ASSESSMENT OF HUMANITARIAN SUPPLY CHAIN PERFORMANCE OF SAVE THE CHILDREN INTERNATIONAL ETHIOPIA NON-GOVERNMENTAL ORGANIZATION

By: Bitweded Mesfin Asefa

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Advisor: Tariku Jebena, Ph.D.

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Addis Ababa University

Approved by Board of Examiners:

Advisor	Signature	Date
_____	_____	_____
Internal Examiner	**Signature**	**Date**
_____	_____	_____
External Examiner	**Signature**	**Date**
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Declaration

I declare that this research project "Assessment of Humanitarian Supply Chain Performance of Save the Children International Ethiopia" is my original work and has never been submitted to any other University for assessment or award of a degree, and that all sources of materials used for the study have been duly acknowledged.

Signature: _____

Date: _____

Bitweded Mesfin

ID No: GSE/0519/07

Certification

This investigation, entitled "Assessment of Humanitarian Supply Chain Performance of Save the Children International Ethiopia" was carried by Bitweded Mesfin so as to obtain his second degree from Addis Ababa University School of Commerce. He conducted his original thesis under my guidance and supervision. I certify that, the study is his own original work and suitable for submission of the award of MA in Logistics and Supply Chain Management

Advisor: _____

Signature: _____

Date: _____

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I would like to extend my whole hearted gratitude to the Almighty God who is the reason for my existence. Without his grace and wish, I won't be hear where I am now and obviously this research project work can't be accomplished successfully.

After that I would like to extend my heartfelt gratitude to my thesis advisor **Dr. Tariku Jebena** for his constructive comments and unreserved guidance throughout the course of this project work. Undoubtedly, his valuable comments, supervision and encouragement greatly improved the content of this thesis.

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Abbreviations and Acronyms

CSCM Commercial supply chain management

DFAP Developmental food assistance program

FDP Food distribution point

FFP Food for peace

JEOP Joint emergency operation

HA Humanitarian agencies

HO Humanitarian organization

HSCM Humanitarian supply chain management

NGO Nongovernmental organization

SC Supply chain

SCM Supply chain management

SCI Save the children international

PDP Primary distribution point

USAID United States agency for international development

3PL Third part logistic

Abstract

The objective of the study was to assess the Humanitarian Supply Chain Performance of Save the Children Ethiopia. Specifically, this study intended to explore and empirically test the possible relationships among Humanitarian Supply Chain Performance factors such as: Humanitarian Supply Chain Performance with communication, coordination, transporters' efficiency and infrastructural issues, addressing of the resource to the intended beneficiaries in effectively and efficiently with organizations' performance on supply chain management. The researcher carried out a systematic literature review to identify variables and their items to design a structured questionnaire. A total of 40 questionnaires were distributed, of which 38 questionnaires were filled and returned which made the response rate of 95%. The relationships proposed in the framework were tested using Spearman's correlation and used both descriptive and explanatory research design. The result of the analysis shows that there is positive and statistically significant relationship between humanitarian supply chain planning, communications, coordination. On other hand, it is also that there is strong relationship between transporters efficiency and infrastructural issues with the organization performance on supply chain management. Therefore, in order to become competitive and achieve sustainable performance in humanitarian supply chain operation, Save the Children should give due attention to builds Humanitarian Supply Chain Performance in planning, communications, coordination, evaluate the efficiency of 3rd part logistics as well as addressing of the resource to the needy peoples in effective and efficient manner.

Key Words: Performance, Planning, Communication, Coordination

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

The number of natural disasters has steadily been increasing since 1960 (EM-DAT 2015). This increasing frequency is accompanied by an increased severity in terms of individuals injured or killed as well as the scale of the financial impact of these events (Tatham and Hughes 2011). According to Munich Re's NatCatSERVICE database (2015), which is the most comprehensive natural catastrophe loss database in the world, eight out of the top ten deadliest as well as costliest natural disasters that were recorded between 1980 and 2014 have happened since 2003.

Furthermore, the world faces many structural problems like hunger, lack of proper sanitation and displacement (Van der Laan, Brito and Vergunst 2009). Therefore, the global demand for humanitarian assistance, especially with regard to disaster relief, is rising and will continue to rise (Christopher and Tatham 2011 Thomas and Kopczak 2005). Given the contributions of US$24.5 billion that international humanitarian assistance received in 2014 (GHA 2015), the resultant procurement and logistical spend of around US$19.5 billion provide an enormous potential for improvement and thus a substantial benefit to those affected by disasters (Christopher and Tatham 2011).

According to Mentzer (2001) describe the humanitarian supply chain 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 goal of the supply chain is to deliver the right supplies, in the right quantities to the right location at the right time (Shepherd & Gunter, 2006). Therefore, disaster relief organizations need to move relief goods more quickly and effectively so that victims can be saved.

In addition, HSCM requires the process of effective and cost-efficient plans, implementations and controls for aid flows (i.e., materials, goods, services, financial resources, information, etc…) from the point of origin to the point of consumption with the

intention of meeting the aid recipients' requirements (Thomas and Mizushima, 2005). As a subset of supply chain management, it covers almost all of the functional processes that a commercial supply chain management (CSCM) does, including processes such as sourcing, procurement, inventory management, logistics and distribution, information management, and so forth (Day, 2012). However, unlike the "financial" objectives of CSCM, the primary goal for HSCM is to minimize human suffering more specifically to prevent further loss of life and harm to humans, as well as provide immediate treatment to those with injuries and illness (Beamon and Balcik, 2008). Now a day, this area attracted the attention of both academics and practitioners (Dubey, 2015). Hence, this is the main area of this study focusing assessment of humanitarian supply chain performance of save the children international in Ethiopia.

Relating to HSCM in Ethiopian, the emergence & development programs are implemented the occurrence of the major food crises happened in 1950's which claims the life of many Ethiopians affected due to drought. Since, Ethiopia has been facing recurring drought and famine due to environmental, social and political factors which subject the large segment of the rural population to vulnerability and food insecurity to the country. To assist these drought affected peoples, save the children has been working both emergency and development programs in different areas of the country.

Save the Children in collaboration with Government of Ethiopia has been implementing both DFAP and JEOP programs in 7 Woredas of Oromia and Somali since October 2011. The program is a USAID Food for Peace (USAID/FFP) funded five year programs. The operational areas include Afder and Liben zones of Somali and Borena zone of Oromia. The targeted beneficiaries of the programs are chronically food insecure households in chronic food insecure villages and Woredas of the zone as targeted, registered and monitored by the government of Ethiopia. The total program beneficiaries are 301,476 for DFAP and 67,824 for JEOP programs respectively. The quantity of food transported and supplied to the beneficiaries is calculated on the basis of the number of the beneficiaries. Thus a total of 43,690 metric tons (436,900 quintals) of food is transported from port of Djibouti, temporarily/primary stored in Adama and finally delivered to the secondary warehouses in the Woredas. In addition to facilitate the smooth transaction of the DFAP and JEOP programs commodities, Save the Children annually rents 4 very big warehouses with a total capacity of 45,000 MT (450, 000 quintals) in Adama.

Private transporters who are awarded the transportation contract based on open bid competition manage the transportation of this quantity of commodity. The performance of the transportation of the commodity is evaluated annually based on the terms agreed in the contract. Accountability of the delivery of the food by the transporters is normally ensured by designed contract which depicts liability to any losses by the transporters as well as the documentation process ensuring dispatch authorization from the primary warehouse, receipt of food by the transporters by receipt waybills as well as confirmation of receipt by the secondary warehouse. Transportation of one round of DFAP and JEOP food requires a total of 182 trucks each with capacity of 400 quintals should be made available at Adama warehouses by 3rd party logistics. The dispatch and transportation of the food from the primary warehouse is strictly based on regular dispatch plan submitted by Save the Children.

The implementation of food assistance by Save the Children especially in pastoral zones of Oromia and Somali has been challenged by the capacity of the local contractors to provide sufficient number of trucks that transport to the FDPs (Final Distribution Points), the carrying capacities of the Kebele level mini-stores (FDPs) as well as the carrying capacity of the Woreda level secondary warehouses (sometimes when both DFAP and JEOP food are dispatched), the accessibility of dry-weather roads in rainy season for secondary and tertiary transportations, communication gaps between the supply chain and sometimes the inter-clan conflict in Oromia and Somali regions are some of the major challenges affecting the supply chain of the organization.

Against the above background, Save the Children has been endeavoring to rich children in some of the remotest and marginalized food insecure Woredas of the country. By taking the operational management system of the organization, availability different infrastructure, private transporting companies and geographical location of the operation, this study focuses on the performance of humanitarian supply chain system of Save the Children DFAP and JEOP programs in 2 Regions of Ethiopia draw lessons and best practices and propose possible recommendations.

1.1 Statement of the Problem

Logistics is the most important element in any disaster relief effort, and it is the one that makes the difference between a successful and a failed operation (Wassenhove, 2006). But it is also the most expensive part of any disaster relief: it has been estimated that logistics accounts for about 80 % of the total costs in disaster relief (Wassenhove, V. 2006). And given that the overall annual expenditure of aid agencies is of the order of $20billion, the resultant logistic spending is around $15 billion (Christopher & Tatham, 2011).Thus, proper investment in logistics in disaster relief provides the main opportunity to develop and implement effective and efficient use of resources in humanitarian operations (Cozzolino et al., 2012).

