FACTORS AFFECTING THE OUTBOUND HUMANITARIAN LOGISTICS PRACTICES OF UNITED NATIONS INTERNATIONAL CHILDREN EMERGENCY FUND AND ETHIOPIAN RED CROSS SOCIETY

BY

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(ID: GSE/4710/2013)

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Declaration

I, the undersigned, certify that this thesis, titled "***Factors Affecting Humanitarian Logistics Distribution Performance of United Nations International Children Emergency Fund (UNICEF) And Ethiopian Red Cross Society (ERCS)",*** is my own original work and, to the best of my knowledge, has not been submitted for a degree by anyone else, and that all the sources of material used for the thesis have been duly acknowledged.

Declared by: Dagmawi Moges

Signature: _____

Date: _____

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

Confirmed by: Dr. Shiferaw Mitiku

Signature: _____

Date_____

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Table of Contents

List of Tables

List of Figures

Abbreviations and Acronyms

CRM -	Customer Relationship Management
DPR -	Disaster Preparedness and Response
DRR -	Disaster Risk Reduction
ECRC -	Ethiopian Red Cross Society
ERCS -	Ethiopian Red Cross Society
GDP -	Gross Domestic Product
HR -	Human Resources
IT -	Information Technology
KPI -	Key Performance Indicator
NGO -	Non-Governmental Organization
RMT -	Relationship Management Theory
SCOR -	Supply Chain Operations Reference
SPSS -	Statistical Package for the Social Sciences
UNICEF -	United Nations International Children's Emergency Fund
WHO -	World Health Organization

Abstract

Humanitarian logistics plays a critical role in providing aid and relief to communities affected by disasters and emergencies. Efficient and effective logistics operations are essential for the timely and efficient delivery of relief supplies, such as food, medication, shelter, and water, to those in need. However, humanitarian logistics faces numerous challenges, including unpredictable demand, damaged infrastructure, limited resources, and coordination issues. This research aims to investigate the outbound humanitarian logistics practices of two prominent organizations, UNICEF and the Ethiopian Red Cross Society (ERCS), and identify the factors that affect their effectiveness. To achieve the research objectives, quantitative approach is employed. The sample population consisted of 200 logistics and supply chain management professionals from UNICEF and ERCS Ethiopia, who were chosen through a census survey. The collected data were analyzed using descriptive statistics, including percentage analysis, mean, standard deviation, tables, and graphs. Furthermore, inferential statistics, specifically multiple linear regression analysis, were employed to examine causal linkages between variables. The study conducted on the outbound humanitarian logistics practices of UNICEF and ERCS revealed valuable insights. The respondents generally agreed that their organizations effectively evaluated the situation, adhered to ethical procurement standards, selected appropriate transportation modes, had adequate warehouse facilities, and followed humanitarian principles during distribution. However, there were areas for improvement, such as matching procured supplies with requests, efficient transportation of relief personnel, temporary storage during disasters, and quality control measures for distributed goods. The regression analysis showed a weak positive relationship between certain factors (lack of donor funding, lack of collaboration and coordination, unavailability of local market suppliers, government policy and regulation, and human resource-related challenges) and outbound humanitarian logistics practices. Recommendations were made to enhance collaboration, improve delivery time consistency, seek diverse funding sources, address human resource challenges, and implement continuous monitoring and evaluation for ongoing optimization.

Key Words: Logistics, Humanitarian Operations, Humanitarian logistics, Outbound humanitarian logistics, Humanitarian performance

CHAPTER ONE

1. INTRODUCTION

This chapter provides an introduction to the study, highlighting its key components. It presents the background, problem statement, study objective, research question, study scope, significance, definition of key terms, and study organization. These elements establish a foundation for the research, addressing knowledge gaps, emphasizing the significance of the problem, and outlining the goals and boundaries of the study.

1.1 Background of the Study

The World Health Organization (WHO) defines a "disaster" as any event that results in damage, destruction, ecological disruption, human suffering, loss of life, and deterioration of health and health services on a scale sufficient to necessitate a remarkable response from outside the affected community or area. Among the causes of catastrophes include earthquakes, hurricanes, tornadoes, volcanic eruptions, fire, floods, blizzards, drought, terrorism, chemical spills, and nuclear mishaps. Each of these events has devastating repercussions on human life and property, and they all have a substantial impact.(Safeer*et al.*, 2014)

According to the annual report of the Centre for Research on the Epidemiology of Disasters (2022), there were 432 natural disasters in 2021, which is more than the ten-year average (357 occurrences in the yearly average from 2001 to 2020). The report also states that there were 10,492 fatalities as a result of these incidents, 101.8 million people were affected, and US$ 252 billion in losses were predicted to result from them.

The majority of disasters happen unexpectedly, leaving little time to plan for their mitigation. The need for relief supplies, such as food, medication, shelter, water, and other resources, increases dramatically in the wake of disasters. To boost the provision of relief supplies, efficient emergency operations are necessary. The dangers and uncertainties that come with each tragedy make managing emergency humanitarian logistics operations more difficult. In the case that a disaster is anticipated, this creates challenges during the planning and mitigation phases. Humanitarian efforts are made more difficult during the response phase by damages to transportation infrastructure (road, rail), along with demand, supply, and environmental uncertainty.(Safeer*et al.*, 2014)

Humanitarian logistics and supply chain management point to the critical need of planning for and responding to complex emergencies, disasters caused by nature or man, and minimizing suffering for victims and the vulnerable. According to Global Humanitarian Assistance, approximately 65.6 million people are displaced due to war and conflict, and 661 million people live in poorer nations with worse environmental conditions. As a result, the amount of humanitarian help has increased to US Dollar 27.3 billion. (Global Humanitarian Assistance, 2017).

The success of aid and relief operations can be greatly aided by humanitarian logistics. One of the most challenging tasks during an emergency or disaster is managing such operations and their supply chains. Disasters affect these ecosystems' infrastructure, but they can also cause problems with people (victims and personnel), changeable post-disaster conditions, and stakeholder reluctance to participate in certain activities, to mention a few. Humanitarian logistics is a process that involves all phases of a disaster, from the initial stages (problem identification, region recognition, initial assistance to victims) to the end of all required relief operations (reconstruction of damaged infrastructures, training, demobilization of medical and aid personnel), and is divided into four distinct stages: mitigation, being ready, responding, and reconstruction(Varella and Gonçalves, 2015).

Humanitarian logistics is the process of organizing, carrying out, and managing the efficient, economical flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption with the aim of easing the suffering of weak people (Pettit, 2008). Humanitarian logistics have been defined by the author from the broad definition of logistics and humanitarian logistics to the particular objective of humanitarian logistics.

According to Thomas (2007), humanitarian logistics are "the processes and systems involved in mobilizing people, resources, skills, and knowledge to assist vulnerable people affected by natural disasters and complex emergencies." It entails several different activities, including last-mile delivery, warehousing, customs clearance, tracking and tracing, and transportation. Beyond logistics supplies, humanitarian logistics is also included in the method and system utilized in this example to handle people and the mobility of disaster victims. It also covers all steps necessary to assist those who need humanitarian assistance.

Humanitarian or emergency supplies are required to achieve the humanitarian logistics purpose. These urgent needs fall under the category of humanitarian logistics, which also covers the

products, tools, and supplies utilized by relief organizations to meet the basic requirements of the disaster's victims. These supplies encompass a wide range of relief logistics needed depending on the situation, from food, medicine, and clothing to rescue tools, electric generators, building supplies, and tools. (Varella and Gonçalves, 2015).

Therefore, humanitarian organizations play a significant role in providing for the fundamental necessities of the many millions of people who require humanitarian relief. A humanitarian organization is a non-profit entity or group committed to helping the weakest people of society. These organizations function in crisis situations and in regions where people are affected by war, disease, and poverty. All donations from governments, organizations that support development, and volunteers support humanitarian organizations. Humanitarian organizations are also referred to as Non-Governmental Organizations (NGOs) or relief organizations. Humanitarian organization's key goals include maximizing value for money, improving efficiency and effectiveness, ensuring fair competition among suppliers, and upholding ethics, accountability, and transparency. This contrasts with privately held businesses, which priorities making a profit. Humanitarian organizations have recently come under intense pressure from donors who have pledged millions of dollars' worth of help and commodities to show that they are accomplishing their goals in the most effective and efficient manner possible. Humanitarian organizations must pay closer attention to the impact of aid, not just the intake and output but the entire operation, as funders are getting more involved in the decision-making process over expenditures.(Van Wassenhove, 2006)

UNICEF and ECRC are two leading humanitarian organizations that have been actively involved in responding to emergencies in Ethiopia. UNICEF has been working in Ethiopia for over 70 years and has been involved in various humanitarian and development programs. ECRC is the largest humanitarian organization in Ethiopia with over 50 years of experience in responding to emergencies. However, little is known about the outbound humanitarian logistics practices of these organizations and the factors affecting their effectiveness.

1.2 Background of the Organization

United Nations International Children Emergency Fund (UNICEF)

UNICEF, the lead UN agency for child rights, has been operating in Ethiopia since 1952, with its headquarters in Addis Ababa and a presence in eight regions (Afar, Amhara, Benishangul-Gumuz, Gambella, Oromia, Somali, SNNP and Tigray). The objective of UNICEF is to assist the Ethiopian government in upholding its dedication to safeguarding children's rights and ensuring that their basic needs are satisfied so they can realize their full potential. To do this, UNICEF closely collaborates with the government, global and local partners, and children. UNICEF Ethiopia's overall country program has six main areas: health, nutrition, water, sanitation and hygiene, learning and development, child protection, and social policy. In addition, UNICEF focuses on three crosscutting programs covering social and behavior change communication, gender and early childhood development.('Country Kit.pdf', 2014 date)

Ethiopian Red Cross Society (ERCS)

ERCS was established by government decree on 8 July 1935 in the aftermath of the second Italian aggression over Ethiopia. ERCS began by providing humanitarian services to wounded soldiers and civilian victims. That same year on the 25 September 1935, ERCS was officially recognized as the 48th member of the International Federation of Red Cross and Red Crescent Societies. ERCS is auxiliary to the government and yet it is an independent humanitarian organization. It was established and recognized by law through a National Charter adopted in 31 October 1947. The Charter has undergone various parliamentary revisions, the last being in 1999. The current Charter was endorsed by the Parliament in January 2018.(*Organizational Background*, 2014)

The ERCS program aids in preserving lives, safeguarding means of subsistence, and enhancing crisis and disaster recovery. It encourages social inclusion, healthy living, and a culture of peace and nonviolence. In order to effectively and efficiently provide better services to disaster-affected communities, ERCS seeks to increase the ability of employees and volunteers in disaster response and preparedness.('MAAET00210ar (2).pdf', 2010)

Through the mobilization of resources, it gains from relationships at the national and worldwide level as a member of the worldwide Red Cross and Red Crescent Movement. In addition to its president and vice president, the ERCS is administered by 551 more board members. Its national headquarters are located in Addis Ababa, where the secretary general, deputy secretary-generals, program directors, heads of departments, coordinators of program, and other support staff members develop, oversee, and carry out the governing board's policies and decisions. It has a

decentralized structure through regional, Zone, woreda branches and kebele grass root committee throughout the country. Also, religious leaders, youth, women and other community members are included in this office (Munye Dagnew, 2020).

1.3 Statement of the Problem

The humanitarian environment is becoming increasingly complex, given the number and diversity of the different stakeholders involved and the environment in which they operate. There is the public sector with the government agencies, emergency relief mechanism and local authorities. There is the private sector with the corporations, service providers, goods suppliers and individuals. In between, there is the international community and the large and small aid agencies. Lastly, there is the society at large, which, regardless of their condition after the disaster, are exposed to unexpected changes(Van Wassenhove, 2006). All these stakeholders have different expectations that need to be coordinated for an effective outcome. Failure to do so would be at the expense of optimal performance of the humanitarian organization and ultimately the well-being of those in critical need of assistance. To coordinate all these stakeholders' needs, some level of accountability need to be present at every stage of the organization's operations including supply chain(Van Wassenhove, 2006)

Due to a number of problems, including unpredictable demand in terms of quantity and supply, and lengthy delivery times caused by perishable goods, providing humanitarian aid to those in need can be difficult. Infrastructure vulnerability mixed with the unpredictability of obtaining sufficient supplies results in a disrupted pipeline where the flow is not constant. The required lead times are small, but greater lead times are induced because of difficulties with gathering pertinent data and network member collaboration.

The challenges faced by humanitarian organizations are understandable given the complex context in which they operate. The majority of logistical issues faced by humanitarian organizations are related to infrastructure, ambiguity, urgency, unfavorable conditions, bureaucracy, low incentive to use lessons learned, lack of transportation management, lack of information flow, lack of continuous improvement, and short-term donations. The logistics processes employed by humanitarian groups should be improved using the finest corporate sector practices. Since large-scale activities requiring swift reactions are a focus of humanitarian help, many highly motivated

individuals are involved, and most significantly, many lives are saved. The endeavor to enhance its logistics is worthwhile. This suggests that organizations engaged in humanitarian operations need to enhance their logistical procedures in order to save the most lives and lessen suffering, which necessitates evaluating the practices and identifying the obstacles that obstruct them (Agostinho, 2013).

In the stage of preparation, logistics-related costs might account for up to 80% of overall costs. Additionally, the rise in the number of disasters brings to more complicated disaster relief operations due to challenges with coordination, transparency, information availability, and duplication of effort. These challenges necessitate a review of the relief activities in order to improve resource management, operational efficiency, and duplication of effort. Thus, preparation is a vital framework that must be put in place before the tragedy occurs.

