ASSESSMENT OF THE FACTORS THAT AFFECT THE HUMANITARIAN LOGISTICS PERFORMANCE OF THE ETHIOPIAN RED CROSS SOCIETY

BY

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(GSE/0966/10)

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF ARTS IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

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July 2020

ADDIS ABABA, ETHIOPIA

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Statement of Declaration

I, Hailu Zenebe Wami, hereby declare that this thesis entitled "*Assessment of factors affecting the Humanitarian Logistics Performance of the Ethiopian Red Cross Society*" is my original work. I further confirm that this paper has never been submitted to any other university for any degree, diploma, or fellowship. Finally, I declare that all source materials used in this research have been duly recognized and acknowledged.

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_____

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Dedication

Dedication for Ethiopia Red Cross Society for permitting me to conduct the inquiry by easing ways at this very critical time of COVID 19; and above all, to the humanitarian workers who have been given their life and everything in advancing services to the humanitarian works.

Certification

I, the undersigned certify that I have perused and therefore recommend for acknowledgment by the Addis Ababa University, School of Commerce a thesis entitled: “Assessment of factors affecting the Humanitarian Logistics Performance of the Ethiopian Red Cross Society” in partial fulfillment of the requirements for the Degree of Masters in Logistics and Supply Chain Management.

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Acknowledgment

First and for most, I thank God for all the energy he has given me to finish what I have started and to overcome my obstacles.

Second, its great honor to have outstanding research advisor Dr. Shiferaw Mitiku for all his continued support, guidance, and corrections. I would also further like to thank ERCS staff members also for all experts who participated in the survey for devoting their time in responding to the questionnaires conducted in the study.

Finally, I would like to send my gratitude to all my friends especially, Simret Zewude, Emebet.F, Biniyam.T, Getinet.M, and Gemechis.M who gave me strength and courage in different ways to complete this thesis.

The researcher, Hailu Zenebe

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Abbreviations and Acronyms

ERCS:	Ethiopia Red Cross society
IRCS:	International Red Cross Society
OCHA:	United Nations Office for the coordination of humanitarian office
IFRC:	International Federation of Red Cross and Red Crescent
WHO:	World health organization
USD:	United States Dollar
NGO:	Non-Government Organization
UN:	United Nation
USAID:	United States Agency for international development
WFP:	World food program
HO:	Humanitarian Logistics
SCM:	Supply chain management
HL:	Humanitarian Logistics
UNICEF:	United Nation International Children Emergency Fund
UNJLC:	United Nations Joint Logistics Centre
UNHRD:	United Nation Humanitarian Depot

Abstract

The main purpose of this research paper is to study the Humanitarian Logistics Performance of the Ethiopian Red Cross Society. The eight factors that have been examined in this study are Recognition factors, Technological factors, Real professional factor, and Collaboration factor, legal and political factors, socio-economic factors, infrastructural factors, and donor factors. A total number of responses from 80 respondents were used for analysis in this research study. Questionnaires with closed-ended and five-point Likert scale items were utilized as an instrument to gather data for the research. The data collected were analyzed in SPSS 23.0 Version. Descriptive statistics were utilized to explain the demographic characteristics of respondents and to discuss the descriptive report of responses provided by the respondents on the humanitarian logistics practices and humanitarian logistics performance-using mean and standard deviation. The result has shown that the level of humanitarian logistics practices is very low. Inferential analysis was conducted to find out the effects of the eight factors that affect humanitarian logistics performance. The result has shown infrastructural factors affect the humanitarian logistics performance of the Ethiopian Red Cross Society followed by technological factors.

Keywords: Humanitarian, logistics, performance, supply chain, disaster, response, beneficiaries

CHAPTER ONE

INTRODUCTION

This chapter introduces the readers to the theme of the thesis. First, a brief summary of the background and problems, humanitarian organizations have to face in the field of disaster relief, is given. A detailed explanation of the purpose and research questions follows, to create a clear understanding of the objectives and framework of this paper.

1.1 Background of the study

Disasters cause gigantic annihilation for a long time. Within the antiquated world, due to losing preplanning and constrained capacities, characteristic catastrophes seem indeed devastate whole civilizations (e.g. The eruption volcano Mount Vesuvius in 79 A.D quenched Pompeii in Italy). Even though today's human knowledge and technological progressions have cured various illnesses and solved numerous issues, it is still not sufficient to manage the enormous destruction disasters cause (Nikbakhsh & Farahani, 2011). Agreeing to Relief web (2013), the final disaster happened in May 2013 in Uganda, where surges affected approximately 25,000 people. Consequently, the event of disasters could be a point of high reality. The number of calamities was always rising amid the final decades. Be that as it may, that drift does not appear to proceed. In 2011, 332 common disasters were recorded, which less than the normally early catastrophe occurrence is watched from the pasta long time. In any case, the human and financial impacts in 2011 were still enormous, as 30,773 individuals passed on and 244.7 million casualties were influenced around the world. In 2011, financial harms were the most elevated ever recorded (USD 366.1 billion) (Guha-Sapir, Vos, Underneath, &Ponserre, 2011). The impact of catastrophes rises, as progressively individuals live in disaster-prone districts. Typical or man-made catastrophes lead to the hardship of lives, insufficiency of nourishment and water, infrastructural hurts, cracked financial conditions (Akhtar, Marr & Garnevska, 2012) and economic harms (e.g. hardships in divisions like fisheries, agribusiness, animals, tourism or microenterprises). Within the same vein, Ethiopia experienced one of its most noticeably terrible dry seasons in decades, three a long time back, due to El Nino climate framework (USAID, 2016). The affect of this

wonder in Ethiopia is still ongoing, and the East Africa Report (2015) shows that 10.2 million people have been uncovered to dry season and require for help and this report affirms that among those 2.5 million individuals have been exposed to the disaster within the Amhara national territorial state. Still, the presently unmentionable number of individuals in Ethiopia is under food insecurity. In line with this, USAID (2016) underlines that the nature of helpful emergencies in Ethiopia recommends the research for concerted catastrophe risk reduction and calamity mitigation. This circumstance calls for humanitarian aids to be the prime motivation of the government, humanitarian organizations, international NGOs, and local NGOs. Concerning the environmental factor, the effect of El Nino climatic occasion has constrained northeastern and central Ethiopia to have negligible precipitation for consecutive seasons which in turn caused deteriorating agricultural, livestock, food security, and nutrition conditions (USAID, 2016). According to a field report from employees, Afar, northeastern Amhara, Oromiya's East Hararghe and West Hararghe zones, and southeastern Tigray have received delayed and intermittent kiremt rainfall which caused chronic food-insecurity and severe negative effect by the 2015/2016 El Nino climatic event(USAID, 2016).

And also as part of man-made disaster more people were newly internally displaced in Ethiopia as a result of violence than anywhere else in the world in 2018; and to put off this problem Ethiopia ERCS works with IRCS to distribute emergency relief items to displaced, provide clean drinking water, and reconnect separated members (IRCS, Dec 2018)

To calm the negative impacts, people get ready countermeasures by making a system and arranging mitigation operations in advance (Nikbakhsh & Farahani, 2011). In particular, regulatory as well as non-governmental organizations (humanitarian organizations) all over the world put a portion of effort into making different countries and people to recoup from catastrophes (Taupiac, 2001). These organizations more frequently provide food, water, covers, covers, arrangements, and other supplies to the affected people (Tomasini & Wassenhove, 2009).

Reacting palatably to calamities isn't a simple task, as various factors contribute to troubles. For the event, the chaotic post-disaster alleviation environment (e.g. open solidify, lost transportation and communication establishment) (Tomasini & Wassenhove, 2009), the broad number and assortment of on-screen characters included (e.g. donors, media, governments, military, humanitarian organizations …) (Van Wassenhove, 2006) and the requirement of adequate resources is obstacles in providing giving satisfactory calamity reaction (Akhtar *et al*., 2012).

A productive but versatile humanitarian relief supply chains are the key subject in misfortune help, talked around from scholastics as well as pros (Kovács &Spens, 2007). In orchestrating to reach these humanitarian logistics is one of the foremost imperative disciplines interior fiasco management (Nikbakhsh & Farahani, 2011; UNDRO, 1992).

As specified over, a large number of humanitarian organizations react to fiascos when catastrophes hit a specific region. One of these performing artists is the Red Cross Social orders working in 188 nations over the world in collaboration with the International Federation of the Red Cross and Red Crescent. Subsequently, the Ethiopian Red Cross Society started its humanitarian operations to the injured warriors, wiped out combatants and civilian casualties of the Italian war of hostility in 1935. The ERCS was established by the government declared on 8 July 1935 and got to be 48th part of the International Federation of Red Cross and Red Crescent Societies on September 25thof the same year. The National Society is an autonomous organization set up and recognized by law through a National Charter embraced on 31 October 1947 (ERCS Magazine, 2014).

Ethiopian Red Cross Society attempts distinctive activities such as, to begin with, first aid vehicle benefit, crisis alleviation, natural assurance, water sanitation and cleanliness, job and nourishment security, and urban disaster risk reduction programs. And currently, the ERCS has a structure consisting of of11 Regional offices,34 zonal branches and 131 District /Woreda Braches,599 Woreda Red Cross committee, and 5871 Kebele Red Cross Committee.

Ethiopian Red Cross Society (ERCS) has designed a new and clear envisions where it wants to be by 2025. That is to be the leading humanitarian organization in Ethiopia in

reaching the vulnerable. It also developed the mission statement that states to prevent and alleviate human suffering, contribute to the wellbeing of humankind, and prevalence of peace by mobilizing the public at large and partners in Ethiopia and around the world. (ERCS, Strategic Plan, 2008).

Therefore, this study attempts to examine associated factors that affect the performance of humanitarian logistics in the case of Ethiopia Red Cross Society (ERCS), and finally put forward recommendations so that ERCS will act on to reduce the suffering of its beneficiaries or affected population.

1.2. Statement of the Problem

Due to an enormous disaster effect on life, infrastructure, and economies, the optimal delivery of aid and the efficient management of resources are of supreme importance. Strong and concerted activity is required to form logistics and supply chain that's responsive to desires of the defenseless people influenced by the common or man-made disaster efficiently and cost-effectively. The ability to convey the right merchandise to meet the correct individuals at the proper put at the correct time and within the right amounts could be a center organizational work (Russell, 2005). According to Van Wassenhove (2006), logistics is a basic component in any catastrophe alleviation exertion and it separates between an effective and fizzled operation. These capacities incorporate a wide extend of activities such as procurement, warehousing, transport, planning, tracking and tracing, customs clearance, as well as preparedness (Bean, Viljoen, Ittmann & Kekana, 2011). Interests, around 80 percent of costs related to humanitarian aid are assignable to materials and delivery costs thus labeled as “logistical costs” (Kovács & Tatham, 2009). Consequently, there's research for vital speculation in logistics so that humanitarian aid will influence emphatically on the conveyance of humanitarian aid (Whiting & Ayala-Öström, 2009). Various creators have considered variables influencing humanitarian logistics performance from distinctive focuses of view. A few of them have a distinguished assortment of challenges commonplace for humanitarian logistics, counting appraisal and arranging issues, constrained utilize of innovation, inaccessible and provincial areas of operation, and need of foundation (Chandes&Paché, 2010,

Overstreet *et al.* 2011, Sandwell 2011). Overstreet *et al.,* (2011) recognized the major challenges of 5 compassionate coordinations as routinely having to bargain with cloud ask, brief delivery time, unpracticed logistics staff, unequal media pressure, lack of financing, insufficiently hardware and technology, and pointless political obstructions.

Concurring to United Nations Joint Logistics Centre (2008), in humanitarian operation, pre-positioning warehouses enlivens responsiveness but is exorbitant in terms of inventory costs; transportation for the final mile has been detailed to be troublesome, due to constrained transportation resources, damaged infrastructure, and the expansive volumes that can be required. Demeke, (2016), in his study distinguished infrastructural factors, situational factors, government situational components, socio-economic variables, and environmental situational factors as determinant factors affecting logistics performance. Eliyas Wako (2018), in his master thesis research about humanitarian logistics activity in disaster operation, has concluded that procurement, warehouses, and transpiration practices moderately affect humanitarian logistics in Goal Ethiopia, Borena Zone office but proposed assist study on comparative humanitarian organizations in the Ethiopian context. Neeta, B. & Liina, B. (2018), in their consider assessing the challenges confronted by humanitarian logistics amid disaster alleviation operation for a non-profit organization (the Red Cross Society) in Namibia uncovered that basic challenges like legitimate sourcing of alleviation supply, assets, transportation issues and troubles in distinguishing starting help prerequisite lead to challenges in conveying viable and effective administrations to the influenced ranges. In any case, no adequate inquire about has been conducted on components factors affecting logistics performance in Ethiopian setting especially on ERCS. Other considers conducted on ECRS were related to volunteer administration Misrak, W. (2018), and checking and assessment study (Tewodros, G.2018). Moreover, past studies did not consider internal and external factors momentarily as major factors to discover out what precisely affects the logistics performance of humanitarian operations. Therefore, this research tries to conduct a study on factors affecting humanitarian logistics performance in the Ethiopian context to find out how the internal and external factors affect humanitarian logistics performance, with particular emphasis on the Ethiopian Red Cross Society at Addis Ababa regional branch.