In addition, a more strategic use of resources allows humanitarian organizations to raise donor trust and long-term commitment by increasingly skeptical benefactors (Scholten et al., 2010). Humanitarian organizations are therefore under greater scrutiny to monitor the impact of aid and the arrangement of their entire operations; they have to prove to donors, who are pledging millions in aid and goods, that they are really reaching the ones in need (Wassenhove V., 2006). Due to the fact that supply chain (SC) needs aid worker knowledge and skills are utmost importance to guaranteeing a quick response (Tomasini *et al*, 2009).

Similarly, humanitarian organizations need ways to identify and adapt to emerging supply chain trends. To proactively manage the overall performance of their supply chain, organizations need to know more than inventory positions, delivery dates, and fill rates. This requires end-to-end visibility into factors that drive SC performance such as: cash-to-cash cycle time, overall supply chain cost, or perfect order fulfillment (Oloruntoba and Gray, 2005).

As per different scholars mentioned above about challenges and the areas need to see humanitarian supply chain performance of the organization this study focuses on save the children international humanitarian supply chain management of DFAP and JEOP programs. The supply chain of the 2 programs involves the transaction from purchase order or call forward of the food, shipment of the food from source country (USA) to the delivery of the food to end users (FDPs) in the Woredas. The programs are handling and managing a total of 65,000 Metric tons (650,000 quintals) of wheat, Sorghum, YSP, Vegetable Oil commodities that distribute to targeted beneficiaries per Year.

Moreover, the food delivered to the secondary warehouses in the Woredas further is transported to FDPs in the Kebeles or pastoralist associations by tertiary transporters hired locally in the program implementation Woredas. In an effort to build the capacity of local transportation business, also in account of the hardships, knowledge of local context as well as by requirement form the local Woreda governments tertiary transporters are hired locally in the Woreda. There are 165 FDPs in all 7 Woredas of the 3 zones of Oromia and Somali Regions. Hence, the tertiary transporters at Woreda level are required to transport food from the 7 Woreda level warehouses to those 165 FDPs. To facilitate the smooth transaction of the commodity T2FS-DFAP and JEOP programs of Save the Children annually rents 4 very big warehouses with a total capacity of 65,000 MT (650, 000 quintals) in Adama. Hence, to manage this much quantity of commodities needs high supply chain management of warehouses, planning, coordination, transportations and collaboration with partners and staffs at all level. Therefore, these are the basic areas and seasons for conducted the proposed study.

1.3 Basic Research Questions

The purpose of this study is to assess the humanitarian supply chain performance of Save the Children international NGO related with commodity handling, transportation management and distribution process to the intended beneficiaries. Therefore, to address the basic issues of the research formulate the following basic research questions to be answered.

- How the organization supply chain planning, communication and coordination with staffs, partners and beneficiaries affect the organization humanitarian supply chain performance?
- How infrastructural problems and transportation facilities influence the organization supply chain performance?
- How the organization perform delivering of food aid products for targeted beneficiaries?

1.4 Objective of the Study

1.4.1 General Objective

The main objective of this study is to assess the humanitarian supply chain performance of save the children international in Ethiopia.

1.4.2 Specific Objectives

The specific objectives of this study are: -

- To measure performance of the organization supply chain planning, communication and coordination with staffs, partners and beneficiaries.
- To measure the infrastructural and transportation problems that influence the organization supply chain performance
- To examine how the organization perform delivering of food aid products for targeted beneficiaries?

1.5 Scope of the Study

Supply chain management has a wide scope and includes a lot of theories about how to set up the chain yet, this study will not go through details regarding everything include in the term supply chain management. The aims for this study only consider assessing humanitarian supply chain performance of save the children in Ethiopian. The organization has a head office in Addis Ababa and has been working in nine Regional states in the country in addition to one Administrative city (Dire Dawa). Due to the time constraints, limited resources and wide scope of the organization operational and geographical areas the study will focus only on two regional states namely: Somali and Oromia regions that have been working in development and emergency food aid assistance programs in Ethiopian.

1.6 Definition of Terms and Concepts

Development Aid: is assistance given to developing countries to support their economic, social and political development. Such assistance usually comes from individual countries or from international organizations. Development aid tends to be aimed at long-term problems such as poverty. (OECD, 2013)

Emergency relief: is the immediate survival assistance to the victims of the disasters crisis and

violent conflict. Most relief operations are initiated on short notice and have a short implementation period (project objectives are generally completed within a year). The main purpose of emergency relief is to save lives (OECD, 2013).

Humanitarian Relief

Communities' resilience to and ability to cope with future emergencies increased. Children better protected from harm and able to continue their education during crisis.

Humanitarian supply chains: Mentzer et al. (2001) describe the humanitarian supply chain 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 goal of the supply chain is to deliver the right supplies, in the right quantities to the right location at the right time (Shepherd & Gunter, 2006). The humanitarian supply chain usually includes functions which do not fall directly into the field of humanitarian logistics. 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 (Howden, 2009)

Supply Chain Performance

Jane.K (2013) defined supply chain performance for a firm as the performance of the various processes included within the firm's supply chain function. Examples of measures specifically used to assess supply chain performance of a firm include supplier performance, customer satisfaction, inventory costs, number of on-time deliveries, product availability performance and customer response time. In addition supply chain performance undertaking work in ways that are consistent with humanitarian principles, mobilizing and deploying sufficient financial, material and human resources in ways that are relevant, well-managed, accountable, impartial, durable and ensure good quality"(Bolsche, 2013)

1.7 Significance of the Study

Effective performance measurement systems would assist relief chain practitioners in their decisions, help improve the effectiveness and efficiency of relief operations, and demonstrate the performance of the relief chain, thereby increasing the transparency and accountability of disaster response. As indicated by several authors (Beamon, 2004; Thomas and Kopczak, 2005; Davidson, 2006; Van Wassenhove, 2006; Oloruntoba and Gray, 2006; Thomas, 2007). Some supply chain concepts share similarities to relief chains and therefore some tools and methods developed for supply chains can be adapted to relief chains. This study, adapt an existing performance measurement framework developed for supply chains considering the unique characteristics of relief chains. The framework of this research will be used as a basis for a performance measurement system in the relief sector.

This research is aimed to assessing the performance of development and emergency relief supply chain operations. The outcome will helpful to humanitarian organizations that have been currently implementing development and emergency food aid programs in Ethiopia and other organizations that are implementing humanitarian relief operations in the country.

Moreover, in Ethiopia the study of humanitarian supply chain management has not sufficiently studied, so the result of this study will help to better understanding of the process of HSCM practices in development and emergency food aid assistance programs. And also it contribute for understanding of humanitarian organizations that relation with their operational supply chain system and performance of the HSCM in Ethiopia and the proposed study come up with some recommendations anticipated to improve the effectiveness of the system.

1.8 Organization of the Paper

Generally the paper is organized into five chapters. The first chapter presents background followed by statement of the problem, objective of the study and research question, significance of the study, scope of the study and organization of the paper. The second chapter deals with literature review which shows a review of related topics for the research and conceptual framework of the study with operational definition. The third chapter is a research methodology which includes research design, source population, study population, sample design, data collection instrument and administration, data management, data processing procedures and

ethical consideration. The fourth chapter handles data analysis, result and discussion. The fifth chapter wind ups the paper by summarizing the major findings giving conclusion, recommendation , by listing limitation of the study and by giving suggestions for further study.

CHAPTER TWO

2. RELATED LITERATURE REVIEW

2.1. Introduction

This chapter briefly introduced and provided a systematic literature review on the works of various scholars in the area of SCM and SC performance in humanitarian organization. It includes definition and concepts such as, humanitarian supply chain management, humanitarian supply chain performance, humanitarian supply chain versus commercial supply chain, HSC sourcing, Internal and external coordination, flow of aid materials, funds, people and information, access and last mile distribution; empirical review related to the topic of the study and conceptual framework.

Based on the literature reviewed, this thesis sought to compose and evaluate those research questions and identifies measurement variables which are used for answering those research questions in designed to assess humanitarian supply chain performance of Save the Children.

2.2. Humanitarian Supply Chain Management

Humanitarian supply chain is the process used by not-for-profit or donor funded organizations to plan, implement, control the efficiency, cost effective flow and storage of goods and materials as well as related material, from the point of origin to the point of consumption for the purpose of alleviating the suffering of the most vulnerable and most at risk people. The function encompasses a range of activities, including preparedness, planning, procurement, transporting, warehousing, tracking and tracing and custom clearance (Oloruntoba & Gray, 2006).

Humanitarian supply chain involves components such as procurement, transportation, warehousing, inventory management, tracing and tracking, bidding and reserve bidding, reporting and accountability to address emergency needs (Mbohwa, 2006). It involves flow of relief from the donor to the beneficiaries. There is need to coordinate and manage disaster supply chain to ensure that humanitarian organizations gain from the benefits of having a supply chain system in place. The humanitarian supply chain would ensure that even in times of emergency, the humanitarian organizations receive value for money in procurement of goods and services.

