was 10.9. Since F calculated is greater than the F critical (value = 21.229), this shows that the overall model was significant. According to the findings, the simple linear regression equation established that, taking government related challenges to be constant at zero, the responsiveness of humanitarian organizations will increase by 8.769 units. The findings also shows that taking all other independent variables at zero, a unit increase in government related challenges will lead to a 0.496 unit decrease in responsiveness of humanitarian organizations. Therefore, this result indicates that the null hypothesis (1ao) was rejected.

H_{1b}: Government challenges may have a negative effect on collaboration

The results of simple linear regression show that, the government related challenges explain only 15.1% the collaboration of humanitarian aid organizations in AACA. The significance value is 0.003 which is less than 0.05. As a result, the model is statistically significant in predicting the effect of government challenges on collaboration of humanitarian aid organizations. The model predicts that, government related challenges to be constant at zero, the collaboration of humanitarian aid organizations will increase by 19.196 units. Furthermore, the finding shows that, an additional unit of government challenges will reduce HAO collaboration by 0.427 units. This suggests that government challenges affect the collaboration of humanitarian supply chains negatively. Therefore this result indicates that the null hypothesis (1bo) was rejected.

H_{1c}**:** Government challenges may have a negative effect on flexibility

The results shown in the above table 4.8 indicates that all the government challenges variables that were studied; explain only 13.7% the flexibility of humanitarian organizations. The significance value is less than 0.05, which show that the model is statistically significance in predicting the outcome variable. The model predict that, taking government related challenges to be constant at zero, flexibility of humanitarian organizations will increase by 6.846 unit. The finding also shows that taking all other independent variables constant at zero, a unit increase in government related challenges will lead to a 0.530 unit decrease in flexibility of humanitarian organizations. Therefore, a null hypothesis (1co) was rejected.

H_{1d}: Government challenges may have a negative effect on cost performances

The government related challenges that were studied, explain only 4% the cost performances of humanitarian organizations in Addis Ababa City Administration as represented by the R^2. The significance value is 0.041 which is less than 0.05. Thus, the model is statistically significance to predict the effect of government related challenges on cost performance of humanitarian organizations. According to the findings, the simple linear regression equation established that, taking government related challenges to be constant at zero, cost performances of humanitarian organizations will increase by 4.055 units. The findings also shows that taking all other independent variables at zero, a unit increase in government related challenges will lead to a 0.190 unit increase in cost performances of humanitarian organizations. Therefore, this result indicates that the null hypothesis (1do) was accepted.

H_1- Summary: Government challenges may have a negative effect on HAO performances

The result in table 4.8 above shows all the government challenges variables that were studied; explain only 31.5% the performances of humanitarian aid organizations. According to the findings, the simple linear regression equation established that, taking government related challenges to be constant at zero, the performances of humanitarian organizations will increase by 8.290 units. The model predicts that an additional unit of government challenges will decrease the performance by 0.381 units. According to the first hypothesis result, the government related challenges negatively affects for responsiveness, collaboration, flexibility, and cost performances. These include; government bureaucracy, stuck national regulations toward relief organizations, registration processes, customs, and clearance delays tax exemption processes among others. This finding is consistent with other related studies which suggested that, government challenges have a great impact on the humanitarian operation. In this respect the findings are aligned with Beamon, B. M. & Balcik, B. (2008), Dr. Graham E. Heaslip and Peter Nyandega Agwata (2014), Jane Kiende Kinyua (2013), which is government challenges, have a negative effect on HAO performances. Therefore, the first hypothesis was supported.