1.3 Objective of the Study

1.3.1 General Objective

The overall objective of this research was to assess the factors that affect the humanitarian logistics performance of the Ethiopian Red Cross Society (ERCS) at Addis Ababa Regional Branch.

1.3.2 Specific Objective

In particular, the specific objective of this study was:

- To assess how humanitarian logistics is being practiced at the ERCS.
- To assess how the humanitarian logistics performance of ERCS is being entertained.
- To assess the extent to which internal factors,(Recognition factor, Technological factor, Real professional staff factor, Collaboration factor) affect the humanitarian logistics performance of ERCS in terms of (Responsiveness, Agility, Reliability, Cost, Asset utilization)
- To identify the extent to which external factors, (legal or political related factors, Infrastructural, socioeconomics, and donors) affect the humanitarian logistics performance of ERCS in terms of (Responsiveness, Agility, Reliability, Cost, Asset utilization).

1.4 Research Question

The research questions were:

1. How humanitarian logistics is being practiced at the ERCS?

2. How humanitarian logistics performance of ERCS is being entertained?

3. To what extent do internal factors (Recognition factor, Technological factor, Real professional staff, Collaboration) affect the humanitarian logistics performance of ERCS in terms of (Responsiveness, Agility, Reliability, Cost, Asset utilization)?

4. To what extents do external factors (legal or political related factors, Infrastructural factors, Socioeconomic factors, and Lack of donors) affect the humanitarian logistics

performance of ERCS in terms of (Responsiveness, Agility, Reliability, Cost, Asset utilization)?

1.5 Significance of the Study

Any research outcome though difficulty and with impediments still contribute to knowledge and give solutions to numerous issues confronted in genuine life circumstances. This considers to bargains with diverse concepts of humanitarian logistics performance. Compelling performance estimation frameworks will help relief chain specialists in their decisions, offer assistance to make strides the viability and productivity of alleviation operations, and illustrate the performance of the relief chain, in this manner expanding the transparency and accountability of calamity reaction. Besides in Ethiopia, the study about humanitarian logistics performance isn't well-considered, so the result of this study will offer help to the prevalent understanding of the humanitarian logistics performance practice in advancement and disaster relief programs. Additionally, it contributed to the understanding of humanitarian organizations that association with their operational logistics system and performance of the humanitarian logistics performance in Ethiopia, and the proposed thought came up with a few suggestions expected to make strides the viability of the system. This thought will offer assistance to construct on investigating humanitarian logistics performance by distinguishing the challenges confronting humanitarian organizations in Ethiopia, the effect of the challenges, and conceivable arrangements. The study would benefit the humanitarian organization in Ethiopia who knows in advance conceivable challenges they might confront amid alleviation operations and put relieving factors to diminish the impact of the challenges. Donors will get it to supply chain management challenges confronting humanitarian relief organizations and along with the humanitarian organizations work at receiving measures to moderate the challenges. Governments, like donors, work hand in hand with alleviation humanitarian organizations amid calamities. The study empowers them to learn much better-improved knowledge of the humanitarian operations and the challenges confronted. Even though the study will be carried out for academic purposes and it is restricted to a single humanitarian organization in Ethiopia the discoveries should contribute to developing the knowledge of the humanitarian supply chain in

common and the study range in specific. Hence, the results of the study were utilized for arrangement created in defining future approaches and procedures on components that affect humanitarian logistics performance, donors gain a much better understanding of the environment inside which alleviation humanitarian organizations work and accomplishing effectiveness and adequacy, guaranteeing reasonable competition among providers, guaranteeing responsibility, straightforwardness, and morals. Nearby government and recipients will be effectively included in the humanitarian supply chain especially in readiness and appraisal. Above all, the study was the primary of its kind within the regions that, it would be utilized to invigorate for encouraging investigate, analysts, and researchers develop the body of information on components that affect humanitarian logistics performance so that they can construct upon the concept and work done.

1.6 Scope of the study

The scope of the study depended on only humanitarian logistics performance which incorporates a wide scope and incorporated part of speculations around logistics practice and performance, however; this study wouldn't go through subtle elements with respect to everything incorporated within the term logistics performance of the humanitarian organization. Geographical: The study kept to the Ethiopian Red Cross Society at Addis Ababa regional branches, methodologically; the study is a descriptive and explanatory type of research by using both the primary and secondary data source. Conceptually; the study focused on Humanitarian logistics performance indicators such as Responsiveness, Agility, Reliability, Cost efficiency, Asset utilization.

1.7 Limitation of the study

In this study, the researcher collected data from only the Humanitarian organization (ERCS) but not a government body, beneficiaries, and donors it shows that the study was limited to only one body. The other limitation was the lack of willingness of the employees regarding, filling out all distributed questionnaires and providing the required data with care and returns it on a time basis. In addition to the above limitations of this

study of inferior quality was the limitation of resources, movement, contact, and time that marked for the reason that the state of emergency proclaimed still because of COVID19.

1.8 Definition of Terms

Logistics: "is defined as the planning, organization, and control of all activities in the material flow, from raw material until final consumption and reverse flows of the manufactured product, to satisfy the customer's and other interest party's needs and wishes i.e., to provide good customer service, low cost, low tied-up capital, and small environmental consequences" (Jonsson, Mattsson, 2005).

Performance: Firm's ability to accommodate special requests: special service requests program support, customized service, modification while in the logistics system. (Daugherty, Sabath Rogers, 1992.)

Humanitarian Logistics: The possess of planning, implementing and controlling the proficient, cost-effective flow and capacity of products and materials as well as related information, from the point of root to the point of consumption for the reason of assembly the end beneficiary's prerequisites (Thomas and Mizushima, 2005).

Disaster: Usually, the term disaster refers to a disruption that physically affects a System as a whole and threatens its priorities and goals (Van Wassenhove, 2006).

Logistics Management: "Supply chain management is defined as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, to improve the long-term performance of the individual companies and the supply chain as a whole" (Mentzer, 2001).

Internal organizational factors: factors very endemic to the organization itself and can be affected or intervened or enhanced (Kunz & Reiner 2012).

External organizational factors: Factors that cannot be changed or influenced but a given organization can adopt and cop up with them (Kunz & Reiner 2012).

1.9. Organization of the Paper

Generally, the paper was organized into five chapters. The primary chapter presents the background taken after the statement of the problem, objective of the study and research question, significance of the study, the scope of the study, and organization of the paper. The second chapter deals with the literature review which shows a review of related topics for the research and conceptual framework of the study with an operational definition. The third chapter may be a research methodology that incorporates an investigative plan, source populace, study population, test plan, information collection instrument and administration, information administration, information processing procedures, and ethical thought. The fourth chapter handles information investigation, results, and discourse. The fifth chapter looked into the paper by summarizing the major findings and gave a conclusion, recommendation, by listing limitations of the study and by giving suggestions for further study.

CHAPTER TWO

RELATED LITERATURE REVIEW

According to Mayring (2003), the literature survey is characterized as a substance examination for analyzing e.g. records and distinguishing the conceptual substance of the field by conducting a clear and precise strategy. Based on this; the study envelops literature review concerning hypothetical, experimental, and conceptual that's related to logistics. This chapter investigates writing, composed by diverse creators, on the variables influencing humanitarian logistics exhibitions in calamity response to set up and give answers to the research questions.

2.1. Theoretical literature review

2.1.1. Introduction of Disaster

According, to Van Wassenhove (2006) the term disaster refers to a disturbance that physically influences a system as an entirety and threatens its needs and objectives and categorized concurring to their causes (natural versus technological or man-made). He recognizes natural and man-made disasters. A common catastrophe may be a calamity caused by nature itself whereas a man-made catastrophe could be a disaster caused by human beings. Sudden-onset disasters allude to the catastrophe that happens promptly without or with fewer data in progress (e.g. earthquakes, tornadoes, storms, terrorist, chemical spills, and coup d'état), whereas slow-onset disasters are catastrophe that is creating and advancing over time (e.g. starvation, dry season, destitution, political crisis, and displaced person emergency)

2.1.2 Transactional Cost theory

Transactional cost theory centers on the guideline that buyers and suppliers make choices based on the cost-efficient way of conducting business (Sandsonet al. 2015). Buyer center on getting openings for accomplishing esteem for cash from obtaining products and service at low cost taken a high within the spot market while provider endeavors to realize the objective of the buyer through advertising materials of high quality at best esteem. Firms ought to make a choice that minimizes costs. Its suggestion for sourcing choice is buying when exchange costs are less than fetched of procuring goods/services

(Shook et al., 2009). The theory is pertinent to this think about particularly to ERCS and providers since it centers on the financial contracting which applies amid selecting right providers, the transaction of legally binding terms and conditions, and checking supplies performance to realize esteem for cash for products and services.

2.1.3 Humanitarian Organization's Logistics Performance

There are distinctive properties of logistics performance, even though much of the center is on specific measurements for each of these properties, the definition of these measurements, and how to measure them. For the most part, the center of logistics performance is on its viability and productivity. Breaking down these two; the wrangle about centers on the estimation of things and handle quality, on-time delivery, versatility, time and taken high efficiency, and user benefit levels (Daugherty et al., 1994; Beamon 1999; Morgan, 2004). Here, time efficiencies relate to turnover measures (of e.g. stock turnover) as well as money related measures (e.g. cash-to-cash cycle times) and on-time delivery and lead times. From a supply chain perspective, Stewart (1997) moreover incorporates the address of time to market from a product development perspective. Cost efficiencies are related to operational productivity (Caplice and Sheffi, 1994; Morgan, 2004), but as well to capital decrease, and resource utilization (once more alluding to stock turnovers. Client advantage is another quality that incorporates drivers from on-time conveyance to, interests; adjust printed fabric (Morgan, 2007).

In substance, we ought to relate the qualities of logistics performance to materials groups as well as to information (cf. Moberg et al., 2004), and without doubt cash related streams (cf. Töyliet al., 2008). The final said is especially basic inside the not-for-profit portion, given its need to ensure its financial soundness (Beamon and Balcik, 2008).

Strikingly, much of the composing centers on particular performance measurements – while logistics performance can be related to result as well as the strategy. A much-quoted process-oriented illustrate is the supply chain operations reference appear (SCOR) that starts from a benchmarking consider (Stewart, 1997). The SCOR show distinguishes 19 13 crucial measures checking resource turns, cash-to-cash cycle times, come full circle arranges fulfillment, return on settled assets, etc., but can be criticized for the instability

of its measures which span managerial-operational or key levels (Morgan, 2007). However, the foremost crucial qualities inside the SCOR show can be summarized to be supply chain unwavering quality, supply chain responsiveness, supply chain adaptability, and supply chain costs (Theeranuphattana and Tang, 2008). The partition between SCM- and logistics-related models to boot clear in terms of internal vs. external measures of execution. So also, such a separation exists inside logistics performance writing, where it has been examined in terms of output-oriented and input-oriented measures. Hence, Beamon (1999) talks of input-related measures ('resources'), output-related measures, and the executioner it of 'flexibility'. In substance, resources allude back to operational viability, whereas surrender implies to the adequacy of operation – or, in humanitarian logistics, the reasonability of a mission (Beamon and Balcik, 2008).

Adaptability has unmistakable sub-sets, insinuating to volumes, delivery times, and a mix of things. Another see on 'external' estimations is to recognize between organizational-internal and client, and shareholder measurements (Caplice and Sheffi, 1995). Within the humanitarian sector, this would incorporate giver measurements which make a difference to clarify why extra traits of logistics performance here incorporate straightforwardness and responsibility of operations (de Brito et al., 2007; Beamon and Balcik, 2008).

Several performance estimation measurements or systems for the humanitarian segment have been created. Most of the systems distributed (Moe, 2007; Schulz and Heigh, 2009; De Leewu, 2010) are based on the adjusted scorecard presented by Norton and Kaplan (1992). In any case, Davidson (2006) found the adjusted scorecard unacceptable for humanitarian division due to the framework's rigidness and the complexity of the humanitarian setting. Other illustrations of systems to degree and oversee humanitarian performance are the Supply Chain Operations Reference Model (SCOR) (Blecken, 2010 &Bolshe, 2012), ISO and Six Sigma (Parris, 2013). The SCOR show and its pertinence were considered by Bolshe (2012) who recommended that the show might work for the humanitarian setting when adjusted to the organizational and environmental challenges. The performance area of the SCOR model comprises of two sorts of components, to be specific, performance qualities and measurements. The performance property is utilized

to specify a procedure and it cannot be measured. The measurements of the degree and the ability of a supply chain attain the key properties. For illustration, the prevalent execution for unwavering quality is communicated by the performance objective of perfect order fulfillment.