Humanitarian organizations that have an effective SCM system in place benefit from transparency of all phases in the procurement process are fair and accurately documented. This contributes to the establishment of sound and reliable business relations with suppliers; accountability to donors who may require certain rules to be followed when using the money they have provided. This ensures that expenses incurred are accepted by the donor and no funds are disallowed; efficiency and cost effectiveness meeting the six rights of supply; right price, right time, right quantity, right quality, delivery to the right places and from the right source/supplier. This has an impact on the operations of the organization and on the beneficiary. When disaster strikes, relief organizations respond by delivering aid to those in need, quickly and effectively. Their supply chains must be both fast and agile, responding to sudden disasters. A disaster response operation involves trade-off of speed, cost and accuracy with regard to the type of goods that are delivered and the quantities (Mbohwa, 2006).

Humanitarian operation is divided into two; development and emergency. The NGOs operate in development sector or emergency sector. Some however, operate in both sectors by having a department that deals in development and one that deals in emergency. The development sector includes activities that take place over a long period of time (longer than one year) while emergency sector deal with short term activities mainly during disasters.

2.3. Humanitarian Supply versus Commercial Supply Chain

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. Supply chains comprise all activities and processes associated with the flow and transformation of goods from the raw material stage through the end user (Shepherd and Gunter, 2006).

Similar to a commercial supply chain, supplies flow through the relief chain via a series of long haul and short haul shipments. Supplies flowing through the relief chain primarily consist of pre-positioned stocks in warehouses, supplies procured from the suppliers, and in-kind donations. Supplies are shipped from various worldwide locations to a primary warehouse, which is usually located near a sea or airport. Next, supplies are shipped to a secondary hub (a large, permanent warehouse typically located in a larger city). At this secondary hub, supplies are stored, sorted and transferred to tertiary hubs (local distribution centers).

Finally, local distribution centers deliver relief supplies to beneficiaries. Supplies acquired from local sources may also be stored at secondary and tertiary warehouses, or directly distributed to the beneficiaries.

Scholars have clearly pointed out, that in spite of similarities, there are dissimilarities between commercial supply chain and HSC network. The business supply chain network is driven with an objective to maximize supply chain surplus; on the other hand, the HSC network is driven with an objective to reduce the potential loss of human and infrastructure (pre-disaster) and provide maximum relief and ensure quick recovery during the post-disaster phase (Holguin-Veras et al., 2012). The commercial supply chain aims to generate maximum supply chain surplus without compromising service level (Pettit and Beresford 2006), whereas HSC is driven by non-profit objectives. The aims of the HSC are to provide maximum relief to the affected victims in terms of medical aid, food, shelter and drinking water.

2.4. Humanitarian supply chain performance

According to Poister (2003) explains the importance of performance measurement of humanitarian nonprofit sector. "Effective performance measurement systems can help nonprofit managers make better decisions, improve performance, and provide accountability. Moreover, when they are designed and implemented effectively, performance measures provide feedback on agency performance, and motivate managers and employees to work harder and smarter to improve performance. They can also help allocate resources more effectively, evaluate the efficacy of alternative approaches, and gain greater control over operations, even while allowing increased flexibility at the operating level". In addition "effective performance means undertaking work in ways that are consistent with humanitarian principles, mobilizing and deploying sufficient financial, material and human resources in ways that are relevant, well-managed, accountable, impartial, durable and ensure good quality"(Bolsche, 2013)

Donors increasingly demand accountability, transparency and value for money in return for their sponsorship of humanitarian aid agencies (Scholten et al., 2010). They have great interest in knowing how successful an organization is in accomplishing its goals with the resources they have provided. According to a (2009) Oxfam report aid should be relevant, of good quality, well managed and should be accountable with mechanisms to challenge failure and abuse. It should also build durable solutions and be sufficiently resourced. This emphasizes why mechanisms for

measuring performance of humanitarian organizations are of great importance. Though, NGO's may have multiple stakeholders whose priorities differ therefore making it difficult to define humanitarian organizational performance (Pavicic et al., 2014).

Humanitarian supply chain performance is measured in four aspects delivery, reliability, flexibility and responsiveness (Jane.K et al., 2013). 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 to international emergencies must be timely, effective, appropriate, and well organized.

2.5 Infrastructure Situational Factors

Infrastructure situational factors, such as the availability of a road network, railway, airports, power supply, play an important role in the performance of humanitarian logistics (Chakravarty, 2011). Indeed, the existence of a well-developed road infrastructure will, for example, 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 example, the delivery of relief aid.

2.6 Transport

Transportation makes it possible for assistance to reach those in need (Jane.K et al., 2013). Transportation in a disaster or humanitarian emergency can run the gamut. It 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. 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 infrastructure, and the lack of infrastructure needed for large-scale assistance lead to bottlenecks, delays, and congestion at entry points to the disaster area.

Transportation is the element in the logistics chain that makes it possible for assistance to arrive at the site where it is required (the arrival of goods from abroad, as the movement of them within the country). When defining the transportation, it is important to take into consideration not only

the necessary means and resources to move the supplies, but also to determine what the actual possibilities and alternatives are to deliver assistance. Alternative means, methods, and routes should be considered as a matter of course. Supplies should not just be moved in any way and at any time, but that the challenge is to do so safely and in a timely manner. This requires maybe the use of all the available means. When deciding which means of transport to use, we have to think about two tasks: the needs on the ground (urgency, type of supplies, distance of the destination, other conditions, as routes, weather, etc.) and feasible forms of transport (available means, cost, transmission capacities, etc.)

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 (Van Wassenhove and Samii, 2003), and are often in conflict zones, thus hindering efficient delivery and distribution of relief cargoes to the needy.

2.7 Internal/External Coordination

Further, the coordination within an NGO and outside with the other stakeholders is deemed pivotal for the success of humanitarian aid operations. On the sourcing end, the coordination between an NGO and its donors can be demanding due to the importance of donations to an NGO's operations as well as the heterogeneity of goals from different groups of donors. At the same time, within a humanitarian supply chain, the coordination between an NGO and other players (e.g., other NGOs, governments, etc.) is complicated due to the unique characteristics of this system. For instance, when a major disaster happens, usually there are thousands of disaster relief organizations participating in the relief activities. This would make the coordination far too complex. For instance, the number of NGOs operating in Haiti after the 2010 earthquake was estimated to be between 3,000 and 10,000; the OCHA directory of registered NGOs and their key contacts is 82 pages long (Tatham and Pettit, 2010). In addition, the coordination within humanitarian supply chain is extended to other fields such as governments, militaries, other NGOs, etc... All these facts have made the coordination very challenging for any NGO that participated during the earthquake. It is worth mentioning that trust and information are two key success factors for the coordination within this system. Both factors have gained academic researchers' attention and there exist two streams of literatures

focusing on trust (Tatham and Kovacs, 2010) or/and information (van der Laan, 2009).

2.8 Communication and Information

Regardless of the type of uncertainty affecting the humanitarian supply chain, information management can help to reduce the complexity brought about by uncertainty. That is what several initiatives driven by the humanitarian agencies attempt to do through designing a common language, increasing visibility, and promoting collaboration. Disaster relief operations are carried out by humanitarian agencies who, unlike private companies, do not share the same explicit profit incentives to collaborate and exchange information. Information management can help increase visibility and foster transparency in the humanitarian supply chain. Overall, agencies investing in information management can help facilitate the response by creating greater visibility of the needs and more accountability among the different actors involved.

In the typical commercial supply chain framework, three types of flows occur (i.e., materials or goods/services, information, and finance). This is also the case within humanitarian supply chain. In Mentzer et al.'s (2001) framework, the information flow is bi-directional while the financial flows occur from the customer to the upstream suppliers, and the goods flow from upstream down to customers. In this study, the aid elements (e.g., goods/services and funds) are constructed as flowing out to affected areas whereas information and people are bi-directional. The component of "sourcing" which purposely emphasize generates the unidirectional input flows for the humanitarian supply chain system. Similar to commercial supply chains, bi-directional information flow is necessary for humanitarian supply chains. It is worth mentioning that "people" is one of the crucial aid flow elements in NGOs' humanitarian operations management. When a disaster takes place, the NGOs' field staff near the affected region would always involve in the aid activities; also, sometimes NGOs' personnel from other areas (including head office) as well as volunteers are sent to the affected area; while on the other hand, some people in the affected area would be shipped out from the affected region. Most of the volunteers (or other relief activity participants) will step away from the affected region sooner or later.

2.9 Access and Last Mile Distribution

Distribution management is another essential part for humanitarian aid management. Distributions take place through the entire system and distribution management features aspects ranging from demand management to logistics. However, the affected area becomes the focus of the whole system as soon as a disaster strikes.

An NGO involved in the aid activities must forecast the demand from the disaster region; it then needs to expeditiously decide the quantity of resources needed (aid materials, funds, and people) and how to quickly make delivery. To augment the efficiency and effectiveness of distribution, the NGO is supposed to coordinate with the related stakeholders, including third party logistics providers (3PLs), suppliers, governments, militaries, volunteers, donors, aid recipients, other NGOs, among others. The humanitarian aid delivery, especially the last mile distribution, during emergent disaster period has been deemed far more challenging compared to the delivery in commercial supply chains due to factors such as the unreliability of the transportation system in the disaster zone (beamon and Balcik, 2008).