H_2: Socio-economic challenges may have a negative effect on HAO Performances

Table 4.9: Effect of socio-economic challenges on HAO performances

	Model	R^2	Un standardized Coefficients B	Un standardized Coefficients Std. Error	Standardized Coefficients Beta	Sig.
H_{2a}	Socio-economic challenges	.341	9.748	.389		
	Responsiveness		-.308	.051	-.576	.000
H_{2b}	Socio-economic challenges	.272	7.971	.526		
	Collaboration		-.584	.071	-.481	.000
H_{2c}	Socio-economic challenges	.184	6.781	.318		
	Flexibility		-.264	.095	-.290	.003
H_{2d}	Socio-economic challenges	.086	4.525	.288		
	Cost performances		.085	.066	.126	.198
H_2	Socio-economic challenges	.392	11.12	.208		
	HAO performances		-.348	.030	-.637	.000

Source: Survey Data, 2016

Note: $P \leq 0.05$

H_{2a}**:** Socio-economic challenges may have a negative effect on responsiveness

The socio-economic challenges, explain only 34.1% the responsiveness of humanitarian organizations in Addis Ababa City Administration as represented by the R^2. The significance value is less than 0.05. As a result, the model is statistically significant in predicting the effects of socio-economic challenges on the responsiveness of humanitarian organizations. The F critical at 5% level of significance was 18.42. Since F calculated is greater than the F critical (value = 37.085). According to the model predicting, taking socio-economic challenges to be constant at zero, responsiveness of humanitarian organizations will increase by 9.748 units. The findings also shows that taking all other independent variables at zero, a unit increase in socio-economic challenges will lead to a 0.308 unit decrease in responsiveness of humanitarian organizations. Therefore, this result indicates that the null hypothesis (2ao) was rejected.

H_{2b}**:** Socio-economic challenges may have a negative effect on collaboration

The finding shows that, the socio-economic challenges explain only 27.2% the collaboration of humanitarian organizations in Addis Ababa City Administration. The F critical at 5% level of significance was 26.96. Since F calculated is greater than the F critical (value = 33.047). This shows that the overall model was a statistical significant. According to the simple linear regression equation result, taking socio-economic challenges to be constant at zero, collaboration of humanitarian organizations will increase by 7.971 units. Furthermore, the results indicate that an additional unit of socio-economic challenges will reduce collaboration by 0.584 units. This suggests that a socio-economic challenge have negative effect on collaboration. Therefore, the null hypothesis (2bo) was rejected.

H_{2c}**:** Socio-economic challenges may have a negative effect on flexibility

According to the above table 4.9 finding, that all the socio-economic challenges variables that were studied, explain only 18.4% the flexibility of humanitarian organizations. The significance value is 0.003 which is less than 0.05, which show that the model is statistically significance to predicate the outcome variable. According to the model results, taking socio-economic challenges to be constant at zero, flexibility of humanitarian organizations will increase by 6.781 units. The findings also shows that taking all other independent variables at zero, a unit increase in socio-economic challenges will lead to a 0.264 unit decrease in flexibility of humanitarian organizations. Therefore, null hypothesis (2co) was rejected.

H_{2d}**:** Socio-economic challenges may have a negative effect on cost performances

Socio-economic challenges are not a predictor cost performances of humanitarian aid organization. The socio-economic challenges that were studied, explain only 8.6% the cost performances of humanitarian organizations in Addis Ababa City Administration as represented by the R^2. The significance value is 0.198, which is greater than 0.05. Thus, the model is not statistically significant in predicting the effects of socio-economic challenges on cost performance. According to the findings, taking socio-economic challenges to be constant at zero, cost performances of humanitarian organizations will increase by 4.525 units. The findings also shows that taking all other independent variables at zero, a unit increase in socio-economic challenges will lead to a 0.085 unit increase in cost

performances of humanitarian organizations. Therefore, this result indicates that the null hypothesis (2do) was accepted.