The SCOR model comprises of ten performance measurements that are gathered into five performance traits. The supply chain committee proposes that scorecards ought to contain at slightest one metric for each performance quality to guarantee an adjusted decision-making prepare (Lima-Junior and Carpinetti, 2016). The clarification of these measurements and their causal relationship make the SCOR metric able to analyze the performance of a supply chain for distinctive perspectives. SCOR performance properties concurring to (Bolsche, D.2012) characterized as:

I. Reliability: The capacity to perform errands as expected. Reliability centers on the consistency of the result of a handle. Normal measurements for the reliability attribute include: On-time, the correct amount, the correct quality

II. Responsiveness: The speed at which a supply chain provides products to the clients is delivered. Example; Cases incorporate cycle- time metrics

III. Agility: The capacity to reply to outside impacts, the ability to reply to market place changes to pick up, or maintain a competitive advantage. SCOR Dexterity metrics include adaptability and versatility.

Iv. Cost: The taken a toll on operating the supply chain forms. This incorporates labor costs, fabric costs administration, and transportation costs. A commonplace fetched metric is Fetched of Products Sold.

v. Asset Management Efficiency: The capacity to effectively utilize assets. Resource management methodologies in the supply chain include stock lessening and in-sourcing vs. outsourcing. Measurements incorporate Inventory days of supply and capacity utilization.

Performance in the humanitarian setting has been recommended to be measured as the output, recourses, and adaptability (Beamon and Balcik, 2008) or as customer service, financial control, and handle adherence (Schulz &Heigh, 2009). Whereas Belcken *et al.*(2009) contended that in alleviation supply chains, donation-to-delivery time, the yield and asset sought to be measured. Beamon and Balcik (2008) take into thought the yield at the side populace scope or arrange the fulfillment rate. More particularly, the real estimations rate recommended to arrange fulfillment cycle time, supply chain flexibility, resource precision, scope rate, arrange fulfillment rate, on-time delivery, taken high productivity, asset adequacy, and framework utilization rate.

2.1.3.1 Humanitarian Organization's Logistics Practices

Logistics within the humanitarian segment envelops a few conventional activities such as the procurement, transportation, and warehousing of products and services, as well as other particular activities such as disaster preparedness and planning (Thomas and Kopczak,2005). The humanitarian logistics management practices incorporate needs evaluation hones (Selda& Emmett, 2010), fabric and benefit requesting practices (Mungatia, 2010), ideal gifts management practices (Cozzolino, 2012), best warehousing practices (Americas Alleviation Group, 2012), documentation, cataloging, union and recording practices (Oloruntoba, 2006), and, transportation and delivery practices (Moeiny & Mokhlesi, 2011).

Operational issues experienced in humanitarian logistics are characteristic of more extensive issues influencing humanitarian organizations (Christopher & Sandwell 2011). These issues are further detailed down from more extensive literary works and talked about in this beneath. This study will focus on the following humanitarian Logistics practices: i.e. procurement, transport, warehouse, and inventory management.

2.1. 3.2 Warehouse Management Practices of HOs

In humanitarian logistics, warehouse is a critical viewpoint in each humanitarian disaster reaction. The plan of the warehouse ought to be wiped out a precautious way to avoid wastes or indeed defilement of what is stored. The warehouse makes a difference in times

of making deliveries as activities can be facilitated from there. Either, dissemination centers ought to be done accurately for ease of delivery and maximization of other critical fetched components. Logisticians can use various procedures in this manner to guarantee the proper arrangement of warehouse and dispersion centers (Roh Jang, & Han, 2013).

Supplies are put away until it required be dispersing or utilizing, but it isn't a matter of fair finding a put to keep things. An organized framework ought to be utilized which permits one to know the sort, sum, and area of the existing supplies in this put, as well as saves for afterward, needs. This handle is called Warehousing and it has vital significance for the security of supplies. The organization of a stockroom ought to take into consideration the vital rules for quality support and safeguarding items. A few warehouses have been uncommonly planned to encourage storage in most crises one should settle for whichever spaces are accessible and these are regular schools, community centers, exercise centers, and the like, that were not outlined for capacity. An extraordinary exertion must be made to discover a suitable put for putting away crisis supplies, indeed even though choices are regularly few in a crisis zone. When selecting the location, be that as it may, certain basic issues must be borne in intellect. To begin with, of all, we ought to think the put, concurring the sort of supplies, which are to be stored Are they medications or dress, equipment, or nourishment? Besides, it’s exceptionally vital to see the estimate and the openness of the capacity location. Moreover, we got to see a few inner location conditions (great lighting, ventilation, no numerous harms, doors, windows, etc.) At last, a few outside location conditions, such as its powerlessness to common risks, nearness of stagnant water, security social environment, etc. must be taken into thought (Henderson. L, 2004).

The size of the warehouse required depends on the number of supplies anticipated. Be that as it may, in crisis operations it is for the most part difficult to anticipate how numerous bundles or bundles will come in since most of the things sent are spontaneous. It is subsequently best to select the biggest conceivable space, indeed in the case to begin with the number of supplies does not appear to legitimize such a course of activity. There will be times when it is incomprehensible to discover a satisfactory structure to the warehouse, and it gets to be essential to investigate options for temporary storage. One

alternative is to construct a brief structure out of timber and folded press, or utilizing fortified plastic. Other options incorporator-assembled structures for building sheds, which come with bent metal sheets that can be rapidly assembled (PAHO, 2011).

The distribution system utilized in humanitarian relief operations may depend on each situation's characteristics. The distribution of relief items in disaster response operation takes put in four major stages; Stage 1: the onset of relief supplies from different locations to entry port (seaports, air terminals) to which nation the disaster response is requested. Stage2: the shipment of relief supplies from ports to central/ territorial stockrooms. Stage 3; the shipment of relief supplies goes from central/ territorial warehouse to Local Distribution Centre (LDCs) close to the calamity area. Stage 4: at long last, the distribution of relief items goes from LCDs to target beneficiaries (Balick *et al.* 2008).

2.1.3.3 Inventory Management Practices of HOs

The foremost viable, most proficient reaction to any calamity is made conceivable by cleverly pre-positioning of stock and ideal assignment of assets (Merminod *et al.* 2014). To pick up the benefits of prepositioning stock, a gathering of HOs have created shared centralized stations called "United Nations Humanitarian Response Depots (UNHRD)" for pre-positioning of unexpected stock to reply to disaster around the world. The warehouses have been set up at six distinctive areas: Brindisi, Italy; Dubai, Joined together Center easterner Emirates; Panama City, Panama; Kuala Lumpur, Malaysia; Accra, Ghana, and Las Palmas, Spain. The UNHRD accomplices claim that this strategy of centralized stations and stock pre-positioning empowers them to reply to any adversity any put inside the world Within 24 to 48 hours (Dufour, Laporte, Paquette, Rancourt, 2018).

The vital point decided from the composing overview is that most of the HO stock administration operations consider examining the distinctive perspectives of catastrophe management operations, though points of ordinary (non-emergency) operations are seldom investigated, which a vital investigate research gap is revealed by this literature survey.

2.1.3.4 Transportation and Distribution Practice of HOs

Delivery of helpful administrations to beneficiaries is one of the foremost basic operations of HO-LSCM which known as last-mile delivery (Balciket al. 2008). The center of final mile conveyance is the errand drive framework utilized to transport the stock, fabric, and individuals (Apte 2009). For HOs, armada management is the moment's greatest overhead cost, being 15percent of the whole helpful relief logistics fetched (Falasca, Zobel, 2011, Martinez, Stapleton, Van Wassenhove, 2011). Plans and approaches on sourcing and task of vehicles by HOs can be abruptly rendered immaterial on genuine grounds: the event of characteristic calamities more regularly than cannot be anticipated. Regularly the nature of such calamities, and nearby, social, political, security and security scenarios for the alleviation mission demands different sorts of vehicles: heavy-duty hardware, 4WD vehicles, or light obligation vehicles. In one case study, most of the vehicles were not conveniently sent concurring to the demands of that HO's mission since 95percent of the vehicles were a light duty, and not useable (Eftekhar, VanWassenhove, 2016).

Successful and reasonable armada administration and distribution systems are significantly subordinate to the assurance of a fitting course. (Dufouretal., 2018) made a computer recreation for optimization of transport courses which suggested an unused course for the conveyance of offer assistance supplies from UNHRD to East Africa. Utilizing the unused course was 21percent less expensive than utilizing the existing course. This showed up that crisis operations transportation is more troublesome to orchestrate and actualize than normal, every-day, generation and formative operations are. Cautious preparedness, coordination, and well-informed information outline works can overcome these issues to an extraordinary extent that as it may (Berkoune, Renaud, Rekik, Ruiz 2012).

This study found that the literature focus was on crisis fleet or transportation management, and ordinary and formative operations armada management has not been tended to any great extent. As well, existing inquire about is regularly significant to utilization and administration of HOs owned vehicles assets, and out-sourcing of

fleet management as an effectiveness and optimization strategy could be a generally overlooked range.

2.1. 3.5 Procurement Management Practices of HOs

Procurement in HOs is the securing preparation of goods, services, works, and leasing in the midst of and after a calamity, to empower the dispersal of help to influence and vulnerable communities. In HO-LSCM budgets, 65percentisspent on obtainment exercises (Falasca, Zobel 2011). Efficiency in depleting the acquirement budget can be ensured through clear and responsible management of the distinctive stages of the obtainment plan, tallying recognizable verification of needs, arrange of needs, the affirmation of tenders, assessment of tenders, purchase orders, conveyance of supplies, appraisal of supplies, and installment to vendors, etc. Straightforwardness and duty in HO-LSCM procurement operations can be ensured through data innovation and standardization of common acquirement processes.

A standardized procurement prepare system has been created for the redeclaration, of redevelopment and reassessment stages. The offered declaration stage is considered more challenging for HO experts and requires cautious advancement of criteria for deliverances, timing, and offered an assessment. Whereas subject to an unsteady environment and the effect of a disaster, providers sought to make choices to build their offers in keeping with a required put of deliveries, timeframes, and other basic prerequisites (Trestrail, Paul, Maloni 2009, Ertemetal., 2010). HO-LSCM operations ought to hence incorporate standardized forms of obtainment of products and procurement, data management, composed documentation, financial management, warehousing, and stock management logistics and armada administration, and coordination between accomplices (Blecken, Tatham, 2010). Another HOLSCM procurement framework as well endorses that emergency merchandise, supplies, and administrations be obtained from nearby markets which are likely to supply speedier and convenient conveyance, and will be capable in taken a toll due to reserve stores in transportation costs (Falasca, Zobel 2011)

The victory of HO disaster operations is dependent on the convenient delivery of goods and supplies, which is conceivable through great connections with potential suppliers. HO is keeping up great connections with brief-term bolted in providers as a brought efficiency drivers another hole within the investigation. This is often frequently a difficult range of action for HOs, given the often-large number of nearby providers that have to be included, and guaranteeing the best-cost of products and administrations from these nearby providers is both essential, and troublesome. Particularly, acquirement operations germane to ordinary helpful operations are beneath investigated, particularly when compared to examine that has been done on crisis stage procurement operations.

2.2. Major Situational/External Factors Affecting Logistics Performance

A large body of literature has documented five major situational or external factors that could affect the performance of humanitarian logistics, namely, governmental factors, environmental factors, socio-economic factors, infrastructural factors, and donor funding. The details of these external factors are discussed hereunder.

2.2.1. Legal and Political factors

Kunz and Reiner (2012) delineated that sort of administration, the national controls towards alleviation organizations, the productivity of the state, the level of debasement are among numerous other political variables influencing the execution of humanitarian logistics. In this way, it is conceivable to say the government-related challenges category has subcategories related to political, collaboration, security, reserving finance, interferer, and traditions clearances challenges. According to (Kunz and Reiner, 2012), incapable and ill-conceived administration forces confinements on help supply chains. Moreover, political insecurity in East Africa has moderate down the alleviation exertion within the locale (Cho et al., 2010 as cited in Kunz and Reiner, 2012). Hence, the have governments have the obligation to put into put conventions and take activity to decrease the likelihood of diminishing the destructive impact of calamities (MingliLiu, 2013 cited in Mebrahtom, 2016).

H1- legal and Political related factors negatively and significantly affect the HLP of ERCS.

2.2.2 Infrastructural situational factor

A successful and convenient humanitarian alleviation operation can spare thousands of lives. Be that as it may, humanitarian logistics works in such regions where troublesome to reach under ordinary circumstances since streets are frequently lacking (Kunz & Reiner, 2012). The debased system concerns on street arrange railroad, air terminals, control supply, warehouses, communications lines, etc. that are harmed within the disaster or were non-existent to start inside the influenced local ended up an extraordinary impediment for the execution of humanitarian logistics (Tomasini& Van Wassenhove, 2009). They advance contend that the presence of a well- created street foundation will encourage the calculated operations, whereas a destitute street arranges tends to disturb and moderate down the dissemination of alleviation things.

H2-Infrastructural factors negatively and significantly affect the HLP of ERCS.