2.10 Conceptual Framework

The focus of this study is to assess the factors that affect supply chain performance in humanitarian response. This study had different independent variables that were investigated in relation to the dependent variable. The independent variables comprised of factors such as; HSC planning, communication and coordination, transporters' availability, efficiency, infrastructural issues and HSC performance with intended beneficiaries.

The independent variables were investigated with a view to finding their effect on supply chain performance in humanitarian response of Save the Children International in Ethiopia. As an international Humanitarian organization, save the children is operating in an environment where different stakeholders, processes and flows exist to assist it to get to its ultimate goal. In order to understand the end-to-end supply chain, it is believed by the study to take a step in mapping the Supply chain frame work of Save the Children International in Ethiopia so it will be better to illustrate the network structure and as built working processes.

The conceptual framework is a combined modification of the conceptual frameworks developed by prior studies (Yu, D., Yalcin, M. G., Ozpolat, K., & Hales D. N., 2015). Based on this the study developed conceptual models to indicate the interconnection between dependent and independent variables.

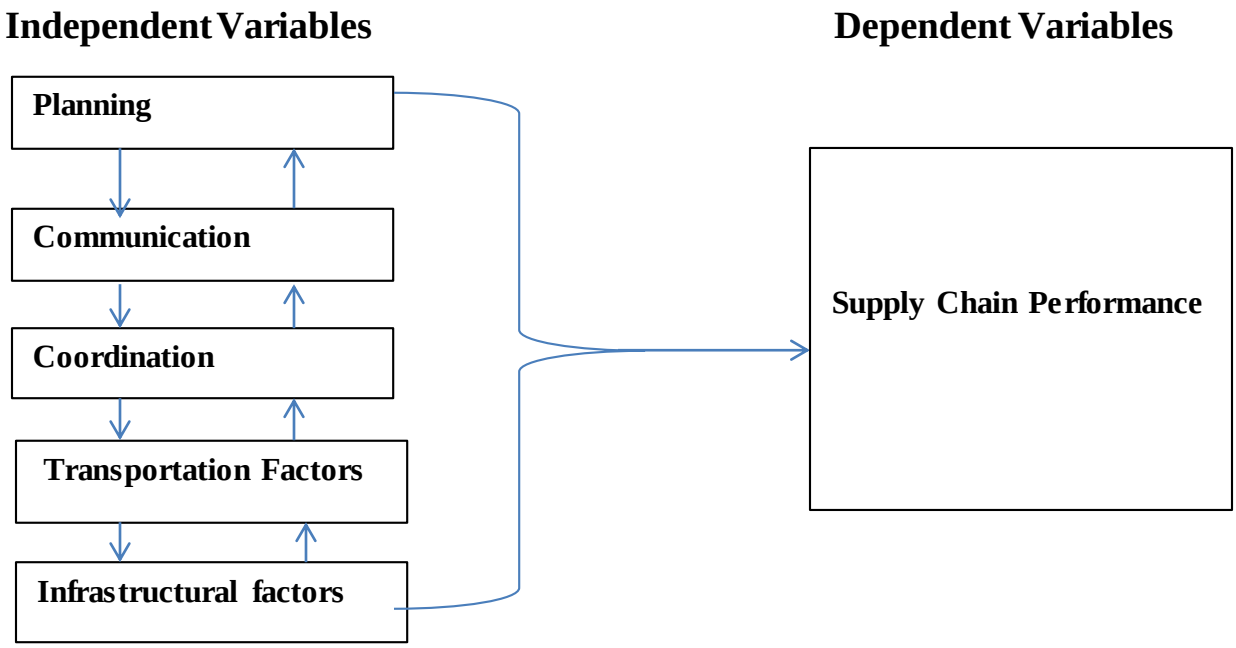

Figure 1 Conceptual framework (Adapted from Yu, D.,Yalcin, M.G.,Ozpolat, K., & Hales D. N., (2015),

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Introduction

In this study the research design and methodology section was discussed about the research design, sample and sampling technique, target population, sample size, unit of analysis, participants, research instruments, source of data, data collection methods, development of the instrument, data analysis tools, validity and reliability.

3.2. Description of the Study Area

This study was conducted in 7 Woredas of Save the Children DFAP (safety net) and JEOP (Emergency) programs implementation areas namely: Dolo Ado and Dolo Bay Woredas of Liben zone Bare Woreda Afder zone of Somali Region and Yabello, Arero, Dhas and Dugda Dawa Woredas of Borena zone of Oromia Region. The distance covered from primary distribution point (Adama) to deliver food to the specific secondary warehouses in Woredas of Liben zone 960 km, Woreda of Afder Zone 1100 km and Woredas of Borena zone 700 km. The targeted beneficiaries of the program are chronically food insecure households in chronic food insecure villages and Woredas of the Zone as targeted, registered and monitored by the government of Ethiopia. The total program beneficiaries are 301,500 for DFAP and 450,828 for JEOP programs out of the total population of the 3 zones.

The reasons for selecting the study areas are firstly the organization has transported and managed high quantity of commodities which is about 65,000 metric tons (650, 000 quintals) of commodities from Adama to each operational area of Somali and Oromia regions. So to transport this much commodity and to management each operational Woreda's warehouses and primarily distribution points (PDP) staffs and partners need high attention the supply chain system.

3.3. Research Approach

The study used quantitative research approaches. This is because the study primarily focused on the data collected through questionnaires to give condensed pictures of the data by using SPSS. Accordingly, the collected data presented in to two parts, in the first part the study described the

relationship between the dependent and independent variables using frequency and percentage. And in the second part the study triangulate the interdependence between the dependent and independent variables using explanatory research approaches such as, using multiple regression and correlation.

3.4. Research Design

The study used both descriptive and explanatory research design. Accordingly, in descriptive method the study focuses on the determination of the frequency with which an event occurs and how variables are related in a particular context. And in explanatory approach the study concerned with determining the impact and cause and effect relationships among variables. Hence, this research is undertaken with descriptive and explanatory research design in order to give an adequate description of the variables and reveal the extent to which the factors of humanitarian supply chain performance of Save the Children.

3.5 Unit of Analysis

Save the children DFAP and JEOP programs individual selected staffs were taken as a unit of analysis. The total targeted population of DFAP and JEOP programs staffs is 60. The survey was conducted depends on data research requirement and familiarity with the required data. Regarding to this the study used purposive and stratified sampling techniques, this is because to find adequate and relevant data from different department and positional level, that include Program Managers, Technical supervisors, Program coordinators, Finance and Logistics coordinators, Commodity supervisors, Commodity officers and Food distributors who have direct link with the supply chain management of the organization.

3.6 Study variables and their operational definitions

3.6.1 Coordination

Coordination is especially vital in HSCM due to the complexity of the operational areas. To deliver the food aid products to end use beneficiaries it requires effective coordination and collaboration between the supply chain partners at all level such as proper planning and coordination between program unit with supporting department (i.e. finance and logistics and procurement) to facilitate third part logistics selection, bid and payment processing. It needs proper coordination between third part transporters with program unit to deliver the product to the needy people on time. Need proper planning and coordination between field program staffs, head office staffs and primary dispatching warehouse staffs to deliver the food as per the plan. It also needs proper planning and coordination between field program staffs with end use beneficiaries to minimize/avoid waiting time of the beneficiaries at distribution points. It also needs coordination between primary dispatching warehouse staffs with Woreda warehouse to know expecting arrival time the food at Woreda level and warehouse arrangement for food receiving. In addition it is also very important collaboration and coordination between Government actors, local communities with program staffs to facilitate the distribution process effectively and efficient.

3.6.2 Communication

Communication is an information sharing/exchange that extent to which the organization shares a variety of relevant, accurate, complete and confidential ideas, plan and procedures with the entire supply chain partners such as internal staffs at head office, field offices and operational areas as well as external partners such as third party transporters, Governmental stakeholders, customers and end use beneficiaries. So information sharing has been essential part or foundation of supply chain collaboration and supply chain partners who exchange information regularly are able to work as a single entity and can understand the needs of the other partner better and, hence, can respond to any change quicker. In addition simplified material flow, including streamlining and making highly visible all information flow throughout the chain, is the key to an integrated and effective supply chain.

3.6.3 Infrastructure

Along with infrastructure like road access, may have high effect on the performance of transportation system. The distribution sites or centers should be accessible to road trucks to enable the food aid to be delivered to the site without any additional handling and transportation. The ideal distribution site will be close to, but not directly on a main road, and will have sufficient space for trucks to arrive, unload, and depart without serious congestion and the possibility of accidents between vehicles and staffs or recipients.

3.7. Population and Sampling Techniques of the Study

3.7.1. Population of the study

Population of the study is a study of a group of individuals taken from the general population who share a common characteristic. However, the study only considered some of the target population based on department and positional level. According to Hair *et al.* (2010), target population is said to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information. Therefore, in this study, the target populations are employees of Save the Children international in Ethiopia, particularly the staffs those are working in Development and Emergency food aid assistance programs as well as supporting staffs of the two programs. This is because the study selects those area respondents because they have adequate knowledge regarding the supply chain processes of the organization as they work related area. The total populations of individual which are targeted to sample are 60 staffs that include Addis Ababa and the programs operational field office staffs.

