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ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

**ASSESSMENT OF FACTORS AFFECTING HUMANITARIAN LOGISTICS PERFORMANCE
OF CRS: CASE OF ADAMA**

BY

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DECLARATION

This is to certify that Tewodros Dileseber has carried out his research work on the topic entitled “Assessment of factors affecting humanitarian logistics performance of CRS: case of Adama” The work is original in nature and is suitable for submission for the award of master degree in logistics and supply chain management (M.A in LSCM).

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Tewodros Dileseber

Acronyms

CRS - Catholic Relief Services

HO – Humanitarian organization

IFRC - International Federation of Red Cross and Red Crescent Societies

IRC - International Rescue Committee

NDRMC - National Disaster and Risk Management Commission of Ethiopia

NGO- None governmental organization

SCM- supply chain management

UN – United Nations

UNHCR - United Nations High Commissioner for Refugees

WFP- World food Program

WHO - World Health Organization

Abstract

Humanitarian Logistics is the people, resources, skills, and knowledge that go into mobilizing people, resources, skills, and knowledge to assist vulnerable individuals afflicted by natural disasters and complex emergencies. Procurement, transportation, tracking and tracing, customs clearance, local transportation, warehousing, and last-mile delivery are all part of humanitarian logistics. The major goal of this research was to assess factors affecting humanitarian logistics performance of CRS: case of Adama branch. The majority of the data analysis approaches used in the study were quantitative. The data was described using descriptive statistics such as mean, percentage, and frequency tables. From the total population of 71 take 68 samples was used by using census for employee and availability sampling technics for government agency. In order to address the basic issue and the research question, inferential statistics such as the ordered logit model were used. The study included five independent variables, all of which were assessed using a 5-point Likert-Scale, with "1" denoting "Strongly Disagree" and "5" denoting "Strongly Agree." The mean appears to have been utilized as a measure of central tendency. SPSS.V22 was also used to encrypt, process, and analyze the data. Moreover the correlation analysis shows that all variables had a significant association with performance. Accordingly, most of the variables except external relation had a significant relationship and a positive association with performance, besides external relation has positive relation but not significant with performance as well. Regarding the regression analysis shows that the three independent variables have significant effect on humanitarian logistics performance (procurement, warehouse management, and transportation) two independent variable (distribution of supplies and external relationship) has no significant effect on humanitarian logistics performance of CRS. Generally, the consistency of regression coefficients on the selected area suggests that the three variables are important indicators for affecting the humanitarian logistics performance of CRS at different degrees t and some of the independent variables were significant predictors of logistics performance. Overall the study concludes that humanitarian logistics performance of CRS in Adama branch is found in a poor manner in the study.

Keywords: humanitarian Logistics, performance, and logestic performance

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CHAPTER ONE

Introduction

This chapter presents background information on the subject of the study and covers the statement of the problem, research objective, research question, and significance of the study. The chapter also covers other sections, including the delimitation of the study. Finally, the background of the study reviews the key concepts of Humanitarian logistics that will be discussed.

1.1 Background of the Study

Humanitarian organizations are organizations that provide aid or humanitarian assistance to those in need in situations like war, disease, or poverty (Beamon and Balcik, 2008). Contributions and donations from development partners, funders, the government, and volunteers pay the whole cost of humanitarian assistance (Wassenhove, 2006).

Today, the number of people in need of humanitarian assistance is on the rise. Armed conflict continues to be a significant source of humanitarian relief. Long-term crises have resulted in immense destruction, internal and external displacement, and a collapse of law and order in many countries due to a lack of political solutions. Natural calamities are growing more frequent as well. Climate change also changes weather patterns, increasing the frequency, predictability, and duration of threats.

This increases the risk of disasters everywhere, but notably in areas where susceptibility is already high due to rapid population expansion, volatile food, energy prices, poverty, and environmental degradation, to name a few variables. Wide-ranging and repeated humanitarian crises occur due to the combined effect (IASC, 2015).

When a significant disaster happens, according to Ichoua (2010), a quick response is vital to preserving lives and minimizing the suffering of the affected community. The task at hand is to supply the necessary emergency supplies in adequate quantities, precisely when and where they are required. As a result, in order to ensure the success of humanitarian efforts, an organizational framework similar to that used in logistics must be implemented.

The processes and systems involved in mobilizing people, resources, skills, and knowledge to assist vulnerable people afflicted by natural disasters and complex emergencies are known as humanitarian logistics. Procurement, transportation, tracking and tracing, customs clearance, local transportation, warehousing, and last-mile delivery are all part of humanitarian logistics. Humanitarian logistics plays three crucial roles in the success of present and future humanitarian operations and projects. First, it enables major humanitarian programs (such as health, food, shelter, water, and sanitation) to give an efficient and effective response; second, it's the most expensive part of relief operation; third, the logistics department may have bunches of data that can be analyzed for post-event learning such as the effectiveness of suppliers & other service providers, cost information & the rightness of response and appropriateness of donated goods (Thomas & Kopczak, 2005).

Many people are exposed to both natural and man-made disasters every year, resulting in thousands of people being displaced and killed all over the world (International Federation of Red Cross 2010). Natural catastrophes affected around 377 million people worldwide in 2016, according to a report by Development Initiatives (2017). According to the study, the number of people affected by natural catastrophes increased by over 267 million in 2016, necessitating \$27 billion in humanitarian relief, up from the 2015 projection.

South Sudan, Somalia, Yemen, Syria, Iraq, India, the Rohingya Muslims in Myanmar, the Ethiopian civil war, and many more recent disasters have taken the lives of millions of people and displaced millions more (UNOCHA 2017). Humanitarian organisations' presence and relevance are vital in ensuring that victims have access to critical humanitarian supplies in such instances. Therefore, humanitarian logistics is critical for efficiently delivering relief to those in need. However, improving humanitarian logistics necessitates reviewing the practice and identifying the primary roadblocks to its implementation.

1.2 Historical Background of the Organization

Catholic Relief Services Ethiopia (CRS/Ethiopia) has a long and illustrious history that dates back to 1958. When the Ethiopian Catholic Bishops Conference offered CRS/Ethiopia to operate in the country with government approval, CRS/Ethiopia accepted. CRS has been a part of the fight against humanitarian crises and food insecurity since 1958, with activities aimed at reducing human suffering and encouraging charity. CRS has been assisting famine victims since

the 1984/85 drought by distributing emergency food and providing medicines through the Joint Relief Partnership of Ethiopia's three main churches, the Ethiopian Orthodox Church, the Ethiopian Evangelical Church Mekane-Yesus, and the Ethiopian Catholic Church, as well as the Lutheran World Federation.

CRS Ethiopia is one of CRS' most extensive country programs, with 213 employees. CRS Ethiopia implements program activities around 70 Woreda's throughout ten of Ethiopia's regions, directly benefiting about 2.5 Million people for the JEOP project, 250,000 people with DFAP, and around 300,000 with the rest of the projects are benefited without regard to religion or ethnicity. CRS Ethiopia Head Office is located in Addis Ababa Gullele Sub-city around the specific place called "Inqulal Fabrica". The organization consists of seven departments, namely Administration, Finance, Logistics, ICT, Compliance, Human Resource and Program. It has four food distribution areas outside Addis Ababa: Adama, kombolcha, Dire Dawa and Mekelle. 1.2.2 Overall Goal of CRS CRS/Ethiopia's strategic goal are to reduce the overwhelming poverty by promoting food security and strengthening the capacity of local civil society organizations, which are CRS Ethiopia's strategic local partners. CRS Ethiopia's entire program runs in tandem with the organization's long-term integrated development goals. Furthermore, CRS/local Ethiopia's partners coordinate the two ways within their operational areas in order to mitigate the detrimental effects of the acute crisis by depending on diverse emergency response activities. CRS implements long-term development projects as well as emergency assistance programs as needed to achieve this goal. CRS has been at the forefront of emergency food distribution programming since the drought years of 1984-1985. This began in the 1980s with the Joint Relief Partnership and continues today with projects like DFAP, JEOP, and (USAID emergency food aid Program,) Seed recovery, Wash and Clear water supplies for the community, Education and Livelihood projects, REAAP, and Emergency Seed recovery.

CRS/Ethiopia works together with more than 15 local partners, including the Ethiopian Catholic Church –Social and Development Coordinating Offices of Adigrat (in Tigray), Harar (in East and West Hararghe, Somali, Dire Dawa and Harari), Meki (in East Shoa, Arsi, and West Arsi) and Sodo (in Wolaita), Hosanna (in Kambata-Tambaro), Bahir Dar (in Metekel), Soddo (in South Omo), Nekemet, Gambella, Team Today and Tomorrow (in South Wollo), Water Action (in South Wollo), the Missionaries of Charity (in 16 Homes located in different Regions

including Addis Ababa work on charity activities), Ethio- Wetlands Association (in Borena Zone, Abaya), and Relief Society of Tigray (REST) Mekelle and the northern part of Ethiopia. CRS Ethiopia also work with Six international NGOs For the implementation of the JEOP and REAAP projects those international partners are CARE, Save the Children, Food for the Hungry, and World Vision , Cordaid and Handicap internationals throughout the country based on the Ethiopian Government's Humanitarian Requirements rules and regulations.

CRS implements the humanitarian logistics operation in various mechanisms; transportation, warehousing, storage, distribution to beneficiaries and procurement of good and service order to alleviate the sufferings. This study focus in Assessment of Factors affecting humanitarian logistics performance of CRS: case of Adama which is the significant logistics center of CRS operation such as warehousing, transportation, distribution and procurement of goods for the needs.