2.2.3 Socio-economic situational factor

Ramsden (2014 as cited in Demeke, 2016) depicted the socio-economic challenges as defenselessness in ask and supply; uncompetitive of exhibit economy; the unlucky deficiencies of neighborhood providers; accessibility firm competition; unfortunate lacks of donors; the culture and lingo of the have country; high stock and transportation got, and require of accepting among the supply chain accomplices. In this manner, accessibility of local suppliers, education level of the society, sort of showcase economy, the nearby culture and religion, are among other Socio-economic situational components which influence the performance of humanitarian logistics(Altay et al., 2009 cited in Demeke, 2016; Dowty& Wallace, 2010; Kandiyoti, 2007; Leon et al., 2009; Maonet al., 2009).

H3-Socio-economic factors negatively and significantly affect the HLP of ERCS.

2.2.4 Donors funding factor

A study by Van Wassenhove (2006) verified that the foremost of humanitarian organizations have the issue of the accessibility of stores in arrange to prepare and progress the capacity of logisticians.

As a result logistics operation would not be superior arranged and compelling. Thomas and Kopczak (2005) progress as curtained this reality that the colossal whole of stores are generally allocated for facilitating easing but deficiently sum of stores are assigned for calculated vital readiness and hypothesis on foundations and systems advancement. Inside the same vein, Maon, Lindgreen and Vanhamme 22 (2009) fought that the help organizations get brief-term mitigation stores from the benefactors, and they cannot versatile utilize the gotten support

In this manner, organizations are obliged to lock in from particular field ventures and more often than not endure from embracing and utilizing the available a vital position. Also, agreeing to Tomasini and Wassenhove (2009) not only lack of subsidizing, but too spontaneous gifts is additionally the other major causes of operation bottlenecks in disasters.

H4-Donors related factor negatively and significantly affects the HLP of ERCS.

2.2.3 Major Situational/Internal Factors Affecting Logistics Performance

2.2.3.1 Recognition factor

Concerning the affirmation of the importance of logistics, a study by (Van Wassenhove, 2006) found that most choices amide relief operations have been made by the program staff that controls the budget by disregarding the support of logisticians. This recommends that compassionate organizations show up to undervalue the portion of logisticians. Additionally, disaster-affected populations require evaluation gather which is organized by humanitarian help organizations drop level to incorporate logisticians. Given this genuine study, how can a logistician get it what to supply in what amount to reply to emergency influenced people's needs? Based on the over said proof, it may be coherent to gather that logisticians are not still considered as the imperative staff individuals within the operation of disaster alleviation. Besides, thinks about have validated that logistics function within the humanitarian segment is under-recognized, under-utilized, and under-resourced (Thomas &Kopczak, 2005).

H5- Recognition of logistics factor negatively and significantly affects the HLP of ERCS.

2.2.3.2 Technological factors

Another inner calculate that seems to influence the execution of humanitarian logistics is to utilize progressed innovation. In this respect, a study by (Thomas and Kopczak, 2005) within the private division validated that supply chain innovation has empowered the change of logistics to function from an auxiliary to a vital one. Hence, choice producers have the opportunity to have diverse options to make efficiencies. Within the same vein, (Long and Wood, 1995) guaranteed to consider that utilizing the data frame may be a key determinant to calculate for the success of a humanitarian logistic. Be that as it may, the viable encounter completely different humanitarian aid organizations shows that data frameworks put input to assist meet emergency program necessities are exceptionally fragmented, incapable, or wasteful (Maxwell & Watkins, 2003). Besides, different thinks about (Oloruntob a& Gray, 2006;

Thomas &Mizushima, 2005 cited in Overstreet et al., 2011) found that logistics operations in numerous humanitarian aid organizations are still largely manual. Therefore, it is most common for aid agencies to have multiple mismatched information systems about their responsibilities in the operation of logistics in crisis relief (Maspero&Itmann, 2008 cited in Overstreet *et al.*, 2011).

H6- Technology factor negatively and significantly affect the HLP of ERCS.

2.2.3.3 Real profession staff factor

Institutional learning plays an essential part in the advancement of capacity and abilities of logisticians in help operations. Appropriately, commonsense seen counters gotten within the field operation of crisis relief are crucial for encounter sharing and make organization learning culminate. Something else, the lesson learned in one help operation may not be passed on to other logisticians of a given organization (Fritz Established, 2005). Be that as it may, concurring to the think about by (Chandes and Pache, 2010 cited in Demeke, 2016), need of a genuine calling way for field logisticians and the unpleasant nature of the work of humanitarian logistics are to be faulted for such a colossal staff

turnover. Additionally, agreeing to the think about logistics staff turnover accounts for 80% every year as result the circumstance hampered the capacity of humanitarian aid organizations to construct and keep up regulation memory and relevant information (Telford & Cosgrove, 2007). So, it is astute to say that organizing, analyzing, and sharing the lessons learned organizations, as well as other humanitarian community, would have a significant advantage to upgrade the logistics execution. Humanitarian help organization's intra-organization and inter-organization collaboration are exceptionally critical to improving the execution of humanitarian logistics. In line with this, most hones in humanitarian aid organizations seen that successful and productive operation of logistics execution depends on fruitful management of inside and outside connections (Christopher, 2005). Be that as it may, the study by, Fritz founded (2005) shows that there was a need for collaboration among logisticians of different humanitarian aid organizations. The over articulated reality is reinforced by Allow (2007) who appeared that there's no solid understanding between NGO members in disaster aid amid needs appraisal handle and information to be captured.

H7-Real profession factor negatively and significantly affect the HLP of ERCS.

2.2.3.4 Collaboration factor

Lack of collaboration among individuals in emergency help action was found energize by Telford and Cosgrove (2007), which watched exceptionally uncommon slant in sharing assets and information among distinctive NGOs included in Asian torrent. (Beamon and Kotleba, 2006) proposed that organizations still did not create all-around acknowledged strategies or maybe they make their claim methodologies openly. In truth, agreeing to Chandes and Pache (2010 cited in Demeke, 2016) after 1999 up to be that as it may there has been an increment ask for multi-agency collaboration since NGOs are in arranging competition for provider financing and other resources such as warehousing and vehicle armada. Be that as it may, as to his conclusion need of logistics factor and the performance of humanitarian logistics operations and members in disaster alleviation ought to collaborate to lock in collective activity for accomplishing positive effect on their logistics performance.

H8-Collaboration factor negatively and significantly affects the HLP of ERCS.

2.3 Conceptual Framework of the Study

Miles and Huberman (1994) characterized a conceptual system as a visual or composed item, one that "explains, either graphically or in story frame, the most things to be examined -the key variables, concepts, or factors -and the assumed connections among them". A variable may be a quantifiable characteristic that accepts distinctive values among subjects. Free factors are changes that happen in a try that is straightforwardly caused by the experimenter. It can be changed as required, and its values don't speak to an issue requiring clarification in an analysis but are taken basically as given (Avoid, 2003). A dependent variable could be a variable subordinate on another variable: the autonomous variable. A dependent variable is what is measured within the test and what is influenced amid the try. The subordinate variable reacts to the autonomous variable (Everitt, 2002). The center of this study is to survey the variables that influence humanitarian logistics performance in humanitarian reaction. This thinks about will have diverse autonomous factors that will be explored in connection to the subordinate variable. The free factors comprised of variables such as; obtainment, warehousing, inventory management, and transportation issues and humanitarian logistics performance with aiming recipients. The autonomous factors will be examined to find their impact on supply chain performance in the humanitarian reaction of the Ethiopian Red Cross Society. As an international Humanitarian organization, ERCS is working in an environment where diverse partners, forms, and streams exist to help it to induce to its extreme objective. In arrange to get it the end-to-end variables that influencing helpful logistics performance, the outline work ERCS will be way better to demonstrate the arrange structure and as-built working forms. Based on this the study hereby developed conceptual models to indicate the interconnection between dependent and independent variables.

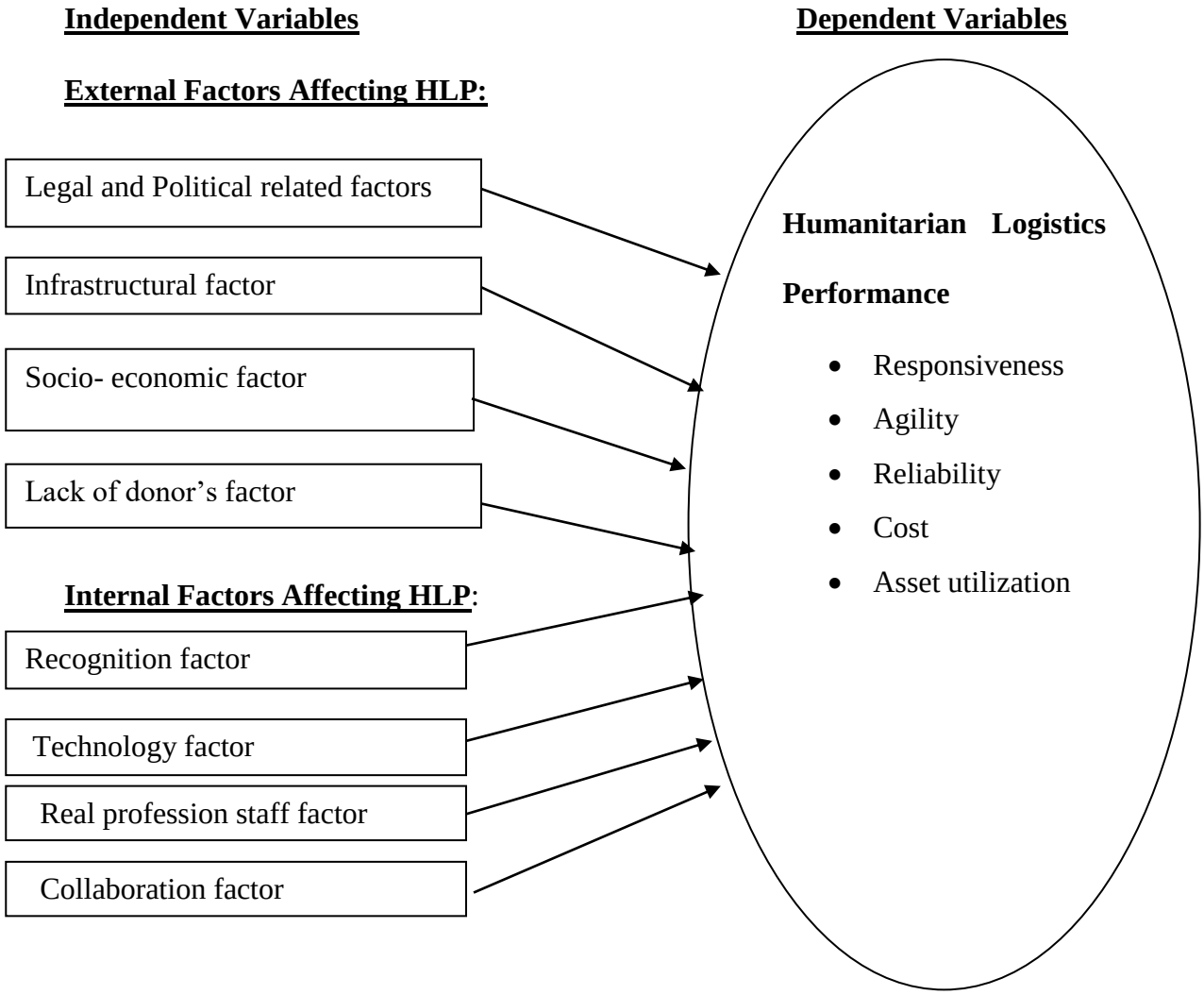

Figure1. Conceptual framework modified from (Kunz & Reiner 2012; Thomas &Kopczak 2005; Beamon&Balcik 2008; Wassenhove 2006).

Hypothesis Summary

External Factors Affecting HLP:

H1- Political related factor negatively and significantly affect the HLP of ERCS.

H2-Infrastructural factors negatively and significantly affect the HLP of ERCS.

H3Socio-economic factors negatively and significantly affect the HLP of ERCS.

H4-Donors related factor negatively and significantly affects the HLP of ERCS.

Internal Factors Affecting HLP:

H5- Recognition of logistics factor negatively and significantly affects the HLP of ERCS.

H6- Technology factor negatively and significantly affect the HLP of ERCS.

H7-Real profession factor negatively and significantly affect the HLP of ERCS.

H8-Collaboration factor negatively and significantly affects the HLP of ERCS.

2.4. Literature Gap

It's mentioned in the empirical review part it shows different related researches conducted in Humanitarian logistics and disaster response particular issues of the subject matter internal and external factors as determinant factors affecting humanitarian logistics performance. And other humanitarian logistics influencing factors in different countries and different kind of disaster occurs in different countries context.

Nevertheless, there is limited research regarding humanitarian logistics in disaster response in Ethiopia case study. Therefore, this study attempts to address this gap, identify current practices of humanitarian logistics applied in humanitarian organization perspectives, and recommend possible in Ethiopian context particularly at ERCS.

CHAPTER THREE

METHODOLOGY OF THE STUDY

In this study the research design and methodology section will be discussed about the research design and approach, data types and sources, the target population of the study, data collection procedures, methods of data analysis tools, validity and reliability, and ethics in research.