3.7.2. Sampling technique of the study

The study used purposive and stratified sampling techniques. The reason behind using the techniques the study focuses to include respondents from different department and positional level such as, Program Managers, Technical supervisors, Program coordinators, Finance and Logistics coordinators, Commodity supervisors, Commodity officers and Food distributors.

3.7.3. Sample size determination

The choice of employee respondents from the given organization were only focused on employee worked related to the organization supply chain management area such as, Program managers , Technical specialists, Program coordinators, Finance and logistics coordinators, Commodity

supervisors, Commodity officers and Commodity coordinators. The total staffs involved in the listed department above were 60. Therefore, the sample size that was selected out of 60 total populations based up on sampling technique of Belcourt and Saks (2000). The formula is large enough to allow for precision and confidence in general ability of the research. Based on the method formula for the calculation of sample size present as follow:

$$n = \frac{N}{1+Ne^2}$$

Where n = sample size

N= Total Number of population

e = standard error used (0.5) or 95% confidence interval.

$$n = \frac{60}{1+0.5}$$

$$= \frac{60}{1.5} = 40$$

Based on the above sampling technique nearly 40 sample respondents will be presented in the study.

Sample proportion allocation among the seven positional levels selected based on their staffs members who work related to supply chain of the organization. So to have appropriate representative of the total sample size (40) divided to staffs employee on their position.

Table 1: Distribution of Sample Size

Types of the position	Population	Sample Population
Program managers	4	4
Technical specialists	4	4
Program coordinators	6	6
Finance and logistics coordinators	6	6
Commodity supervisors	4	4
Commodity officers	18	8
Commodity coordinator	18	8
Total	60	40

Source: human resource department (2017)

3.8. Sources and instruments of data collection

The study data were collected both primary and secondary data sources. To collect the primary data the study used questionnaire as instrument of data collection. It was organized in to two major parts, the first part deals about personal characteristics of respondents such as, sex, position, age, qualification and so on, and the second part deals with the issue factor affecting supply chain management of the organization. The questions related to factor affecting supply chain performance of the organization developed from related researches, articles and journals to find out standard questions. In addition the researcher also develops questions depend on the organization problem area. The study also collect secondary data from different sources, such as, articles, journals, document of the organization and books used as sources of secondary data sources

3.9. Reliability of the Instrument

Cronbach's alpha is a tool for assessing reliability scale which normally ranges between 0 and 1.Internal consistency reliability is a measure of consistency between different items of the same construct. If a multiple-item construct measure is administered to respondents, the extent to which respondents rate those items in a similar manner is a reflection of internal consistency. Hence, a multiple–item measurement scale internal consistency method is used to the study. According to George and Mallery (2003) a Cronbach's alpha coefficient greater than 0.9 implies excellent, greater than 0.8 is good, greater than 0.7 is acceptable, greater than 0.6 is questionable, greater than 0.5 is poor, and less than 0.5 is unacceptable".

Based on the principle in order to establish the degree of reliability, consistency, and accuracy of the instrument, a pilot study was conducted. Based on the method the consistency and reliability of the study measured dividing the question based on their dimension as indicated blew in the table

Table 2: Reliability Test of the Study

Independent Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
HSC planning, communication & coordination	8.0526	12.051	.917	.870	.951
Transporter's availability efficiency & infrastructure	8.7368	12.253	.915	.907	.951
HSC with the intended beneficiaries	7.6579	12.123	.876	.805	.963
Performance	8.5526	11.821	.935	.929	.945

Source Questioner, 2017

3.10. Methods of Data Analysis

The data obtained through questionnaire were first edited for their completeness, categorized, registered. Based on this the data analyzed using descriptive and inferential statistical analysis techniques. With regards to the descriptive analysis the study analyzed using mean and standard deviation. On the other hand, inferential statistics techniques, specifically correlation and regression analyses were applied to verify the direction of relationships between the dependent variable and the independent variables. The study used SPSS software package in the entire analysis part.

3.11. Ethics in research

During the course of administering the questionnaires, names and any identifying remarks were not used. The confidentiality of the respondents is kept and any data received for the study kept at the hands of the researcher and the advisor. The data's were used based on the questionnaires rather than using the researcher opinion and input. The researcher stays truth full to responses of the respondents and free from any personal assessment. Results depicted were only from out puts of truth full inputs.

CHAPTER FOUR

4. DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter deals with the discussion and analysis of data collected from Employee of Save the Children International in Ethiopia. Descriptive statistics analysis such as, mean and standard deviation were calculated to present the general information about respondents. In order to assess the relationship between HSC factors (humanitarian supply chain planning, communication, coordination, transporters efficiency and infrastructural issues as well as addressing of the resource to the needy peoples/beneficiaries in effectively and efficiently) and organizations' performance on supply chain management. Correlation and regression analysis were conducted for scale typed questionnaire. The research totally distributed 40 questionnaires for management bodies in procurement, logistics/supply chain, finance, and warehouse and food aid programming departments. Out of which 38 respondents have filled and returned the questionnaire. This represented a response rate of 95%, which is valid and used for analysis. In this ways major findings of the study summarized, conclude and recommend in chapter five.

4.2 General Information of Respondents

To find out general information of respondents, the study asked the following basic demographic characteristics. The results obtained from the structured questionnaires are represented on Table 4.1 below.

Table 3: Profile information of respondents

Character	Category	Frequency	Percentage (%)
Gender	Male	32	84.21
	Female	6	15.78
	Total	38	100
Age	20-30 Years	8	21.1
	31-40 Years	22	57.9
	Over 40 Years	8	21.1
	Total	38	100
Education	College diploma	4	10.5
	First Degree (BSc, BA)	20	52.6
	Second Degree (MSc, MA)	14	36.8
	Total	38	100.0
Years Stayed in the organization	Under 2 Years	6	15.8
	2-5 Years	22	57.9
	6-10 Years	6	15.8
	Over 10 Years	4	10.5
	Total	38	100.0
Department	Procurement	2	5.3
	Finance	2	5.3
	Logistics/Supply Chain	10	26.3
	Food Aid Programming	24	63.2
	Total	38	100.0
Work Experience in humanitarian sector	Under 2 Years	8	21.1
	2-5 Years	12	31.6
	6-10 Years	12	31.6
	Over 10 Years	6	15.8
	Total	38	100

Source: Research Data (2017)

Based on the above table out of the total 38 respondents 32(84.21%) of them were males while the rest, 6 (15.78%) of them were females. As far as respondents' age is concerned, the distribution of frequency and percentage shows that, 8 (21.1 %) of respondents found between the age groups of 20 – 30 years, about 22 (57.9%) of them found between the age groups of 31-40, the rest 8 (21.1%) were above 40 years. According the age distribution of the respondent's majority of them found at young and youth age group.

Concerning the educational level of the respondents the data show that, 20 (52.60%) and 14 (36.80%) of respondents found between the education level of BA/BSc and MSc/MA holders respectively. The rest 4 (10.50%) covered by Diploma. According to the data level of education

in the organization dominated by BA/BSC holders, followed by MSc/MA holders and Diploma respectively.

With related to the employee work stayed in the organization 6 (15.8%) and 22 (57.9%) were stayed in the organization below two years and between 2 – 5 years respectively. The rest 6 (15.8%) and 4 (10.5%) were stayed between 6 – 10 years and over 10 years respectively. According to the data 10 (26.30%) employees have stayed long years in the organization.

Concerning the working department of the respondents the result indicate that 2 (5.3%) of the respondents were from procurement department, 2 (5.3%) of the respondents were from finance department 10 (26.3%) of the respondents were from Logistics/supply chain department and 24 (63.23%) of the respondents indicated that they were from Food Aid Programming department. The results indicate that the respondents were from different department/work unit and thus they give an independent view of humanitarian supply chain practice and humanitarian supply chain performance.

With related to the employee work experience in humanitarian sectors/relief chain organization 8 (21.1%) of them were found less than two years of service, on the other hand 12 (31.6%) of respondent between the service years of 2 – 5, similarly 12(31.6%) found between 6 – 10 years and the rest 6 (15.8%) were above 10 years of work experience. As the data indicated majority of the respondents were found between 3 – 10 years' experience. With regard to the organization work service condition, it can be said that the most of the employee are well experienced.

4.3. Descriptive Statistics analysis

In line with the objectives articulated under section 1.3 here effort is made to describe respondents view on their organizational supply chain management performance based on the performance parameters identified by the researcher. Accordingly, primary data were collected about the supply chain performance of Save the Children international under three broader performance measurement categories namely i) the organization planning, communication and coordination performance; ii) availabilities of transporter and infrastructural issues and iii) humanitarian supply chain performance related with the satisfaction of intended/ target beneficiaries. Based on this, respondents gauge the performance of the humanitarian supply

chain of the organization using five scale likert responses namely: strongly disagree, disagree, neutral, agree and strongly agree.