However, the precise definition of preparedness is still unclear in terms of how logistics aid in the preparedness activity (Jahre *et al.,* 2016). Some researchers have studied logistics preparedness, such as capacity building (Manyena and Tadele, 2009) and risk management (Whybark, 2007). To reduce negative effects prior to a disaster, Tomasini and Van Wassenhove (2009a) attempted to define preparation as a phase involving all participants. Personnel training, the creation of institutions, the allocation of financial resources, and the advance design of a logistical shelter, the prepositioning of products, home readiness, first aid, and coordination can all be part of the preparedness phase's operations (Jahre et al., 2016). Van Wassenhove (2006) even divided the five activities of the preparation stage into categories such as inventory (prepositioning goods), infrastructure (establishing a physical network and communication), human resources (training and skills), operations and process management (framework agreements), financial resources (funding), and community key players, such as governments, HOs, and the military (Jayadi and others, 2020)

Gadeffa (2020) came to the conclusion that Goal Ethiopia's Borena Zone office's procurement, warehouse, and transpiration practices have a minimal impact on humanitarian logistics in his master's thesis study on the role of humanitarian logistics in disaster operations. He did, however, suggest encouraging study on various humanitarian organizations in Ethiopia. In their analysis of the challenges faced by humanitarian logistics during disaster relief operations for a nonprofit organization (the Red Cross Society) in Namibia, (Baporikar and Shangheta, 2018) discovered that

basic problems like legal sourcing of relief supply, resources, transportation issues, and challenges identifying starting help requirements all contribute to difficulties in delivering viable and effective administrations to the affected areas. However, there hasn't been a sufficient investigation into the contributing aspects that component factors affect logistics performance in the Ethiopian context, particularly with regard to ERCS. In light of the current challenges faced by NGOs in relation to humanitarian logistics, a lack of research in the field of humanitarian logistics, the rise in the frequency and impact of disasters, and other factors, the researcher is motivated to investigate the practices, challenges, and effectiveness of humanitarian logistics management. Although UNICEF and the ECRC's outbound humanitarian logistics procedures have been extensively investigated, there are still gaps in understanding of the factors which affect their efficacy and efficiency. Specifically, there is a need to explore how the following factors impact outbound humanitarian logistics practices: (1) transportation infrastructure and availability, (2) procurement and inventory management, (3) coordination and collaboration with local actors, (4) funding and resource constraints, and (5) political instability and conflict in the area of operation. Therefore, the aim of this research is to investigate the outbound humanitarian logistics practices of UNICEF and ECRC and identify the factors that affect them.

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of this research was to assess the outbound humanitarian logistics practices and identify the factors affecting the practices at UNICEF and ECRC.

1.4.2 Specific Objectives

The specific objectives of this study are:

- To assess the outbound humanitarian logistics practice of UNICEF and ERCS in terms of situation analysis transportation management, procurement management, warehouse management, and distribution management.
- To determine factors affecting the outbound humanitarian logistics practices of UNICEF and ERCS

- To measure humanitarian outbound logistics performance of UNICEF and ERCS in terms of delivery time, cost, and inventory management

1.5 Research Questions

The study intended to answer the following research questions:

- How outbound humanitarian logistics is being practiced at UNICEF and ERCS in terms of situation analysis, procurement management, transportation management warehouse management, and distribution management?
- What are determinant factors affecting the outbound humanitarian logistics practices of UNICEF and ERCS?
- How well do UNICEF and ERCS attain the required level of humanitarian outbound logistics performance in terms of delivery time, cost, and inventory management?

1.6 Significance of the Study

This research will assist in understanding the common practices and their impact on the outbound humanitarian logistics on achieving a common goal will also help donors and other involved parties understand the environment. The study's findings provide information about various impacts of the distribution operation in the humanitarian logistics as well as pertinent information on various cycles of distribution operation challenges. The study will also provide as a springboard for individuals who wish to pursue further research on the logistics of humanitarian aid delivery or other related areas.

1.7 Scope of the Study

The field of supply chain management is broad and includes a variety of managerial activities. On the other hand, conducting the study across the board in terms of time, money, and research manageability is challenging and unmanageable. This is why the goal of this study was limited to assess the methods and difficulties of outbound humanitarian logistics, identify the factors that influence it, and evaluate the effectiveness of UNICEF and ERCS in this regard. The study was carried out between February and March 2023 using secondary data. The study's focus was likewise restricted to UNICEF and ERCS (saris branch and stadium headquarters).

1.8 Organization of the Paper

The research paper is organized in to five chapters. The first chapter present the backgrounds of the study, statement of the problem, research question, the study objectives, significance of the study, delimitation of the study, the second chapter discusses the literature review of the subject matter, whereas chapter-three elaborate about the study design and methodological aspects deployed, Moreover, the other part chapter-four includes analysis of the study data, demonstration of the results and discussions. The fifth chapter will present summery of findings, conclusions and recommendation.

1.9 Definition of Terms

Logistics: The process of organizing, carrying out, and managing the smooth movement and storage of products, services, and associated information from the point of origin to the site of consumption in order to satisfy client needs. This definition covers all internal, external, and external movements and logistics as well as the return of goods for environmental reasons(Lambert, Cooper and Pagh, 1998).

Humanitarian Operations: are actions taken to alleviate human suffering, particularly when local authorities are either unable or unwilling to offer necessary service support to civilian populations (‘2012 OCHA Annual Report).

Humanitarian logistics: the ability to effectively plan, implement, and manage the flow and capacity of goods and materials, as well as related information, from the point of production to the point of consumption in order to meet the needs of the final beneficiary(Thomas and Mizushima,2005).

Outbound humanitarian logistics: Is the process of delivering relief items -including food, non-food items and cash-to disaster-affected communities

Humanitarian performance: is the efficient joint effort of a variety of humanitarian participants to save lives, relieve suffering, and uphold human dignity both during and after man-made crises and natural disasters. It also aims to prevent such situations from happening in the future and to improve preparedness for them (Schumann-Bölsche, 2013)

CHAPTER TWO

2. RELATED LITERATURE REVIEW

This chapter undertakes a thorough analysis of the pertinent literature and offers a succinct overview of the topic of humanitarian logistics performance in humanitarian organizations. It includes definitions, suggestions for humanitarian logistics management techniques, information on the effectiveness of the humanitarian supply chain, a description of the differences between

humanitarian and commercial logistics, an empirical analysis relevant to the topic of the study, and a conceptual framework.

2.1 Theoretical Literature Review

A thorough evaluation of the pertinent literature is conducted in this chapter along with a brief overview of the topic of humanitarian logistics performance in humanitarian organizations. It includes definitions, suggestions for managing humanitarian logistics, information on the effectiveness of the supply chain for aid organizations, the distinction between business and humanitarian logistics, an empirical analysis relevant to the topic of the study, and a conceptual framework.

2.1.1 Humanitarian Logistics

According to Thomas and Kopczak (2007), the process of mobilizing resources, people, knowledge, and skills to assist those affected by complex emergencies and natural or man-made disasters is known as humanitarian logistics. Transportation, sourcing, storage and warehouse, customs clearance, order tracking, and tracing are just a few of the tasks involved. Through three key tasks, humanitarian logistics play a crucial role in the current and future success of the humanitarian activities and initiatives. First, in order to provide a prompt and effective response, key humanitarian programs like those for food, housing, and health should be improved.

2.1.2 Outbound Humanitarian Logistics Function

Operations for responding to disasters and carrying out humanitarian relief missions depend on logistics. The level of excellence in logistics operations has a substantial impact on the length and quality of care, important elements for mitigating the detrimental social and economic effects of humanitarian operations in an emergency (Bastos et al., 2013). Humanitarian logistics' responsibilities include safeguarding people's lives and infrastructure, limiting financial losses resulting from tragedies, ensuring sound data management of information systems, offering better transportation, enhancing alarm systems, networking systems, and communication abilities (Agarwal & Singh, 2018). The efficiency and speed of existing and upcoming activities and projects depend greatly on humanitarian logistics (Wassenhove, 2006).

The goal of humanitarian logistics is to provide the necessary supplies Players involved in Humanitarian Logistics. The individual are the people or organizations that take part in or assist with the humanitarian logistics process. To ensure that the humanitarian logistics plan is effective and affordable, each stakeholder has a key role to play (Daud et al., 2016). Improved conditions for the target communities are the primary goal of humanitarian action, which is driven by both private and public interests. The parties involved in humanitarian logistics include the people who receive relief, the organizations that distribute it, the businesses that manufacture it, the military, shipping companies, the donors who fund the efforts, the governments that play important roles, and many more. As a result, logistics concentrates on the exchange of goods, services, and information between businesses.

2.1.3 Outbound Humanitarian Logistics Management Practices

Emergency logistics, according to Jiang and Yuan (2018), The main task after a disaster is gathering and distributing emergency supplies to the affected areas, but there are many interrelated tasks that need to be finished, such as figuring out who is in possession of the emergency supplies, where they can be obtained, who will deliver them to the affected areas, when transport vehicles will be available, etc. In relief operations, procurement aims to make it possible for orders to be placed and delivered on time and for a reasonable price. To save delays and support the local economy, governments and organizations want to buy locally whenever possible. To guarantee the quality and uniformity of their supplies or to obtain better pricing, some firms, however, choose to use their regular suppliers (Moeiny & Mokhlesi, 2011). In order to ensure that the organizations involved in relief management have the resources necessary to address stated demands, the procurement procedure serves this function.

Both before and after a disaster, procurement can be done for humanitarian logistics. To preposition relief goods at key sites, close to disaster prone areas, pre-disaster procurement is required. During the first few days following the tragedy, pre-positioned merchandise is used to supply the recipients. Therefore, it is crucial to have those items ready for delivery. However, only a small portion of the total relief supply is supplied from the pre-positioned inventory, claim Balcik and Beamon (2008). A relief group is interested in purchasing a relief item in huge quantities when a disaster strikes, and it is not cost-effective to pre-position significant volumes of inventory for

this item. In many disasters' relief missions, pre-positioned supplies are therefore frequently insufficient.

2.1.3.1 Transport Management

The main operational components of relief groups are logistics and transportation, and increasing the effectiveness of these systems has the potential to greatly increase the availability of humanitarian aid services. In the immediate aftermath of a disaster, humanitarian groups frequently encounter major challenges moving huge quantities of various goods, such as food, clothing, medical supplies, equipment, and personnel, from many origins to various destinations inside the disaster area. To increase the affected population's chance of survival and reduce operating costs, supplies and relief workers must be sent swiftly and effectively (Dolinskaya et al., 2011).

When a disaster strikes, transportation infrastructures are typically devastated, placing several restrictions on last-mile emergency logistics and reducing the viability of emergency relief operations (Jiang & Yuan, 2018). Infrastructure for transportation is therefore crucial, especially in areas that are susceptible to calamities. The majority of transportation infrastructure is constructed with little consideration for unanticipated situations and is designed to operate normally. This means that in the event of a disaster, there will be more infrastructure damage.

2.1.3.2 Warehouse Management

The supply chain is accountable for getting the right products, in the right quantities, to the right customers, at the right times and places, in the appropriate conditions, and for the right prices. To deliver the appropriate goods in the right quantity, accurate warehouse picking and dispatching operations are required. In order to deliver the right product to the right customer at the right location on time, it must be properly labeled and loaded onto the appropriate vehicle in enough of time to meet the delivery date. Additionally, the warehouse must ensure that the goods depart from the facility intact and in good condition. To give customers value for their money, a prosperous business must run effectively. In order to complete the right order, the warehouse is crucial (Richards, 2014). Warehouse is important because it directly helps reduce suffering of affected people by reducing the time to reach them while also encouraging cooperation and collaboration between large numbers of governmental, non-governmental, national and international organizations working in the field of disaster management. Stock may build up throughout the

relief chain. Collection locations can serve as warehouses, transshipment locations, and locations for preparation and packaging of goods. They may be found there or close to ports, airports, or border crossings. Stock asset management is the process of setting up warehouses at certain locations and setting up the goods stored there for distribution. Strategic warehouse and transshipment point placement will make the best use of the infrastructure and ensure the safety of the resources and people. (Moeiny & Mokhlesi, 2011).

2.1.3.3 Distribution Management

Distribution procedures are crucial to disaster response efforts. The efficient delivery of various relief supplies to afflicted areas is known as resource distribution. Delivering aid to those impacted by the disaster is the main objective of the logistics chain in relief operations, and it must be done in a fair, proportional, and well-controlled manner to avoid abuses or wastes. The many organizations receiving supplies must coordinate their efforts, especially with government authorities, for distribution to be carried out successfully. Distribution of supplies must take into account both the level of demand and the stock already in place (Jiang & Yuan, 2018).

Distribution activities enable the relief supply chain to effectively deliver goods and services in a timely and efficient manner through coordinated transportation nodes and modes. Capacity, capability, speed, cost, resiliency, reliability, and robustness of transportation all contribute to a supply chains ability to respond to demand or changes in the environment. The number of distribution locations should be increased, with them being placed in previously existent community centers and gathering places, to shorten the trip to the beneficiaries. Information regarding the available commodities and the people impacted is necessary for an efficient distribution program. The humanitarian mission is made easier by the employment of military operations for clearing access roads and handling cargo, mapping the danger zones, locating the resources by kind of vehicle that can be promptly dispatched in the case of a natural disaster the ability to adjust to changing demand while accomplishing the goal. The number of distribution stations should be expanded in order to shorten the distance to the recipients, but they should be placed in already established community centers and gathering areas. Therefore, it is crucial to conduct a study of transportation service providers, as well as government agencies or private businesses that have fleets that can support humanitarian operations by assessing their capabilities (Costaa *et al.,* 2012).

2.1.4 Measuring Humanitarian Logistics Performance

Providing assistance to catastrophe victims in the form of food, shelter, clothing, medical care, water, etc. is the ultimate purpose of humanitarian logistics. Humanitarian logistics, like their commercial counterparts, require a performance measurement system to determine whether operations are successful or unsuccessful. As stated by Gunasekarana (2007), for organizations to establish goals and future strategies, performance evaluation and metrics are essential. Performance measures are quantifiable, unbiased indicators of a variety of performance factors. The act of developing, observing, and utilizing these metrics is known as performance measurement (Poister, 2003). An action's efficacy and efficiency are measured using a procedure known as performance measurement. Efficiency examines how economically these needs have been met, whereas effectiveness relates to how much of the consumers' needs are met. Effective performance assessment tools would empower decision-makers in the relief chain, increase the efficacy and efficiency of relief operations, and show the chain's performance, boosting the accountability and transparency of disaster response. A proper organizational performance assessment system should be developed using the metrics that matter most to the organization (Gunasekarana, 2007).

Different models can be used to assess an organization's performance. The Supply Chain Operations Reference (SCOR) model, which was created and approved by the supply chain council as a cross-industry standard for supply chain management, is one of them that might be cited (Thilakarathna, Dharmawardana, and Rupasinghe, 2015). A proper organizational performance assessment system should be developed using the metrics that matter most to the organization (Gunasekarana, 2007). The SCOR model states that five performance criteria should be taken into account when evaluating the effectiveness of an existing logistics function. These performance characteristics include delivery dependability, reactivity, adaptability, and effective cost and asset management. The first three characteristics delivery dependability, adaptability, and responsiveness are geared toward the needs of the consumer, whereas the following two—cost and asset management efficiency are geared toward the needs of the company. Delivery dependability refers to how well the logistics function performs in delivering the appropriate product to the appropriate beneficiary at the appropriate time and in the appropriate amount. On the other hand, responsiveness stresses how quickly the logistics function delivers goods to the beneficiaries.

Being flexible means having the capacity to adapt to shifting needs in terms of both diversity and volume. Cost refers to the expenses incurred in carrying out the logistics function, and asset management effectiveness refers to how well assets are managed to meet beneficiaries' demands that are directed at the organization (Thilakarathna, Dharmawardana, and Rupasinghe, 2015). Delivery dependability refers to how well the logistics function performs in delivering the appropriate product to the appropriate beneficiary at the appropriate time and in the appropriate amount. But responsiveness emphasizes how promptly the logistics function gets the recipients their items.