3.1. Research Design

The study mainly employed descriptive and explanatory research design as the purpose is mainly to understand and explain what relationship and effect do exist between the dependent variable and the independent one.

3.2 Research Approach

Based on the nature of the purpose and in arrange to attain it, a subjective approach was applied. A subjective approach is additionally more appropriate when an inductive approach is used. Further, it permits a deeper understanding of the subject that's to be studied. Therefore, this study followed a mixed research approach, (quantitative and quantitative); here quantitative approach used for the analysis of questionnaire and qualitative approach used for the analysis of secondary data.

The questionnaires were designed, prepared, and distributed to Ethiopian Red Cross Society (ERCS) A.A workers with the field of logistics and supply chain management staff, and to program staffs especially to those who are directly involved in supply chain management of the organization.

3.3. Data Types and Sources

In this study, both primary and secondary sources of data were utilized through questionnaires. The questionnaire was structured in such a way that it includes all relevant parts of information to acquaint the respondents. The data sources were employees who directly involved in the supply chain management of the organization or engaged in the humanitarian operation.

3.4. Target Population of the Study

The target population is the entire population or group that is being interested in generalizing the conclusion of the study. For this research, the target populations were all employees of the Ethiopian Red Cross Society at Addis Ababa regional branch office who directly involved in logistics and supply chain management of the organization and those who have a minimum of two years of service in ERCS. The numbers of target populations engaged in this study were 80; these are from logistics and supply chain management staff which are composed of 24 respondents and 56 respondents from program staff. Thus, due to the small number of the targeted population, it has been decided to consider the entire population in the study, i.e. to conduct a census survey, rather than sampling from the population. This is based on the suggestion that if the target population is smaller (e.g. 200 or less) census survey is very appropriate and effective since virtually all populations would have to be sampled in small populations to achieve a desirable level of precision (Israel, 2013).

3.5. Data Collection Procedures

The researcher for this study attempted to find and work on both primary and secondary data. Accordingly, a relevant questionnaire was prepared for collecting data on factors affecting the humanitarian logistics of the Ethiopian Red Cross Society.

The respondents were contacted at ERCS Addis Ababa regional branch office they were given a brief introduction about the objective of the questionnaire and handed over to the respondents to complete it. The questionnaire focused on internal and external factors that affect the logistics performance of ERCS. The questionnaires were designed clearly and simply for the respondents to easily understand and complete each item without difficulty. The questionnaire also had both closed and open-ended questions to get access to both quantitative and qualitative data.

3.6. Method of Data Analysis

Inferential statistics were used to conclude the reliability and generalizability of the findings. Accordingly, the Pearson Correlation Coefficient is used to understand the relationship between the dependent (logistics performance) and independent variables –

logistics practices/ (internal and external factors). After data entry and cleaning, the analysis will be undertaken to generate summaries of various variables in terms of the Multiple Regression Model to identify the significant effect of each factor affecting the humanitarian logistics performance of ERCS. Finally, to process the data, Statistical Package for Social Science (SPSS) version 23 was used.

3.7. Validity & Reliability Test

The quantification of human behavior or using measurement instruments to observe human behavior is a crucial part of social science research. The measurement of human behavior belongs to the widely accepted positivist view or empirical evidence. Because most behavioral research takes place within this paradigm, the measurement instrument must be valid & reliable (Small bone &Quinton, 2004).

Validity is concerned with the meaningfulness of the research components. When making research on behavior an important factor to be considered is whether the measurement being done is what is intended or the degree to which results obtained from the analysis of the data represent the phenomenon under study.

The research questionnaire for this study paper was prepared based on the subject topic and concepts of logistics and supply chain management, which was believed to be applicable and relevant to the subject organization. The questionnaire was also designed by reviewing a related study by other researchers in similar areas. Besides this, the questionnaires were reviewed and consulted by humanitarian logistics experts to test for its validity.

Simple English was used so that the respondents understand each item quiet easily and great effort was made to make the contents very clear and avoid ambiguity. Reliability analysis was also be conducted to each variable of the instruments. The reliability of the measures was examined through the calculation of Cronbach's alpha coefficient. For scale acceptability, Hair *et al.,* (1998) suggested that Cronbach's alpha coefficient of construct needs to be 0.7 or greater. If each domain obtains the value of 0.7 or greater, it means that the items in each domain are understood by most of the respondents and is acceptable. On the other hand, if the findings are less than from the expected value of 0.7,

this might be caused by respondents' different perceptions toward each item of the domain.

Internal consistency of the items constituting the dimensions of the independent and dependent variables was checked by using Cronbach‟s alpha. Accordingly, the reliability of the study instrument has been determined by evaluating the average correlation among items in the scales of the respective dimensions representing the independent and dependent variables as suggested by Chen et al. (2004). The resulting Cronbach‟s alpha values of the dimensions are presented in the following table.

Table 1: Reliability of Questionnaire Dimensions

Category	Number of Items	Cronbach's Alpha
Recognition Factors	5	0.738
Technological Factors	4	0.884
Real professional staff Factors	4	0.940
Collaboration Factors	4	0.844
Legal or Political Factors	4	0.873
Infrastructure Factors	4	0.873
Socio-economic Factors	4	0.858
Donors factors	4	0.783
Total	**33**	**0.849**

Source: Research Data (2020)

3.8. Ethical Consideration

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

CHAPTER FOUR

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter deals with data analysis, interpretation, and discussion of the findings as set out in the research objectives and methodology, based on the data collected through questionnaires and interviews. The questionnaire was designed in line with the objectives of the study; to enhance the quality of data obtained; type questions were included whereby respondents indicated the level of agreement to which the variables were practiced in a five-point scale in the questionnaire. Coded responses were entered into Statistical Package for the Social Sciences (SPSS) version 23, for data analysis, The total questionnaire distribute were 80 for The target population were employees of Ethiopian Red Cross Society Addis Ababa Regional office employees out of that 68 were properly filled and returned 65 (81.25%) of the questionnaires returned were considered in the study as some of them are discarded because some of the essential parts were not properly filled or skipped. In this chapter, the emphasis was put on three things, First demographic information of respondents followed by the presentation of descriptive statistics and inferential statistics.

4.1 Demographic information

The demographic profile of the respondents was presented in this section, and descriptive statistics were carried out to categorize them based on six demographic variables namely gender, age, educational qualification, year stayed at ERCs, job experience in humanitarian organizations, and their department and work unit were analyzed.

Table2: Respondents' demographic information

Items		Frequency	Percentage
Gender	Male	42	64.6
	Female	23	35.4
	Total	65	100.0
Age	18-25 years	14	21.5
	26-30 years	17	26.2
	31-40 years	25	38.5
	Above 40 years	9	13.8
	Total	65	100.0

Educational qualifications	Diploma	33	50.8
	Degree	21	32.3
	Master	11	16.9
	Total	65	100.0
Year of Experience	Less than 2 Years	4	6.2
	2-5 Years	27	41.5
	6-10 Years	20	30.8
	Over 10 Years	14	21.5
	Total	65	100.0
Job experience	Less than 2 Years	5	7.7
	2-5 Years	17	26.2
	6-10 Years	28	43.1
	Over 10 Years	15	23.1
	Total	65	100.0
Department/work unit	Logistics and	20	30.8
	Program	40	61.5
	Other	5	7.7
	Total	65	100.0

Source: Research Data (2020)

Table2 shows the gender distribution of respondents. Data collected from the staff shows that 42(64.6%) are male and 23(35.4%) are female. This data shows that more males participated in this study than females

Data collected from the staff shows that 14(21.5%) of the respondents representing fall within the ages of 18 to 25 Years. 17(26.2%) fall within the age of 25 to 30years 25(38.5%). falls within the ages of 31 to40 years and 9(13%) fall within above 40years. Therefore the data shows that most of the employees in the organization are in the maturity age that is productive and they can contribute to the accomplishment of their objective.

As it can be seen from the above table the distribution of respondents based on the number of years spent at ERCS-AA was of total 65 respondents, out of this only 4(6.2%) were less than 2 years and the rest 61 (93.8%) were working in the organization.

Concerning addressing rose to respondents almost their Educational Capability, as demonstrated in the table- 16 (24.6%) of respondents had confirmation, 38(58.5%) of respondents had to begin with a degree and the rest 11(16.9 %) of respondents had second Degree and over. The result demonstrates that most of the respondents were

qualified experts so that they can 33 effortlessly get it and give their opinion on the research questionnaire; thus, the data obtained from these respondents are more reliable.

The Humanitarian sector distribution of respondents out of the total 65 respondents, only 5(7.7%) are less than 2 years the rest 60 (89%) of experience in the Humanitarian sector. The ERCS-A.Staff respondents filled a questionnaire about their department/work unit in the organization and accordingly the 20(30.8%) were in logistics and supply chain fields and 40(61.5%) were program officers and the only 5(7.7%) were in the other profession.

4.2. Descriptive Analysis of Humanitarian Logistics Practices

For the analysis of the quantitative data, descriptive statistics supported by SPSS software version 23 was applied, and for qualitative data document, the analysis was done. Using SPSS mean and standard deviation are calculated to show the respondent organization experience in Humanitarian logistics practices, and frequency percentage and table were considered to present the Humanitarian logistics practice.

Table 3: Likert scale interpretation and value interval allocation table

Likert Scale	Interpretation	Value Interval Allocation
1	Strongly Disagree	1-1.8
2	Disagree	1.81-2.6
3	Neutral	2.61-3.4
4	Agree	3.41-4.2
5	Strongly Agree	4.21-5

Source: Dawes J, (2008)

The questionnaire was developed in five scales ranging from five to one; where 5 represents Extensively practiced,4 Well practiced, 3 Moderately practiced, 2 Poorly practiced, and 1Never practice. Accordingly, the mean range between 4.21 -5.0 indicate extensively practiced, mean range between 3.41-4.2 are well-practiced, mean range between 2.61- 3.4 is moderately practiced, mean range between 1.81 – 2.6 are poorly practiced and mean range between 1-1.8 are shows never practiced.

Table 4: Result of descriptive analysis of humanitarian logistics practice of ERCS

Humanitarian Logistics practices of the ERCS		
Procurement Practice	**Mea**	**SD**
There are practices of Preliminary need assessment made in a disaster-prone area before procurement is made	2.54	0.502
There are practices of Selection of Suppliers and Contract provisions are in practice	2.51	0.504
There are the practices of Analysis of proposals	2.43	0.499
There is practices of Issuance of purchase orders and Administration of purchase contracts and resolution of related problems	2.51	0.504
There is practices of Maintenance of a variety of purchase records	2.52	0.503
Average mean	**2.5**	**0.502**
Warehouse Management Practice		
There is practice identification of potential points of storage to enable efficient disaster relief operation,	2.55	0.501
There is practice identification of the required warehouse management equipment for stores,	2.51	0.504
There is a proper storage practice to efficiently utilize storage space,	2.43	0.499
There is a proper practice of handing supplies stored,	2.54	0.502
There is a practice of discharging supplies as per the need identified	2.63	0.575
Average Mean	**2.53**	**0.516**
Inventory management practice		
There is an intelligent pre-positioning of inventory and optimum allocation of resources to respond to any disaster anywhere	2.62	0.550

There is a practical analysis of supply and demand, forecasting in the risks of either supply or demand being too high or too low.	2.58	0.556
There is a practice of allocating time and money in inventory by use of activity-based Costing.	2.58	0.610
There is a practice of active decision in prioritization of goods needed	2.65	0.543
Average Mean	**2.61**	**0.565**
Transportation and distribution management		
There is a practice of careful consideration and measures for evaluating transport performance when choosing the carrier	2.35	0.648
There is a practice of design the flow of materials for distribution keeping in mind the people who require it,	2.2	0.712
There is practice distribution of supplies from central distribution centers,	2.23	0.632
There is practice the use of different distribution spots to deliver supplies to the people,	2.31	0.683
There is practice definition of distribution points to minimize the distance to beneficiaries	2.43	0.585
Average Mean	**2.30**	**0.652**

4.2.1. Response on Procurement practice of ERCS

The questionnaire was developed in five scales ranging from five to one; where 1 Never practiced, 2 poorly practiced, 3 Moderately practiced, 4 well-practiced, 5 Extensively practiced.

Accordingly, the average mean or the mean range between 4.21 -5.0 indicates the extensive practice, mean range between 3.41-4.2 are well-practiced, mean range between

2.61- 3.4 are moderately practiced, mean range between 1.81 – 2.6 is poorly practiced and mean range between 1-1.8 are shows never practiced.

The five items representing these studies were extracted from the literature, (Falasca, Zobel 2011; Blecken, Tatham 2010; Trestrail, Paul, Maloni 2009; Ertemetal, 2010;). Accordingly, as it can be seen from the above table 4, the mean values for all items in the procurement practices are poor as the individual means for all the constructs are within the range of 1.81-2.60. Furthermore, the grand mean for procurement practice is 2.5, or within the range placed from 1.81-2.60, which means that the procurement was poorly practiced in the organization. Therefore, the analysis shows that procurement practiced at ERCS at Addis Ababa regional branch was at a low level due to poor preliminary need assessment (2.54), Contract provisions (2.51), analysis of proposals (2.43), issuance of purchase orders and administration (2.51), maintenance of a variety of purchase records (2.52).