H $_2$ -Summary: Socio-economic challenges may have a negative effect on HAO performances

The independent variables that were studied, explain only 39.2% of the HAO performance in AACA. The significance value is less than 0.05, which show that the model is statistically significance to predicate the effects of socio-economic challenges on performance. The F critical at 5% level of significance was 27.54. Since F calculated is greater than the F critical (value = 44.667). According the model predicts, the simple linear regression equation established that, taking socio-economic challenges to be constant at zero, the performances of humanitarian organizations will increase by 11.12 units. In addition, the results indicate an additional unit of socio-economic challenges will decrease the performance up to 0.348 units. According to the second hypothesis result, the socio-economic challenges have a negative effect on responsiveness, collaboration, flexibility, and cost performances. This finding is consistent with other related studies which suggested that, socio-economic challenges have a great impact on the humanitarian operation. In this respect the findings are aligned with (Jahre, M. and Jensen, L.M. 2010), which is the unpredictable demand, stiff competition and absences financial donors have a great effect on the HAO performances. Therefore, the second hypothesis was supported.

H_3: Infrastructure challenges may has a negative effects on HAO Performances

Table 4.10: Effect of infrastructure challenges on HAO performances

	Model	R^2	Un standardized Coefficients B	Un standardized Coefficients Std. Error	Standardized Coefficients Beta	Sig.
H_{3a}	Infrastructure challenges	.118	6.796	.603		
	Responsiveness		-.282	.134	-.216	.044
H_{3b}	Infrastructure challenges	.084	6.126	.678		
	Collaboration		-.379	.156	-.231	.017
H_{3c}	Infrastructure challenges	.050	5.583	.465		
	Flexibility		-.251	.107	-.224	.021
H_{3d}	Infrastructure challenges	.020	4.443	.314		
	Cost performances		.105	.072	.140	.151
H_3	Infrastructure challenges	.134	6.991	.354		
	HAO performances		-.205	.084	-.233	.016

Source: Survey Data, 2016

Note: $P \leq 0.05$,

H_{3a}**:** Infrastructure challenges may have a negative effect on responsiveness.

The infrastructure challenges that were studied, explain only 11.8% the responsiveness of humanitarian organizations in Addis Ababa City Administration. The significance value is 0.044 which is less than 0.05. As a result, the model is statistically a significant in predicting the effects of infrastructure challenges on the responsiveness of humanitarian organizations. According to the model predict, taking infrastructure challenges to be constant at zero, responsiveness will increase by 6.796 units. The findings also shows that taking all other independent variables at zero, a unit increase in infrastructure challenges will lead to a 0.282 unit decrease in responsiveness of humanitarian organizations. Therefore, the null hypothesis (3ao) was rejected.

H_{3b}**:** Infrastructure challenges may have a negative effect on collaboration

The above table 4.10 shows that, the infrastructure challenges explain only 8.4% the collaboration of humanitarian organizations. The significance value is 0.017, which is less than 0.05. Thus, the model is statistically significant to predict the effects of infrastructure challenges on collaboration. According to the findings, taking infrastructure challenges to be constant at zero, supply chain collaboration of humanitarian organizations will increase by 6.126 units. Furthermore, the results indicate that an additional unit of infrastructure challenges will reduce the collaboration by 0.379 units. This suggests that infrastructure challenges have a negative effect on collaboration. Therefore, this result indicates that the null hypothesis (3bo) was rejected.

H_{3c}**:** Infrastructure challenges may have a negative effect on flexibility

The results shown that, the infrastructure challenges variables that were studied, explain only 5% the flexibility of humanitarian organizations. The significance value is 0.021 which is less than 0.05. As a result, the model is statistically significance to predicate the effects of infrastructure challenges on flexibility. According to the findings, the simple linear regression equation established that, taking infrastructure challenges to be constant at zero, flexibility of humanitarian aid organizations will increase by 5.583 units. The findings also shows that taking all other independent variables at zero, a unit increase in infrastructure challenges will lead to a 0.251 unit decrease in flexibility of humanitarian organizations. Therefore, a null hypothesis (3co) was rejected.