Statement of the Problem

According to the Human Cost of Disasters Report (2020), there were 7,348 large recorded disaster occurrences worldwide from 2000 to 2019, claiming 1.23 million lives, affecting 4.2 billion people (many on several occasions), and causing around US\$2.97 trillion in global economic losses.

Natural and man-made disasters affect millions of people all over the world, and their survival is dependent on disaster relief assistance supplied by governments and international relief groups (Kunz et al., 2013).

According to the Fritz Institute (2005), logistics is critical to humanitarian help. Trunick (2005) also acknowledged that logistics has always been a critical component of humanitarian aid operations since it accounts for 80% of disaster relief costs.

The last few years have brought many challenges to humanitarian organizations due to the increase in the type and number of disasters and crises in the world, which requires humanitarian aid organizations' interventions to save the victims' lives (Kinyua 2013). According to Yigezu (2016), Ethiopia has experienced drought, civil war, and other disasters during the past three decades, affecting people's livelihood and disrupting sustainable incomes. Furthermore, according to reports from the National Risk and Disasters Management Commission of Ethiopia

(2020), over 30 million Ethiopians need humanitarian aid due to recurring drought and conflict. In this respect, humanitarian organizations for any emergency, humanitarian response, or assistance are necessary to reduce people's suffering.

Currently, the humanitarian response has become very complex due to the diversified nature of different stakeholders involved and the environment in which the humanitarian organizations operate. On the one hand, there is the public sector, such as government agencies and local authorities. On the other hand, there are private sectors, service providers, goods suppliers, and individuals. In between, there is the international community and the large and small aid agencies. Lastly, there are the societies at large, which are exposed to unexpected changes regardless of their condition after the disaster (Tomasini & Wassenhove, 2009).

As Tomasini & Wassenhove (2009) further indicated, stakeholders involved in supply chain management of humanitarian assistance have different roles and expectations, which should be addressed in a coordinated and matured approach to creating effective outcomes. In doing so, the role of an effective supply chain at every stage is critical for optimal resource utilization and in fulfilling end beneficiaries' needs. Therefore, many scholars have conducted research in the humanitarian supply chain and logistics management field.

Moreover, the significant increase in natural disasters, complex and cost intensive humanitarian logistics operations, responsibility, and reporting toward donors and beneficiaries are reasons for humanitarian organizations to become more efficient in their operations. In particular, humanitarian supply chain management performance measurements and indicators are crucial for the effective supply chain management. However, in practice, 55% of humanitarian organizations do not monitor and report any performance measurement indicators, 25% declare to control a few indicators, and 20% measure performance consistently (Blecken 2010). The main target of performance measurement and suitable financial and non-financial indicators is to inform decision-makers at all levels about producing high-quality goods, processes, and services during humanitarian operations relief in case of disaster (Gunasekaran and Kobu 2007, Long 1997).

Therefore, the researcher's inability to find such studies in this sector is undoubtedly the primary reasons for conducting the present study. In this study, the researcher will try to assess the

performance of the humanitarian logistics and warehouse operation of current performance gaps/challenges related to procurement, transport, warehouse operations, distribution, etc.

Furthermore, there are various articles and studies about humanitarian logistics in Ethiopia, but so far, the studies are different in terms of variables or indicators of performance. Therefore, these studies were focused on identifying the practice, challenges, and measuring the performance of relief operations at the National Disaster and Risk Management Commission of Ethiopia (NDRMC) Selamawit,(2019), Factors Affecting the Humanitarian Supply Chain Performance of International Rescue Committee/Ethiopia Frehiwot, (2018), and factors affecting the performance of humanitarian logistics the case of IRC Ethiopia (2016).

However, having reviewed various articles and works of literature in the area of humanitarian logistics management, much focus has not been given to addressing the performance and challenges of humanitarian logistics operations in emergency or relief operations and their impacts on operations of humanitarian organizations, particularly in CRS Ethiopia, Adama. Since CRS Sub-office Adama is the largest humanitarian organization providing assistance, in this respect, CRS Hub Adama faces many logistics challenges during its daily operations which have not been researched.

1.3 Research Question

The following are the primary research questions that will be addressed in this study: -

- How does procurement affect the performance of the humanitarian logistics operation of the CRS Adama branch?
- How does transport affecting the performance of humanitarian logistics of CRS Adama branch?
- How Warehouse operation does affect the performance of humanitarian logistics of CRS Adama branch?
- How do distribution factors affecting the performance of humanitarian logistics of CRS Adama branch?
- How does external relations affecting the performance of humanitarian logistics of CRS Adama branch?

1.5 Objective of the study

This study had both general and specific objectives:

1.5.1 The general objective of the study

The general objective of the study was to assess factors affecting humanitarian logistics performance of CRS: case of Adama branch.

1.5.2 Specific objectives

- To assess the effects of procurement on performance of humanitarian logistics operation of CRS Adama branch.
- To examine the effects of transportation that affects Humanitarian logistics in CRS Adama branch.
- To assess the effects of warehouse practice that affects Humanitarian logistics in CRS Adama branch.
- To examine the effects of distribution process that affects Humanitarian logistics in CRS Adama branch.
- To identify how the external relations affecting the performance of humanitarian logistics of CRS Adama branch?

1.6 Significance of the Study

This study were useful in creating a clear understanding of humanitarian logistics performance gaps/challenges in organization supply chain management where the logistics department were able to give better service to achieve organizational goal. The study also develop a model to the quality of logistics coordination as logistics operation is a key to the success of any organization doing business in the most efficient and effective manner and its importance is very critical in humanitarian relief organizations. Furthermore, the community were indirectly benefit from the implementation of the recommendation in this study. Since the study is aimed to determine the factor that affects the humanitarian logistics performance of antecedent on coordination mechanism initiatives, the results of the study benefit humanitarian community to have better understanding about the logistics performance mechanism during relief assistance in a disaster.

Thus, it creates awareness among similar organization working with humanitarian relief works in better coordination of logistics efforts and reaching out to save life and rehabilitation of community and infrastructure during crisis. It also enables other researchers to use it as an additional source for further investigation in the area. Additionally, availability of limited resources during disaster relief makes humanitarian organizations to develop a strategic coordination plan efficiently while delivering the aid supply to the beneficiaries.

1.7 Scope of the Study

This study were conducted in CRS Adama, therefore the results of the study cannot be fully accepted as being completely relevant and applicable to all humanitarian, governmental and private companies. The study sample size and sampling procedure is limited, and the study particularly focuses on one international humanitarian organization. However, some huge level of generalization for similar organization in the same service requirement might be possible (Krauth.et.al, 2005).

In terms of context, this research outlined some common logistics coordination variables from literature and strives to assess the practice, role and performance of logistics activities management in CRS Adama. The study of humanitarian logistics gaps/challenges, practice that affects the performance includes the procurement, transport, warehouse, and distribution practice Not only to individuals who benefit from such initiatives, but also to those who operate within the supply chain and crisis management in general, will be of considerable importance in humanitarian supply chain management. The study explore the challenges and critical factors in logistics performance towards effective and efficient supply chain management, so that best practices could be identified and implemented to avoid delays in reliefs“ distribution an avoid loss of lives. However, the researcher tries to address practice, gaps/challenges that affect the performance of logistics coordination considering organizational attainment of strategic objective, organizational resource sharing and organizational relationship perspectives. In addition, humanitarian logistics performance was analyzed in relation to logistics coordination efforts. In terms of geographic dispersion as CRS operates in different parts of the country including remote areas where it is difficult to access concerned personnel the Adama office were contacted to obtain information for the study

1.8 Limitation of the Study

The main focus of the study is to assess Humanitarian Logistics gaps/challenges of CRS Adama. In view of this, the study is geographically limited to an organization in Ethiopia and humanitarian sector.

The main limitation of the study were unavailability of well documented and organized secondary data particularly research works in the areas of humanitarian logistics management in the country. Moreover, collection of primary data through survey questionnaire was a challenge due to the fact that the physical presence of respondents is located out of Addis Ababa locations or duty stations in the country.

Due to time constraint and other resource constraints, the data collection for the research was done through convenient method and sources. It may be difficult to easily access the target population due to the nature of their profession; humanitarian logistics officials are always busy and not available in their office. Thus, further study shall be done by making comparison between similar organizations to fully understand this area of research.

1.9 Definition of Terms

Humanitarian Logistics is the processes and systems involved in mobilizing people, resources, skills and knowledge to help vulnerable people affected by natural disasters and complex emergencies.

Procurement is the process of finding and agreeing to terms, and acquiring goods, services, or works from an external source, often via a tendering or competitive bidding process. Procurement as an organizational process is intended to ensure that the buyer receives goods, services, or works at the best possible price when aspects such as quality, quantity, time, and location are compared. Corporations and public bodies often define processes intended to promote fair and open competition for their business while minimizing risks such as exposure to fraud and collusion. Include factors such as delivery & handling, marginal benefit, & fluctuations in the prices of goods.

Transportation merchandise being transported can be moved through a variety of transportation means and is organized in different shipment categories. Operators involved in transportation include: all train, road vehicles, boats, airplanes companies, couriers, freight forwarders and multi-modal transport operators.

Warehouse is a building for storing goods. Manufacturers, importers, exporters, wholesalers, transportation companies, customs, and others all use warehouses. They are usually enormous plain structures on the outskirts of cities, towns, or villages in industrial parks.

Distribution The practice of making a product or service available to the consumer or business user who requires it is known as distribution. This can be accomplished directly by the producer or service provider, or indirectly through distributors or middlemen.