4.2.2. Response on Warehouse practice of ERCS

According to the Likert scale the mean range between 4.21 -5.0 indicates extensively practiced, mean range between 3.41-4.2 are well-practiced, mean range between 2.61- 3.4 is moderately practiced, mean range between 1.81 – 2.6 is poorly practiced and mean range between 1-1.8 are shows never practiced.

The five items representing this practice were captured from the literature (PAHO, 2011),(Balick *et al*., 2008),(Henderson. L, 2004),(Roh Jang, & Han, 2013). According to the above table4, we can see that the mean for all items in the warehouse practice is within the range from 2.43-2.63, which mean that the warehouse management was poorly managed in the organization. However, unlike other items, the respondents reported that the organization has the practice of discharging supplies as per the need identified (2.63). The grand mean is also (2.53) which is within the range of 2.43-2.63. Therefore, the analysis shows that warehouse management practiced at ERCS at Addis Ababa regional branch were at a low level due to poor practice of identification of potential points of storage,(2,55) identification of the required warehouse management equipment for

stores(2.51); efficiently utilize storage space (2.43), proper handing supplies(2.54) but have discharging supplies as per the need identified(2.63).

4.2.3. Response on Inventory management practice of ERCS

The mean range between 4.21 -5.0 indicate extensively practiced, mean range between 3.41-4.2 are well-practiced, mean range between 2.61- 3.4 is moderately practiced, mean range between 1.81 – 2.6 is poorly practiced and mean range between 1-1.8 are shows never practiced.

The four items representing this practice were extracted from the literature, (Merminodet al. 2014; Dufour, Laporte, Paquette, Rancourt, 2018;)Accordingly, as it can be seen from the above table 4, there is an intelligent pre-positioning of inventory and optimum allocation of resources to respond to any disaster anywhere (2.62); and there is a practice of active decision in prioritization of goods needed (2.65) which are moderately practiced. However, practical analysis of supply and demand, forecasting in the risks of either supply or demand being too high or too low, and allocating time and money in inventory by use of activity-based Costing(2.58) are poorly practiced since they are within the range of 1.81 – 2.6.

Overall, the grand (2.61) shows that inventory management at ERCS Addis Ababa regional branch has been practiced at a moderate level.

4.2.4. Response on Transportation management practice of ERCS

The mean range between 4.21 -5.0 indicate extensively practiced, mean range between 3.41-4.2 are well-practiced, mean range between 2.61- 3.4 is moderately practiced, mean range between 1.81 – 2.6 is poorly practiced and mean range between 1-1.8 are never practiced.

The five items representing these practices are extracted from the literature of (Balcik*et al.* 2008; Falasca, Zobel, 2011; Martinez, Stapleton, Van Wassenhove, 2011; Eftekhar, VanWassenhove, 2016; Berkoune, Renaud, Rekik, Ruiz 2012;). As can be seen from the above table, the mean value for all items in the transportation and distribution management within the range of 1.81 – 2.6 indicates that transportation and distribution

management is poorly practiced in ERCS. Also, the grand mean is 2.3, which is within the ranges placed from 1.81 – 2.6, which means that transportation and distribution management was poorly managed in the organization. Therefore, the analysis shows that transportation and distribution management practiced at ERCS at Addis Ababa regional branch was at a low level.

4.3 Descriptive Analysis of humanitarian Logistics performance of ERCS

The questionnaire was developed in five scales ranging from five to one; where 1 strongly disagree 2 disagree 3 neutral 4 agree 5 strongly agree

The average mean or the mean range between 4.21 -5.0 indicates strongly agree, mean range between 3.41-4.2 are agreed, mean range between 2.61- 3.4 are 3 neutral, mean range between 1.81 – 2.6 are disagreed and mean range between 1-1.8 are shows strongly disagree.

Table5: Result of descriptive analysis of humanitarian logistics performance of ERCS

Humanitarian Logistics performance of the ERCS		
Reliability	Mean	SD
There is a fulfillment of all the requested demands	2.22	0.625
The supplies are delivered damage-free state with the correct configuration and hence no return or replacement is required.	2.42	0.705
All the supplies are delivered at the right time so that beneficiaries are properly served	2.28	0.673
The right supplies are delivered at the right quantity with all the necessary documentation for a demand requested.	2.42	0.682
There are no complaints reported during the execution of the logistics	2.34	0.756
Average Mean	2.34	0.688
Agility (flexibility)	Mean	SD
The type of supplies required may change from the initial request during the assessment and still can be absorbed by ERCS without any problem	2.32	0.687
There is easy accommodation in any change in terms of types of relief	2.34	0.644
There is flexibility in a way it addresses unplanned demand request	2.22	0.599

The volume of supplies required may change from the initial request during the assessment and still can be engaged without any problem.	2.26	0.567
Average Mean	**2.29**	**0.624**
Cost	**Mean**	**SD**
There are systems designed to make sure that the optimum cost is	2.29	0.701
There is always a distribution of supplies to be prepared with optimum cost	2.42	0.610
There is good management to all the costs that arise from all its activities in supplying and distributing material to where needed	2.34	0.594
There is a recognized cost of management and optimization as important issues in its operations.	2.26	0.619
There is unnecessary costs related to supplies and quantities occurrence	2.32	0.664
Average Mean	**2.33**	**0.638**
Responsiveness	**Mean**	**SD**
There is a decision at all levels to advance the logistics operations	2.09	0.605
All requested demands are delivered at the right time	2.17	0.651
There is an integrated relationship with suppliers and third-party service providers to ensure that ERCS is responsive to requests.	2.12	0.625
There is a proper follow-up of speeds of responding to the requests at any	2.22	0.673
Average Mean	**2.15**	**0.639**
Asset management	**Mean**	**SD**
It takes a very short time for supplies and delivers in addressing the	2.31	0.584
There is the low cost of carrying supplies in the warehouse	2.22	0.599
The supply storage in the warehouse at the right quantity at any time.	2.32	0.709
There is no excess inventory in the warehouse	2.29	0.605
Utmost packaging or shipping materials are being held in the organization to the relief site	2.23	0.656
Average Mean	**2.47**	**0.631**

Source Research Data(2020)

4.3.1. Reliability of ERCS Humanitarian logistics performance

The five items representing this performance were extracted from the literature of (Daugherty *et al*., 1994; Beamon 1999; Morgan, 2004; Caplice and Sheffi, 1994; Morgan, 2004; Theeranuphattana and Tang, 2008). Accordingly, like it can be observed from the above table 4, the mean for all items lists under the reliability of humanitarian logistics

performance is within 1.81 – 2.6. Also, the grand mean for the attribute of reliability in humanitarian logistics performance is 2.34, which is within1.81 – 2.6. Thus, it can be realized that humanitarian logistics in ERCS is not reliable in the fulfillment of all the requested demands (2.22), concerning the right supplies in delivering damage-free state with the correct configuration (2.42), regarding delivering substances at the right time (2.28) and the right quantity with all the necessary documentation for a demand requested (2.42) and there is no way to be free from no complaints reported to ERCS of Addis Ababa regional branch (2.34).

4.3.2. Response on Agility of ERCS Humanitarian logistics

The five items representing this performance was extracted from the literature of(Beamon, 1999; Beamon and Balcik, 2008, Caplice and Sheffi, 1995 ;)Accordingly, as it can be seen from the above table 4, the mean for all items lists under the agility or flexibility of humanitarian logistics performance are within 1.81 – 2.6. The cumulative mean for agility in humanitarian logistics performance is 2.29, which is also within 1.81 – 2.6. This indicates that humanitarian logistics was less agile and inflexible with regards to the type of supplies required which might change from the initial request during the assessment(mean=2.32); accommodation in any change in terms of types of relief logistics supplies(mean=2.34), flexibility in a way it addressed unplanned demand request(2.22), the volume of supplies required, and regarding the flexibility in a way it was being addressed the unplanned demand to ERCS of Addis Ababa regional branch (mean=2.26).

4.3.3. Response on Cost attribute of ERCS Humanitarian logistics performance

The five items representing this performance were extracted from the literature of (Caplice and Sheffi, 1994; Morgan, 2004; Töyliet *.et.al*, 2008; Beamon and Balcik, 2008;). Accordingly, as can be seen from the above table 4, the mean for all items lists under the response on the cost of operating the supply chain processes of humanitarian logistics performance is within the range of 1.81 – 2.6. Besides, the cumulative mean for the cost of operating the supply chain processes in humanitarian logistics performance is 2.33, which is within1.81– 2.6. Thus, it can be realized that cost of operating the supply chain of the organization's humanitarian logistics performance was not as they were

supposed to be regarding the designing of the systems with optimum cost(2.29), and making a distribution of supplies(2.42), application of good management to all the costs(2.34), concerning exploiting of a recognized cost of management, and optimization as important issues in its operations(2.26), in reducing unnecessary costs related supplies and quantities occurrence(2.32).

4.3.4. Response on Responsiveness aspect of ERCS Humanitarian logistics performance

The four items representing this performance were extracted from and supported by the literature of (Caplice and Sheffi, 1995; Davidson 2006; Bolsche, D.2012; Beamon, 1999;).Accordingly, it can be seen from the above table 4, the mean for all items lists under the responsiveness or the speed at which a supply chain provides support to the beneficiaries under humanitarian logistics performance are within 1.81–2.6. Moreover, the cumulative mean for the responsiveness of humanitarian logistics performance is 2.15, which is within 1.81–2.6. Thus, it can be realized that responsiveness of the organization's humanitarian logistics performance was not as it was supposed to be regarding the decision making at all levels to advance the logistics operations immediately(2.09), regarding all requested demands are delivered at the right time(2.17), integration or the relationship with suppliers and third-party service providers to ensure that ERCS of A.A is responsive to requests(2.12) and regarding proper follow-up of speeds of responding to the requests at any level(2.22).

4.3.5. Response on the Asset management aspect of ERCS Humanitarian logistics performance

The five items representing this performance was extracted from and supported by the literature of (Lima-Junior and Carpinetti, 2016; Bolsche, D.2012; Blecken, 2010 & Bolshe, 2012; Parris, 2013;).Accordingly, as it can be seen from the above table4, the mean for all items lists under the asset management of humanitarian logistics performance are within the range of 1.81–2.6 Moreover, the cumulative mean for asset management of humanitarian logistics performance is 2.49, which is within 1.81–2.6. Thus, we can conclude that most of the respondents disagreed about the lists of items under the asset management that the organization's humanitarian logistics performance

was not as it was supposed to be regarding taking very short time for supplies and delivers in addressing the beneficiaries (2.31), regarding reducing the cost of carrying supplies in the warehouse(2.22), regarding the supply store in the warehouse at the right quantity at any time(2.32), regarding a holding no excess of inventory in the warehouse(2.29), regarding utmost packaging or shipping materials are being held in the organization to relief site(2.23).

4.4 Inferential Analysis of factors affecting humanitarian logistics

4.4.1 Correlation Analysis

In this section, correlation analysis was conducted in light of the hypothesis mentioned in chapter one. The relationship between the factors that affect humanitarian logistics and humanitarian logistics performance was investigated. Correlation analysis provides a correlation coefficient which indicates the strength and direction of the relationship. The p-value shows the probability of the relationship's significance. The interpretation is as per the range developed by Mc Daniel and Gates (2006): $\pm$ 1=perfect; 0.8-0.9=very strong; 0.5-0.8=moderately strong; 0.1-0.3=modest; 0-0.3=weak.

Table6: Correlation Analysis

		Humanitarian Logistics
Humanitarian Logistics Performance	Pearson Correlation	1
	Sig. (2-tailed)	
	N	65
Recognition factors	Pearson Correlation	.746**
	Sig. (2-tailed)	.000
	N	65
Technological factors	Pearson Correlation	.902**
	Sig. (2-tailed)	.000
	N	65
Real profession factors	Pearson Correlation	.882**
	Sig. (2-tailed)	.000
	N	65
Collaborations	Pearson Correlation	.856**

factor	Sig. (2-tailed)	.000
	N	65
Legal and political factors	Pearson Correlation	.935**
	Sig. (2-tailed)	.000
	N	65
Socio-Economic factors	Pearson Correlation	.865**
	Sig. (2-tailed)	.000
	N	65
Infrastructural factor	Pearson Correlation	.948**
	Sig. (2-tailed)	.000
	N	65
Donor factor	Pearson Correlation	.861**
	Sig. (2-tailed)	.000
	N	65

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

Source: SPSS output of survey (2020)

Table 5, above shows that there is a positive and moderately strong relationship between Recognition factors and humanitarian logistics performance (r=0746, p-value<0.005); there is a positive and moderately strong relationship between lack of technological factors and humanitarian logistics performance (r=0902, p-value<0.005); there is a positive and very strong relationship between Real profession factors and humanitarian logistics performance (r=0.882, p-value<0.005) and there is a positive and very strong relationship between legal and political factors and humanitarian logistics performance.