2.2 Empirical Literature Review

2.2.1 Outbound Humanitarian Logistics Practice

Distribution techniques are essential to disaster relief efforts. Resource distribution, according to Jiang and Yuan (2018), is the effective distribution of diverse relief resources to affected areas. The primary goal of the logistical chain in relief operations is to deliver aid to those affected by the disaster, and it must be done in a just, proportional, and well-controlled way to prevent abuses or wastes. For distribution to be successful, the different organizations receiving supplies must coordinate their activities, especially with government officials. The demand for supplies as well as their present stock must be considered while allocating them.

Through coordinated transportation nodes and modes, distribution activities help the relief supply chain deliver items and services quickly and effectively. When it comes to a supply chain's ability to adapt to demand or changes in demand while still completing its tasks, capacity, capability, speed, cost, resiliency, reliability, and robustness of the transportation network are all important factors. Although they should be located in already established community centers and gathering places, the number of distribution stations should be designed to reduce the distance to the beneficiaries. Information regarding the available commodities and the people impacted is necessary for an efficient distribution program. The humanitarian mission is made easier by the employment of military operations for clearing access roads and handling cargo. Locating the resources by kind of conveyance that can be quickly mobilized in the event of a natural disaster, and mapping the danger zones. Therefore, it is crucial to conduct a study of transportation service

providers, as well as government agencies or private businesses that have fleets that can support humanitarian operations by assessing their capabilities (Costaa et al., 2012).

Emergency supplies are typically distributed in a disaster relief operation involving international actors by arriving at a major hub, like sea ports or airports, from various locations around the world. Then, after being sorted and kept at secondary hubs, which are sizable, permanent warehouses situated in larger cities, the items are relocated to tertiary hubs, which are neighborhood distribution centers. Finally, aid is given to the recipients. The final stage of humanitarian assistance is to deliver supplies to that in need or in affected areas (Beamon & Balcik, 2008). The final two steps of the relief supply chain are situated between an enlarged delivery point, which are locations or warehouses near to the affected area, and the recipients. The last mile procedure is crucial to ensuring that the relief goods get to the individuals who actually need them. This phase is typically challenging because of the damaged infrastructure and the impacted area's road restrictions. The lack of coordination between relief actors, limitations on transportation options and emergency supplies, and difficulties brought on by harmed transportation infrastructure are frequently the main causes of logistical problems in the last mile. It is challenging for relief agencies to develop effective and efficient distribution plans while simultaneously assuring a coordinated response in such a complicated environment. Therefore, NGOs may decide on distribution using ad hoc methods, which may lead to an ineffective and unproductive response (Beamon & Balcik, 2008).

2.2.2 Factors Affecting the Performance of Outbound Humanitarian Logistics

Unpredictability of disasters, a lack of institutional learning, bad manual logistics procedures, high personnel wage expenses, and poor, fragmented technology are characteristics of humanitarian logistics initiatives (Thomas 2008; Thomas and Kopczak 2005). The performance of humanitarian logistics is influenced by a variety of internal and situational elements, including those related to the environment, the government, socioeconomic conditions, and infrastructure. (2011) Kunz and Reiner the five "pain issues" cited by heads of logistics at leading humanitarian aid groups in Geneva in 2003 included the nature of the funding process, organizational culture, high personnel turnover, lack of institutional learning, and poor coordination (Thomas and Kopczak 2005). Because these five factors overlapped and were discussed in several literatures, the researcher

focused on them. They are coordination and collaboration, donor finance, information technology, local market suppliers, and the availability of professional staff.

2.2.2.1 Collaboration and Coordination

Balcik et al., (2010) has provided a definition of the term "coordination" as a partnership and collaboration between several actors when operating in a relief setting. Sharing resources and information, making decisions at a central level, working on collaborative projects, allocating responsibilities regionally, or using a cluster-based system where each cluster represents a different industry sector are all examples of coordination. (e.g., food, water, sanitation, and information technology).

Coordination and job specialization are required to handle the increasing number and complexity of disasters. Cooperation and partnerships are preferred not only between the armed services, the government, and private enterprise, but also between humanitarian organizations and inside those organizations, (2006) Van Wassenhove. Donors and other parties are enthusiastic about working with the humanitarian organization to cut back on unnecessary activities. Teamwork is a must, not an option, as no one institution can satisfy all demands (IASC). To improve their processes in response to the rapidly changing situations, autonomous organizations must work together, according to (Simatupang et al., 2002).

According to Kampstra and Ashayeri (2006), Coordination might be difficult if there aren't strong collaborative values shared by all stakeholders participating in a supply chain. They also mention that working with someone who is unwilling to cooperate in good faith could be difficult. One global analysis of supply chain advances conducted in 2004 (Supply Chain Management Review and Computer Sciences Corporation) recognized collaboration as the one most pressing issue, for example. 44% of the sample organizations had collaboration-related initiatives, however only 35% of these projects were even moderately successful, according to the poll.

2.2.2.2 Adequate Donor Funding

Donors are the most significant contributors to and for humanitarian organizations. Therefore, these humanitarian organizations must continue to work and run-in accordance with donor motive. Priorities and trends in donor spending are two things that affect the humanitarian operations that donors fund, claims Desta (2018). She also mentioned how important a small number of key

funders are to the continued existence of humanitarian organizations. Only a few of the issues include the growing, excessive interest in funding emergencies, the obvious competition among humanitarian organizations for operation funds, and the problem with non-collaboration in performing comparable operations to avoid recurrence of effort and cost.

Thomas and Kopczak (2005) has added that humanitarian organisations are now more conscious of the need to utilise their resources effectively and efficiently, focusing their operations on their core capabilities. However, (Wassenhove, 2006; Kovacs and Spen, 2007), has said that donors favour direct materials above investments in information technology, capacity building, and the preparation stage. The type of money that these supply chains receive makes investment in research and infrastructure exceedingly difficult. Additionally, it has been observed that in addition to the recipients, contributors must be considered a key stakeholder. (Blecker, 2009).

2.2.2.3 Human Resource Related Challenge

Finding qualified logisticians is challenging for humanitarian organizations, which hinders employee dependability and leads to the usage of untrained staff that does not assist the standardization of work procedures in a sector where the operational process is not standardized. Blecker (2009) has expressed in-depth concern about how difficult it is for an organization to hire professionals because logistics personnel lack training as logisticians while dealing with a variety of demands from local governments and officials, donors, the media, beneficiaries, and their own headquarters. The experience with the Tsunami relief effort also served as evidence for the mentioned claim, as the operation suffered from a shortage of qualified and experienced personnel. (Fritz Institute 2005). Moreover, for many years, appropriate recognition and acknowledgement weren't given for the humanitarian logistics sector which has contributed a lot for the unmet logistics requirements. Wassenhove, (2006), has also witnessed that logisticians are not included in planning and budgetary processes which can be used as a witness on how the humanitarian logisticians are not recognized. Furthermore, logisticians are often not consulted in the decision-making process (Fritz Institute 2005). It has also been revealed how important it is to improve logistics practices by formulating humanitarian academic partnership (Kovacs & Spens 2011).

2.2.2.4 Information Technology

The correctness of the information system is crucial to the effectiveness of disaster relief efforts. When it comes to increasing logistical efficiency and lowering costs at the same time, IT is crucial.

However, donors want to provide their money straight to the most vulnerable people who were affected by the disaster, which leaves them with limited or no money to spend on such essential machinery and technology (Oloruntoba and Gray, 2006). Proper monitoring and communication are essential for the supply chain to become more responsive, ensuring the effectiveness of humanitarian response responsiveness (Christopher and Tatham, 2011). During a crisis, humanitarian agencies require information related to the catastrophe or disaster, beneficiaries, and availability of resources (Gary P. Ramsden, 2014). Furthermore, Thomas (2003), has also supported the existence of these challenge by stating the fact that in spite of knowing of having sophisticated SCM tools could result in effective cost and more efficient operations in the longer term, agencies have limited human and financial resources to invest in such advances.

Fritz institute (2005), has focused more on the fact that supply chain management and logistics operations in the humanitarian sector are still primarily carried out manually because there aren't enough logisticians to have access to computerized tracking and tracing software. He has also stressed the importance of acquiring, analyzing, and disseminating vital information to the stakeholders so that more lives can be saved, and people can receive assistance as soon as possible. The sooner crucial information is received, processed, and disseminated by the parties involved, the more effectively the relevant response will be delivered to the beneficiaries and therefore more lives will be saved.

2.2.2.5 Unavailability of Local Market Suppliers

Gary P Ramsden, (2014), has described socioeconomic challenges by mentioning issues like supply and demand uncertainty, problems with market economy competition, lack of local suppliers for operations, availability of stiff competition, lack of donors, cultural and linguistic differences, expensive materials and logistics, and a lack of trust among stakeholders. Because of this, having access to local vendors on the market in the host country helps the relief effort go more smoothly by allowing beneficiaries to receive support or assistance before running the risk of running out of supplies. According to the different types of disasters and the stages in the disaster timeline, the needs of the beneficiaries may also vary dramatically (Jahre and Jensen, 2010). Due to the lack of past data, demand forecasting in a disaster relief operation can be challenging. Although the organization has various databases created in the past by both NGOs and governments, they are occasionally insufficient due to inconsistent and/or poor data collecting and

reporting issues. Process irregularities are issues brought on by a lack of organization, lead time variability, and agency culture. Accordingly, difficulties like uneven quantity, quality, and lead time are included in volatile supply challenges.

2.2.2.6 Government Policy and Regulations

According to Kunz and Reiner (2012), one of the key governmental factors influencing how effectively humanitarian organizations make operational decisions and perform logistical duties is government policies and laws. Tanzania's cooperative government welcomes relief and humanitarian organizations (HO) to help reduce the number of deaths among the affected people during disaster and emergency situations, in contrast to other governments that forbid HO from sending staff and aid (medicines, food, and clothing) to a particular country during disaster. How well humanitarian logistics are carried out is significantly influenced by government engagement in a country's security issues. (McLachlin & Larson, 2011)

2.2.3 Humanitarian Outbound Logistics Performance

In order to ensure the timely and effective distribution of relief to impacted communities, humanitarian outbound logistics performance evaluation is a crucial component of humanitarian operations. This can be done by evaluating the effectiveness of logistics operations using several performance metrics.

The time it takes for supplies to arrive is one performance measure that has been regularly used to gauge how well humanitarian outbound logistics work. Because it directly affects the lives of the impacted communities, delivery time, according to Kovács and Spens (2007), is a crucial indicator of performance in humanitarian logistics. Therefore, shortening delivery times can boost humanitarian operations' effectiveness and raise beneficiaries' happiness.

The cost of delivering aid is another performance indicator that may be used to evaluate the effectiveness of humanitarian outbound logistics. The effectiveness of logistics operations can be assessed using this metric, and opportunities for cost savings can be found. Reducing logistics expenses, according to Scholten et al. (2013), can increase the sustainability of humanitarian operations and guarantee that there are more resources available for relief distribution.

Inventory management is another crucial performance indicator for evaluating the effectiveness of humanitarian outbound logistics, in addition to delivery time and cost. By ensuring that the right products are supplied at the right time, effective inventory management can reduce waste and increase the amount of relief available to impacted communities. Inventory management is a crucial component of humanitarian logistics, according to Altay and Green III (2006), and performance measurement in this area can assist discover areas for improvement.

The efficient and successful distribution of aid to impacted populations depends on assessing the performance of humanitarian outbound logistics. Logistics operations can be evaluated for effectiveness and efficiency and chances for improvement using performance indicators including delivery time, cost, and inventory management.

2.3 Theoretical Framework

Logistics for humanitarian aid in transit are based on several theories. According to the resource-based view (RBV) hypothesis, for instance, resources and capabilities are crucial for gaining a competitive edge (Barney, 1991). RBV theory emphasizes the need of having the required resources, such as qualified employees, transportation infrastructure, and information systems, to support efficient logistical operations in the context of outbound humanitarian logistics.

The contingency theory, which contends that good management techniques depend on the circumstances in which they are used, is another pertinent theory. Contingency theory emphasizes the need for logistics managers to modify their practices to meet the unique constraints of the operational environment in the context of outbound humanitarian logistics. For instance, logistics managers may need to modify their procurement strategy in the wake of a natural disaster to take into account disruptions in regional supply networks. The researcher has selected the following from among them since they provide strong theoretical bases for this work (Barney, 1991).

2.3.1 Resource Based Theory

According to the Resource-Based Theory (RBT), a company's strategic resources are the foundation for achieving a long-term competitive advantage (Jay B. Barney, Valentina Della Corte, Mauro Sciarelli, and Asli Arikan, 2012). According to Barney (1991), Amit and Shoemaker (1993), an organization is a grouping of organizational resources as well as physical, human, and

human resources. The fundamental source of a sustained competitive advantage for persistent superior performance comes from an organization's resources, which are valued, uncommon, imperfectly replicable, and imperfectly substitutable (Barney, 1991)

2.3.2 Social Exchange Theory

The fundamental principles of social exchange concern (1) subjective assessments of the worth of the resources being exchanged or transferred from one party to another, (2) obligations and expectations that may frequently emerge regarding those exchanges of resources, and (3) the creation and maintenance of frequently intricate political and social relationships as a result of exchanges. For instance, in the context of relationships between rich and poor countries that involve the sourcing and shipment of humanitarian aid and other valuable goods and services from donor countries to poorer, more vulnerable countries; or the outsourcing of humanitarian aid goods and services from within the country (Wang et al 2016).

2.3.3 Stakeholder Theory

Stakeholder Theory is a theory of capitalism that emphasizes the connections between a company's stakeholders, including its clients, vendors, employees, investors, and communities. According to the notion, a company ought to provide value for all parties involved, not just shareholders. The foundation of the stakeholder theory is the idea that organizations can only be deemed successful if they provide value to the majority of their stakeholders. It complements CSR (Corporate Social Responsibility) and, by extension, sustainability. This indicates that value creation is not solely about money and that profit cannot be the only metric of a business' success (Wang et al 2016).

2.3.4 Relationship Management Theory (RMT)

According to Skjoett-Larsen (2007), relationship management theory (RMT) is a logistics management strategy that places a major emphasis on the value of fostering and preserving strong bonds between supply chain partners in order to boost performance and realise mutual gains. RMT entails "developing long-term, cooperative relationships with key suppliers, customers, and other stakeholders to achieve operational excellence, create value, and enhance competitiveness," according to Skjoett-Larsen (2007).