H_{3d}: Infrastructure challenges may have a negative effect on cost performances

Infrastructure challenges are not predictor cost performances of the humanitarian aid organization. The significance value is 0.151 which is greater than 0.05. So, the model is not statistically significance in predicting the effects of cost performance on humanitarian organizations. According to the findings, taking infrastructure challenges to be constant at zero, supply chain cost performances of humanitarian organizations will increase by 4.443 units. The findings also shows that taking all other independent variables at zero, a unit increase in infrastructure challenges will lead to a 0.105 unit increase in cost performances of humanitarian organizations. Therefore, a null hypothesis (3do) was accepted.

H_3 -Summary**:** Infrastructure challenges may have a negative effect on HAO performances

The results in table 4.10 above shows, the infrastructure challenges variables that were studied, explain only 13.4% the performances of humanitarian organizations. According to the findings, the simple linear regression equation established that, taking infrastructure challenges to be constant at zero, the performances of humanitarian aid organizations will increase by 6.991 units. The analysis further showed that an additional unit of infrastructure challenges will decrease performance by 0.205 units. According to the hypothesis three, summary, the infrastructure challenges have negative effects on responsiveness, collaboration, flexibility, and cost performances. These include inadequate logistics infrastructure, inefficiencies' information flow between the supply chain actors and lack of transportation mode to the relief areas among others. This finding is consistent with the other related studies. In this respect the findings are aligned with (Andreas Wieland, Carl Marcus Wallenburg, 2012), which is infrastructure challenges have a negative impact on the on the organizational performances. Therefore, the third hypothesis was supported.

H_4: Internal challenges may have a negative effect on HAO Performances

Table 4.11: Effect of internal challenges on HAO performances

	Model	R^2	Un standardized Coefficients		Standardized Coefficients	
			B	Std. Error	Beta	Sig.
H_{4a}	Internal challenge	.191	7.762	.658		
	Responsiveness		-.164	.134	-.272	.048
H_{4b}	Internal challenges	.165	6.971	.271		
	Collaboration		-.213	.109	-.160	.002
H_{4c}	Internal challenges	.152	6.705	.512		
	Flexibility		-.498	.115	-.390	.000
H_{4d}	Internal challenges	.084	3.803	.354		
	Cost performances		.247	.080	.290	.003
H_4	Internal challenges	.223	7.921	.428		
	HAO performances		-.130	.096	-.267	.031

Source: Survey Data, 2016

Note: $P \leq 0.05$,

H_{4a}: internal challenges may have a negative effect on responsiveness.

The internal challenges explain only 19.1% the responsiveness of humanitarian aid organizations in Addis Ababa City Administration as represented by the R^2. The significance value is 0.048, which is less than 0.05. Thus, the model is statistically significant in predicting the effects of internal challenges on responsiveness. According to the model result, the simple linear regression equation established that, taking internal challenges to be constant at zero, the responsiveness of humanitarian organizations will increase by 7.762 units. It also shows that taking all other independent variables at zero, a unit increase in internal challenges will lead to a 0.164 unit decrease in responsiveness of humanitarian organizations. Therefore, null hypothesis (4ao) was rejected.

H_{4b}**:** Internal challenges may have a negative effect on collaboration

The results in table 4.11 above shows, the internal challenges variables that were studied, explain only 16.5% the collaboration of humanitarian aid organizations. According to the simple linear regression equation result, taking internal challenges to be constant at zero, supply chain collaboration of humanitarian organizations will increase by 6.971units. Furthermore, the model predicts that, an additional unit of internal challenges will reduce supply chain collaboration by 0.213 units. This suggests that an internal challenge have a negative effect on the collaboration. Therefore, null hypothesis (4bo) was rejected.

H_{4c}: Internal challenges may have a negative effect on flexibility

According to the above table 4.11 finding that the internal challenges that were studied, explain only 15.2% the flexibility of humanitarian aid organizations. The significance value is less than 0.05, which show that the model is statistically significance to predicate the effect of internal challenges on flexibility. According to the simple linear regression result, taking internal challenges to be constant at zero, flexibility of humanitarian organizations will increase by 6.705 units. The data findings also shows that taking all other independent variables at zero, a unit increase in internal challenges will lead to a 0.498 unit decrease in flexibility of humanitarian organizations. Therefore, null hypothesis (4co) was rejected.