1.10 Organization of the Study

The study organized into five chapters. The first chapter deals with introduction of the problem, background and its approach. The second chapter was concerned with presenting the review of the related literature that focus on performance indicator, logistics coordination and supply chain performance done by different scholars. The third chapter covered by research methods of the study. The fourth chapter concern to explain the analysis of the data collected and interpretation. The fifth chapter brought to an end this study with summary, conclusion and recommendation.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

Introduction

The aim of this chapter is to go over the research on the elements that influence humanitarian logistics performance. To gain insights into the field and build a conceptual framework, the study reviewed the works of many scholars in the areas of humanitarian logistics management, logistics and warehouse management, and humanitarian performance measurement. In addition, an empirical evaluation of the study's issue was conducted to support the conceptual framework. This study aimed to create and assess those research questions, as well as identify measurement variables that will be utilized to answer those research questions, based on the literature analysis, in order to investigate the humanitarian logistics performance of CRS logistics and Warehouse hub Adama.

Theoretical Literature Review

2.1.1 Social network theory

Nodes and links are independent constructs in social network theory, which is also known as Network theory; network analysis (Scott, 2001). Node size, density, and link strength are dependent constructs in social network theory. The strength of social network theory originates from its distinction from traditional sociological research, which presume that individual actors' characteristics, such as friendliness, intelligence, and so on, are what important. The weight it pays to the relationships between the nodes, rather than the properties of the nodes themselves, is one of the distinguishing features of social network theory that sets it apart from other sociological sciences. The various informal relationships that bind executives together, as well as linkages and interactions between individual employees at different humanitarian organizations, have been studied using social networks (Layton, 2006). These networks provide ways for humanitarian organizations to gather information, deter competition, and even coordinate in setting operational policies (Layton, 2006).

According to Eisenhardt and Martin (2000), resource-based theory posits that a corporation can be thought of as a collection of heterogeneously distributed resources, in this case, humanitarian

organizations with long-term differences. To stay relevant and maintain performance, this idea states that a corporation must obtain an efficient package and flow of the proper type of resources from its operating environment (Rungtusanatham, et al., 2003). Physical or concrete assets such as plants and equipment, as well as intangible assets such as information, skill, and other organizational assets, are referred to as resources in this approach.

Research Based Theory (RBT) is crucial to many organizations, according to Zacharia, Sanders, and Nix (2011), because of its proficiency in logistics and the fact that it can be costly if a company chooses to invest in it. This is because competency is a long-term source of competitive advantage for humanitarian organizations, and its realization is dependent on a company's capacity to employ all of its resources to achieve efficiency and effectiveness, even ones it does not own.

In the competitive market, humanitarian groups have depended on outsourcing to acquire access to other firms' valuable resources. As the demand for such resources grows, humanitarian groups that seek and provide such services become increasingly mutually adapted and value dependent on one another. According to the theory, coordination allows enterprises to access complementary resources and form far more competitive resource bundles, giving them a competitive edge (Zacharia, Sanders & Nix, 2011). According to relief coordination theory, it is possible to orchestrate the efforts of several organizations and to direct actions in an orderly and structured manner ((Seybolt, 1997; McEntire, 1997).

The Humanitarianism and War Project provides a more detailed and frequently cited definition of the concept as: managing information, mobilizing resources, and ensuring accountability; orchestrating a functional division of labor in the field; negotiating and maintaining a serviceable framework with host political authorities; and providing leadership (Minear, 2002). Coordination, according to analysts and academics, is also vital for improving service delivery efficacy. While effectiveness is rarely defined, it is frequently cited as a reason for the importance of developing cooperation among service providers (Minear, 2002). An argument for why humanitarian groups should aim to coordinate their assistance operations is usually presented as a reduction in duplication, generally portrayed as securing or improving organizational efficiency (McEntire, 1997).

Humanitarian operation actors and their roles

The basic purpose of humanitarian action is to "defend human life where it is threatened on a large scale," according to this study, which uses a simple core definition for humanitarian relief from the literature (Seybolt, 2009). Human life preservation is at the forefront of humanitarian organizations' agendas (Seybolt, 2009). Freedom from acute pain and basic human well-being are stressed as essential humanitarian considerations. Furthermore, minimizing the excessive level of human suffering is considered the humanitarians' second purpose (Darcy et al., 2003).

Natural disasters, which include events like as earthquakes and floods, cause around five million people to be temporarily displaced. The World Health Organization (WHO), the World Food Program (WFP), and the United Nations High Commissioner for Refugees (UNHCR) are among the humanitarian organizations receiving donations from this global community, as are international organizations like the International Federation of Red Cross and Red Crescent Societies (IFRC), and global non-governmental organizations (NGOs) like CARE and World Vision. Humanitarian organizations usually include logistic units which can have different functions depending on the organizations or even the disaster and can include: procurement, warehousing, fleet management, transportation (of both supplies and people), asset Management, building Management, security, and information technology (IT), radio communication etc.

Humanitarian logistics information system (HLIS) enhance needs assessments by ensuring the field staff know what supplies are available for beneficiaries, either in local warehouses, prepositioned emergency stocks (Fuad.I. A, 2017:p18).

2.1 The role of HLs in disaster relief SCM

The council of logistics management defines logistics as the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption in order to meet consumer needs. Supply chain management is the process of integrating two or more logistical systems inside a network to create value, improve efficiency, and satisfy customers (Debela, 2013: p9).

By addressing the pain points, humanitarian logistics has the ability to improve its contribution to disaster assistance and be acknowledged for it. This can be accomplished through knowledge management, technology, measurement, community, and voice activities. While getting relief

materials to disaster locations will remain a critical function for logistics, the strategic focus must be on providing timely information, mining that information for insight into how to enhance operations, and learning internally and with others. Creating a community that shares and participates in the field's advancement can multiply each logistician's efforts. It is through these two mechanisms of information and community that humanitarian logistics can find its voice and create its future, rather than limit itself to responding to the present (Fritz institute, 2013: p13).

Humanitarian logistics are all the processes and systems involved in mobilizing people, resources, skills, and knowledge to support vulnerable individuals affected by disaster, according to Frans, N.A. (2016: P40-42) referencing Van Wassenhove (2006) and other scholars. In addition, humanitarian logistics include a wide range of other tasks, including planning, procurement, transportation, warehousing, tracking and tracing, and customs clearance (Thomas &Kopczak, 2005). Furthermore, humanitarian logistics is commonly recognised as primarily involved with the transport and distribution of relief aid to disaster victims, as well as in complicated emergencies such as war and conflict situations (Jahre, Jensen &Listou, 2009).

For the following reasons, Thomas (2003) determined that logistics is critical to disaster relief delivery and distribution: For starters, it acts as a link between several points, such as catastrophe planning and response, procurement and distribution, and headquarters and the field. Second, it's critical to the success and speed with which relief commodities like medication, food, water, shelter, and sanitation are delivered. Third, as the department in charge of tracking items throughout the supply chain, it is frequently the source of data for post-event learning. As a result, logistics can be one of the most costly aspects of a rescue effort (Thomas, 2003).

He goes on to say that the supply chain's ability in handling relief distribution has become critical since the situations in which it functions are frequently irregular, chaotic, and require flexibility (Oloruntoba& Gray, 2006). Other scholars have argued that the role of the supply chain is becoming increasingly important in humanitarian logistics; as a result, humanitarian relief organizations must embrace new supply chain strategies, techniques, and technology in order to improve their effectiveness in humanitarian logistics service operations (Heaslip, 2015). Furthermore, according to Kovacs and Spens (2007), the primary focus of humanitarian logistics has switched from supplying essential products and services to the efficiency of its supply chain.

This means that humanitarian groups must increase the efficiency of their supply chains in order to bring relief aid to the most vulnerable people as quickly as possible.

As a result, experts have concluded that only a superb logistics service can ensure the timely, safe, and trustworthy delivery of goods and services to those in need. In support of this position, The supply chain can be described as effective if the right goods (food, non-food items, and medical items) are delivered to the right people (the most vulnerable people) at the right time (as quickly as possible), at the right place, in the right quantity, and with the right quality (not poor quality goods), according to Bölsche et al (2013).

Logistics challenges among humanitarian agencies

In citation to many researchers such as Romano (2011), Frans, N.A. (2016: P56-59) writes that anytime emergency situations develop, there is always a sense of urgency to supply relief supplies to the afflicted communities. Medication, food, telecommunications, and equipment are all examples of supplies that must be given promptly to those affected (Borda, 2013). Furthermore, the unpredictability in timing, location, type, and size is one of the most problematic parts of relief chain design and management (Balcik&Beamon, 2008).

There's also the issue of supply chain unpredictability, which can sometimes be caused by the unexpectedness of disasters, and this might raise the high risks connected with timely delivery of goods and services (Kovacs & Tatham, 2009). Second, it's possible that coordinating transports as soon as needed to carry products from landlocked places to catastrophe areas will be challenging (Balcik&Beamon, 2008). Finally, the issue of transparency in the allocation of aids may come up. Fourth, supply chain managers face a significant difficulty in ensuring the safety of humanitarian personnel. Finally, there is the issue of a scarcity of resources, such as food, technology, transportation capacity, money, and volunteers (Balcik&Beamon, 2008).