Moreover, there is a positive and very strong relationship between Collaboration factors and humanitarian logistics performance (r=0856, p-value<0.005); there is a positive and moderately strong relationship between socioeconomic factors and humanitarian logistics performance (r=0935, p-value<0.005); there is a positive and very strong relationship between infrastructural factors and humanitarian logistics performance (r=0948, p-value<0.005) and finally there is a positive and very strong relationship between donor factors and humanitarian logistics performance (r=0.861, p-value<0.005)

4.4.2 Multiple Regression Analysis

Regression is a statistical instrument that agrees to us to predict the value of one continuous variable against one or more other variables. When performing a regression analysis each independent variable is connected with specific coefficients in the equation that summarizes the relationship between that independent variable and the dependent variable. Once we approximate a set of coefficients in a regression equation, we can use hypothesis tests and confidence intervals to make inferences about the corresponding parameters in the population. We can also use the regression equation to predict the value of the dependent variable given a specified set of values for our independent variables (Coster 2004).

In this study, simple linear regression is used to forecast the value of a single continuous direct variable (Y) from a single continuous independent variable (X). Regression assumes that the correlation between the independent variable and the dependent variable can be represented by the equation:

$Y=A+B1X1+B2X2+.BnXn+ \varepsilon$

Where:

Y= the predicted/dependent variable

A= constant

B= unstandardized regression coefficient

X= value of the predicted coefficient

ε = is the error term

Table 7: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.991[a]	.981	.979	.09632

a. Predictors: (Constant), Donor factors, Recognition, Real profession factors, Collaboration factors, Socio-economic factors, Technological factors, Infrastructural factors, Legal and political factors

Source: SPSS output of survey, (2020)

The table shows the variation of variables used in the analysis. R-square which is the coefficient of determinant tells that how much variation is taking place in humanitarian logistics performance (dependent variable) due to Donor factors, Legal and political factors, Technological factors, Recognition factor, Socioeconomic factors, Collaboration factor, Real Profession, Infrastructure factors (independent variables). When the table is analyzed, it depicts that the value of R-square is 0.981, that means 98.1% change taking place in humanitarian logistics performance is due to the Infrastructure factors, Technological factors, Collaboration factor, Legal and political factors, Donors factors, Socioeconomic factors, Real Profession factor, Recognition factor.

Table 8: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.189	8	3.399	366.339	.000[b]
	Residual	.520	56	.009		
	Total	27.709	64			

a. Dependent Variable: Humanitarian Logistics Performance

b. Predictors: (Constant), Donor factors, Recognition factors, Real profession factors, Collaboration factors, Socio-economic factors, Technological factors, Infrastructural factors, Legal and political factors

Source: SPSS output of survey, (2020)

In the analysis of variance (ANOVA), if the F ratio is large and probability is less than 0.05 then it is termed as statistically significant (Saunders, 2012). Thus, the F-statistic of each independent variable is 366.339, which indicates that the model is overall good fit and significant at $p< 0.05$.

Table 9: Regression Coefficient

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.054	.111		.487	.628		
	Recognition factors	.114	.036	.087	3.178	.002	.451	2.219
	Technological factors	.153	.040	.186	3.817	.000	.140	7.122
	Real profession factor	.076	.032	.105	2.355	.022	.167	5.975
	Collaboration factors	.116	.030	.137	3.924	.000	.275	3.632
	Legal and political factors	.113	.048	.133	2.345	.023	.104	9.617
	Socio-economic factors	.111	.033	.137	3.353	.001	.200	4.993
	Infrastructural factors	.200	.048	.231	4.176	.000	.110	9.109
	Donor factors	.103	.049	.089	2.117	.039	.189	5.304
a. Dependent Variable: Humanitarian Logistics performance								

Source: SPSS output of survey, (2020)

4.3.4 Hypothesis Testing

Recognition factor has a positive and significant effect on humanitarian logistics performance with a β value (β =.087), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that Recognition factors have a positive and significant effect on humanitarian logistics performance is accepted.

The technology factor has a positive and significant effect on humanitarian logistics performance with a β value (β =.186), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that the Technological factor has a positive and significant effect on humanitarian logistics performance is accepted.

The real profession factor has a positive and significant effect on humanitarian logistics performance with a β value (β =.105), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that the Real profession has a positive and significant effect on humanitarian logistics performance is accepted.

The collaboration factor has a positive and significant effect on humanitarian logistics performance with a β value (β =.137), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that a Collaboration factor has a positive and significant effect on humanitarian logistics performance is accepted.

Legal and political factors have a positive and significant effect on humanitarian logistics performance with a β value (β =.133), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that a legal and political factor has a positive and significant effect on humanitarian logistics performance is accepted.

Socio-economic factors have a positive and significant effect on humanitarian logistics performance with a β value (β =.137), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that a socio-economic factor has a positive and significant effect on humanitarian logistics performance is accepted.

Infrastructural factors have a positive and significant effect on humanitarian logistics performance with a β value (β =.231), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that an infrastructural factor has a positive and significant effect on humanitarian logistics performance is accepted.

Donor factors have a positive and significant effect on humanitarian logistics performance with a β value (β =.089), at 95% confidence level $p < 0.05$). Thus, the null hypothesis is rejected and the alternative hypothesis that states that a donor factor has a positive and significant effect on humanitarian logistics performance is accepted.

Table 10: Hypothesis summary

Hypothesis result	Standardized Coefficients Beta	Sig.	Remark
H5- Recognition of logistics factor negatively and significantly affects the HLP of ERCS.	.087	.002	null hypothesis rejected
H6- Technology factor negatively and significantly affect the HLP of ERCS.	.186	.000	null hypothesis rejected
H7-Real profession factor negatively and significantly affect the HLP of ERCS.	.105	.022	null hypothesis rejected
H8-Collaboration factor negatively and significantly affects the HLP of ERCS.	.137	.000	the null hypothesis is rejected
H1- Political related factor negatively and significantly affect the HLP of ERCS.	.133	.023	the null hypothesis is rejected
H3Socio-economic factors negatively and significantly affect the HLP of ERCS.	.137	.001	the null hypothesis is rejected
H2-Infrastructural factors negatively and significantly affect the HLP of ERCS.	.231	.000	null hypothesis rejected
H4- Donors related factor negatively and significantly affects the HLP of ERCS.	.089	.039	null hypothesis rejected
a. Dependent Variable: Humanitarian Logistics performance			

Source: Research Data, (2020

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION, RECOMMENDATION

This chapter deals with a summary of the findings, conclusions, and recommendations. To achieve the objective of the study relevant literature was reviewed and quantitative data were collected through questionnaires and were presented, analyzed, interpreted, and discussed using statistical package for social science. Thus, based on the analysis the following finding is obtained, conclusions drawn, and recommendations forwarded.

5.1 Summary of Findings

Based on the cumulative result of descriptive statistics, procurement practice scored a mean of 2.50 and a standard deviation of 0.503, and this shows that the respondents' level of agreement towards procurement practice is very low. Concerning warehouse management practice, the cumulative mean is 2.53 and a standard deviation is 0.516. This implies that the overall respondents' agreement towards warehouse management practice is low.

As per the cumulative result of descriptive statistics, inventory management practice has scored a mean of 2.61 and a standard deviation of 0.565, and this result indicates that the respondents' agreement towards the inventory management practice is very low. Similarly, according to the cumulative result of descriptive statistics, transportation and distribution management has scored a mean of 2.30 and a standard deviation of 0.652. This implies that respondents' agreement is again very low.

The reliability of ERCS humanitarian logistics has a cumulative mean of 2.34 with a standard deviation of 0.688. This shows that the respondents' agreement towards the reliability of ERCS of humanitarian logistics is significantly very low. Similarly, agility/flexibility of ERCS humanitarian logistics has a cumulative mean of 2.29 with a standard deviation of 0.624. This shows that the respondents' agreement towards the flexibility of ERCS of humanitarian logistics is significantly very low. Moreover, the cost-efficiency of ERCS humanitarian logistics has a cumulative mean of 2.33 with a standard deviation of 0.638. This shows that the respondents' agreement towards the cost efficiency of ERCS of humanitarian logistics is significantly very low. The

responsiveness of ERCS humanitarian logistics has a cumulative mean of 2.15 with a standard deviation of 0.639. This shows that the respondents' agreement towards the reliability of ERCS of humanitarian logistics is significantly very low. Finally, asset management of ERCS humanitarian logistics has shown a cumulative mean of 2.47 with a standard deviation of 0.631. This shows that the respondents' agreement towards asset management of ERCS of humanitarian logistics is significantly very low.

The correlation result shows that there is positive and significant relationship between lack of recognition, Technological factors, Real profession, Collaboration, legal and political factors, socio-economic factors, infrastructural factors and donor factors ($r=.746^{**}$, $P<0.05$, $r=.902^{**}$, $P<0.05$, $r=.882^{**}$, $P<0.05$, $r=.856^{**,}$ $P<0.05$); $r=.936^{**,}$ $P<0.05$); $r=.865^{**,}$ $P<0.05$); $r=.948^{**,}$ $P<0.05$); and $r=.861^{**,}$ $P<0.05$) respectively.

Regarding the regression result, the findings show that Recognition factors, Technological factors, Real profession factors, Collaboration factors, legal and political factors, socio-economic factors, infrastructural factors, and donor factors had Beta values of β=0.087, 0.186, 0.105, 0.137, 0.133, 0.137, 0.231 and 0.089, respectively, infrastructural factors scoring the highest Beta value of β=0.231.

Overall, results revealed that all independent variables accounted for 98.1% of the variance in humanitarian logistics performance ($R^2 = 0.981$). Thus, 98.1% of the variation in humanitarian logistics performance is explained by the eight stated variables.

5.2. Conclusion

In light of the descriptive and inferential analysis of factors affecting Humanitarian logistics performance, the following conclusions have been drawn.

The correlation result shows that there is positive and significant relationship between Recognition of logistics factors, Technological factors, Real profession factors, Collaboration factors, legal and political factors, socio-economic factors, infrastructural factors and donor factor ($r=.746^{**}$, $P<0.05$, $r=.902^{**}$, $P<0.05$, $r=.882^{**}$, $P<0.05$, $r=.856^{**,}$ $P<0.05$); $r=.936^{**,}$ $P<0.05$); $r=.865^{**,}$ $P<0.05$); $r=.948^{**,}$ $P<0.05$); and $r=.861^{**,}$ $P<0.05$) respectively.

The finding also shows that Recognition of logistics factors, Technological factors, Real profession, Collaboration factors, legal and political factors, socio-economic factors, infrastructural factors, and donor factors had Beta values of β=0.087, 0.186, 0.105, 0.137, 0.133, 0.137, 0.231 and 0.089, respectively. It has been found out that infrastructural factors scoring higher Beta value of (β=0.231), followed by Technological factors (β=0.186).

At last, from the study concluded, that there was a relationship between the Humanitarian logistics factors both the internal and external (independent variables) and Humanitarian logistics performance (dependent variable); the correlation result shows there were a strong and positive correlation with all factors.

5.3 Recommendation

Recommendations Regarding Humanitarian logistics practices

From the data analysis discussed in chapter four, procurement practice is somehow not fully satisfactory and needs to have a few improvements in some areas. Therefore the researcher recommends regarding the procurement practice of ERCS at Addis Ababa regional branch that the top management needs to regularly review their procurement policy, procedures, preliminary need assessment, Contract provisions, and analysis of proposals, issuance of purchase orders and administration, maintenance of a diversity of purchase records and the guidelines to cope with changeable global trends

According to the data analysis in chapter four regarding the warehouse practice of the organization, it can be perceived that it was poorly practiced, and unsatisfactory. Therefore, the researcher recommends that the manager's needs to consider solving the problems related with the poor practice of identification of potential points of storage, identification of the required warehouse management equipment for stores, efficiently utilize storage space, proper handing supplies, discharging supplies as per the need identified, Furthermore, the top management needs to assess its warehouse capacity and information administration system to take action on enhancement areas.

Concerning inventory management practice even if the practice of the organization shows that it is moderately practiced, there still needs some changes, therefore, the researcher recommends the top managements of the organization that they should pay more attention particularly in the improvement of on the subject of practical analysis of supply and demand, forecasting the risks of either supply or demand being too high or too low and allocating time and money in inventory by use of activity-based Costing.

Regarding transportation and distribution management practice the data analysis shows that transportation and distribution management practiced at ERCS at Addis Ababa regional branch was at a low level. Therefore the researcher recommends that the top managers of the organization should consider and measure for evaluating transport performance, design the flow of materials for distribution keeping in mind the people who require it, develop the trend of distribution of supplies from central distribution to minimize unnecessary cost, use of different distribution spots to deliver supplies to the people, define a clear distribution point to minimize the distance to beneficiaries.

In general, ERCS has to develop a proper humanitarian logistics system that improves the procurement, inventory management, warehouse management and transportation, and distribution management practices and enhance effective and efficient logistics performance of the organization.