4.2.1 Supply Chain Planning, communication and Coordination

The supply chain planning, communication and coordination of the organization is assessed using six performance measure indicators namely: i) Good level of communication and coordination between the supply chain staffs, ii) Timely and accurate Information exchange within the organization and other stakeholders, iii) Effective supply chain planning and networking, iv) Communication and coordination between supply chain and other departments, v) Information exchange with third parties for any changing needs and vi) Transparency of supply chain process. Accordingly, the five scale likert responses are presented in the table below

Table 4: Respondents view on the organization supply chain planning, communication and coordination

No	Questions	N	Mean	Std. Deviation
1	Good level of communication and coordination between the supply chain staffs	38	2.84	1.128
2	Timely and accurate Information exchange within the organization and other stakeholders	38	2.55	1.245
3	Effective supply chain planning and networking	38	2.92	1.217
4	Communication and coordination between supply chain and other departments (such as finance and logistics)	38	2.76	1.125
5	The organization inform the 3rd party logistics/transporters and partners/beneficiaries in advance for any changing needs	38	3.11	1.290
6	The organization has transparency of supply chain process (the way activities are conducted visible for other)	38	3.34	1.169

Source, questioner, 2017

As we see from the above table respondents were asked 6 question and replay through the Likert scale by saying strongly agrees, agree, neither agree nor disagree, disagree and strongly disagree for each questions. Based on these respondents views are revised competing mean and standard deviation.

Related to the organization's performance in the level of communication and coordination between the supply chain department has a mean value of 2.84 with standard deviation of 1.128 which imply the organization practice regarding to creating an effective communication and coordination was not performed well. With related to this idea Vendor (2011) states that, cross functional coordination in the organization is a collaboration work with different functional expertise working towards a common goal. It may include employee from finance, logistics, human resources, marketing and even outside the company with customer and suppliers. A group of qualified individuals of various background and disciplines are assembled to collaborate in an efficient manner in order to better the organization or solve the problem.

With related to timely and accurate information exchange with transporters and other logistics service providers outside the organization has a mean score value of 2.55 with a standard deviation 1.245 still the result indicate the organization not well performed.

The mean value of the organization performance regarding supply chain planning and networking has a mean score value of 2.92 with a standard deviation 1.217 that imply the organization challenged by creating an effective planning of supply chain and networking with the 3rd parties such as, with transporters and Woredas/ Zone leaders.

Concerning to whether the organization inform 3rd party logistic service providers/ transporters in advance if there is a change in the humanitarian operation plan the mean value 3.11 with a standard deviation 1.290 indicate that, relatively the organization inform well in informing an information if there is any change.

Regarding the organization supply chain transparency, the mean value indicated 3.34 with a standard deviation 1.169, imply, relatively the organization perform supply chain process in a transparent manner.

Generally, the highest mean score 3.34 and 3.11 respectively implied that, the organization perform supply chain in a transparent manner and informed 3rd party logistic on time for any change. On the other hand, the lowest mean value of 2.55, 2.76, and 2.92 respectively implied an areas supply chain that the organization relatively not well performed.

4.2.2 Transporter's availability, efficiency and infrastructure issues

Transporter's availability, efficiency and infrastructures issues affected supply chain performance of an organization. In this regard the study provided a five likert scale questions whether availability of transporter and infrastructural condition of the country affect performance of the organization or not. Accordingly, below in the table the study pottery respondents view on the issues.

Table 5: Respondent view on the effect of transporters availability, efficiency, and infrastructure issues with supply chain performance of the organization

Questions	N	Mean	Std. Deviation
Sufficient transporter availability at Woreda	38	1.84	.945
3rd party transport the commodity without loss	38	2.92	1.024
Infrastructure Problems	38	1.79	.843
Conduct market survey for potential 3rd PL	38	2.42	1.328

Source: Research Data (2017)

The study were assessed whether, transporters are available or not when the commodities delivered from operational Woredas to end users distribution points, in this regard almost majority of the respondents were implied availabilities are very rear this were indicated by a mean score value of 1.84 with a standard deviation of 0.945.

Similarly, the study was asked respondents when the commodities transported from primary distribution points to operational Woredas and from operational Woredas to end use distribution points whether the commodities delivers without loss or not, in this regards the mean score value 2.92 with a standard deviation of 1.024 still result show that there is a loss of commodities by the third party transporters in the supply chain process.

The study further assessed, respondents whether, their organization obstacle by transportation and infrastructural facilities, accordingly the mean score 1.79 with a standard deviation 0.843 indicated that the organization supply chain highly affected by transportation or infrastructural problems at operational Woredas.

Finally the study were provided a question, what the organization were done to solve the transportation and other infrastructural problems that obstacle the organization supply chain in addressing food aid to the victims, such as, it was asked whether, the organization conduct market survey to collaborate with 3rd parties transporter to facilitate logistic activities, however, the result mean value 2.42 with a standard deviation of 1.328 indicate that the organization effort is not satisfactory.

Generally, the lowest means score value of 1.84 and 1.97 respectively implied that the organization supply chain performance more affected by transportation and infrastructural challenges, followed by lack of market survey at a mean score 2.42 and loss of commodities at a mean score 2.91.

4.2.3 Organizational Supply Chain performance with targeted beneficiaries

Organizational supply chain can be affected by several factors before, the organization achieve its major mission and aims. With relate to humanitarians supply chain in Ethiopia there are a lot of factors affecting organization delivery of the commodity, timely for the target population, lack of transparency, accountability and so forth. In this regard the study provided related questions to assess the study organization supply chain performance and achieving the target beneficiaries.

Table 6: Respondents view on the organization supply chain performance in achieving intended/ target beneficiaries

Questions	N	Mean	Std. Deviation
Delivered quality of food for drought affected beneficiaries	38	3.00	1.185
Reduce causalities & impact of drought	38	4.26	.644
Accountable towards beneficiaries & donors	38	3.58	1.081
Control of commodity quality at primary & secondary points	38	3.21	1.234
Beneficiaries satisfied for achievement of distribution	38	2.87	1.277

Source: Research Data (2017)

The study were assessed the organization performance regarding, whether, the food aid is on timely delivered for affected areas or not, in this regard a mean value of 3.00 with a standard deviation 1.185 implied that, even though the organization delivered commodities on time in some of the areas such as, an areas with accessible of transportation and other facilities, however, still the organization challenged in delivering commodities on time in large areas.

The study were also assessed whether the organization reduced causalities, droughts and save lives efficiently or not, in this regards, the mean value 4.26 with a standard deviation value 0.644 indicated that, the organization contribute a lot in reducing causalities and impact of the drought to save human lives.

The study was forward a question to assess whether or not perform the organization accountably, in this regards, most of the respondents indicated that the organization is accountable in performing its task of supply chain, this was indicated by a mean score value of 3.58 with 1.081 value of standard deviation.

Similarly the study were assessed how the organization control qualities of commodities when the commodity delivered from primarily distribution points to Woredas and Zones level, in this regard the mean value at 3.21 with a standard deviation of 1.234 indicate that, even though some of challenges affected the organization performance in controlling commodities such as problems raised from the 3rd parties however the organization tried its own contribution to reduce challenges.

Finally the study tried to assess whether beneficiaries are satisfied or not in delivery of commodities. In this regard the mean score value 2.87 with 1.277 value of standard deviation implied majority of beneficiaries were not satisfied on the delivery of commodities. This is because delivery of commodities affected through several factors, such as, lack of transportation, infrastructural problems, bureaucracy of Worda and Zone, and loss of commodities by 3rd party.

Generally, the computed mean and standard deviation values indicated that, the highest mean value at 4.26, 3.58 and 3.21 respectively implied that, relatively the organization perform well in

reducing causalities, accountability and controlling commodities of supply chain. On the other hand, the low mean score value of 2.87 and 3.00 respectively implied that, the organization were still not satisfied beneficiaries and delivery of aid foods.

4.4. Level of organizational performance

In this part the study tried to measure in a comprehensive ways whether organizational operation of supply chain was performed in an effective manner or not. Hence, below respondents implied their respective response as follow:

Table 7: Organizational performance and efficiency

Questions	N	Mean	Std. Deviation
Regarding, the supply chain planning, communication and coordination the organization perform successfully.	38	2.7632	1.26136
The organization performs well in reducing challenges of transport availability and infrastructural problem's.	38	2.0526	1.01202
The organization perform well in delivering products, for target beneficiaries	38	2.6842	1.18790

Source: Questioner (2017)

To measure the organizational performance of supply chain the study were provided summarized questions. Accordingly, the respondents view for each questions analyzed as follow:

Regarding, the supply chain planning, communication and coordination performance of the organization, the study were forwarded a related question whether the organization is performed well or not its supply chain using effective plan, communication, as well as effective co-ordination, in this regard the competed mean value at 2.7632 with 1.26136 value of standard deviation implied that, even if the organization performs somehow well in addressing food aid assistance through planning, communication and coordination with in the organization departments, however, organization still week, in communicating with the 3rd party to create

strong relation and collaboration works such as, in solving the transportation and warehouse problems.

The study also tried to assess performance of the organization regarding the organization performance in reducing challenges of transport availability and infrastructural problem's. In this regard the mean score value of 2.0526 with a standard deviation 1.01202 indicated that, the organization didn't solve problems related to transporters and infrastructures.

Finally the study were assed performance of the organization in delivering the commodities for target population in this regard respondents were provided an option to reflect their agreement or disagreement, whether their organization perform well or not in delivery of foods aid for targeted population in a good manner of supply chain. However, the computed mean score value of 2.6852 with a standard deviation 1.18790 indicated, delivery of commodities for targeted population was not effective.