Furthermore, many organizations involved in the distribution of relief items, according to Sebbah, Boukhtouta, and Ghanmi (2012), sometimes face serious scientific issues during emergency relief operations. Such issues could include automated emergency supply identification, demand forecasting for basic commodities, transportation routing and monitoring, and automated demand response help (Sebbah et al., 2012). He also states that the lack of a complete standardization of one of the key obstacles in the provision of drought aid has been

highlighted as supply chain operations (Kovacs & Spens, 2009). Nonetheless, the presence of governments and numerous relief groups in the system, either as suppliers or as third-party logistics providers, emphasizes the entire importance of the humanitarian supply chain (Kovacs & Spens, 2009). This view is bolstered by the fact that a slew of humanitarian organizations are involved in coordinating the actions of numerous players in any catastrophic scenario (Balcik & Beamon, 2008).

The authors ensued on to list the following critical supply chain challenges in handling the distribution of relief materials: unpredictability of disaster occurrence, suddenness of demand, high stakes associated with delivery timeliness and a lack of sufficient supplies, people, technology, transportation capacity, and funds. Following a disaster, Kovacs and Spens (2009) classified humanitarian assistance into four categories: urgent reaction, basic relief, development relief, and rehabilitation relief. Every day, these support functions help to restore people's lives and strengthen the systems in place. The causes, impacts, and magnitude of disasters vary, as do the institutions involved in resolving disaster shortages (Coleman, 2006).

The distribution of relief assistance by aid agencies creates unique problems for supply chain management, as mitigating the effects of these challenges has never been straightforward. According to Balcik and Beamon (2008), the obstacles faced in the supply chain of disaster relief distribution are dependent on the kind and location of the event. However, Kovacs and Spens (2009) divided the issues into three categories: disaster-related challenges, disaster-relief-related challenges, and challenges linked to different types of humanitarian enterprises.

Furthermore, he states that the reasons of certain disasters frequently provide insight into disaster logistics difficulties. Different calamities will constantly prevail due to a lack of understanding of climate change consequences, uniform planning and preparedness methods, security, and safety. The difficulties encountered during the catastrophe recovery phase are viewed in terms of cycles that connect recovery and preparedness (Pettit and Beresford, 2009). According to Kovacs and Spens (2009), the issues that distinguish humanitarian organizations come in a range of shapes and sizes, including UN agencies, Red Cross agencies, governmental organizations, and non-governmental organizations (NGOs). The organizations differ in presence, size and mandates to standard operating procedures and moreover, their sizes effectively limit operational potentials. Small humanitarian organizations, for example, are known to focus on certain topics that are

prevalent in a given neighborhood or region (Coleman, 2006). Humanitarian organizations face the following challenges: lack of collaboration among humanitarian organizations; lack of coordination among humanitarians; lack of information among fellow actors; humanitarian staffs lacking logistical training in emergency situations; lack of supplies and financing among humanitarian agencies; and inadequate infrastructure causing additional logistical expenditures.

Humanitarian logistics vs. Business logistics

Between the commercial sector and humanitarians, there is a significant contrast in how logistics is viewed. When comparing humanitarian and business logistics, parallels in essential ideas can be found. Both types can benefit from managing the flow of goods, information, and funds from a specified source to the final client. Furthermore, numerous operations that are part of commercial logistics, such as planning and procurement, as well as transporting and storing, are also applicable to humanitarian logistics. (2007, Kovács& Spens)

Kovács and Spens (2007) discuss several important differences between business logistics and humanitarian logistics. While business logisticians work with predetermined actors or partners and predictable demand, humanitarians deal with unknown or changing actors and unpredictable demand. Aid agencies receive many unsolicited and sometimes even unwanted donations, such as: drugs and foods past their expiry dates; laptops needing electricity where infrastructure has been destroyed; and heavy clothing not suitable for tropical regions. Humanitarian logisticians have higher obstacles in teamwork and coordination than their business colleagues. Coordination of a large number of relief agencies, suppliers, and local and regional actors, each with their own operating procedures and structures, can be difficult. Aid agencies are regularly chastised in descriptions of relief operations for their lack of teamwork, redundancy, and duplicated efforts and materials.

McLachlin, Larson and Khan (2009) offer a framework in which differences between business and humanitarian logistics largely follow from two dimensions: motivation (profit versus not-for-profit) and environment (uninterrupted versus interrupted). In business logistics, actors have the profit motive and generally operate in uninterrupted environments. Interrupted operating environments are rare exceptions. To the contrary, in humanitarian logistics, actors are usually not-for-profit organizations and interrupted environments are the norm, especially in the case of disaster relief as opposed to ongoing development aid operations.

In their study on commercial logistics, Langley and Rutner (2000) stated that the value of logistics is "the contribution to profitability." As a result, the primary goal of business logistics is to reduce costs, but the primary goal of humanitarian logistics is to ensure that people in crisis areas receive relief.

2.1.1 Performance Measurement in Humanitarian Logistics

Humanitarian logistics, according to Thomas and Kopczack (2005), is the process of planning, implementing, and controlling the effective and cost-efficient movement of goods/services, information, finance, and human resources from one point of origin to another desired location in order to alleviate the suffering of vulnerable people. The key humanitarian logistics functions include situation analysis, planning, procurement, transportation, warehousing, tracking and tracing, and customs clearance.

Humanitarian logistics is characterized by large-scale activities, irregular demand and unusual constraints (Beamon and Kotleba, 2006). The problems can range from a lack of electricity supplies to limited transport infrastructure including 'controlled' environment with some minor variability (e.g. traffic congestion) (Kovacs and Spens, 2009). Humanitarian organizations are mostly driven by donors (i.e. supply) (Tomasini and Van Wassenhove, 2009). The customers (aid recipients) actually have no choice and, therefore, 'true demand' is not created in humanitarian logistics (Kovacs and Spens, 2009).

The effectiveness of humanitarian logistics can have a significant impact on the speed with which help can be moved along the supply chain and provided to beneficiaries (Fritz, 2006). During aid operations, a variety of items may be required at various times and in various locations over the duration of the operation. This intricacy must be effectively controlled for the operation to succeed. The ultimate purpose of supply chain performance measurement is to ensure that the correct goods are delivered at the correct location, at the correct time, in the correct amounts, and in the correct quality from the correct source.

As said by Neely, Gregory and Platts (1995), performance measurement is the process of quantifying the efficiency and effectiveness of an action using a set of performance metrics. Moreover, Parker (2000) stated that the purpose of measuring organizational performance is (1) to identify success; (2) to identify whether customer requirements are met; (3) to help understand organizational processes; (4) to identify problems, bottlenecks, waste etc.; (5) to ensure decisions

are based on facts rather than on supposition or emotion and (6) to show whether planned improvements actually happened.

Performance measurement is particularly important in the humanitarian sector, where limited resources have to be used in the most efficient and effective way (Abidi and Scholten 2015). Furthermore, the increased frequency and severity of natural and manmade disasters, the costs involved in humanitarian supply chain operations as well as the growing competition for scarce resources and donor funding, make performance measurement very important for all humanitarian organizations involved in disaster management (Beamon and Balcik 2008; Santarelli et al. 2013).

Effective performance assessment systems, according to Poister (2003), can assist various humanitarian actors in making better decisions, improving performance, and providing accountability. Furthermore, performance measures provide feedback on agency performance and aid in the more efficient allocation of resources. As a result, performance assessment gives for more control over operations while also enhancing operational flexibility (Beamon and Balcik 2008).

Even though, various performance measurement frameworks (e.g. SCOR Model or performance prism) and indicators exist for commercial supply chains, the distinct characteristics of the humanitarian environment cause many of these to be unsuitable or irrelevant (Beamon and Kotleba 2006; Abidi, De Leeuw and Klumpp 2014). However, performance measurement frameworks from the commercial sector are a useful point for the non-profit sector, and thus for the humanitarian organizations (Moxham 2009).

Humanitarian performance is the effective collective performance of a complex system for international, national and locally based organizations, which works to save lives, alleviate suffering and maintain human dignity both during and in the after effects of man-made crises and natural disaster, as well working to prevent and strengthen preparedness for the occurrence of such situations (Ramalingam and Mitchell, 2009).

In addition, Arnold (2008) stated in his study that effective performance means undertaking work in ways that are consistent with humanitarian principles, mobilizing and deploying sufficient

financial, material and human resources in ways that are relevant, well-managed, accountable, impartial, and durable and ensure good quality.

In a systematic literature review, Abidi, De Leeuw and Klumpp (2014) evaluate the current state of research on performance management in humanitarian supply chains. They conclude that even though there are a variety of approaches, there is still a long way to go in research on performance measurement in humanitarian supply chains. Only few performance measurement frameworks have been empirically tested and likewise, relatively few humanitarian organizations have contributed to research projects in the field.

Davidson (2006) develops a performance measurement framework for relief logistics for the International Federation of Red Cross and Red Crescent Societies and describes an application of the framework to actual relief operations. The proposed performance measurement framework relies upon four performance attributes i) appeal coverage, ii) donation-to-delivery time, iii) financial efficiency, and iv) assessment accuracy.

The balanced scorecard is the first approach for humanitarian logistics considering different perspectives like the process standpoint, different actors and not only the past but also future expectations about indicators. In addition it tries to identify connections and correlations between the indicators- a requirement which succeeds rarely in the practical application of the balanced scorecard and the influence of indicators on aims and goals, strategy and vision and with this on the impact of humanitarian logistics (Bolsche, 2013).

Performance measurements for the humanitarian sector have been developed where most frameworks (de Leeuw, 2010; Schulz and Heigh, 2009; Moe et al., 2007) are based on the balance score card introduced by Kaplan& Norton (1992). However, due to the rigidness of the framework and the complexity of humanitarian context, balance score card is unfit for the humanitarian sector (Davidson, 2006).