The foundation of RMT is the resource-based perspective of the company, which contends that a firm's assets and skills may serve as sources of long-term competitive advantage (Barney, 1991). RMT emphasizes the significance of building and utilizing relational resources, such as trust, commitment, and communication, in the context of logistics in order to add value and gain a competitive edge (Skjoett-Larsen, 2007).

2.4 Conceptual Framework of the Study

The conceptual framework shows the dependent variable, outbound humanitarian logistics practice, along with the independent variables, coordination/collaboration, donor's fund, HR/professional logistics, government policy and regulations and local suppliers.

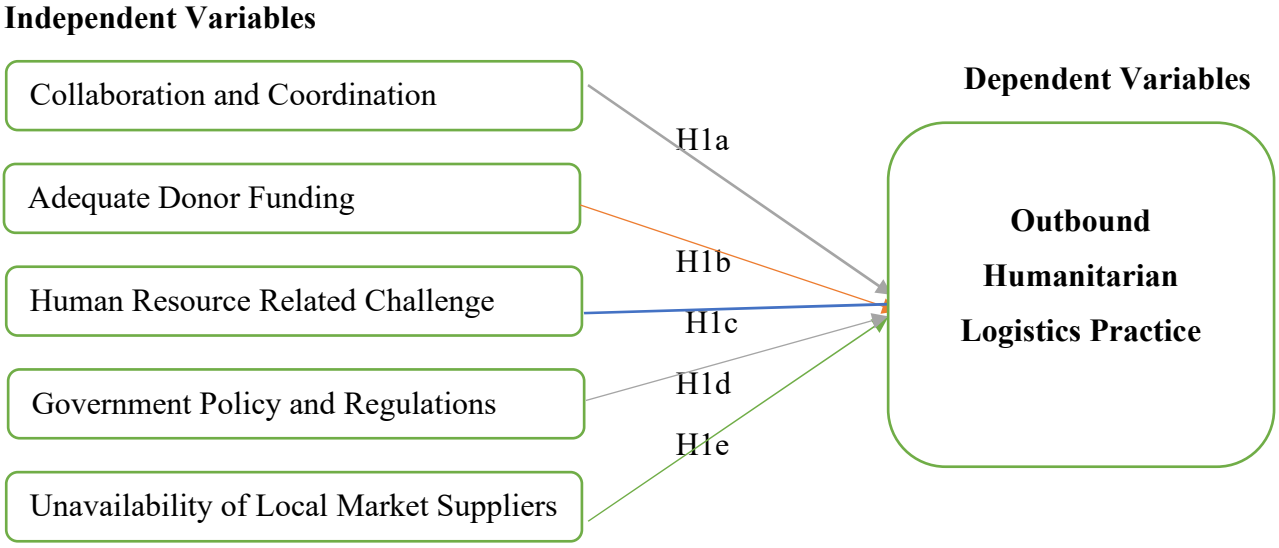

Figure 1 Conceptual framework of the study

Source:(Balcik et al., 2010; Kopczak 2005; Kunz and Reiner. 2012; Van Wassenhove, 2006)

2.5 Summary of Hypothesis

Based on the literature review and conceptual framework presented, the following summarized hypotheses are formulated in order to achieve the study objectives.

- *H1a: Collaboration and coordination problems negatively affect the outbound logistics practices of UNICEF and ERCS*

- *H1b: Lack of adequate donor funding negatively affects the outbound logistics practices of UNICEF and ERCS*
- *H1c: Human resource related challenge negatively affects the outbound logistics practices of UNICEF and ERCS*
- *H1d: Government policy and regulation affect the outbound logistics practices of UNICEF and ERCS*
- *H1e: Unavailability of local market suppliers negatively affects the outbound logistics practices of UNICEF and ERCS*

CHAPTER THREE

3. METHODOLOGY OF STUDY

The methodologies used in this study are covered in detail in this chapter, including the selection of specific study design of the research, data type and source, research approach, data gathering method and tools, sampling method and techniques, data analysis methods, validity and reliability tests of the study, and the appropriate justification for each methodology.

3.1 Research Approach

The study used a quantitative research approach to accomplish its objective, deliver a conclusive response to the research questions and the test hypothesis. While using statistical tools, a quantitative approach is utilized to analyze secondary data

3.2 Research Design

The design for achieving research goals and addressing research questions is known as the research design. In other words, it is a master plan that details the procedures and strategies for gathering and analyzing the necessary data. This study's objective was to examine how humanitarian logistics distribution is actually carried out using management philosophies and operating concepts that are meant to serve as effective benchmarks for doing so. That indicates that the goal of this research is to describe the facts while also learning the underlying facts and/or actual humanitarian logistics distribution practice. For the purpose of addressing the research questions, this study has both descriptive and explanatory research design.

3.3 Sampling Design

Since the sample size for this study's population is 200, it was chosen to conduct a census survey rather than take a representative sample of the population for the study. The sample population were comprised logistics and supply chain management professionals from UNICEF and ERCS in Ethiopia

3.4 Target Population

The study's intended audience consists of all UNICEF and ERCS personnel who work in the disaster risk reduction (DRR), disaster preparedness and response (DPR), logistics, warehousing, and logistics departments.

3.5 Sample Size

200 people were making up the sample population for this study, who were proportionally chosen from the ERCS and UNICEF Ethiopia DRR, DPR, logistics, warehousing, and logistics departments.

3.6 Methods of Data Collection

The required information was gathered using both primary and secondary data. The primary data was collected through close ended questionnaire and a five-point Likert scales will be used to collect data from the sample respondents. The questionnaire containing five rating scales ranging from 1- very low to 5- very high. The secondary data, on the other hand, were gathered through books, other research, and the organization's manual, and online sources.

3.7 Methods of Data Analysis

The answers to the questionnaires were assessed and numbered, and the data were then analyzed and validated. The responses were described and summarized using descriptive statistics, such as percentage analysis, mean, standard deviation, tables, and graphs. Additionally, causal linkages were examined using inferential statistics specifically multiple linear regression analysis.

3.8 Ethical Consideration

The study was conducted after acquiring the appropriate ethical approval from the AAU ethical review board and permission of ERCS and UNICEF management. The person participating in the study were fully informed about the evaluation being conducted, aware of the purpose of the research and participants are also certain about discretion of the information by not using personal identifiers and analyzing the data in aggregates.

3.9 Reliability and Validity Analysis

Reliability was tested using Cronbach alpha coefficient and Pearson product moment correlations, respectively on SPSS

3.9.1 Reliability Test

The Cronbach alpha coefficient, which measures the internal consistency or homogeneity of the items that make up each scale and is expressed as a value between 0 and 1, used to examine reliability in SPSS.

On a scale from 0 to 1, Cronbach's alpha measures the consistency and dependability of a variable. Cronbach's alpha values of 0.70 or above indicate that a variable has passed the reliability and consistency test. As can be seen in the table below, the researcher employed the Cronbach's alpha

coefficient to assess the consistency of each variable in this study. Based on the result shown in the above table, the variable has passed the reliability and consistency test.

Table 1Test of Reliability

Variable Name	Cronbach's Alpha	No. of Item
Situation analysis	.806	5
Procurement management	0.797	5
Transportation management	0.731	5
Warehouse management	0.789	5
Distribution management	0.733	5
Factors affecting the outbound humanitarian logistics practices	0.736	5

Source: Survey Result (2023)

3.9.2 Validity Analysis

The degree to which a measurement process genuinely measures what it is supposed to measure as opposed to measuring something else is referred to as validity. It is the extent to which variation in participants' scores on a given measure accurately captures variation in the trait we're trying to gauge. Questionnaires were created from reviews of relevant literature and previously conducted studies in order to ensure the content validity of the measuring instruments, and the validity of the measures was confirmed by the research adviser.

CHAPTER FOUR

4. RESULTS, DISCUSSION AND INTERPRETATION

4.1. Introduction

Chapter Four delves into the data analysis and findings of the study, focusing on the examination and interpretation of the collected data. The Statistical Package for Social Science (SPSS v.20) is utilized to conduct both descriptive and inferential statistical analyses. The chapter encompasses an exploration of the data using various statistical techniques. Descriptive statistics, such as

frequency, percentage, and mean, are employed to analyze the demographic profile of the study participants, who are employees of UNICEF and ECRC Ethiopia head office. Moving beyond the descriptive analysis, the chapter proceeds to present the results of various inferential statistical techniques employed in the study. These techniques include the Pearson correlation coefficient and multiple regression analysis, which were derived from the questionnaire responses. The inferential statistics help to establish relationships, associations, or influences between variables of interest. Throughout this chapter, the analyzed data is not only presented but also interpreted to provide meaningful insights. The findings derived from the statistical analyses contribute to the overall understanding of the research questions or objectives, shedding light on the relationships and patterns discovered within the data. By employing rigorous data analysis techniques and presenting the results in a clear and concise manner, this chapter serves as a critical component of the study, allowing for the examination and interpretation of the collected data, and ultimately addressing the research objectives.

4.2. Response Rate

To address the research objectives, data were collected from staffs at the head office of UNICEF and ECRC Ethiopia. The data collection process involved the use of a self-administered questionnaire, which was coded for compatibility with SPSS. Additionally, the collected questionnaires underwent thorough checks to identify any errors or incomplete responses. The student researcher took care to ensure that the questionnaires were complete before they were received from the respondents.

Out of a total of 200 questionnaires distributed, 185 were collected, resulting in a response rate of 92.5%. The remaining 15 questionnaires (7.5%) were not obtained due to reasons such as unavailability or other factors. Among the collected questionnaires, 180 (97.3%) were deemed suitable for analysis, while 5 (2.7%) were excluded due to incompleteness or missing values

4.3. Demographic Information of the Respondents

Table 2 Demographic information of the respondents

Number	Items	Description	Frequency	Percentage (%)
1	Gender of the respondents	Male	98	54.4
		Female	82	45.6

		Total	**180**	**100.0**
2	Respondents Age	Under 25 Years	12	6.7
		25-34 Years	75	41.7
		35-44 Years	75	41.7
		45-54 Years	12	6.7
		55 and above Years	6	3.3
		Total	**180**	**100.0**
3	Education Level of Respondents	High school diploma or less	12	6.7
		College degree	76	42.2
		Masters & above	92	51.1
		Total	**180**	**100.0**
4	Work experience of the respondents'	0-2 Years	49	27.2
		3-5 Years	38	21.1
		6-10 Years	54	30.0
		≥10 Years	39	21.7
		Total	**180**	**100.0**
5	Department/work unit	Logistics Department	8	4.4
		Procurement Department	38	21.1
		Operations Department	30	16.7
		Supply Chain Management Department	31	17.2
		Disaster Risk Reduction (DRR) Department	18	10.0
		Disaster Preparedness and Response (DPR)	18	10.0
		Field Operations	31	17.2
		Other	6	3.3
		Total	**180**	**100**
6	Company Name	UNICEF	102	56.7
		ERCS	78	43.3
		Total	**180**	**100.0**

Source: Survey Result (2023)

The demographic profile of the respondents, as shown in the table above, provides valuable insights into the characteristics of the participants in the study. Firstly, in terms of gender, the respondents were fairly evenly distributed, with 54.4% being male and 45.6% female. Secondly, regarding age, the majority of respondents fell within the age groups of 25-34 years and 35-44 years, accounting for 41.7% each. Additionally, the educational background of the respondents indicates a higher level of attainment, with 51.1% holding a Master's degree or above, 42.2% having a college degree, and only 6.7% possessing a high school diploma or less.

Furthermore, the work experience of the respondents varied, with 30.0% having 6-10 years of experience, followed by 27.2% with 0-2 years, 21.1% with 3-5 years, and 21.7% with more than 10 years of experience. The distribution across different departments or work units revealed that the Procurement Department had the highest frequency (21.1%), while the Logistics Department had the lowest (4.4%). Other departments such as Operations, Supply Chain Management, Disaster Risk Reduction (DRR), Disaster Preparedness and Response (DPR), Field Operations, and Others were also represented.

Lastly, in terms of company affiliation, 56.7% of the respondents were associated with UNICEF, while 43.3% were affiliated with ERCS. This information collectively provides a comprehensive overview of the demographic characteristics of the respondents, shedding light on their gender distribution, age groups, education levels, work experience, departmental affiliations, and company associations. Understanding these demographic profiles is crucial for drawing meaningful insights and interpreting the study's findings within the context of the respondents' backgrounds and experiences

4.4. Humanitarian Logistics Practices

The questionnaire employed a five-point Likert scale to measure participant responses, with response options ranging from 1 (Strongly disagree) to 5 (Strongly agree).

Table 3 Summary of the questionnaire's scale and the corresponding interpretation

Mean Score	Interpretation
4.21 to 5.0	Strongly agree
3.41 and 4.2	Agree
2.61 to 3.4	Neutral
1.81 to 2.6	Disagree
1 to 1.8	Strongly disagree

Source: (Nursalim, H., & Setianingsih, R. E. 2023)

4.4.1. Descriptive Analysis of: Situation Assessment Practices

Table 4 Descriptive Analysis of Situation Assessment Practices

Sr. N	Statements	Mean	Std. Deviation
1	During disasters, my organization evaluates the situation of the affected area in terms of the quantity and kind of supplies required.	3.94	.691
2	My organization assesses the situation in the affected area in terms of how the supplies will be delivered	3.73	.641
3	In order to determine where to store the supplies, my organization evaluates the situation of the impacted area.	3.55	.841
4	My organization identify and involve key stakeholders, including affected communities, in the assessment process	3.67	.838
5	Based on its assessment of the circumstances, my organization provides services to the beneficiary	3.59	.810
	Grand Mean	**3.71**	

Source: Survey Result (2023)

The table presents the results of the descriptive analysis of situation assessment practices in outbound humanitarian logistics conducted by UNICEF and ERCS. The mean and standard deviation values provide insights into the respondents' perceptions regarding various statements related to the organizations' practices.

On average, the respondents rated the statement "During disasters, my organization evaluates the situation of the affected area in terms of the quantity and kind of supplies required" with a mean of 3.94 and a standard deviation of 0.691. This indicates that, on average, the respondents generally agreed that their organizations evaluate the requirements of supplies during disasters.

Similarly, the statement "My organization assesses the situation in the affected area in terms of how the supplies will be delivered" received a mean score of 3.73, suggesting that the respondents perceived their organizations to have a moderate level of assessment regarding the delivery of supplies. The corresponding standard deviation was 0.641.

In terms of determining storage locations for supplies, the statement "In order to determine where to store the supplies, my organization evaluates the situation of the impacted area" obtained a mean score of 3.55, indicating a slightly lower level of agreement among the respondents. The standard deviation of 0.841 suggests some variability in responses.