H_{4d}: Internal challenges may have a negative effect on cost performances

According to the above table finding that the internal challenges that were studied, explain only 8.4% the cost performances of humanitarian aid organizations. The significance value is 0.003 which is less than 0.05. So, the model is statistically significance in predicting the effects of internal challenges on cost performance. According to the findings, taking internal challenges to be constant at zero, cost performances of humanitarian organizations will increase by 3.803 units. The data findings also shows that taking all other independent variables at zero, a unit increase in internal challenges will lead to a 0.247 unit increase in cost performances of humanitarian organizations. Therefore, this result indicates that the null hypothesis (4do) was accepted.

H $_4$- Summary: internal challenges may have a negative effect on HAO performances

The independent variables that were studied, explain only 22.4% the performances of humanitarian organization. The significance value is 0.031 which is less than 0.05, this show that the model is statistically significance to predicate the effect of SCM challenges on the performances of humanitarian aid organization. According to the findings, the simple linear regression equation established that, taking internal challenges to be constant at zero, the performances of humanitarian organizations will increase by 7.921 units. The analysis further showed that an additional unit of internal challenges will decrease the performance by 0.130 units. According to the internal challenges summary, the internal challenges have a negative effect on responsiveness, collaboration, flexibility, and cost performances. In this respect the findings is aligned with Daniel Willner and Stavros Zafeiridis (2013), which is inadequate resources, lack of coordination among the supply chain partners, lack of managerial commitment, high employee turnover and internal budget constraints have a great effect on the on the organizational performances. Therefore, the fourth hypothesis was supported.

4.5.1. Hypothesis test summary

Multiple regression analysis was conducted as to determine the relationship between supply chain management challenges and the performance of humanitarian aid organizations. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (the performance of humanitarian organizations in AACA) that is explained by all the independent variables. As per the SPSS V 20.0 generated in table 4.12 below, the equation;

($\mathbf{Y} = \beta 0 - \beta 1X_1 - \beta 1X_2 - \beta 1X_3 - \beta 1X_4 - \varepsilon$) becomes:

($\mathbf{Y}= 10.15- 0.371X_1-0.402X_2 - 0.201X_3 - 0.286X_4 - \varepsilon$)

Table 4.12: Effect of SCM challenges on HAO performances

	Model	R^2	Un standardized Coefficients B	Un standardized Coefficients Std. Error	Standardized Coefficients Beta	Sig.
H_1	Government challenges HAO performances	.734	10.15 -.371	.505 .109	-.467	.003
H_2	Socio-economic challenges HAO performances		-.402	.119	-.506	.001
H_3	Infrastructure challenges HAO performances		-.201	.142	-.229	.016
H_4	Internal challenges HAO performances		-.286	.165	-.294	.042

Source: Survey Data, 2016

Note: $P \leq 0.05$,

a. Dependent Variable: HAO performances

b. Predictors: (Constant), Internal challenges, Socio-economic challenges, Government challenges, Infrastructure challenges

The finding shows that, the independent variables that were studied, explain only 73.4% the performance of humanitarian organizations in Addis Ababa City Administration, as represented by the R^2. Therefore, this means that other SCM challenges not studied in this research contribute 26.6% the performance of humanitarian aid organizations. Therefore, further research should be conducted to investigate the other SCM challenges (26.6%) that have a negative effect on the performance of humanitarian organizations in AACA. The significance value of all independent variables (government challenges, socio-economic challenges, infrastructure challenges and internal challenges) is less than 0.05, which show that the model is statistically significance to predicate the effect of SCM challenges on the organizational performances. According to the findings, the multiple linear regression equation established that, all independent variables taking to be constant at zero, the performances of humanitarian aid organizations will increased by 10.15 units. The findings also shows that taking all other independent variables constant at zero, a unit increase in