Even though there is a limited body of existing knowledge in the area, a recent exception is the research conducted by Davidson (2006); Whitten et al. (2012); and Dubey et al (2015) offering a framework for measuring relief logistics performance. Several measures have been formulated to gauge supply chain activities and the determination of the appropriate type of gauge is not easy since focusing on one aspect such as cost reduction may improve cost effectiveness at the

expense of the performance of the entire supply chain system among others like responsiveness, flexibility, reliability, and customer (beneficiary) satisfaction (Arrowsmith, 2013). Due to this more realistic supply chain model including Supply Chain Operation Reference (SCOR) need to be developed which leads to superior measurement of supply chain performance. The SCOR is perceived as a balanced system of performance measurement since it covers five important processes of the supply chain namely, planning, sourcing, making, delivering and returning (Supply chain Council, 2015).

As per the SCOR model, five performance attributes should be considered in analyzing the performance of a logistics function in place. These performance attributes are delivery reliability, responsiveness, flexibility, cost and asset management efficiency. Delivery reliability, flexibility and responsiveness performance attributes are those facing towards customers while cost and asset management efficiency focus towards the organization (Supply Chain Council, 2012).

Delivery reliability is about performance of the logistics function in delivering the right product to the right beneficiary at the right time and right quantity. Responsiveness on the other hand emphasizes on the speed at which the logistics function provides products to the beneficiaries. Flexibility is about ability in responding to changing demands in terms of both variety and volume. Cost stands for the costs associated with running the logistics function while asset management efficiency is about efficiency in managing assets so as to satisfy beneficiaries' demand (Thilakarathna, Dharmawardana and Rupasinghe, 2015).

2.1.2 Humanitarian logistics management practices

Humanitarian activities should be designed correctly in order to receive the best response with the least amount of loss. Costa et al. (2012) listed the following measures that need to be developed in order for humanitarian operations to operate better: procurement, transport, storage and handling, distribution and performance evaluation.

a. Procurement

The recent global disasters have highlighted the need of relief supplies arriving on time and in sufficient quantity to save lives. As a result, efficient logistical planning is critical to the success of a rescue mission. In humanitarian supply chains, the procurement process ensures that each humanitarian organization (HO) has the necessary material resources to respond to disasters.

Various procurement selections made by relief organizations can have a wide range of consequences in terms of relief item transportation, storage, and distribution. These factors may have an impact on the humanitarian supply chain's performance and the delivery of relief supplies. According to Blecken and Hellingrath (2008), procurement activities account for 65 percent of total disaster relief logistical expenditures.

Humanitarian logistics procurement might take place before or after a disaster. Pre-disaster procurement is required for pre-positioning relief goods in strategic places close to disaster-prone areas. During the first days after a tragedy, the beneficiaries are supplied from pre-positioned goods. As a result, having those supplies available for deployment is crucial.

However, according to Balcik and Beamon (2008), only a small percentage of the total relief supply is sourced from the pre-positioned inventory. When a crisis strikes, a relief group may need to procure huge quantities of a relief item, and it is not cost-effective to pre-stock significant quantities of inventory for this item. As a result, many disaster relief programs have insufficient pre-positioned inventory. Furthermore, because disasters are unexpected, post-disaster procurement is required (Balcik et al. 2010). Because the location, timing, and intensity of a disaster are unknown, the relief agency prefers to make purchasing decisions after the crisis has occurred. It's worth mentioning that, in addition to pre-positioned stocks and post-disaster procurement auctions, some relief item demands can be met through pre-disaster special supply contracts and in-kind gifts. Large humanitarian groups make long-term agreements with vendors to offer a specific number of relief goods on demand as part of supply contracts. Also, the number of in-kind donations as a source of additional supplies is unpredictably large and tends to proliferate after a disaster, necessitating sorting, prioritization, and storage.

Transport Management

Transportation is the element in the logistics that makes it possible for assistance (the arrival of goods from abroad, as the movement of them within the country) to arrive at the site where it is required. When defining the transportation, it is important to take into consideration not only the necessary means and resources to move the supplies, but also to determine what the actual possibilities and alternatives are to deliver assistance. Alternative approaches, procedures, and routes should be taken into account on a regular basis. Supplies should not just be moved in any way and at any time, but that the challenge is to do so safely and in a timely manner. This

requires maybe the use of all the available means. When determining which mode of transportation to employ, we must consider two factors: the needs on the ground (urgency, type of supplies, distance of the destination, other conditions, as routes, weather, etc.) and feasible forms of transport (available means, cost, accessibility, transmission capacities, etc.) (Van Wassenhove and Samii, 2003). According to Ballou 2004, transportation is the most important single element in logistics cost and it has significant impact on logistics performance of an organization.

b. Warehouse Management

Warehousing is fundamentally an act of storing goods between the time they are assembled and the time they are handled to the customer. Warehousing commonly depends on human resources and required facilities and equipment costs (Stock & Lambert, 2001). Furthermore, according to Tuzkaya & Onut, 2009, warehouse performance directly affects the whole supply chain performance of a firm or organization. Ineffective warehouse location selection, design or management will threaten the achievement of a humanitarian relief organization and result in loss of many lives and unnecessarily high costs (Pazour & Carlo, 2015).

d. Distribution

The flow of resources from warehouses or medical centers to afflicted areas is known as distribution. Wounded individuals receive aid in the form of food, medications, housing, and other relevant resources through relief distribution. Because of the uncertainty in the post-disaster context, careful planning is necessary to ensure maximum aid distribution.

Demand fluctuations, link and facility damage, and resource shortages are some of the concerns in post-disaster situations. For demand satisfaction, reduced unmet demand (unsatisfied demand level), minimum fatality, and maximum lifesaving, better relief distribution is critical.

The size of the facility, the number of facilities, and the quantity and capacity of trucks all play a role in the efficient management of relief materials intake and outflow. Similarly, the number of vehicles, capacity of vehicles, effectiveness of managing relief items, and proximity to the field warehouse and distribution center all contribute to a timely and efficient distribution of relief materials to the afflicted population. As a result, it is evident that these four decisions are connected in some way. These factors have not been investigated as a whole, but rather separately or in pairs, as shown above. These four decisions (facility placement decision,

inventory decision, transportation decision, and distribution decision) must be coordinated for an efficient and successful relief distribution.

A large section of the literature on relief distribution focuses on reducing unmet demand and enhancing relief distribution. Afshar and Haighani (2012) suggested a mathematical model to govern the flow of numerous relief goods through a supply chain from the point of origin to the point of delivery to recipients. Some scholars have studied on resource allocation, with automobiles, commodities, and equipment as resources (Holgund-Veraset al., 2013, Zhang et al., 2012, and Fiedrich et al., 2013). (2000). The process of resource allocation entails allocating resources without regard for the flow. Resource allocation gets more challenging as demand rises. Brown and Vassilou (1993) suggested a disaster resource allocation model; later, Fiedrich et al. (2000) proposed a superior disaster resource allocation model.

Humanitarian logistics coordination practices

Coordination has been broadly identified as being essential for successful commercial supply chain management (SCM), as a potential source of competitive advantage, and as a strategic design of decision between actors to enhance performance in respect of customer service and response time. Coordination is an „act of properly combining (i.e. relating, harmonizing, adjusting, and aligning) a number of objects (i.e. actions, objectives, decisions, information, knowledge, and funds) for the achievement of the chain goal“ (Amin M., et.al, 2018: p1).

Balciket al. (2010) defines coordination in HRSCs as the relationship and interactions among different actors operating within the relief environment. They further argue that coordination in humanitarian relief supply chains may appear horizontal or vertical. Horizontal coordination refers to the extent to which an umbrella organization coordinates with their partners at the same level within the chain. NGOs prefer horizontal coordination. Vertical coordination refers to the traditional hierarchical command-control structure of linking with partners in the chain. Government organizations and armed forces normally follow vertical coordination (Fabiola, et.al, 2017).

According to the theory on coordination, one advantage of horizontal coordination is that it can achieve advantages of scale and individual clusters would be expected to achieve some aspects of this. However, one particular challenge for the cluster system is that effective coordination

across different clusters can be crucial to serving the beneficiary. The main effect of vertical coordination in the literature is to synchronize different levels of a supply chain for overall efficiency and to improve customer service by making all participants focus on the final customers' needs. Effective vertical coordination depends on successfully merging the pipelines of many of the organizations in an operation, and on creating a strategic level for carrying out coordination between disasters; that is, preparing for a coordinated approach in operations (Jahre & Leif-Magnus, 2010: p18).

They also note that several important issues when dealing with coordination have been discussed, including the question of what to coordinate. It is essential to coordinate flows that are of a physical, informational and financial nature. Coordinating processes and activities, actors and technologies and systems are all ways of achieving efficiency. This covers what types of issues can be coordinated, in a broad and general sense, and those that can be carried out vertically and/or horizontally. Finally, the coordination can be carried out at an operational, tactical or strategic level.

Humanitarian relief organizations have a common need for integrated information technology (IT) solutions that support procurement, distribution through a pipeline, tracking and tracing of goods and funds, flexible and robust reporting and connectivity in the field. Despite the complexity of humanitarian logistics, manual processes are still dominant and IT resources which could enhance information availability, reporting and learning, are often not effectively leveraged (Fritz institute, 2013: p11).

2.2 Empirical Literature Review

2.2.1 Humanitarian logistics practices

Munguti(2010),did a study on supply chain management practices in disaster operation using descriptive study approach and a sample of 27 humanitarian organizations found out that HL practices improved the success of HOs and the study stated the HL practices that can be applied to HOs. The study focused on wide scope of SCM practices.

Likewise Munguti (2010) conducted study on supply chain management practices in 27 humanitarian organizations and reported that humanitarian logistics practices improved the success of HOs.