Regarding stakeholder involvement, the statement "My organization identifies and involves key stakeholders, including affected communities, in the assessment process" received a mean score of 3.67, reflecting a moderate level of agreement among the respondents. The standard deviation of 0.838 suggests some variability in the perceptions of stakeholder involvement.

Furthermore, the statement "Based on its assessment of the circumstances, my organization provides services to the beneficiary" obtained a mean score of 3.59, indicating that the respondents perceived their organizations to provide services based on their assessment of the circumstances. The corresponding standard deviation was 0.810.

Overall, the grand mean of 3.71 suggests a moderate level of agreement among the respondents regarding the situation assessment practices of outbound humanitarian logistics. The findings highlight the perceptions of the respondents regarding their organizations' practices, providing valuable insights for understanding the current state of situation assessment in the context of UNICEF and ERCS.

4.4.2. Procurement Management Practices

The table below presents the results of the descriptive analysis of procurement management practices in outbound humanitarian logistics conducted by UNICEF and ERCS. The mean and standard deviation values provide insights into the respondents' perceptions regarding various statements related to ethical and transparent procurement practices.

Table 5 Descriptive Analysis of Procurement Management Practices

Sr. N	Statements	Mean	Std. Deviation
1	My organization adheres the ethical and legal procurement standards and guidelines	3.94	.749

2	My organization have competitive and transparent procurement processes	3.83	.721
3	Procurement of relief supplies always match with the requested type and volume of supplies	3.38	.763
4	Adequate quality control measures for procured goods and services is in place	3.61	.680
5	Proper documentation and record-keeping of procurement activities is in place	3.43	.791
	Grand Mean	**3.64**	

Source: Survey Result (2023)

According to the data, the statement "My organization adheres to ethical and legal procurement standards and guidelines" received a mean score of 3.94, indicating a relatively high level of agreement among the respondents. The standard deviation of 0.749 suggests some variability in the perceptions of adherence to procurement standards.

Similarly, the statement "My organization has competitive and transparent procurement processes" obtained a mean score of 3.83, suggesting that the respondents perceived their organizations to have effective and transparent procurement practices. The corresponding standard deviation was 0.721.

In terms of the match between procured relief supplies and the requested type and volume, the statement "Procurement of relief supplies always matches with the requested type and volume of supplies" received a mean score of 3.38. This indicates a slightly lower level of agreement among the respondents. The standard deviation of 0.763 suggests some variability in the perceptions of procurement matching requirements. Regarding quality control measures for procured goods and services, the statement "Adequate quality control measures for procured goods and services are in place" obtained a mean score of 3.61, reflecting a moderate level of agreement among the respondents. The standard deviation of 0.680 suggests some variability in the perceptions of quality control measures.

Furthermore, the statement "Proper documentation and record-keeping of procurement activities is in place" received a mean score of 3.43, indicating that the respondents perceived their organizations to have some level of documentation and record-keeping practices in procurement.

The corresponding standard deviation was 0.791. Overall, the grand mean of 3.64 suggests a moderate level of agreement among the respondents regarding the procurement management practices of outbound humanitarian logistics.

4.4.3. Transportation Management Practices

Table 6 Transportation Management Practices

Sr. N	Statements	Mean	Std. Deviation
1	Selection of appropriate transportation modes and routes based on the urgency of the situation is practiced	3.69	.644
2	Efficient transportation of relief personnel to maximize the survival rate of the affected population is practiced	3.17	.639
3	Compliance with safety and security requirements during transportation is exercised	3.46	.834
4	Effective coordination with third party transport companies to transport supplies and people to the affected area is well practiced	3.57	.519
5	We have the practices of monitoring and tracking of goods in transit	3.51	.564
	Grand Mean	**3.48**	

Source: Survey Result (2023)

The table above show Descriptive Analysis of Transportation Management Practices of outbound Humanitarian Logistics of UNICEF and ERCS, and discuss the result of the above table

The table presents the results of the descriptive analysis of transportation management practices in outbound humanitarian logistics conducted by UNICEF and ERCS. The mean and standard deviation values provide insights into the respondents' perceptions regarding various statements related to transportation practices.

The descriptive analysis of transportation management practices in outbound humanitarian logistics conducted by UNICEF and ERCS revealed some noteworthy findings. The respondents generally agreed on the importance of selecting appropriate transportation modes and routes based

on the urgency of the situation, as indicated by a mean score of 3.69. However, there was some variability in their perceptions, as suggested by a standard deviation of 0.644. On the other hand, the efficient transportation of relief personnel received a moderate mean score of 3.17, indicating room for improvement in maximizing the survival rate of the affected population. The findings also highlighted a moderate level of agreement (mean score of 3.46) regarding compliance with safety and security requirements during transportation, with some variability (standard deviation of 0.834) in respondents' perceptions. However, effective coordination with third-party transport companies received a relatively high mean score of 3.57, indicating a recognized practice. Similarly, monitoring and tracking practices received a moderate mean score of 3.51, indicating the existence of such practices with some variability (standard deviation of 0.564). Overall, the grand mean of 3.48 suggests a moderate level of agreement among the respondents regarding the transportation management practices of outbound humanitarian logistics.

4.4.4. Warehouse Management Practices

Table 7 Warehouse Management Practices

Sr. N	Statements	Mean	Std. Deviation
1	My organization have adequate and secure storage facilities for stockpiling items	3.59	.761
2	My organization have accessible warehouse to deliver the perfect order in disaster situation	3.58	.668
3	My organization has sufficient and appropriate warehouse to temporarily store relief supplies during disasters.	3.49	.647
4	My organization complies with safety and security standards and guidelines of warehouse management	3.43	.701
5	My organization effectively coordinated with other stakeholders involved in warehouse management activities	3.25	.676
	Grand Mean	**3.47**	

Source: Survey Result (2023)

The descriptive analysis of warehouse management practices in outbound humanitarian logistics conducted by UNICEF and ERCS revealed important findings. The respondents perceived their

organizations to have relatively high mean scores for statements such as having adequate and secure storage facilities (mean = 3.59) and accessible warehouses for delivering the perfect order in disaster situations (mean = 3.58). These results suggest that the organizations have recognized the importance of proper storage facilities and accessible warehouses. However, there were moderate mean scores for statements related to having sufficient and appropriate temporary storage during disasters (mean = 3.49) and compliance with safety and security standards in warehouse management (mean = 3.43). This indicates the need for further attention and improvement in these areas. The statement regarding effective coordination with other stakeholders involved in warehouse management activities received a relatively lower mean score (mean = 3.25), highlighting the potential for enhancing collaboration among different stakeholders. Overall, the findings emphasize the significance of ensuring adequate storage facilities, accessible warehouses, safety compliance, and stakeholder coordination in outbound humanitarian logistics.

4.4.5. Distribution Management Practices

The table below presents the results of the descriptive analysis of distribution management practices in outbound humanitarian logistics conducted by UNICEF and ERCS. It provides insights into the respondents' perceptions regarding various statements related to distribution practices.

Table 8 Distribution Management Practices

Sr. N	Statements	Mean	Std. Deviation
1	Selection of appropriate distribution channels and methods based on the urgency of the situation is exercised	3.32	.672
2	My organization distribute relief items in adherence to humanitarian principle	3.22	.737
3	My organization Provides appropriate training to the distribution team to make sure that they execute their duties at high level	3.25	.739

4	My organization ensures adequate quality control measures for distributed goods	3.36	.745
5	Effective coordination with other stakeholders involved in distribution activities is well practiced	3.53	.787
	Grand Mean	**3.34**	

Source: Survey Result (2023)

According to the data, the statement "Selection of appropriate distribution channels and methods based on the urgency of the situation is exercised" received a mean score of 3.32, indicating a moderate level of agreement among the respondents. The corresponding standard deviation was 0.672, suggesting some variability in the perceptions of distribution channel and method selection based on urgency.

Furthermore, the statement "My organization distributes relief items in adherence to humanitarian principles" obtained a mean score of 3.22, reflecting a moderate level of agreement among the respondents. The standard deviation of 0.737 indicates some variability in the perceptions of adherence to humanitarian principles during distribution.

Regarding training provided to the distribution team, the statement "My organization provides appropriate training to the distribution team to make sure that they execute their duties at a high level" received a mean score of 3.25, indicating a moderate level of agreement among the respondents. The standard deviation of 0.739 suggests some variability in the perceptions of training effectiveness in executing distribution duties.

Additionally, the statement "My organization ensures adequate quality control measures for distributed goods" obtained a mean score of 3.36, suggesting a moderate level of agreement among the respondents. The corresponding standard deviation was 0.745, indicating some variability in the perceptions of quality control measures during distribution.

Furthermore, the statement "Effective coordination with other stakeholders involved in distribution activities is well practiced" received a mean score of 3.53, indicating a relatively high level of agreement among the respondents. The standard deviation of 0.787 suggests less variability in the perceptions of effective coordination with stakeholders during distribution.

Overall, the grand mean of 3.34 suggests a moderate level of agreement among the respondents regarding the distribution management practices of outbound humanitarian logistics.

4.5. Humanitarian Logistics performance of UNICEF and ERCS

Table 9 Delivery Time Aspect of Outbound Humanitarian Logistics Performance

Sr. N	Statements	Mean	Std. Deviation
1	The outbound humanitarian logistics consistently meet the delivery time targets.	3.25	.927
2	In my organization the delivery of humanitarian aid is efficiently coordinated with the recipients	3.16	.840
3	My organization's outbound logistics team ensures that humanitarian aid is delivered within the specified timeframes	3.07	.798
4	In my organization the outbound humanitarian logistics contribute to timely response in emergency situations.	3.46	.905
	Grand Mean	**3.23**	

Source: Survey Result (2023)

The table presents the responses regarding the delivery time aspect of UNICEF and ERCS humanitarian logistics performance. The first item, "The outbound humanitarian logistics consistently meet the delivery time targets," received a moderate mean score of 3.25. Although there is room for improvement in consistently meeting the targets, the respondents generally agree on the organization's ability to meet delivery time objectives. However, the relatively high standard deviation of 0.927 indicates some variability in these perceptions, suggesting that efforts should be focused on enhancing consistency in meeting delivery time targets.

The second item, "In my organization, the delivery of humanitarian aid is efficiently coordinated with the recipients," received a mean score of 3.16, indicating a moderate level of agreement among the respondents. However, the standard deviation of 0.840 suggests varying views on the efficiency of coordination efforts. This highlights the need for further improvements in ensuring

seamless coordination between the organization and the recipients of humanitarian aid to enhance the overall efficiency of the delivery process.

The third item, "My organization's outbound logistics team ensures that humanitarian aid is delivered within the specified timeframes," received a mean score of 3.07. This indicates a moderate level of agreement among the respondents regarding the organization's efforts to deliver aid within the specified timeframes. However, the standard deviation of 0.798 implies some variability in perceptions, suggesting the need for greater consistency in meeting the specified timeframes for aid delivery.

Lastly, the item "In my organization, the outbound humanitarian logistics contribute to timely response in emergency situations" received a relatively higher mean score of 3.46, indicating a higher level of agreement among the respondents. This suggests that the outbound humanitarian logistics efforts are perceived to play a significant role in ensuring timely responses during emergency situations. However, the standard deviation of 0.905 suggests some variability in perceptions, indicating the potential for further improvements to enhance the overall timeliness of emergency response. Overall, the grand mean of 3.23 suggests a moderate level of agreement among the respondents regarding the delivery time aspect of UNICEF and ERCS humanitarian logistics performance.

Table 10 Response on Cost Attribute of Outbound Humanitarian Logistics Performance

Sr. N	Statements	Mean	Std. Deviation
1	My organization effectively manage outbound humanitarian logistics costs within the allocated budget	3.03	.801
2	My organization cost of outbound logistics is optimized without compromising the quality of humanitarian aid.	3.14	.950
3	My organization’s outbound logistics team implements cost-saving measures without compromising delivery timelines.	3.13	.855
4	My organization’s overall cost of outbound humanitarian logistics is reasonable and justifiable.	3.26	.924

	Grand Mean	**3.14**

Source: Survey Result (2023)

The analysis of the cost attribute responses for UNICEF and ERCS humanitarian logistics performance reveals important insights. The mean values indicate the average agreement among the respondents, while the standard deviations provide an indication of the variability in their perceptions.

The statement "My organization effectively manages outbound humanitarian logistics costs within the allocated budget" received a mean score of 3.03, suggesting a moderate level of agreement. The corresponding standard deviation of 0.801 indicates some variability in the perceptions of cost management practices within the organizations.

Similarly, the statement "My organization's cost of outbound logistics is optimized without t compromising the quality of humanitarian aid" obtained a mean score of 3.14, indicating a moderate level of agreement. The standard deviation of 0.950 suggests a notable degree of variability in the perceptions regarding the optimization of costs while maintaining aid quality.

Moreover, the statement "My organization's outbound logistics team implements cost-saving measures without compromising delivery timelines" received a mean score of 3.13, reflecting a moderate level of agreement. The standard deviation of 0.855 suggests some variability in the perceptions of cost-saving measures and their impact on delivery timelines

Table 11 Inventory Management Aspect of Outbound Humanitarian Logistics Performance

Sr. N	**Statements**	**Mean**	**Std. Deviation**
1	The inventory management during outbound logistics ensures timely availability of required humanitarian aid in my organization	3.58	1.013
2	The outbound logistics team of my organization’s maintains accurate and up-to-date inventory records	3.54	.911
3	The outbound logistics team in organization’s effectively tracks and manages stock levels to avoid stockouts or overstocking.	3.51	.887

4	My organization's inventory management processes during outbound logistics minimize losses or damage to humanitarian goods	3.45	.976
	Grand Mean	**3.52**	

Source: Survey Result (2023)

The inventory management aspect of UNICEF and ERCS humanitarian logistics performance received mixed perceptions from the respondents. While there was a relatively high level of agreement regarding the timely availability of required humanitarian aid, with a mean score of 3.58, there was also notable variability in these perceptions, as indicated by the standard deviation of 1.013. Similarly, respondents moderately agreed that accurate and up-to-date inventory records were maintained by the outbound logistics team, as reflected in a mean score of 3.54, but there was some variability in these perceptions with a standard deviation of 0.911.

In terms of stock level tracking and management practices, respondents expressed a moderate level of agreement, with a mean score of 3.51. However, there was still some variability in these perceptions, as indicated by a standard deviation of 0.887. Additionally, the effectiveness of inventory management processes in minimizing losses or damage to humanitarian goods received a moderate level of agreement, with a mean score of 3.45. Again, there was variability in these perceptions, with a standard deviation of 0.976.

Overall, the responses suggest that there is room for improvement in the inventory management aspect of UNICEF and ERCS humanitarian logistics. The variability in perceptions highlights the need for standardized and efficient practices to ensure timely availability of aid, accurate record-keeping, effective stock level tracking, and the prevention of losses or damage.