government challenges will lead to a 0.371 unit decrease the performances of humanitarian aid organizations; a unit increase in socio-economic challenges will lead to a 0.402 unit decrease the performances of humanitarian aid organizations; a unit increase in infrastructure challenges will lead to a 0.201 unit decrease the performances of humanitarian aid organizations and a unit increase in internal challenges will lead to a 0.286 unit decrease the performances of humanitarian aid organizations. This infers that socio-economic challenges have a great impact on the performances of humanitarian aid organizations in Addis Ababa City Administration, followed by government challenges, internal challenges and infrastructure challenges in the relief and emergency sectors respectively. This finding also supports other literature that argues the supply chain management challenges have a negative effect on the performances of humanitarian aid organization.

Chapter Five

5. Summary, Conclusion and Recommendations

This chapter presents summary, conclusion and recommendations of the study on the effects of supply chain management challenges on the performance of humanitarian aid organizations in Addis Ababa City Administration on the relief and emergency sectors.

5.1. Summary of major findings

This section presents the summary, about the humanitarian supply chain management challenges and the performances of humanitarian aid organization based on the study objectives.

- According to the descriptive statistics results, the supply chain management challenges have a very great extent effect on the humanitarian operations. Therefore, SCM challenges have highly prevalent in the humanitarian sector in AACA impeding their supply chain efficiency towards delivering of the relief supplies as well as limiting achievement of their mandate.
- The SCM challenges consequently reduced the ultimate effectiveness of humanitarian supply chain management in responding to multiple interventions within a short time frame. The SCM challenges are categorized as government related challenges, socio-economic challenges, infrastructure challenges and internal challenges. The humanitarian aid organizations are very great experienced with government challenges in relation to: government interferences, government bureaucracy, stuck national regulations toward relief organizations, complex local customs clearances procedure and habits in the relief area respectively and to a great experienced with; absence of security, and restrictions of entry of staff and goods. In relation to socio-economic challenges, the humanitarian organization are a very great experienced with the; absences financial donors, unpredictable demand, availability stiff competition, lack of trust among the supply chain partners and to a great experienced with; absences of local suppliers, and culture and language of the host country respectively.

- The finding also revealed that, the humanitarian organizations are very great experienced with the infrastructures challenges associated with; inadequate logistics infrastructure, inefficiencies' information flow, geographical dispersion problems and chaotic environment and lack of transportation mode to the relief areas respectively. In relation to internal challenges, the humanitarian organization are very great experienced with; inadequate resources to supporting and execution of supply chain processes, lack of coordination among the supply chain partners, poor procurement procedure, high employee turnover, lack of contingency plan and earmarking fund, respectively and to a great experienced with; organizational culture and resistance to change, lack of managerial commitment, internal budget constraints and lack of employee empowerment.

- The finding implies that supply chain management challenges experienced by the humanitarian sector greatly hampered the performance of humanitarian organizations. Based on the bivariat correlation finding, the supply chain challenges have a negative impact on the performances (responsiveness, collaboration and flexibility), while there is a positive relationship with the cost performances.

- Based on the simple and multiple regression analysis results, the supply chain management challenges have a negative effect on the performances of humanitarian aid organization in Addis Ababa City Administration. Government challenges have a negative effect on the performances of humanitarian aid organization. As a result, the null hypothesis i.e. H_{10} is rejected. There is a negative relationship between socio-economic challenges and the performances of humanitarian aid organization. Therefore, the null hypothesis i.e. H_{20} is rejected. The other finding is an infrastructure challenges have a negative influence on the performances of humanitarian aid organization. The null hypothesis i.e. H_{30} is also rejected. Finally, the internal challenges have a negative effect on SC performances with the performances of humanitarian aid organization. As a result, the null hypothesis i.e. H_{40} is rejected. The study indicated that; socio-economic challenges have a great negative impact on the performance of humanitarian organizations in AACA, followed by government challenges, internal challenges and infrastructures challenges, respectively.