Another study conducted by Mohamed (2012) revealed the relationship between humanitarian supply chain management practices and performance in HOs in Kenya. The research was centered on three aims: i) establishing supply chain management practice among HOs in Kenya, ii) analyzing the relationship between supply chain practices among HOs in Kenya, iii) identifying the supply chain challenges faced by HOs in Kenya. The study was based on descriptive research design and 28 humanitarian organizations in Kenya were participated in this study. The study findings showed that maintaining a good supplier relationship, effective and efficient internal operations, continuous improvement, flexible production processes, use of technology to speed up humanitarian work, inter-organization integrations and simplicity in internal operations are among the practices prevalent among humanitarian organizations in Kenya. The main challenges included customs and habits in the relief area, lack of financial resources, inability to anticipate disaster, bulky materials to be transported, demand and supply uncertainty. The study however did not prove an in-depth description of the possible solutions to overcome the supply chain challenges faced by humanitarian organizations.

According to Catherine and Alexandra (2013: p14) response has been shown to be more timely and effective when provided locally (Zwaagstraet al. 2010). Communities have their own early warning systems and are very aware of the underlying causes of their vulnerability to drought, but they rarely receive long-term meteorological forecasts. When local authorities and communities have been provided with the funds to implement disaster risk reduction plans and programs well before any drought episode, their capacity to cope with the situation has been enhanced.

They explain that coordination is essential during an emergency response and consequently several countries in East Africa have established government units or departments to lead humanitarian responses. For example, the Kenya Food Security Steering Group works across sectors and links the ministries into working sub-groups-Agriculture and Livestock, Health and Nutrition, Water and Sanitation, Education, and Disaster Management. The challenge is how these sub-groups coordinate activities both during and outside of drought to achieve jointly agreed outcomes.

Furthermore, they note that the urgency of a crisis ensures sufficient political will exists among actors and between sectors to enforce the necessary coordination and cooperation required.

Unfortunately, in non-drought periods few countries have effective mechanisms to ensure that the necessary coordination in planning, policymaking and implementation takes place.

Effective disaster risk management system requires an efficient, dependable and technology supported information management and vertical and horizontal information exchange between different bodies involved in disaster risk management at all levels. When looking at the situation so far, however, in addition to the lack of dependable, uniform and technology supported information management system, the information exchange has been inefficient and not supported by technology (FDRE, 2013: p10).

Furthermore, he describe that humanitarian supply chain management activities have three levels that are generally applicable in different parts of an organization: i) Operational which involves decisions that are made on day to day basis in organizations relating to how materials are moved along the supply chain. ii) Tactical: This refers to decisions made in the middle of a project that affect the transportation of materials into storage facilities and then into the affected areas. This usually entails devising techniques targeted at lowering storage costs and ensuring that things are delivered to the impacted population on time. iii) Strategic, which entails high-level, long-term decisions on the organization's involvement in its relationships with other stakeholders, such as the government and its agencies. Many countries currently use enterprise resource planning (ERP) that is coupled with a transportation management system (TMS), which in turn drives the warehouse operation controlled by a warehouse management system, in order to properly implement the humanitarian supply chain management process (WMS). The ERP must be linked to the organization's finance system in order to maximize its benefits. Furthermore, the introduction of the World Wide Web has enabled quick communication between businesses and their clients, as well as timely information updates (Frans N.A., 2016).

Humanitarian Logistics performance measures and measurements

Logistics activities as the operational component of supply chain management, including quantification, procurement, inventory management, transportation and fleet management, and data collection and reporting. Supply chain management includes the logistics activities plus the coordination and collaboration of staff, levels, and functions. The supply chain includes global manufacturers and supply and demand dynamics, but logistics tends to focus more on specific tasks within a particular program health system (USAID, 2011: p13).

According to Andargachew (2014: p15), humanitarian Logistics is central to disaster relief for several reasons. First, it is crucial to the effectiveness and speed of response for major humanitarian programs, such as health, food, shelter, water, and sanitation. Second, with procurement and transportation included in the function, it can be one of the most expensive parts of a relief effort. Third, because the logistics department is responsible for tracking items throughout the supply chain, it is frequently the source of data that may be examined to give post-event learning. The effectiveness of suppliers and transportation providers, the cost and timeliness of response, the appropriateness of donated items, and the management of information are all reflected in logistics statistics. As a result, it is crucial to the success of present and future operations and plans.

Citing Kovács and Spens (2007) Mebratom(2016) discusses that there are several important differences between business logistics and humanitarian logistics. While business logisticians work with predetermined actors or partners and predictable demand, humanitarians deal with unknown or changing actors and unpredictable demand. Aid agencies receive many unsolicited and sometimes even unwanted donations, such as: drugs and foods past their expiry dates, where infrastructure has been destroyed; and heavy clothing not suitable for tropical regions. Compared to their business counterparts, humanitarian logisticians have greater challenges in collaboration and coordination with different aid agencies, suppliers, local and regional actors.

Emebet (2016: p66) notes in her research conclusion that vehicle safety/security, response time, cooperation, operating infrastructure and satisfaction of the company are positively related with logistics performance. Which means GOAL Ethiopia practice of giving attention for third party service provider is not enough. The organization logistics procedure, program planning and coordination with rental vehicle transport service have to be improved. This involves integration, co-ordination and collaboration across and within organization departments and throughout the logistics chain. Therefore, to achieve logistics operational objective and to increase the efficiency of logistics performance it requires an integration between internal (intra organizational) and external (inter organizational) functions.

The effectiveness and efficiency of the relief chain, according to O'Neill and Young (1988), are essential indices of relief performance because of the central role of logistics in relief efforts. The

area of relief chain performance measurement, on the other hand, has received little attention in the literature.

According to Abidi & Klumpp (2013), measuring supply chain performance in humanitarian setting have been challenging due to the following reasons: 1) difficulty obtaining accurate data, 2) limited information technology, 3) chaotic environment, 4) lack of motivation, 5) potential negative media exposure, 6) humanitarian resource issues, 7) general reluctance, 8) conflict between long-term and short-term goals & 9) lack of internal recognition of the importance of supply chain management.

Bolsche (2013) stated on her study that the previously developed frameworks largely miss the integration of the mentioned indicators into process models of logistics and supply chain management. This is a challenge for further research on performance measurement in process-oriented humanitarian logistics.

Furthermore, Qing et al. (2016) on their study demonstrated how the Supply Chain Operations Reference (SCOR) framework and its associated performance attributes can be adapted to the humanitarian supply chain. They are able to map the generic supply chain processes of humanitarian organizations and develop a set of twenty-four KPIs for HOs to measure and control their supply chain performances effectively. These metrics measure their performances in terms of agility, responsiveness, reliability, and cost effectiveness along the whole supply chain processes.

2.2.2 Conceptual Framework of the Study

Even though there are number of conceptual frameworks and discussions on performance measurement systems in the supply chain, there are gaps in supporting the frameworks with an empirical and case studies in (Gunasakaran et al., 2004). The SCOR model is one of the popular supply chain framework used to measure the performance of the organization. The model has been used in different continents and business sectors. There are thousands of organizations which implement SCOR model. Adopting SCOR model in organizations helps to solve the five top supply chain challenges (SCC, V.10). These are achieving superior customer service, controlling cost, planning and risk management, supplier/ partner relationship management and talent acquisition.

The study would seek to establish how adoption of the independent variables, the procurement, warehouse, and transport and distribution management practices can lead to realization of the dependent variables, logistics performance.

Dependent Variable



Independent Variable



Fig. 1 conceptual framework for the study
Source own construction based on literature (2022)

2.3 Research Gap

The majority of previous humanitarian logistics research has either focused on identifying difficulties or on measuring humanitarian logistics performance. To the best of the researcher's knowledge, this study is the first of its sort in terms of identifying factors affecting humanitarian logistics and measuring their performance in CRS Ethiopia in Hub of Adama. Another literature gap discovered by the researcher is that the bulk of humanitarian logistics studies are theoretical, leaving a vacuum in assessing the validity of ideas employed in humanitarian logistics. However, by contributing additional knowledge to the field of study, this study attempted to fill the gap identified above as much as feasible.

CHAPTER THREE

3. METHODOLOGY OF THE STUDY

Introduction

In this chapter methodology of the study were presented. Research methods or techniques refer to the methods used in performing research operations. In other words, all those methods which are used during the course of studying research problem are termed as research methods. Research methods are those methods which are concerned with the collection of data and the analytical tools of research statistical techniques which are used for establishing relationships between the data to evaluate the accuracy of the results (Kothari 2004). This chapter therefore describes the methods that will be used in this study including the choice of particular research designs, data type and source of data, research approach, data gathering technique and instruments, sampling and sampling techniques, data analysis techniques, validity and reliability of the study along with an appropriate justification associated with each approach.

3.1 Description of the Study Area

The study conducted in CRS Adama and which might include different stakeholders such as UN sister agency, governmental sectors and other partners who are involved in the logistics activity. CRS Adama is one of the major logistics involved in procurement, transport, distribution and warehouse service provider among other CRS Ethiopia operations. CRS has been implementing different humanitarian activity such as food distribution, nutrition aid, health support, logistics service and other humanitarian aid.

Hence, all logisticians who are working in logistics department from assistant to senior manager position were considered as a target population of the study. All logisticians and supply chain management staff who have served the organization for at least for one year were included to participate in the study.