4.5 Correlation Analysis of supply chain performance of the organization

To find out the relationship between organizational humanitarian supply chain performance and predictors (independent variables) Pearson's correlation coefficient (r) which measures the strength and direction of a linear relationship between two variables is used. Values of Pearson's correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that two variables are perfectly related in a positive sense; whereas a correlation coefficient of -1 indicates that two variables are perfectly related in a negative sense, and a correlation coefficient of 0 indicates that there is no linear relationship between the two variables. A low correlation coefficient; 0.1 - 0.29 suggests that the relationship between two items is weak or non-existent. If r is between 0.3 and 0.49 the relationship is moderate. A high correlation coefficient i.e. p >0.5 indicates a strong relationship between variables. The direction of the dependent variable's change depends on the sign of the coefficient. If the coefficient is a positive number, then the dependent variable will move in the same direction as the independent variable; if the coefficient is negative, then the dependent variable will move in the opposite direction of the independent variable. Hence in this study both the direction and the level of relationship between the dimensions of the organization supply chain management practice and organizational performance are conducted using the Spearman's rho correlation coefficient. The table below presents the result of the correlation analysis made using bivariate correlation.

Table 8: Correlation coefficient analysis

Correlations			
			Performance
Spearman's rho	**HSC planning, communication and coordination**	Correlation Coefficient	.889**
		Sig. (2-tailed)	.000
		N	38
	Transporter's availability, efficiency and infrastructure issues	Correlation Coefficient	.937**
		Sig. (2-tailed)	.000
		N	38
	Organizational performance with targeted beneficiaries	Correlation Coefficient	.866**
		Sig. (2-tailed)	.000
		N	38
**. Correlation is significant at the 0.01 level (2-tailed).			

From the result we can see that all the performance predictors' dimensional variables are strongly correlated with organizational supply chain performance. Accordingly, HSC performance significantly correlated with 3rd party logistics/transporters availability, efficiency and infrastructural condition at (r = 0.937), followed by Supply Chain Planning, Communication and Coordination (r = 0.889). The organization activity to achieve organizational goal over an effective supply chain management practice regarding delivery of food aid for targeted beneficiary also correlated with organization performance and efficiency at (r = 0.866). As indicated in the above result, all of the independent variables strongly correlated with the organization performance. This implies that a change made in one of the independent variables can change organization supply chain performance. Thus from this result confirmed that there is a positive and significant relationship between the provided questionnaires and the organization supply chain performance. Hence any improvement in one of the dimensions will positively contribute in enhancing the organization effectiveness.

CHAPTER FIVE

5. SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the study

The study was analyzed in to two parts in the first part the study was analyzed variables using descriptive approach and in the second part the study tried to analyze using inferential statistics such as, testing correlation between dependent and independent variables. Based on these the study discusses major findings as follow:

The results of background information of respondents indicated that majority of the total respondents 32(84.21%) were male while, 6 (15.78%) of them were female. In terms of respondents age majority of them 22 (57.9%) age groups of 31- 40 years. 4 (10.52%) diploma, 20 (52.63%) BA/BSc and 14 (36.84%) MSc/MA. With related to the employee work experience 6 (15.8%) less than two years, 22 (57.7%) 2 – 5 years, similarly 6 (15.8%) between 6 – 10 years and the rest 4 (10.5%) were above 10 years of work experience.

Regarding, the supply chain planning, communication and coordination performance of the organization, the study were forwarded a related question whether the organization is performed well or not its supply chain using effective plan, communication, as well as effective co-ordination, in this regard the competed mean value at 2.7632 with 1.26136 value of standard deviation implied that, even if the organization performs somehow well in addressing food aid assistance through planning, communication and coordination with in the organization departments, however, organization still week, in communicating with the 3rd party to create strong relation and collaboration works such as, in solving the transportation and warehouse problems. This finding is consistent with the work of other researchers (i.e Jane Ke, 2013, Beamon and Balcik 2008)

The study also tried to assess performance of the organization regarding the organization performance in reducing challenges of transport availability and infrastructural problem's. In this regard the mean score value of 2.0526 with a standard deviation 1.01202 indicated that, the

organization didn't solve problems related to transporters and infrastructures. This finding is consistent with the work of other researchers (i.e Tatham and Pettit, 2010, Jane Ke, 2013)

Finally the study were assed performance of the organization in delivering the commodities for target population in this regard respondents were provided an option to reflect their agreement or disagreement, whether their organization perform well or not in delivery of foods aid for targeted population in a good manner of supply chain. However, the computed mean score value of 2.6852 with a standard deviation 1.18790 indicated, delivery of commodities for targeted population was not effective. This finding is consistent with the work of other researchers (i.e Van der Laan, 2009, Beamon and Balcik, 2008)

From the result we can see that all the performance predictor's dimensional variables are strongly correlated with organizational operational performance. Accordingly, the organization activity to achieve organizational goal over an effective supply chain management practice regarding availability of Transporters and infrastructural condition significantly correlated with organization performance and efficiency at (r = 0.937), followed by Supply Chain Planning, Communication and Coordination (r = 0.889) and delivery of aids for targeted beneficiary (r = 0.866)

5.2 Conclusions

This research was conducted to assess humanitarian supply chain performance of Save the Children International DFAP and JEOP programs. To achieve the major objective, the study was collected data using questionnaire from employees of the organization found in management position. The study identified that majority of the performance indicators of the respondents responded that they were very dissatisfied and/or dissatisfied and / or strongly disagree and disagree with service performed by their organization. The evaluation of respondents indicates that on some performance indicators the organization did not meet their expectation. However, some of the respondents evaluates in contrary with the majority respondents. Some of the performance indicators positively supported. In this regards the organization some area achieve good results such as, the organization effort in reducing causalities and drought.

In general, humanitarian supply chain planning, cross functional communication and coordination, of operation system of the organization has not fulfilled the expectations. Similarly, the organization practice to create 3rd parties logistics/ stakeholders to work in collaborates such as, to minimize problems of transportation activities efficiency also poor. High proportion of respondents implied their response indicating strongly disagreed and/or disagreed. The respondents results indicated the organization were not performed well especially, organization performance with targeted beneficiaries, transporters efficiency by Spears man correlation at r = 0.937 is the highest and significant determinate of organizational performance and followed by HSC planning communication and coordination correlation at r = 0.889 and 0.866.

5.3 Recommendations

Save the Children is required to review its existing supply chain management and make the necessary modifications in order to benefit from the performance improvements in terms of improved the supply chain planning, communication and coordination to deliver goods and service to intended beneficiaries effectively and efficiently. The respondents indicated many of challenges of the organization that affect performance of supply chain management. In this regard the study recommends some of corrective Suggestion. The researcher suggestion is just considered as personal opinion it is not factual. Accordingly the following recommendations forwarded:

- Concerning the organization relation with the 3rd party most of the respondents were indicated there was a problem in managing supply chain effectively, such as, there is a loss when food aids transport from primarily distribution point to operational Woreda and end use distribution points. Therefore, the study advised that, the organization needs to assign responsible bodies such as: food aid monitors and commodity supervisors to follow up and monitor 3rd party logistics/transporters until the food reaches final distribution points/ end use beneficiaries.
- As indicated by many of the respondents the organization cross functional collaboration inside the organization such as, department's linear relationship in controlling the supply chain of food aid were weak. Therefore, the study recommend that, to strengthen departments chain work the organization should design procedural plan and awareness raising program.
- With related to transportation problem the study indicate that the organization is affected by shortage of transporters specifically, to transport the commodity from operational Woreda to end use distribution points. In these regard the study suggest that, it is better if the organization create partnership with the 3rd party transporters and logistics.
- As the humanitarian organization directly or indirectly work in collaborate with governmental organization, it is advisable if the organization work with Woredas and Zone leaders of government to solve or minimize the challenge of transporters shortage as well as infrastructural issue in the operational Woredas

5.4 Limitation and Suggestions for Future Studies

One of the major limitations of this study that worth mentioning is the fact that it does not comprehensively capture all aspects of supply chain management system rather it made emphasis in revealing the associations with three dimensions of supply chain performance of save the children. In order to benefit from a comprehensive assessment of the factors that affect the supply chain performance of Save the children, future studies may consider more dimensions of supply chain management haven't been considered in this particular study in different humanitarian organization, third part logistics providers and other sectors.

REFERENCES

Balcik, B and Beamon, B.M (2008). performance measurement in humanitarian relief chains, International Journal of Public Sector Management, 21(1), 4 – 25.

Balcik, B., Beamon, B. M., Krejci, C. C., Muramatsu, K. M., & Ramirez, M. (2010). Coordination in humanitarian relief chains: Practices, challenges and opportunities. International Journal of Production Economics, 126(1), 22–34. http://dx.doi.org/10.1016/j.ijpe.2009.09.008

Bethlehem T., and Alev, T.G (2016). Humanitarian relief supply chain performance Evaluation. International Journal of Marketing Studies; Vol. 8, No. 2; 2016, PP 105-107

Bolsche, D. (2013). Performance measurement in humanitarian logistics. Discussion papers in Business and Economics. Fulda University of Applied Sciences, Fulda.