5.2. Conclusion

The purpose of this study is to determine the effect of supply chain management challenges on humanitarian aid organization's responsiveness, collaboration, flexibility and cost performances. According to this objective the following conclusion are drawn.

- The empirical evidence from this study indicates that there are numerous SCM challenges in the humanitarian aid organization sector in AACA. The SCM challenges highly contributed to supply chain inefficiency in delivery of the relief supplies as well as it have a negative on daily operations of the humanitarian aid organizations. The study concludes that, the SCM challenges have a negative effect on the performances of humanitarian aid organizations in the relief and emergency sectors. These challenges are associated with; government related challenges, socio-economic challenges, infrastructure challenges and internal challenges. Therefore, the relief and emergency sector is affected by multiple SCM challenges.
- Managing humanitarian supply chain is critical, in terms of securing SC operation and improving the relief mission. The research study also concludes that, supply chain management challenges have negative impact on the humanitarian supply chain performance through; deter the humanitarian organization to achieve timeliness, lead to SC cost increment, lead to failure to deliver relevant humanitarian aid materials, created disharmony in the humanitarian organization, lead to lack of reliability in the humanitarian supply chain, decreased efficiency in the humanitarian SC, increased the risk of the firm`s ability to match demand and supply, lead to unfair competition among humanitarian organization, leads to use un standardization procedures during the resolution of the emergency and leads to reduces organization's ability to change the variety of goods respectively. Therefore, the result of the research paper is consistent with the other related studies.

5.3. Recommendations

Based on the findings of the study, the following recommendations are proposed;

- In order to reduce SCM challenges, the study recommends that, panels discussion are needed between the government and the humanitarian aid organization. The government gives an orientation on the legal and policy issues during registration as humanitarian aid organization. As a result, there is no panel discussion with the humanitarian organization on continuous bases. Therefore, the government with the HAO should prepare and organize a continuous panel discussion to avoid confusion and misunderstanding and to get an input from all stakeholders even to reduce the SC challenges. Humanitarian organizations should comply with the laws and policies of the country and the government should strengthen the capacity of the established agency, so that to render best service as much as possible.
- So as to have effective SC operation, it is advisable that the management of humanitarian organizations should invest in an integrated supply chain management system that will help them to monitor and control their supply chain as well as in dealing with SCM challenges. This will assist the humanitarian organization in mitigating against the effects of the SCM challenges on their organizational performance.
- The study recommends that the management of humanitarian organizations should allocate adequate budgetary resources towards human resource training to increase employee competence in handling supply chain management challenges as well as increase their retention rates through improving their employee welfare.
- Moreover, the study further recommends that the management of humanitarian organizations should conduct research on the different relief areas they are operating in to ensure that the SCM initiatives being implemented are effective in addressing the specific SCM challenges towards enhancing their organizational performance.

5.4. Areas of further studies

Since this study examined the effect of supply chain management challenges on the performance of humanitarian aid organizations in Addis Ababa City Administration. The study recommends that similar studies should be done on;

I. The relationship between SCM challenges and supply chain strategy implementation in humanitarian organizations in Ethiopia.

II. The effect of using modern technology on the SC Performance in humanitarian organizations in Ethiopia.

III. The relationship between the disaster phases challenges and performances management in the humanitarian aid organization in Ethiopia.

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Appendixes-I: A Questionnaire to be filled by the humanitarian organization

Addis Ababa University

School of Commerce

College of Business and Economics

Department of Logistics and Supply Chain Management

Dear Sir/Madam:

My name is Mebrahtom Tesfay, I am a postgraduate student of Addis Ababa University, College of Business and Economics and Department of Logistics and Supply Chain Management. This questionnaire is designed to examine the effect of supply chain management challenges on the performances of humanitarian aid organization of Addis Ababa City Administration. Therefore, I kindly request you to spare some time and to honestly respond to all the questions. I assure you that all your responses will be kept confidential and your identity shall not be exposed. Your response will only be used for this study.