Table 12 A t-test Comparison of Humanitarian Logistics Performance of UNICEF and ECRC.

Group Statistics

	Name of the Organization	N	Mean	Std. Deviation	Std. Error Mean
PER	UNICEF	102	40.11	4.854	.481
	ERCS	78	38.91	5.312	.601

Source: Survey Result (2023)

The table above compares the humanitarian logistics performance between UNICEF and ERCS. It shows the mean performance score, standard deviation, and standard error mean for each organization. The mean humanitarian logistics performance score for UNICEF is 40.11, with a standard deviation of 4.854 and a standard error mean of 0.481. On the other hand, ERCS has a mean score of 38.91, a standard deviation of 5.312, and a standard error mean of 0.601. The slightly higher mean score for UNICEF suggests that, on average, it may have a better humanitarian logistics performance compared to ERCS.

4.6. Factors Affecting the Outbound Humanitarian Logistics Practices: Inferential Statistics

4.6.1. Correlation Analysis

In this section, a correlation analysis was conducted to examine the relationship between the factors influencing the outbound humanitarian logistics practices, as stated in chapter one. The correlation coefficient was utilized to determine the strength and direction of the relationship. Additionally, the p-value was used to assess the significance of the relationship. The interpretation of the correlation coefficients followed the range established by McDaniel and Gates (2006): a correlation of +1 indicated a perfect relationship, while a range of 0.8-0.9 indicated a very strong relationship, 0.5-0.8 indicated a moderately strong relationship, 0.1-0.3 indicated a modest relationship, and 0-0.3 indicated a weak relationship.

Table 13 Correlation Analysis

Correlations

		DF	LM	GP	CC	HR	Practices
Lack of Donor Funding	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	180					
Unavailability of Local Market Supplier	Pearson Correlation	.304**	1				
	Sig. (2-tailed)	.000					
	N	180	180				
Unfavorable Government Policy and Regulation	Pearson Correlation	.067	.011	1			
	Sig. (2-tailed)	.370	.881				
	N	180	180	180			
	Pearson Correlation	.805**	.407**	.176*	1		

Lack of Collaboration and Coordination	Sig. (2-tailed)	.000	.000	.018			
	N	180	180	180	180		
Human Resource Related Challenge	Pearson Correlation	.475**	.295**	.129	.694**	1	
	Sig. (2-tailed)	.000	.000	.085	.000		
	N	180	180	180	180	180	
Outbound Humanitarian Logistics Practices	Pearson Correlation	-.056	-.172*	.183*	-.052	-.031	1
	Sig. (2-tailed)	.452	.021	.014	.485	.679	
	N	180	180	180	180	180	180

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

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

The correlation analysis results reveal the relationships between various factors related to outbound humanitarian logistics practices. The table displays the Pearson correlation coefficients for each pair of factors.

The factor "Lack of Donor Funding" shows a highly significant positive correlation of 0.805 with "Lack of Collaboration and Coordination" at the 0.01 level, indicating a strong relationship between these two factors. Similarly, "Lack of Donor Funding" exhibits a significant positive correlation of 0.475 with "Human Resource Related Challenge" at the 0.01 level, suggesting a moderate relationship between these factors.

The factor "Unavailability of Local Market Supplier" demonstrates a significant positive correlation of 0.407 with "Lack of Collaboration and Coordination" at the 0.01 level, indicating a moderate relationship. Additionally, "Unavailability of Local Market Supplier" shows a significant positive correlation of 0.295 with "Human Resource Related Challenge" at the 0.01 level, suggesting a moderate relationship between these factors.

The factor "Unfavorable Government Policy and Regulation" exhibits a modest positive correlation of 0.176 with "Lack of Collaboration and Coordination" at the 0.05 level, suggesting a modest relationship between these factors. However, the correlation between "Unfavorable Government Policy and Regulation" and other factors is not statistically significant.

Overall, the correlation analysis indicates significant positive relationships between several pairs of factors, such as "Lack of Donor Funding" and "Lack of Collaboration and Coordination," "Lack of Donor Funding" and "Human Resource Related Challenge," "Unavailability of Local Market

Supplier" and "Lack of Collaboration and Coordination," and "Unavailability of Local Market Supplier" and "Human Resource Related Challenge."

As seen in the above table the independent and dependent variables correlation result demonstrates a + sign symbolizes a positive relationship is seen in unfavorable Government Policy and Regulation (.183, P=0.14), while the other independent variable as shown above has a - sign denoting a negative relationship seen in the study.

4.6.2. Regression Analysis

The study utilized the Statistical Package for the Social Sciences (SPSS) version 26 to perform various statistical analyses, including coding, data entry, and computation of multiple regressions. One of the key measures calculated in the analysis was the coefficient of determination, also known as R-squared.

The coefficient of determination provides insight into the proportion of variability in the dependent variable, Outbound Humanitarian Logistics Practices, that can be explained by changes in the independent variables. It represents the percentage of variation in the dependent variable that is accounted for by all the independent variables collectively.

By examining the coefficient of determination, researchers can assess the overall strength and predictive power of the regression model. A higher coefficient of determination indicates that a larger proportion of the variability in the dependent variable is explained by the independent variables, suggesting a better fit of the model.

4.6.2.1. Normality Distribution Test

In multiple regression analysis, it is important to assess whether the independent variables exhibit a normal distribution. Skewness and kurtosis are statistical measures that can be used to evaluate the normality of data. Skewness measures the symmetry of a distribution, indicating whether it is skewed to the left or right. Kurtosis, on the other hand, reflects the thickness of the tails of a distribution.

According to Smith and Wells (2006), a normally distributed dataset should have skewness and kurtosis values within the range of -1.0 to +1.0. If the skewness is close to zero and the kurtosis falls within this range, it suggests that the data is normally distributed.

In the context of the regression analysis conducted in this study, the skewness and kurtosis test results for the independent variables indicate that they are normally distributed. This means that the assumption of normality is satisfied, allowing for the use of these variables in the multiple regression model. The skewness and kurtosis values for each variable are within the acceptable range, indicating a satisfactory error term for each constant

4.6.2.2. Linearity Test

The link between each independent variable and the dependent variable was plotted on scatterplots in order to test the linearity assumption. Visual examination of the SPSS scatterplot, as displayed below, demonstrated that the interaction between each independent variable and the dependent variable was linear.

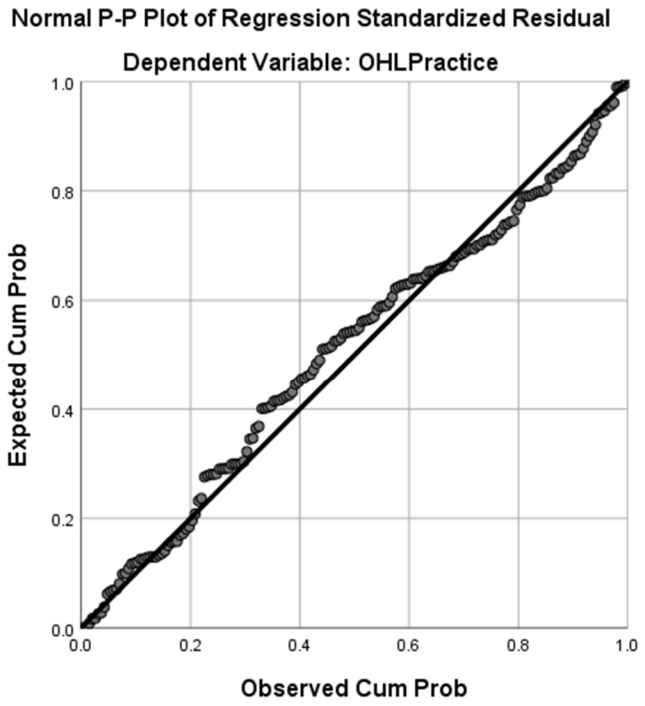

Figure 2 Linearity Test

4.6.2.3. Multi Collinearity Test

Multicollinearity is a phenomenon in which independent variables in a regression model are highly correlated with each other. It can pose challenges in regression analysis, as it affects the

interpretation and reliability of the regression coefficients. VIF ≤ 10 and tolerance > 0.2 are acceptable to say there is no multicollinearity problem showed (Kim JH, 2019).

Table 14 Multi Collinearity Test

Multi collinearity test of independent variable

Independent Variable	Collinearity Statistics	
	Tolerance	VIF
Lack of Donor Funding	.331	3.018
Unavailability of Local Market Supplier	.828	1.208
Government Policy and Regulation	.948	1.055
Lack of Collaboration and Coordination	.207	4.836
Human Resource Related Challenge	.498	2.007

Source: Survey Result (2023)

The multi-collinearity test was conducted to assess the presence of multicollinearity among the independent variables in the regression model. The results indicate that the variables "Lack of Donor Funding," "Unavailability of Local Market Supplier," and "Government Policy and Regulation" have tolerances of 0.331, 0.828, and 0.948, respectively, suggesting moderate to low levels of multicollinearity. The corresponding VIF values of 3.018, 1.208, and 1.055 also support the absence of significant multicollinearity for these variables. And also "Lack of Collaboration and Coordination" exhibits a low tolerance of 0.207 and a high VIF of 4.836, indicating demonstrate there is no multicollinearity exist.

4.6.3. Model Fit

Table 15 Multi Collinearity Test

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	521.876	5	104.375	2.375	.041[b]
	Residual	7647.874	174	43.953		
	Total	8169.750	179			

a. Dependent Variable: Outbound humanitarian logistics practices

b. Predictors: (Constant), HR, GP, LM, DF, CC

The ANOVA analysis provides information about the overall fit of the regression model. In this case, the F-ratio obtained from the ANOVA table is 2.375, which is statistically significant at a significance level of .05. This indicates that there is a relationship between the independent variables (strategic supplier relationship, customer relationship, level of information sharing, and level of integration) and the dependent variable (outbound humanitarian logistics practices).

Furthermore, the R and R2 values from the model summary indicate that approximately 6.4% of the variance in outbound humanitarian logistics practices can be explained by the independent variables included in the model. This suggests that supply chain management practices have some influence on supply chain performance, although there are other factors that contribute to the remaining 93.6% of the variation. Overall, the results suggest that there is a statistically significant relationship between supply chain management practices and outbound humanitarian logistics practices, as indicated by the significant F-ratio and the significant R and R2 values.

4.6.4. Regression Coefficients

Table 16: Regression Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	87.101	4.026		21.634	.000		
	DF	-.014	.189	-.010	-.076	.940	.331	3.018
	LM	-.315	.152	-.167	-2.074	.040	.828	1.208
	GP	.457	.184	.187	2.478	.014	.948	1.055
	CC	-.025	.245	-.017	-.103	.918	.207	4.836
	HR	.026	.257	.010	.099	.921	.498	2.007

a. Dependent Variable: outbound humanitarian logistics practices

From the above table the unstandardized beta coefficient indicates how much the independent variables varies with an independent variable when all the other independent variables held constant. From the result only lack of donors and government policy are statically significant with the p value < 0.05. indicating from the total variation occurred in outbound humanitarian logistics practice (dependent variable), (0.14) are results from government policy.

4.6.5. Hypothesis Summary

Table 17 Standardized Coefficients

Hypothesis	P-Value	Remark
H1a: Lack of collaboration and coordination negatively affect the outbound logistics practices of UNICEF and ERCS	.940	**Rejected**
H1b: Lack of Adequate Donor Funding negatively affect the outbound logistics practices of UNICEF and ERCS	.040	**Accepted**
H1c: Government Policy and Regulation affect the outbound logistics practices of UNICEF and ERCS	.014	**Accepted**
H1d: Human Resource Related Challenge negatively affect the outbound logistics practices of UNICEF and ERCS	.918	**Rejected**
H1e: Unavailability of Local Market Suppliers negatively affect the outbound logistics practices of UNICEF and ERCS	.921	**Rejected**

Source: Survey Result (2023)

The above table presents the standardized coefficients and p-values for each hypothesis related to the outbound logistics practices of UNICEF and ERCS. The p-value represents the probability of obtaining the observed results by chance, and typically, a significance level of 0.05 or below is considered statistically significant.

H1a: Lack of collaboration and coordination negatively affect the outbound logistics practices of UNICEF and ERCS (P-Value: 0.940, Remark: Rejected)

The p-value of 0.940 indicates that the relationship between the lack of collaboration and coordination and outbound logistics practices is not statistically significant. Therefore, this hypothesis is accepted, suggesting that the lack of collaboration and coordination does not have a significant negative impact on the outbound logistics practices of UNICEF and ERCS.

H1b: Lack of Adequate Donor Funding negatively affect the outbound logistics practices of UNICEF and ERCS (P-Value: 0.040, Remark: Accepted)

The p-value of 0.040 suggests that there is a statistically significant relationship between the lack of adequate donor funding and outbound logistics practices. Therefore, this hypothesis is accepted,

indicating that the lack of adequate donor funding negatively affects the outbound logistics practices of UNICEF and ERCS.

H1c: Government Policy and Regulation affect the outbound logistics practices of UNICEF and ERCS (P-Value: 0.014, Remark: Accepted)

The p-value of 0.014 indicates a statistically significant relationship between government policy and regulation and outbound logistics practices. Therefore, this hypothesis is rejected, implying that government policy and regulation do affect the outbound logistics practices of UNICEF and ERCS.

H1d: Human Resource Related Challenge negatively affect the outbound logistics practices of UNICEF and ERCS (P-Value: 0.918, Remark: Rejected)

The p-value of 0.918 suggests that there is no statistically significant relationship between human resource related challenges and outbound logistics practices. Therefore, this hypothesis is rejected, indicating that human resource related challenges do not have a significant negative impact on the outbound logistics practices of UNICEF and ERCS.

H1e: Unavailability of Local Market Suppliers negatively affect the outbound logistics practices of UNICEF and ERCS (P-Value: 0.921, Remark: Rejected)

The p-value of 0.921 indicates that there is no statistically significant relationship between the unavailability of local market suppliers and outbound logistics practices. Therefore, this hypothesis is accepted, suggesting that the unavailability of local market suppliers does not significantly affect the outbound logistics practices of UNICEF and ERCS.

The literature acknowledges the significance of donor funding for humanitarian organizations and the impact it has on their operations. Desta (2018) highlights the influence of donor priorities and competition among organizations for funding. The correlation analysis supports this notion, as it indicates that the lack of adequate donor funding negatively affects outbound logistics practices.

While Balcik et al. (2010) emphasize the importance of collaboration and coordination in humanitarian logistics, the correlation analysis conducted in the study suggests that the lack of collaboration and coordination does not have a significant negative impact on outbound logistics practices. This finding seems to contrast with the literature and raises the question of why such a

discrepancy exists.