Recommendations Regarding Humanitarian logistics performance

Regarding the Reliability of the organization, the data from chapter four of analysis can be realized that humanitarian logistics in ERCS poorly performed, therefore, the top management of the organization should work specifically on the fulfillment of all the requested demands, pay attention during the selection of right supplies in delivering damage-free state with the correct configuration, improve the trend of delivering of substances at the right quantity and at the right time with all the necessary documentation for a demand requested and should work on minimizing the complaints reported.

According to chapter four regarding the agility performance of the organization, the data analysis results show that it was less agile and inflexible. Therefore the researcher recommends that the top managers of the organization should work harder towards the

improvement of flexibility in a way it addressed unplanned demand requests, the volume of supplies required, and regarding flexibility in a way it was being addressed the unplanned demand of their organization.

As the data results regarding the cost of operating the supply chain of the organization's logistics performance, it was not satisfactory. Therefore, the researcher recommends that the top managers of the organization should work on designing of the systems with optimum cost, and making a distribution of supplies application of a goods management to all the costs, exploiting of a recognized cost of management, and optimization as important issues in its operations in reducing unnecessary costs related supplies and quantities occurrence.

According to the data analysis in chapter four the responsiveness of the organization's humanitarian logistics performance was found at a low level. Therefore, the researcher recommends that the managers need to consider solving the problems regarding the decision making at all levels to advance the logistics operations immediately, any requested demands are delivered at the right time, integration or the relationship with suppliers and third-party service providers to ensure the ERCS of A.A is responsive to requests, and proper follow-up of speeds of responding to the requests at any level.

ERCS top managers should consider asset management performance should take a very short time for supplies and delivers in addressing the beneficiaries, reducing the cost of carrying supplies in the warehouse, the supply store in the warehouse should be managed at the right quantity at any time, holding no excess of inventory in the warehouse, packaging or shipping materials should be held in the organization to relief site.

Factors that affecting the performance of humanitarian logistics of ERCS

Concerning the factors that affect the organization's performance, the top managers should have to make a proper emphasis on the major factors that affecting the performance of ERCS, specifically the infrastructural factors scoring higher Beta value of β=0.231, followed by technological factors (β=0.186).

Concerning the technological factors, the researcher recommends that the top managers of ERCS should disseminate accurate and timely information of what is in the pipeline inventory, use very organized technological support for updates and tracking of the good arriving in the field, develop very accessible technology to necessary logistics information from the database of other organizations, use automated systems or mechanisms to increase logistics efficiency.

Regarding the infrastructure, the government should consider increasing construction of alternative roads to different sub-cities of the city as well as increase reliability of utilities, build all-weather alternative roads for use to field sites when main roads are damaged, the government should cooperate with the organization to the accessibility of adequacy or stability of electric, communications, and water utilities, make cost assessment of transport for goods and people within the expected range that increases the cost of HLP

5.4. Further Research Directions

The study suggests that further research should be done to find out if Recognition factors and Donor factors do not affect the humanitarian logistics performance of ERCS and similar organizations.

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ANNEX 1: RESEARCH QUETIONNAIRE

Dear Participant,

This questionnaire is developed for an academic effort planned for the collection of primary data that will be used to assess the challenges of disaster preparedness and its effect on humanitarian logistics performance of the Ethiopian Red Cross Society, for the partial fulfillment of the Degree of Master of Arts in Logistics and Supply Chain Management, from the Addis Ababa University, School of Commerce.

The information obtained using this questionnaire will be kept confidential and will be used only for any academic purpose. Hence, I, kindly request you respond to the questions freely and openly to share your experience and knowledge with me.

Thank you for your cooperation!

Hailu Zenebe

Cell Phone: 0913326640

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General Instructions

- It is not necessary to write your name
- Try to address the entire question given below
- Where answer options are available, please tick (√) in the appropriate box for PART-I and circle for your response to each statements of PART-II. And write down shortly your answers for section three

PART-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 A. Female ☐ B. Male ☐

1.2 Age

A. 18-25 years☐ B. 26-30 years☐

C. 31-40 years☐ D. Above 40 years ☐

1.3 Educational Qualification:

A. College Diploma ☐ B. First Degree ☐

C. Second Degree and above ☐

1.4 Years stayed at the ERCS

A. Less than 2 Years ☐ B. 2-5 Years ☐

C. 6-10 Years ☐ D. Over 10 Years ☐

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

A. Less than 2 Years ☐ B. 6-10 Years ☐

C. 2-5 Years ☐ D. Over 10 Years ☐

1.6 Your department/work unit:

A. Logistics and supply chain ☐B. Program ☐C .Others ☐

Part Two: objective 1: Humanitarian Practice of ERC

Please tick (√) the appropriate option to indicate the level of humanitarian logistics practice at the ERCS its impact in addressing the right supplies at the right place and time for those who need it most. . Kindly indicate your level of agreement to the items by putting a tick mark (√) in the boxes provided. A scale of 1-5 is used to respond to the questions where:1=Never practiced2=Poorly practiced 3=Moderately practiced 4=Well practiced 5=Extensively practiced

A	Humanitarian Practice of ERCS	Score				
1	Procurement Management practice	1	2	3	4	5
1.1	There is practices of Preliminary need assessment made in a disaster prone area before procurement is made					
1.2	There is practices of Selection of Suppliers and Contract provisions is in practice					
1.3	There is the practices of Analysis of proposals					
1.4	There is practices of Issuance of purchase orders and Administration of purchase contracts and resolution of related					
1.5	There is practices of Maintenance of a variety of purchase					
2	Warehouse management practice		2	3	4	5
2.1	There is practice identification of potential points of storage to					
2.2	There is practice identification of the required warehouse					
2.3	There is a proper storage practice to efficiently utilize storage					
2.4	There is a proper practice of handing supplies stored,					
2.5	There is a practice of discharging supplies as per the need					
3	Inventory management practice					
3.1	There is intelligent pre-positioning of inventory and optimum allocation of resources to respond to any disaster anywhere					
3.2	There is practical analysis of supply and demand, forecasting in the risks of either supply or demand being too high or too low.					
3.3	There is a practice of allocating time and money in inventory by use of activity based Costing.					
3.4	There is a practice of active decision in prioritization of goods needed					
4	Transportation and distribution management					
4.1	There is a practice of careful consideration and measures for evaluating transport performance when choosing the carrier					
4.2	There is a practice of design the flow of materials for distribution keeping in mind the people who require it,					

4.3	There is practice distribution of supplies from central distribution centers,					
4.4	There is practice the use of different distribution spots to deliver supplies to the people,					
4.5	There is practice definition of distribution points to minimize the distance to beneficiaries					

Objective Two: Factors affecting humanitarian logistics performance of ERCS

To what extent do internal factors affect humanitarian logistics performance of ERCS? Please tick (√) the appropriate option to indicate the level of its impact in addressing the right supplies at the right place and time for those who need it most. 1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

B	Internal factors affecting humanitarian logistics performance of ERCS					
1	Recognition factors of logistics	1	2	3	4	5
1.1	Lack of involvement of all logistics staffs in organizational decision making process negatively affects the reliability of HLP					
1.2	Lack of participation of logistics staffs in humanitarian need assessment during startup of emergency & development projects negatively affects the agility of HLP					
1.3	Absence of standby assessment team to determine the need of the population negatively affects the responsiveness of HLP					
1.4	Inactive program staffs who determine the supplies that need to be produced in order to provide relief service negatively affects asset utilization of HLP					
1.5	Irresponsible for the immediate Procurement and Transport negatively affects the cost of HLP					
3	Technological factors	1	2	3	4	5
3.1	Inability to disseminate accurate and timely information of what is in the pipeline inventory negatively affects the responsiveness of HLP					

3.2	Lack of organized technological support for updates and tracking of the good arriving in the field negatively affects agility of HLP					
3.3	Inaccessible to necessary logistics information from data base of other organizations negatively affects the agility of HLP					
3.4	Absence of automated systems or mechanisms to increase logistics efficiency negatively affects the reliability of HLP					
4	Real professional staff factors	1	2	3	4	5
4.1	Lack of well experienced and real profession staff of humanitarian logisticians in the organization negatively affects the responsiveness of HLP					
4.2	Absence of humanitarian-academic partnerships to improve training, education, and research skills and capacity of logisticians negatively affects the reliability and asset utilization of HLP					
4.3	Absence of formal records of failure or success stories of past logistics experiences negatively affects the cost of HLP.					
4.4	Lack of professionals' people who can manage the complex supply chain of relief negatively affects the agility HLP					
5	Collaboration factors	1	2	3	4	5
5.1	Absence of Sharing resources such as field sites warehouses is negatively affecting the responsiveness of HLP					
5.2	Inability of Working together with NGOs or other partners for joint logistics set up & implementation is negatively affecting the agility of HLP					
5.3	Lack of capability of staff carrying out the coordination efforts (i.e. skills, attitude, knowledge, experience) is negatively affecting cost and asset utilization of HLP					
5.4	Absence of necessary logistics information from data base of other organization is negatively affecting reliability of HLP					
C	External factors affecting humanitarian logistics performance of ERCS	Score				
6	Legal or Political Factors	1	2	3	4	5

6.1	The government bureaucracy negatively affects the responsiveness of HLP						
6.2	Lack of government support is negatively affecting agility of HLP						
6.3	The insecurity situation challenge the freely operation of an affected area negatively affects reliability of HLP						
6.4	Restrictions of entry of staff and goods from abroad negatively affects cost and asset utilization of HLP						
7	The socio-economic challenges	1	2	3	4	5	
7.1	Absence of any support from the local community or beneficiary negatively affect the agility of HLP						
7.2	Uncertainty in demand and supply negatively affects reliability of HLP						
7.3	Incompatible to a culture and a language of affected area negatively affects the responsiveness of HLP						
7.4	Absence of well experienced staff deployment to the related community resistance in the emergency sites negatively affects the cost and asset utilization of HLP						
8	Infrastructure Factors	1	2	3	4	5	
8.1	Absence of all-weather alternative roads for use to field sites when main roads are damaged or blocked reduces the responsiveness of HLP						
8.2	Lack of adequacy or stability of electric, communications, and water utilities negatively affects the agility of HLP						
8.3	Absence of cost assessment of transport for goods and people within the expected range increases the cost of HLP						
8.4	Absence of Good communication and coordination between the supply						
9	Donors factors	1	2	3	4		
9.1	Inability to use of the obtained fund right away negatively affects the agility of HLP						
9.2	Insufficient amount of funds that allowed for logistic strategic preparedness affects the responsiveness of HLP						

9.3	Unavailability of funds in order to train and improve the capacity of logisticians negatively affects the reliability of HLP						
9.4	Absence of funds in order to train and improve the capacity of a logician negatively affects the cost and asset utilization of HLP						

Objective Four: Humanitarian performance of ERCS

With regard to the humanitarian performance of Ethiopian Red Cross Society, Please tick (√) the appropriate option to indicate the level of its impact in addressing reliability, agility, cost, and asset management for those who need it most. KEY: 1=strongly disagree 2=disagree 3=Neutral 4=agree 5=strongly agree

D	Humanitarian performance of ERCS	Score				
1	Reliability	1	2	3	4	5
1.1	There is a fulfillment of all the requested demands.					
1.2	All the supplies are delivered at the right time in order that beneficiaries are properly served					
1.3	All the supplies are delivered at the right time in order that beneficiaries are properly served					
1.4	The right supplies are delivered at the right quantity with all the necessary documentation for a demand requested					
1.5	There are no complaints reported during the execution of the logistics operation					
2	Agility (flexibility)	1	2	3	4	5
2.1	The type of supplies required may change from the initial request during assessment and still can be absorbed by ERCS					
2.3	There is easy accommodation in any change in terms of types of relief logistics supplies.					
2.4	There is flexibility in a way it addresses unplanned demand					
2.5	The volume of supplies required may change from the initial request during assessment and still can be engaged without any problem. There is flexibility in a way it addresses unplanned					
3	Cost	1	2	3	4	5
3.1	There are systems designed to make sure that the optimum cost is experienced					
3.2	There is always distribution of supplies to be prepared with optimum cost					

3.3	There is good management to all the costs that arise from all its activities in supplying and distributing material to where needed					
3.4	There is a recognized cost of management and optimization as important issues in its operations.					
3.5	There is unnecessary costs related supplies and quantities					
4	Responsiveness	1	2	3	4	5
4.1	There is a decision at all levels to advance the logistics operations immediately					
4.2	All requested demands are delivered at the right time					
4.3	There is an integrated relationship with suppliers and third party service providers to ensure that ERCS is responsive to requests.					
4.4	There is proper follow-up of speeds of responding to the requests at any level					
5	Asset management	1	2	3	4	5
5.1	It takes very short time for supplies and delivers in addressing the beneficiaries.					
5.2	There is low cost of carrying supplies in the warehouse					
5.3	The supply storage in warehouse at the right quantity at any					
5.4	There is no excess inventory in the warehouse					
5.5	Utmost packaging or shipping materials are being held in the organization to relief site.					