I thank you in advance for your cooperation, time and thoughtfulness.

Instruction:

- You do not need to write your name
- Please use a **"√"** Mark to select the options that best represent your response for part I, II and III.

Mebrahtom Tesfay

Mebrahtom21@gmail.com

March, 2016

Part I: General information:

Age in year:

25-35 ☐ 36-45 ☐ 46-60 ☐ 61 and above ☐

Working experiences in the area:

1-5 Years ☐ 6-10 Years ☐ over 10 Years ☐

Educational Background:

High school ☐ Diploma ☐ Degree ☐ Master and above ☐

Part II: Detailed question on supply chain management challenges (government, socio-economic, infrastructure and internal) and performances (Responsiveness, collaboration, flexibility and cost performances).

Q1. To what extent are the following supply chain management challenges (government, socio-economic, infrastructure and internal) experienced in your organization and fill the answers by putting a tick mark (" √") under: (1= To no extent 2= To a little extent 3= To a moderate extent 4= To a great extent 5= To a very great extent)

No	Supply chain challenges	Level of extent				
		1	2	3	4	5
1	Government related challenges					
1.1	Government bureaucracy					
1.2	Stuck national regulations toward relief organizations					
1.3	Absence of security					
1.4	Highly government interferences					
1.5	Restrictions of entry of staff and goods					
1.6	Complex local customs clearances procedure and habits in the relief area					
2	Socio-economic challenges					
2.1	Unpredictable demand					

2.2	Absences of local suppliers					
2.3	Availability stiff competition					
2.4	Absences financial donors					
2.5	Culture and language of the host country					
2.6	Lack of trust among the supply chain partners					
3	Infrastructure challenges					
3.1	Inadequate logistics infrastructure					
3.2	Inefficiencies' information flow					
3.3	Geographical dispersion problems					
3.4	Chaotic environment					
3.5	Lack of transportation mode to the relief areas					
4	Internal challenges					
4.1	Inadequate resources to supporting and execution of supply chain processes					
4.2	Lack of coordination among the supply chain partners					
4.3	Lack of managerial commitment					
4.4	Earmarking fund					
4.5	High employee turnover					
4.6	Lack of contingency plan					
4.7	Organizational culture and resistance to change					
4.8	Lack of employee empowerment					
4.9	Internal budget constraints					
4.10	Poor procurement procedure					

Part III: Levels of supply chain

Q1. To what extent are the above supply chain management challenges (government, socio-economic, infrastructure and internal) affects to your organization`s SC performances (responsiveness, collaboration, flexibility and cost performances) and fill the answers by putting a tick mark (" √") under: (1= To no extent 2= To a little extent 3= To a moderate extent 4= To a great extent 5= To a very great extent)

		1	**2**	**3**	**4**	**5**
1	Leads to lack of reliability in the humanitarian SC					
2	Deter the humanitarian organization to achieve timeliness in humanitarian aid					
3	Leads to failure to deliver relevant humanitarian aid materials organization's warehouse in relief and emergency area					
4	Create discrepancy information sharing between actors belonged to the organization and involved in the supply chain					
5	Creates disharmony in the humanitarian organization between actors belonged to the organization and involved in supply chain					
6	Leads to use un standardization procedures during the resolution of the emergency					
7	Leads to reduces organization's ability to match demand and supply					
8	Leads to reduces organization's ability to change the variety of goods.					
9	Lead to reduces the humanitarian SC efficiency					
10	Lead to increment cost of goods					
11	Leads to increment transportation cost of the supply chain					
12	Lead to increment the warehousing cost for storing goods in the surroundings of the relief and emergency area					

Thank you for your time and participation