One possible explanation for this discrepancy could be the specific context or sample characteristics of the study. The correlation analysis conducted in the study might have focused on a specific region, time period, or set of organizations that exhibited different dynamics in terms of collaboration and coordination. It is important to note that correlation analysis examines statistical relationships between variables, and the absence of a significant correlation does not necessarily imply the absence of an impact. There may be other factors at play that were not captured in the analysis.

The findings of the correlation analysis align with the literature regarding the impact of the unavailability of local market suppliers on outbound logistics practices. Ramsden (2014) and other studies recognize the socioeconomic challenges associated with a lack of local suppliers, including supply and demand uncertainty, market competition, cultural differences, and logistical difficulties. These challenges can significantly hinder the smooth operation of humanitarian logistics.

The study states that government policies and regulations can affect outbound logistics practices. Kunz and Reiner (2012) highlight the role of government policies in shaping operational decisions and logistical duties. However, the correlation analysis suggests that government policy and regulation do not have a significant impact on outbound logistics practices, contradicting the literature.

CHAPTER FIVE

5. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This final chapter presents a comprehensive summary, conclusion, and recommendations based on the study's investigation into the factors affecting the outbound humanitarian logistics practices of the United Nations International Children Emergency Fund (UNICEF) and Ethiopian Red Cross. The chapter summarizes the key findings obtained from the analysis of data, highlighting their significance in the context of the research topic. The conclusions drawn from the study are carefully examined, considering the theoretical foundations and existing literature, and addressing any limitations encountered during the research process. Based on the study's outcomes, practical recommendations are provided

5.2. Summary of major findings

The objective of the study was to assess the outbound humanitarian logistics practices of UNICEF and ECRC and identify the factors that affect them. The major findings of the study revealed the following:

Situation Assessment Practices: The respondents generally agreed that their organizations evaluate the situation of the affected area in terms of the quantity and kind of supplies required. They also perceived moderate levels of assessment regarding the delivery of supplies and determining storage locations. The involvement of key stakeholders in the assessment process was recognized, and organizations were perceived to provide services based on their assessment of the circumstances.

Procurement Management Practices: The respondents perceived their organizations to adhere to ethical and legal procurement standards and guidelines. They also recognized the presence of competitive and transparent procurement processes. However, there was room for improvement in terms of matching procured relief supplies with the requested type and volume. Adequate quality control measures and proper documentation and record-keeping of procurement activities were perceived to be in place to some extent.

Transportation Management Practices: The selection of appropriate transportation modes and routes based on the urgency of the situation was recognized as a practiced approach. However, there was room for improvement in terms of efficient transportation of relief personnel to maximize the survival rate of the affected population. Compliance with safety and security requirements during transportation and effective coordination with third-party transport companies were perceived to be in place. Monitoring and tracking of goods in transit were also recognized practices.

Warehouse Management Practices: The respondents perceived their organizations to have adequate and secure storage facilities and accessible warehouses for delivering the perfect order in disaster situations. However, there was room for improvement in terms of having sufficient and appropriate temporary storage during disasters and compliance with safety and security standards. Effective coordination with other stakeholders involved in warehouse management activities was perceived to be a practice that required further attention.

Distribution Management Practices: The respondents recognized the importance of selecting appropriate distribution channels and methods based on the urgency of the situation. Moderate levels of agreement were observed regarding the adherence to humanitarian principles during

distribution and the provision of appropriate training to the distribution team. There was room for improvement in terms of ensuring adequate quality control measures for distributed goods. Effective coordination with other stakeholders involved in distribution activities was perceived as a well-practiced approach.

The regression analysis was performed to examine the relationship between the independent variables (Lack of Donor Funding, Unavailability of Local Market Supplier, Government Policy and Regulation, Lack of Collaboration and Coordination, and Human Resource Related Challenge) and the dependent variable (Outbound Humanitarian Logistics Practices). The coefficient of determination, also known as R-squared, was calculated to assess the overall strength and predictive power of the regression model.

The results of the regression analysis indicate a weak positive relationship between the independent variables and Outbound Humanitarian Logistics Practices, as indicated by the correlation coefficient (R) of 0.253. This means that approximately 25.3% of the variability in Outbound Humanitarian Logistics Practices can be explained by changes in the independent variables collectively.

Furthermore, the normality distribution test was conducted to assess whether the independent variables exhibit a normal distribution. The skewness and kurtosis values for each variable fell within the acceptable range of -1.0 to +1.0, indicating that the assumption of normality is satisfied. This allows for the use of these variables in the multiple regression model.

The linearity test confirmed the linear relationship between each independent variable and the dependent variable through visual inspection of the scatterplots. This suggests that the assumption of linearity is met.

Additionally, the multicollinearity test revealed that the variables Lack of Donor Funding, Unavailability of Local Market Supplier, and Government Policy and Regulation have moderate to low levels of multicollinearity, as indicated by their tolerances and VIF values. However, the variable Lack of Collaboration and Coordination exhibited a low tolerance and a high VIF, suggesting a strong correlation with other independent variables and potential multicollinearity.

Overall, the regression analysis provides insights into the relationship between the independent variables and Outbound Humanitarian Logistics Practices. However, it is important to consider the

limitations of the analysis, such as the potential presence of multicollinearity and the relatively weak correlation coefficient, when interpreting the results. Further research and analysis may be needed to explore these relationships in more depth.

5.3. Conclusion

Based on the information in the preceding section the findings of the study are summarized below.

The descriptive analysis of humanitarian logistics performance of UNICEF and ERCS provides valuable insights into various aspects of their operations. The analysis focused on three key dimensions: delivery time, cost, and inventory management.

Regarding delivery time, the findings indicate a moderate level of agreement among the respondents. While there is recognition of the organizations' ability to meet delivery time targets and contribute to timely responses in emergency situations, there is room for improvement in terms of consistency. Efforts should be directed towards enhancing the organizations' ability to consistently meet delivery time objectives and coordinate efficiently with aid recipients.

In terms of cost, the analysis reveals a moderate level of agreement regarding effective cost management within the allocated budget and optimizing logistics costs without compromising aid quality. However, there are varying perceptions on these aspects, emphasizing the need for further improvements in cost-saving measures and justifying the overall cost of outbound humanitarian logistics.

The inventory management aspect of UNICEF and ERCS humanitarian logistics performance shows mixed perceptions. While there is a relatively high level of agreement regarding timely availability of required humanitarian aid and accurate inventory records, there is room for improvement in terms of stock level tracking, minimizing losses or damage to goods, and avoiding stock outs or overstocking. Standardized and efficient practices are crucial to ensure improved inventory management.

The correlation analysis provides insights into the factors influencing outbound humanitarian logistics practices. The lack of donor funding and lack of collaboration and coordination show a strong positive correlation, highlighting the need to address these issues together. Additionally, factors such as unavailability of local market suppliers and human resource-related challenges

show moderate positive correlations with lack of collaboration and coordination, emphasizing the importance of addressing these challenges collectively.

The regression analysis suggests that the independent variables, including lack of donor funding, unavailability of local market suppliers, government policy and regulation, lack of collaboration and coordination, and human resource-related challenges, collectively have a weak positive relationship with outbound humanitarian logistics practices. Further analysis and exploration of these factors can provide deeper insights into their specific impacts on logistics practices.

Overall, the findings from the descriptive and inferential analyses highlight areas where UNICEF and ERCS can focus their efforts to enhance their humanitarian logistics performance. Improving consistency in meeting delivery time targets, optimizing logistics costs without compromising aid quality, and implementing standardized and efficient inventory management practices are crucial for the organizations to further enhance their humanitarian logistics operations. Additionally, addressing factors such as lack of donor funding, lack of collaboration and coordination, unavailability of local market suppliers, and human resource-related challenges can contribute to improved outbound humanitarian logistics practices.

5.4. Recommendations

Based on the analysis of the humanitarian logistics performance of UNICEF and ERCS, the following recommendations are provided to enhance their operations:

- Strengthen Collaboration and Coordination: Both organizations should prioritize fostering collaboration and coordination among stakeholders involved in humanitarian logistics. This includes improving communication channels, sharing information, and aligning efforts with other organizations, governments, and local partners. Enhancing collaboration will lead to better resource utilization, improved efficiency, and ultimately, more effective delivery of aid.
- Enhance Delivery Time Consistency: Efforts should be made to improve the consistency of meeting delivery time targets. This can be achieved through better route planning, optimizing transportation networks, and utilizing technology for real-time tracking and monitoring of shipments. Regular performance evaluation and feedback mechanisms can help identify areas of improvement and ensure timely responses during emergencies.

- Seek Diverse Funding Sources: To address the challenge of lack of donor funding, the organizations should explore alternative funding sources and diversify their funding streams. This can involve engaging with private sector partners, philanthropic organizations, and leveraging innovative financing models. By reducing dependency on a single funding source, the organizations can enhance their financial stability and ensure sustained support for their humanitarian logistics operations.
- Address Human Resource Challenges: Human resource-related challenges were identified as influencing logistics practices. To overcome these challenges, UNICEF and ERCS should invest in capacity building programs, training, and professional development opportunities for their staff involved in logistics operations. Additionally, establishing clear job roles, responsibilities, and performance evaluation mechanisms can help optimize human resource management and ensure effective logistics operations.
- Continuous Monitoring and Evaluation: Regular monitoring and evaluation of humanitarian logistics performance are essential to identify areas for improvement, measure progress, and make informed decisions. Implementing performance indicators, conducting post-delivery assessments, and seeking feedback from beneficiaries and partners can provide valuable insights for ongoing optimization and adaptation of logistics processes.

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ANNEX

Questionnaire

Dear Participant,

My name is Dagmawi Moges, I am a graduate student in the department of LSCM at Addis Ababa University, School of Commerce. I am conducting a survey to assess the outbound humanitarian logistics practices of UNICEF and ECRC and identify the factors that affect them. Your participation in this survey is vital as it will help me to understand the current practices, challenges, and opportunities of outbound humanitarian logistics.

The purpose of this survey is to gain insights into the logistics practices and procedures that UNICEF and ECRC use for outbound humanitarian aid delivery, including the transportation, storage, and distribution of goods. I also aim to identify the factors that affect the effectiveness of these practices, including funding, infrastructure, workforce capabilities and collaboration and coordination etc.

Your input is critical as it will help me to better understand the current state of outbound humanitarian logistics and identify areas where improvements can be made. This survey is anonymous, and your responses will be kept confidential.

The survey will take approximately 10-15 minutes to complete, and your participation is entirely voluntary. Your answers will be used solely for research purposes and will not be shared with any third parties.

I appreciate your time and effort in participating in this survey. If you have any questions or concerns, please do not hesitate to contact me.

Thank you for your cooperation.

Sincerely,

Dagmawi Moges Date:

Researcher's contact address:

Tel: +251 E-mail:

Part I. Respondents Profile

1. Gender

☐ Female ☐ Male

2. What is your age group?

☐ Under 25 Years ☐ 45-54 Years

☐ 25-34 Years ☐ 55 and above Years

☐ 35-44 Years

3. What is your highest level of education?

☐ High school diploma or less ☐ Masters & above

☐ College degree

Other (please specify) _____

4. How many years of experience do you have in your organization?

☐ 0-2 Years ☐ 6-10 Years

☐ 3-5 Years ☐ ≥10 Years

5. Department or work unit

☐ Logistics Department: ☐ Operations Department

☐ Procurement Department ☐ Supply Chain Management Department

☐ Disaster Risk Reduction (DRR) Department

☐ Disaster Preparedness and Response (DPR)

☐ Field Operations

Other (please specify) _____

6. Name of your organization

☐ UNICEF

☐ ERCS

Part II. Outbound Humanitarian Logistics Practices of UNICEF and ERCS

Please use the following 5-point Likert scales to indicate how much you agree with the practices of outbound humanitarian logistics. Put a checkmark (√) next to the relevant response category.

1	Strongly Disagree	4	Agree
2	Disagree	5	Strongly Agree
3	Neutral		

S/N	Outbound Humanitarian Logistics Practices	*Rating*				
		1	**2**	**3**	**4**	**5**
No	***Situation Analysis***					
S1	During disasters, my organization evaluates the situation of the affected area in terms of the quantity and kind of supplies required.					
S2	My organization assesses the situation in the affected area in terms of how the supplies will be delivered					
S3	In order to determine where to store the supplies, my organization evaluates the situation of the impacted area.					
S4	My organization identify and involve key stakeholders, including affected communities, in the assessment process					
S5	Based on its assessment of the circumstances, my organization provides services to the beneficiary					
No	***Procurement Management***	1	2	3	4	5
P1	My organization adheres the ethical and legal procurement standards and guidelines					
P2	My organization have competitive and transparent procurement processes					
P3	Procurement of relief supplies always match with the requested type and volume of supplies					
P4	Adequate quality control measures for procured goods and services is in place					
P5	Proper documentation and record-keeping of procurement activities is in place					
No	***Transportation Management***	1	2	2	4	5
T1	Selection of appropriate transportation modes and routes based on the urgency of the situation is practiced					
T2	Efficient transportation of relief personnel to maximize the survival rate of the affected population is practiced					
T3	Compliance with safety and security requirements during transportation is exercised					

T4	Effective coordination with third party transport companies to transport supplies and people to the affected area is well practiced					
T5	We have the practices of monitoring and tracking of goods in transit					
No	***Warehouse Management***	1	2	3	4	5
W1	My organization have adequate and secure storage facilities for stockpiling items					
W2	My organization have accessible warehouse to deliver the perfect order in disaster situation					
W3	My organization has sufficient and appropriate warehouse to temporarily store relief supplies during disasters.					
W4	My organization complies with safety and security standards and guidelines of warehouse management					
W5	My organization effectively coordinated with other stakeholders involved in warehouse management activities					
No	***Distribution Management***	1	2	3	4	5
D1	Selection of appropriate distribution channels and methods based on the urgency of the situation is exercised					
D2	My organization distribute relief items in adherence to humanitarian principle					
D3	My organization Provides appropriate training to the distribution team to make sure that they execute their duties at high level					
D4	My organization ensures adequate quality control measures for distributed goods					
D5	Effective coordination with other stakeholders involved in distribution activities is well practiced					

Part III: Factors Affecting Outbound Humanitarian Logistics Practices

Please use the following 5-point Likert scales to indicate how much you agree with the practices of outbound humanitarian logistics. Put a checkmark (√) next to the relevant response category.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