3.2 Research Design

The advanced planning of the methods to be utilized for collecting relevant data and the methodologies to be used in their analysis, all while keeping the researches in mind, is referred to as research design. In general, the design was aimed at reducing bias and increasing the consistency of the data collected and analyzed (Kothari 2004). The investigation will be guided by a descriptive and explanatory survey. Descriptive research, according to Adams, Khan, and Raeside (2007), is concerned with dissecting a phenomenon rather than revealing underlying behavior. The descriptive survey is appropriate for investigations with the purpose of describing the features of the study's object. The current study's goal was to describe consumer experiences with a line up system.

For a variety of reasons, research initiatives have been taken. The two types are descriptive and explanatory. This study examines the major success variables in the selected construction development logistics using a descriptive and explanatory research design. The study also employs an explanatory research design in order to describe the current state of events at the time of the study, as well as to explain the link between variables that are correlated in order to assess the combined influence of the factors on logistical performance. Descriptive research focuses on describing the characteristics of a certain person, environment, or group. This study looked into whether or not certain variables are linked (Kothari, 2004). As a result, the study's goal was to determine the relationship between those logistics performance and impact of mobility. As results, the descriptive research design is found to be suitable for the study. Hence, descriptive is appropriate when data was collected from respondents at a single point in time. A survey design comprises collecting data from a sample or the entire population using a standardized research instrument. Because the study's goal is to describe perceived service quality, a structured questionnaire was utilized, necessitating the usage of survey design.

3.3 Research Approach

Both quantitative and qualitative study approach were conducted in order to investigate factors affecting humanitarian logistics performance in five independent variables of procurement, transportation, warehouse, distribution and external relationship gaps and challenges in line with the relationship with HL performance of reliability, agility and responsiveness which are dependent variables that affect the logistics operation of CRS. This study has been implementing different humanitarian activities such as Ethiopia based in Sub-office Adama. Quantitative research

technique employed in order to obtain the logistics and warehouse team perceptions on logistics coordination and warehouse practices in the organization. Qualitative research methods also allow for historical analysis and observations.

According to Creswell (2013), the mixed research approach is appropriate for the formation of concepts that aid in the understanding of social phenomena in natural (rather than experimental) contexts, with adequate consideration given to the participants' meanings, experiences, and perspectives. It is commonly used to obtain a better knowledge of the underlying causes as well as to reveal the elements affecting the performance of humanitarian logistics in handling relief activities and to find solutions to study problems.

3.4 Target population

The study's target demography includes employees and other stakeholders who are currently involved in and carrying out the humanitarian logistics activity, as the study's goal is to assess factors affecting humanitarian logistics performance. The total set of elements from which you want to draw conclusions is referred to as a population (Stillwell and Clarke, 2011). Through deliberate or judgmental sampling, the researcher can utilize his or her judgment to select cases that best answer the study objectives (Saunders et al. 2009). CRS has been implementing different humanitarian activity such as logistics operation of Adama based in Ethiopia is the subject of the study. The study focuses on the sub branches in Adama, with a population of 63. A census survey will be employed because the target population is manageable. The researcher uses a sampling technique to plan those logistics; probability sampling will be convenient for the researcher in terms of both geographic location and data availability.

3.5 Sampling Techniques

For its initial setting out, the mobility has chosen one of Adama's. The investigation were limited to CRS has been implementing different humanitarian activity such as Ethiopia based in Sub-office Adama. The study was selected a sample of 63 workers and 5 other stakeholders and employees. Using a sampling technique, probability sampling was employed to make selections.

Table 3.1: Sample size in the CRS has been implementing different humanitarian activity such as Ethiopia based in Sub-office Adama

Table 3.1 Sampling Techniques

S/n	Sources of Population	No. of Total Populations	sample size ($n_i = (N_i/N) * n$)
1	Permanent employees of CRS has been implementing different humanitarian activity such as Adama sub office	63	63
2	Government agency(NDRM) in Adama	8	5
Total		71	68

Source: CRS has been implementing different humanitarian activity such as Ethiopia based in Sub-office Adama

3.6 Data Sources and Types

The sources of data for this study will be both primary and secondary. The primary data consists of the new data's that will be collected via questionnaires and the secondary data will be from different existed data's such as journals, magazines, annual reports and books.

The primary data collected from respondents who are related to the logistics activities such as procurement, transport, distribution and warehouse activity, supply chain management and external bodies through questionnaire. It includes logistics managers, regional logistics supervisors, logistics officers, transportation managers, IT managers, warehouse managers and SC officers. In addition to the primary data, secondary data were gathered from reports, published and unpublished sources.

3.7 Data Collection Procedures

In order to analyze the factors affecting humanitarian logistics performance, in case of CRS has been implementing different humanitarian activity such as Ethiopia based in Sub-office Adama, both primary and secondary sources were used as a supply of data. The primary data were collected from CRS has been implementing different humanitarian activity such as Adma (both

the office itself and external strategic partners involved in the operation) by distributing questionnaire. In order to collect the necessary information regarding the study, standardized questionnaire were prepared by adopting the work of Qing (2016), Wolde(2019)&Yaregal (2019).The questionnaire had three sections. The first section dealt with the profile of the respondents and the organization, and the second section dealt with the humanitarian logistics practice of procurement, transportation, warehouse and distribution at CRS has been implementing different humanitarian activity and the third section examined the humanitarian logistics performance of CRS were implemented. The questionnaire design was in the form of Likert scale where respondents were required to indicate their views on a scale of 1 to 5. Accordingly, indicators representing independent variables in research framework were captured using a 5-point Likert scales, ranging from strongly disagree to strongly agree. The secondary data was collected from different articles (extensive article reviews was conducted); books, and documents from the organization database was reviewed to supplement the primary data.

3.8 Data Analysis

Descriptive, qualitative, and inferential statistics were used to analyze the data. Respondent's demographic data and their experience with automated queuing were described using mean scores and standard deviations. Descriptive statistics used to describe the perceived logistics quality of the organization. Correlation and regression analysis are used to determine the relationship between logistics performance and variable factor experience. The correlation and regression model were presented in the following format.

Data analyzed utilizing various data analysis methods shortly after data collection from both qualitative and quantitative approaches and secondary sources was completed. To exhibit distinct variables in quantitative data, descriptive statistical techniques of data analysis such as table, frequency, and percentage will be used. To be clear, the primary reason for using descriptive statistics in this study is that numerical data is best presented in the form of a table.

Furthermore, the Likert rating scale used for the attitude questions. According to Churchile and Icobucci (2005) and Obsiye (2012), as quoted by Amelework (2014), the Likert Scale has two parts: item portion (such as product, event, or attitude) and evaluative part (categorical responses from strongly disagree to strongly agree). Similarly, variables in this study that could measure respondent opinions toward the organization will be prepared with a five-point Likert scale.

Strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5) are examples of such scales.

3.9 Model Specification: Ordinal Logistic Regression

If the dependent variable has ordered categories (i.e. the order of ranked variables is meaningful but the distances between them are arbitrary), you can use the ordered logit. For some variables, the order is much clearer than for others, but always it is important to take care of whether it is the only possible order or if something else is there which makes sense better (Sarkisian 2004). According to Williams (2015), for the ordinal dependent variable, there are four different ways of treating the dependent variable. The first option is treating the variable as continuous and running the usual OLS regression or other techniques for continuous variables. The second option was ignoring the ordinality and treating the variable as nominal, i.e. use multinomial logit techniques, the third option was treating the variable as measured on a true ordinal scale like the professorial ranks of Full Professor, Associate Professor, and Assistance Professor, they are ordered but it may or may not reflect the crude measurement of some underlying continuous variable; the last option was treating the variable as though it were measured on an ordinal scale, however, the ordinal scale represent crude measurement of interval/ratio scale; For example, the categories “High, Medium, Low”. Accordingly, this study considers the dependent variable as a true ordinal scale.

In this study, Humanitarian logistics performance was measured using a single-item measure. Respondents were asked to rate how much it contributes to the performance on a five-point Likert scale, ‘Strongly Disagree’, ‘Disagree’, ‘Undecided’, ‘Agree’ and ‘Strongly Agree’. Since the outcome variables for respondent response were ordered and categorical, the most appropriate econometric estimation method to apply is ordinal logistic regression (Green 2000). The ordered logit models have come into wide use as a framework for analyzing ranked responses (Parasuraman et al. 1988). Furthermore, according to Williams (2008) ordered logit models are among the most popular ordinal regression techniques, however, the assumptions of these models are often violated, the parallel lines/proportional odds assumption often does not hold. Hence, this study employs ordinal logistic regression model and the functional form of the ordered logit model for the Humanitarian logistics performance at CRS as follows:

$$Y^* = \sum_{k=1}^K \beta_k X_{ki} + \varepsilon_k \quad (1)$$

Y^* is a continuous, unobserved, and unmeasured latent variable whose values determine what the observed ordinal variable Y equals

ε is a random disturbance term with zero mean and a standard normal or logistic distribution: $\varepsilon \sim N(0, 1)$. The continuous latent variable Y^* has various threshold/cut-off points. (μ is the Greek small letter Kappa.). The value on the observed variable Y depends on whether or not you have crossed a particular threshold/cut-off point. Thus, when $M=3$, what we do observe is;

$$\left. \begin{aligned} Y &= 1, \text{ if } Y^* \leq \mu_1 \\ Y &= 2, \text{ if } \mu_1 < Y^* \leq \mu_2 \\ Y &= 3, \text{ if } \mu_2 < Y^* \leq \mu_3 \end{aligned} \right\} \quad (2)$$