Christopher, M., & Tatham, P. (2011). Humanitarian logistics. Meeting the challenge of Preparing for and responding to disasters (pp. 1-14). London: Kogan

Cozzolino, A., Rossi, S., & Conforti, A. (2012). Agile and lean principles in the humanitarian supply chain. The case of the United Nations world food programme. Journal of Humanitarian Logistics and Supply Chain Management, 2(1), 16–33.

Day,J. Melnyk,S., Larson,D., Davis,E. and Whybark, D.C.(2012), humanitarian and disaster relief chains. A matter of life and death, Journal of supply chain management, Vol.48, No. 2, PP.21-36.

Dubey, R., Singh, T., Gupta, O.K. (2015). Impact of Agility, Adaptability and Alignment on Humanitarian Logistics Performance: Mediating Effect of Leadership. Global Business Review 16 (5), 1–20. DOI: 10.1177/0972150915591463.

Ira Haavisto (2014). Performance in Humanitarian supply chain, pp. 89-93

Jane.K (2013). Supply Chain Performance in Humanitarian Organization. Pp. 10

Lee, H.L. (2004). The triple-A supply chain. Harvard Business Review, 82(10), 102–112.

Mentzer, J. T., DeWitt, W., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D., & Zacharia, Z. G. (2001). Defining Supply Chain Management. Journal of Business Logistics, 22(2), 1-25. http://dx.doi.org/10.1002/j.2158-1592.2001.tb00001.x

OECD (2013), "DAC Glossary of Key Terms and Concepts'', available at:http://www.oecd.org/dac/dacglossaryofkeytermsandcocepts.htm,(accessed December 2016).

Oloruntoba, R. & Gray, R. (2006). Humanitarian Aid: An Agile Supply Chain? Supply Chain Management: An International Journal of Supply Chain Management, Vol.11, pp 115-120.

Oxfam (2009). *The Right to Survive*, Oxford: OXFAM

Sanncheze-Rodriguez C, (2009), Effect of strategic purchasing on supplier development and performance: a structural model, Journal of Business and Industrial Marketing, Vol. 24, No. 3, pp. 161-172,

Save the Children Food Commodity programming and management manual www.fsnnetwork.org/food-commodity-programming-management-manual

Scholten, K., Scott P. S. and Fynes B (2010). Leagility in Humanitarian Aid Supply Chains. Supply International Journal of Physical Distribution and Logistics Management. 40: 8-9

Tatham, P. and Hughes, K. (2011) "Humanitarian logistics metric: where we are and how we Might Improve", in Christopher, M. and Tatham, P. (Eds) Humanitarian to Disasters, Kogan Page Limited, Philadelphia, London, pp.249-263.

Therien, J., & Lloyd, C. (2000). Development assistance on the brink. Third World Quarterly, 21(1), 21–38. http://dx.doi.org/10.1080/01436590013206

Thomas, A. (2003), "Why logistics?" Forced Migration Review, Vol. 18 No. 4, p. 4.

Thomas, A., & Mizushima, M. (2005). Logistics training: Necessity or luxury? Forced Migration Review, 22(22), 60–61.

Tomaszewski, B., & MacEachren, A. M. (2012). Geovisual analytics to support crisis Management: Information foraging for geo–historical context. Information Visualization, 11 (4), 339–359. http://dx.doi.org/10.1177/1473871612456122

Tomasini, R. M., and L. N. Van Wassenhove. 2009. "From Preparedness to Partnerships: Case Study Research on Humanitarian Logistics." International Transactions in Operational Research 16 (5): 549–559.

Pavicic J., Alfirevic N. and Cacija N.L, (2014). Performance of Nonprofit Organizations: Empirical contrasts Between Privately and publicly funded Croatian Humanitarian organizations, Economic Annals, volume LIX, No.200

Poister, T.H. (2003), Measuring Performance in Public and Nonprofit Organizations, Jossey-Bass, San Francisco, CA.

Vander Laan, ErwinA, DeBrito,M.P.,VanFenema,P.C.,& Vermaesen,S.(2009).Managing Information cycles for intra---organizational coordination of humanitarian logistics. International Journal of Services Technology and Management,12(4),362-390

Wassenhove, L. V. (2006). Humanitarian aid logistics: supply chain management in high gear. Journal of the Operational Research Society, 57, 475-489

World Food Programme (2006). A review of emergency food security assessment practice in Ethiopia. United Nations World Food Programme (WFP), Rome, Italy.

Yu, D.,Yalcin, M.G.,Ozpolat, K., & Hales D. N., (2015), Research in Humanitarian Supply Chain Management and a New Framework, pp. 5-10

APPENDIX

QUESTIONNAIRE

ADDIS ABABA UNIVERSITY

COLLEGE OF COMMERCE SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Dear respondents,

I'm a graduate student at Addis Ababa University College of Commerce in the Department of Logistics and Supply Chain Management. Currently, I'm conducting a research entitled **'Assessment of Humanitarian Supply Chain Performance of save the children international in Ethiopia'** as a partial fulfillment of the requirements for the Degree of Master of Arts in Logistics and Supply Chain Management, Addis Ababa University, School of Commerce.

The purpose of this questionnaire is to gather data for the proposed study, and hence you are kindly requested to assist the successful completion of the study by providing the necessary information. Your participation is entirely voluntary and the questionnaire is completely anonymous. I confirm you that the information you share will stay confidential and only used for the aforementioned academic purpose. So, your genuine, frank and timely response is vital for the success of the study. I want to thank you in advance for your kind cooperation and dedication of your precious time to fill this questionnaire.

Sincerely yours,

Bitweded Mesfin

Please Note:

1. No need of writing your name.

2. Indicate your answer with a check mark (√) on the appropriate block/cell for all questions.

3. If you need further explanation please contact me and discuss the matter freely at (Telephone No. 0911 116427, E-mail michaelbit2013@gmail.com)

Section I: General Information

This part of the questionnaire, tries to gather some general information about the background of the respondent and the organization.

1.1 Sex

1) Female ☐

2) Male ☐

1.2 Age

1) Under 20 Years Old ☐ 3) 31-40 Years Old ☐

2) 20-30 Years Old ☐ 4) Over 40 Years Old ☐

1.3 Educational Qualification:

1) Below college diploma ☐ 2) College diploma ☐

3) First Degree (BSc, BA) ☐ 4) Second Degree (MSc, MA) ☐

5) PHD and above ☐

1.4 Years stayed at the organization:

1) Under 2 Years ☐ 3) 6-10 Years ☐

2) 2-5 Years ☐ 4) Over 10 Years ☐

1.5 Your department/work unit:

1) Procurement ☐ 2) Finance ☐ 3) Warehouse ☐

4) Logistics/Supply Chain ☐ 4) Food Aid Programming ☐

1.6 How long have you been working in humanitarian sector/relief chain operation?

1) Under 2 Years ☐ 3) 6-10 Years ☐

2) 2-5 Years ☐ 4) Over 10 Years ☐

Section II: Main Questionnaire

Please indicate your choice by putting the tick mark (√) on the appropriate cell. **Where, 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree**.

Please indicate the degree to which you agree with the following statements regarding Save the Children International in Ethiopia position pertaining to Supply Chain management practices of development and emergency food aid programs.

Humanitarian Supply Chain Planning, Communication and Coordination		**Score**				
		1	**2**	**3**	**4**	**5**
1	Good communication and coordination between the supply chain staffs (such as head office, primary distribution point and operational Woredas)					
2	Information exchange between the organization and key 3rd party logistics /transporters and other partners in timely and accurate manner					
3	The organization plan the supply chain network (e.g. decide to keep warehouse and fleet management)					
4	Good communication and coordination between supply chain of the programs with other departments (such as finance and logistics)					
5	The organization inform the 3rd party logistics/transporters and partners/beneficiaries in advance for any changing needs					
6	The organization has transparency of supply chain process (the way activities are conducted visible for other)					

Transporters' availability, efficiency, and infrastructure issues		Score				
		1	2	3	4	5
7	Sufficient transporters available at Woreda level to transport commodities from operational Woreda to end users distribution points					
8	3rd party logistics/transporters delivered the commodity from primary to secondary warehouses (Woreda warehouse) without loses					
9	Infrastructure problems such as road inaccessibility during rainy season not affected the transportation of commodities from primary distribution points to secondary warehouses and Woreda to end users distribution centers					
10	The organization conduct market surveys and find potential 3rd party logistics for the commodity transportation					
Humanitarian Supply Chain Performance with intended/targeted beneficiaries						
11	The organization delivered quality of foods to drought affected beneficiaries on time to save lives					
12	The organization achieved in reducing casualties and impact of the disaster/drought on human lives					
13	The organization has accountable towards beneficiaries and donors					
14	The organization has controlled the quality of the commodities at primary distribution points, at operational Woredas and end users distribution points					
15	Beneficiaries are much satisfied with the achievements of the time efficiency of the organization commodity/food distribution					

16. Please indicate the degree to which your organization successfully, performs or not the organization mission regarding supply chain operation system.

16.1	Regarding, the supply chain planning, communication and coordination the organization perform successfully.					
16.2	The organization performs well in reducing challenges of transport availability and infrastructural problem's.					
16.3	The organization perform well in delivering products, for target beneficiaries					