S/N	Factors Affecting Outbound Humanitarian Logistics	*Rating*				
		1	**2**	**3**	**4**	**5**
NO	***Lack of Donor Funding***					
DF1	Lack of adequate funding affects the outbound humanitarian logistics operation of my organization					
DF2	There is a lack of coordination and communication between donors and my organization regarding the timing of funding					
DF3	Restrictions or conditions placed on the use of funding negatively affect the effectiveness of my organization's outbound humanitarian logistics operations					
DF4	Preferences and priorities of donors negatively affect the effectiveness of my organization's outbound humanitarian logistics operations.					
DF5	Competition from other organizations or crises for resources and attention negatively affect the outbound humanitarian logistics operations.					
NO	***Unavailability of Local Market Supplier***	1	2	3	4	5
LM1	Local market suppliers are not readily available in the areas where my organization operate.					
LM2	Local suppliers have been ineffective in meeting the needs of my organization in the past					
LM3	The quality of products/services offered by local suppliers is not comparable to those of international suppliers.					
LM4	Local suppliers struggle to comply with international standards and regulations for humanitarian logistics					
LM5	Local suppliers lack the capacity to meet demand and scale up operations as needed.					
NO	***Unfavorable Government Policy and Regulation***	1	2	2	4	5

GP1	Customs and import regulations in Ethiopia make it difficult for my organization's outbound humanitarian logistics operations					
GP2	Taxes and tariffs on goods and services in Ethiopia make it difficult for my organization to procure and transport goods for outbound humanitarian logistics operations.					
GP3	Compliance with local laws and regulations adds complexity to my organization outbound humanitarian logistics operations.					
GP4	There is conflicting interest between my organization and the national government					
No	***Lack of Collaboration and Coordination***	1	2	3	4	5
CC1	Early partner involvement in humanitarian aspects presents challenges in outbound humanitarian logistics practices of our organization					
CC2	My organization face challenges in effectively partnering with other organizations and agencies to achieve their humanitarian logistics objectives.					
CC3	There is lack of high level of coordination and communication between different departments and partners of our organization for outbound humanitarian logistics practices.					
CC4	My organization encounter challenges in aligning our objectives and strategies with those of other organizations and partners in the humanitarian logistics space.					
CC5	The roles and responsibilities of each partner and organization involved in the outbound humanitarian logistics practice of our organization are not well defined and understood, posing challenges in effective collaboration.					
No	***Human Resource Related Challenge***	1	2	3	4	5
HR1	The unavailability and lack of skillful staff to manage logistics operations are a significant challenge for effective outbound humanitarian logistics practices of my organization					
HR2	High staff turnover and retention issues pose a significant challenge to outbound humanitarian logistics practices of my organization					
HR3	Lack of capacity building and training opportunities for staff presents a challenge in improving outbound humanitarian logistics practices.					
HR4	Lack of diversity and inclusivity of staff presents a challenge in achieving better outbound humanitarian logistics practices.					

HR5	Lack of safety and security measures for staff working in challenging environments presents a challenge in achieving successful outbound humanitarian logistics practices					

Part IV: Humanitarian Outbound Logistics Performance

Please use the following 5-point Likert scales to indicate how much you agree with the practices of outbound humanitarian logistics. Put a checkmark (√) next to the relevant response category.

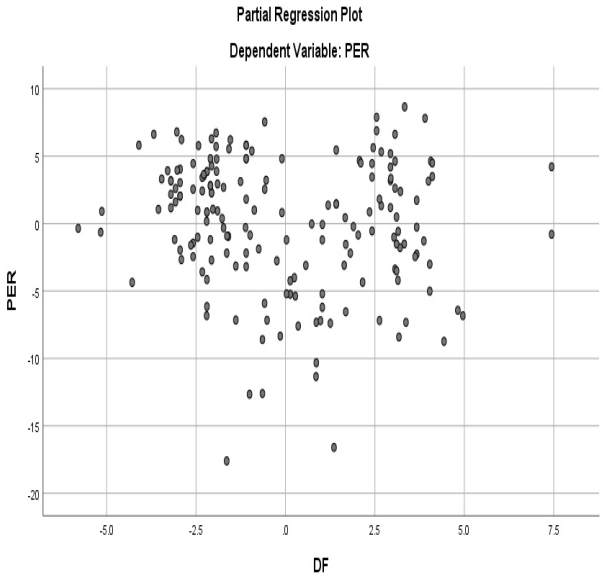
1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

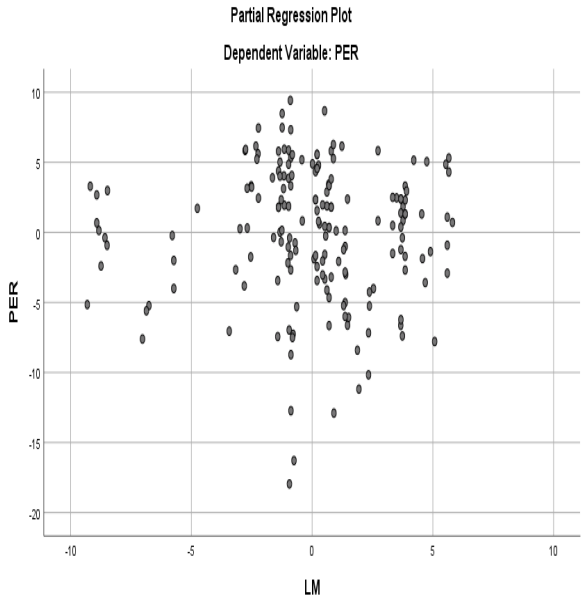
S/N	Humanitarian Outbound Logistics Performance	*Rating*				
		1	**2**	**3**	**4**	**5**
No	***Delivery Time***					
Dt1	The outbound humanitarian logistics consistently meet the delivery time targets.					
Dt2	In my organization the delivery of humanitarian aid is efficiently coordinated with the recipients					
Dt3	My organization's outbound logistics team ensures that humanitarian aid is delivered within the specified timeframes					
Dt4	In my organization the outbound humanitarian logistics contribute to timely response in emergency situations.					
No	***Cost***	1	2	3	4	5
Co1	My organization effectively manage outbound humanitarian logistics costs within the allocated budget					
Co2	My organization cost of outbound logistics is optimized without compromising the quality of humanitarian aid.					
Co3	My organization's outbound logistics team implements cost-saving measures without compromising delivery timelines.					
Co4	My organization's overall cost of outbound humanitarian logistics is reasonable and justifiable.					
No	***Inventory Management***	1	2	2	4	5
IM1	The inventory management during outbound logistics ensures timely availability of required humanitarian aid in my organization					
IM2	The outbound logistics team of my organization's maintains accurate and up-to-date inventory records					
IM3	The outbound logistics team in organization's effectively tracks and manages stock levels to avoid stockouts or overstocking.					
IM4	My organization's inventory management processes during outbound logistics minimize losses or damage to humanitarian goods					

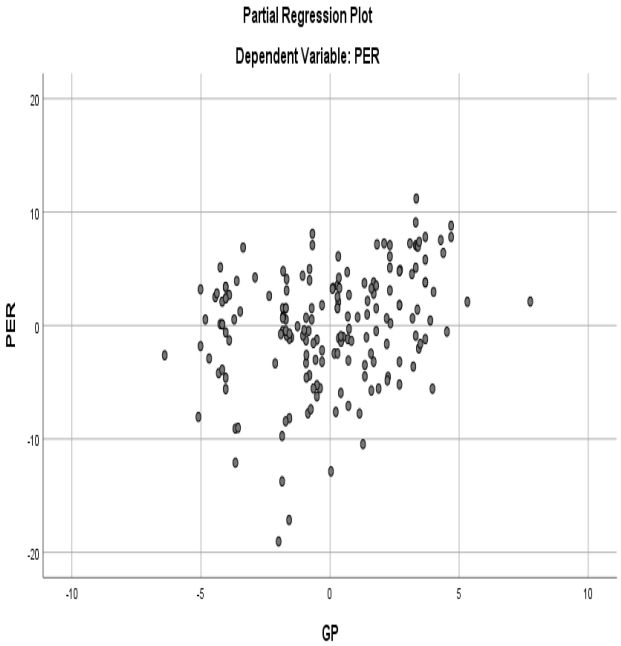
Appendix

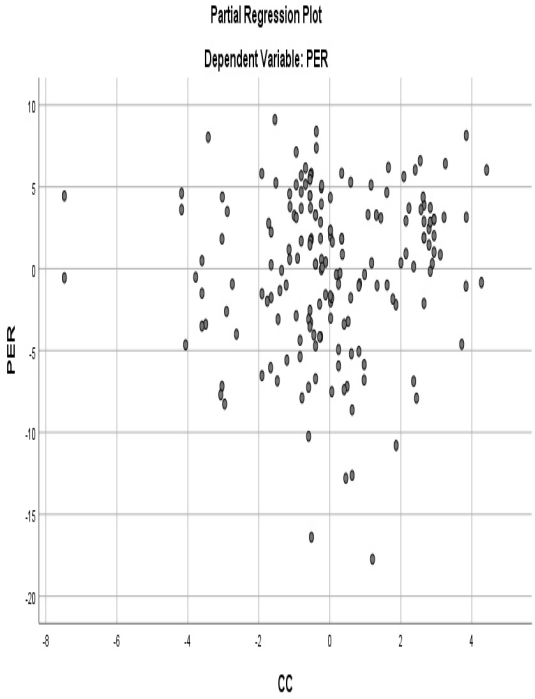
Regression Model Assumption Tests

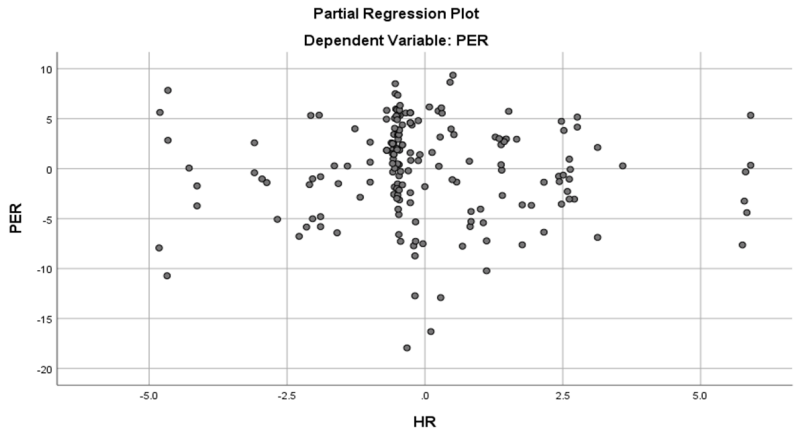
1. Normality Distribution Test









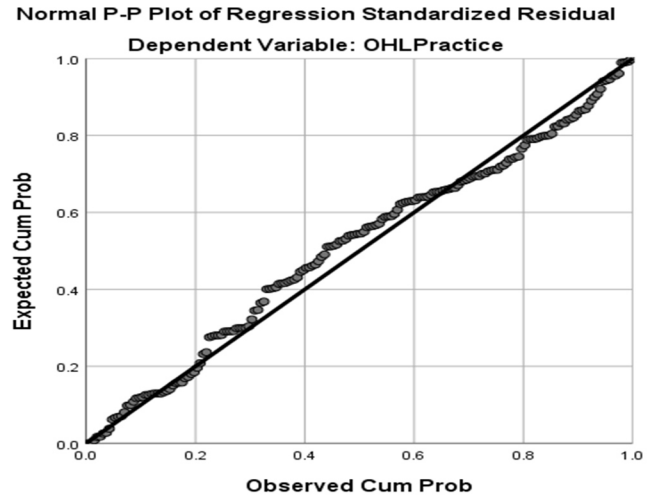


2. Multicollinearity Test

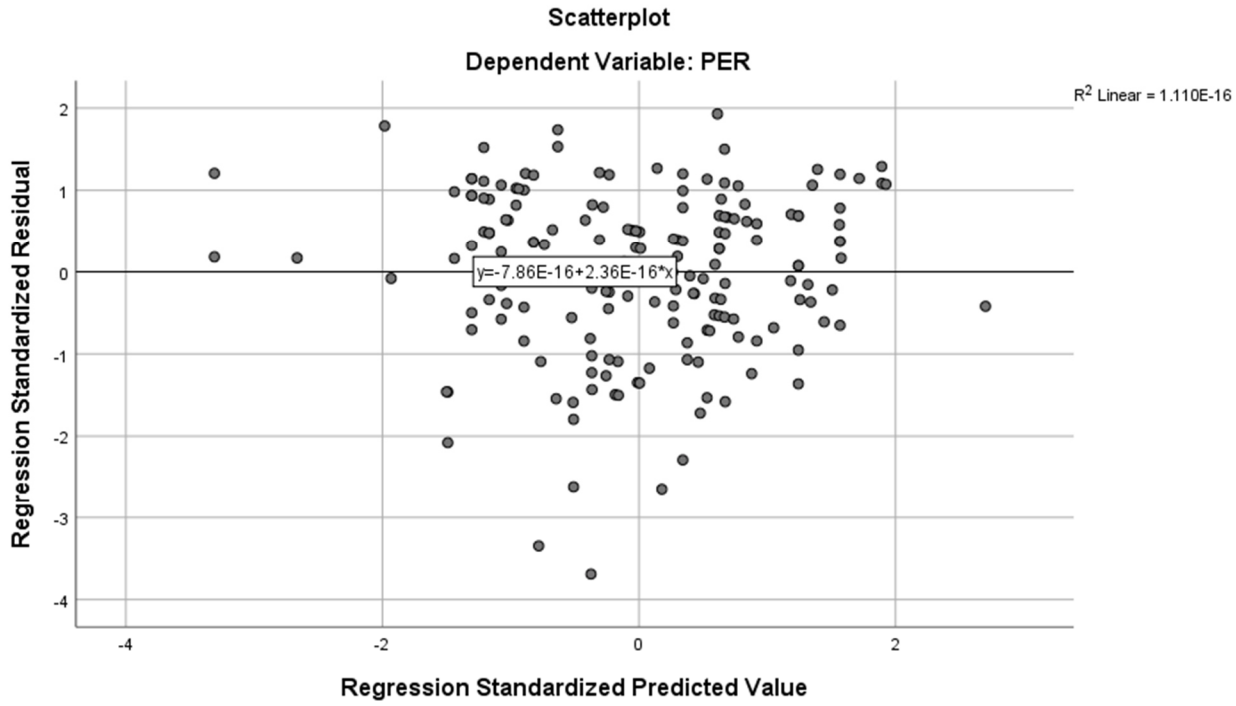
Multi collinearity test of independent variable

Independent Variable	Collinearity Statistics	
	Tolerance	VIF
Lack of Donor Funding	.331	3.018
Unavailability of Local Market Supplier	.828	1.208
Government Policy and Regulation	.948	1.055
Lack of Collaboration and Coordination	.207	4.836
Human Resource Related Challenge	.498	2.007

3. Linearity Test



4. Homoscedasticity Test



5. Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.325[a]	.106	.080	4.870	1.430

a. Predictors: (Constant), HR, GP, LM, DF, CC

b. Dependent Variable: PER