Where: Y , is observed in j number of ordered categories, μ s are unknown threshold/cut-off point parameters separating the adjacent categories to be estimated with β s. The continuous latent variable Y^* can be rewritten as;

$$Y^* = \sum_{k=1}^K \beta_k X_{ki} + \varepsilon = Z_i + \varepsilon_i \quad (3)$$

The Ordered Logit Model estimates part of the above:

$$Y^* = \sum_{k=1}^K \beta_k X_{ki} + \varepsilon = E(Y^*) \quad (4)$$

Note that, because of the random disturbance term, the unmeasured latent variable Y^* can be either higher or lower than Z . Note also that there is no intercept term. You then use the estimated $M-1$ cut-off terms to estimate the probability that Y will take on a particular value. In this case since $M=3$, the formulas are:

$$P(Y = 1) = \frac{1}{1 + e^{Z_i - \mu_1}}$$

$$P(Y = 2) = \frac{1}{1 + e^{Z_i - \mu_2}} - \frac{1}{1 + e^{Z_i - \mu_1}}$$

$$P(Y = 3) = 1 - \frac{1}{1 + e^{Z_i - k_2}}$$

The cumulative probabilities can also be computed using the form:

$$\text{Prob}(Y = j) = 1 - L(\mu_{j-1} - \sum_{k=1}^k \beta_k X_k)$$

Where: L(.) Represents cumulative logistic distribution

3.10 Validity of the Study

Validity is a term used in both qualitative and quantitative research. It is derived from the Latin term *validitas*, which means "strength." It claims that a conclusion can never be proven; it can only be argued (Trochim, 1999). Validity can be established in a variety of ways in quantitative research. Validity has a different meaning in this context than it does in qualitative studies. The term "validity" describes how well an instrument measures what the researcher is trying to assess. Items in the questionnaire, on the other hand, were created using a five-point Likert-scale close-ended multiple-choice format. Some SPSS lecturers and some supply chain Logistics employees tested in the instrument to ensure its validity. Employees were asking to see it and assess its validity.

3.11 Reliability of the Study

The research instrument is concerned with the instrument's ability to produce consistent results over time. The process of questionnaire pilot testing (testing and retesting) aided in ensuring the questionnaire's reliability in eliciting responses (Cook & Campbell, 1979:37) Chronbach Alpha Statistics is the most important tool for determining the findings' reliability and internal consistency. To obtain a reliable scale, the Chronbach Alpha result must be greater than 0.70, and any scale with a Chronbach Alpha of less than 0.70 must be excluded (Sekaran & Bougie, 2013). As a result, the study's reliability was tested using the Chronbach alpha test.

Table 3.2 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.723	5

3.12 Ethical Consideration

Research ethics matter for scientific integrity, human rights and dignity, and collaboration between science and society. The researcher makes sure these principles that participation in studies is voluntary, informed, and safe for research subjects.

Researcher balance pursuing important research aims with using ethical research methods and procedures. It's always necessary to prevent permanent or excessive harm to participants, whether inadvertent or not.

Ethical considerations:

- Protect the rights of research participants
- Enhance research validity
- Maintain scientific integrity

CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION

Introduction

This chapter deals with data presentation, interpretation, and analysis of the study. It has two main parts: the first part is the demography of the respondents; the second part consists of data collected from the respondents through questionnaires. To address the research questions, 68 questionnaires were prepared and distributed to respondents, 63 for CRS employee and 5 for external (stakeholder) respondents out of these questionnaires 60 from 63 were filled and returned, and 2 from 5 were again unreturned from the stakeholder.

Demography of Respondents

4.1.1 Response Rate

A total of 63 responses out of the 68 questionnaires sent out were received, achieving an acceptable response rate of 92.6 %, and all the questionnaires were edited and checked for completeness and used in the data analysis.

Table 4.1 Gender and Education Level Cross tabulation

Gender * Education Level Cross tabulation									
Count									
		Education Level							
		/Diploma		Bachelor Degree		Master's Degree		Total	
		F	%	F	%	F	%	F	%
Gender	Male	5	8.3	23	38.3	7	11.7	35	58.3
	Female	4	6.7	14	23.3	7	11.7	25	41.7
Total		9	15	37	61.7	14	23.3	60	100

Table 4.1 indicates that there were 35 (58.3%) male and 25(41.7%) female respondents. Besides, 14(23.3 %) of the respondents were master's holders 37(61.7%) of the respondents were Bachelor degree holders, and 9(15%) of them were diploma holders. In terms of proportion, majority of male and female respondents were Bachelor degree holders.

Table 4.2 Work experience and position in your organization Cross tabulation

Position category * work experience Cross tabulation											
Count											
		work experience								Total	
		less than 5 and 5years		6 -10years		11- 15 years		16 and above 16 years			
		f	%	f	%	f	%	f	%	f	%
Position category	Resource Mobilization & Fund Administration Directorate	1	1.65	0	0	0	0	1	1.7	2	3.3
	Response & Rehabilitation Directorate	0	0	8	13.4	2	3.3	0	0	10	16.7
	Logistics Directorate	3	5	6	10	5	8.3	1	1.7	15	25
	Disaster Reduction Directorate	1	1.66	5	8.32	6	10	2	3.3	14	23.3
	Main Warehouse	1	1.67	5	8.35	4	6.7	0	0	10	16.7
	Supervisor	1	1.66	1	1.7	1	1.7	0	0	3	5
	CRS Admin	1	1.66	2	3.33	0	0	0	0	3	5
	Technical staff	2	3.33	1	1.7	0	0	0	0	3	5
Total		9	15	29	47	18	30	4	6.7	60	100

Table.4.2 shows that there were four categories of work experience; 5 and less than 5 years, 6 - 10 years, 11 -15 years, and 16 and above years. Accordingly, the first category accounts for 9(15%) of the respondents, the second category who had 6-10 years of experience was 29(47%) of the respondents, the third category 11 -15 years were 18(30%) and the last category above 15 years accounts for 4 (6.7 %) of work experience. Concerning position in the organization, the current position of the respondents were 2 (3.3%) Resource Mobilization & Fund Administration Directorate, 10 (16.7%) Response & Rehabilitation Directorate, 15(25%) Logistics Directorate, 14(23.3%) Disaster Reduction Directorate, 10(16.7%), Supervisor, CRS Admin and Technical

staff were 3(5%) each. Furthermore, the majority of respondents work in Logistics Directorate followed by Disaster Reduction Directorate positions besides, the large number of respondents who participated in the study has worked for 6-to 10 years in the organization. This indicates that the work experience of the respondents had adequate exposure to the work area.

4.1 Descriptive Analysis

According to Creswell (2007), an interval measurement scale is used to analyze liker scale data. Liker scale items are created by calculating a composite score (sum or mean) from four or more type Likert-type items; therefore, the composite score for Likert scales should be analyzed at the interval measurement scale. Furthermore, for Likert scale data from 1 (Strongly Disagree) to 5 (Strongly Agree) if the sample is approximately normally distributed the interpretation should be for mean up to 2.8 is “Disagree”, mean between 2.9 and 3.2 is “Neutral”, and mean above 3.2 is “Agree” Cetro (2006).

Accordingly, the 0.8 was a result found by dividing the difference between the maximum (5) and minimum (1) scores by the maximum score (5) of the questionnaire. In the process of examining the data, the standard deviation was used. Small standard deviations (relative to the value of the mean itself) indicate that data are close to the mean whereas a large standard deviation (relative to the mean) indicates that the data points are distant from the mean. The mean is a poor fit for the data. Standard deviation is a measure of how well the mean represents the data (Field 2009). All of the variables were measured using a five-point Likert scale where 1 stand for Strongly Disagree and 5 stands for Strongly Agree. Therefore the interpretation made using the mean of each variable the mean falls between the two ranges, hence if the mean approaches 1 the interpretation would be the respondents didn't agree on the raised issue or variable, and if it approaches 5 the reverse would be true.

Table 4.2.1 Procurement

Descriptive Statistics			
	N	Mean	Std. Deviation
The organization has regular procurement activities to support the operation of the organization	60	3.7000	.86944
The organization has its database/catalog for the regularly procuring items	60	3.6333	.88234
The organization has successful procurement involvement in budgeting systems	60	3.4333	1.03115
The organization has good teamwork in the procurement system	60	3.0333	.95610
The organization has an efficient procurement staff	60	3.3333	1.05230
The organization's procurement policies can be revised	60	3.0133	1.05713
The procurement process has met the budget of the organization	60	5.0667	9.03452
There is effectiveness in E-procurement(Information technology)	60	3.7000	.86944
Does the organization use digitalization of procurement to respond quickly in emergencies	60	3.6333	.88234
The organization has regular procurement activities	60	3.4533	1.03115
Political change (change in government) can affect the procurement activities of the organization	60	3.0333	.95610
Social and cultural factors can affect the procurement activities of the organization	60	3.3333	1.05230
Environmental fluctuations have the potential to affect the procurement activities of the organization	60	3.3133	1.05713
Procurement	60	3.4923	1.11186

Table 4.2.1; determine how internal factors of procurement that affects humanitarian logistics performance at CRS. And most of the respondents were agreed with those enquiries. The first query in which the respondents gave a higher mean score was the question supposed that the procurement process has met the budget of the organization which accounts 5.0, the organization

has regular procurement activities to support the operation of the organization which is the mean score of 3.7, there is effectiveness in E-procurement(Information technology) which is the mean score of 3.70, the organization has its database/catalog for the regularly procuring items and the organization use digitalization of procurement to respond quickly in emergencies which is the mean score of 3.63, The organization has regular procurement activities which is the mean score of 3.45, the organization has successful procurement involvement in budgeting systems which accounts 3.43, the organization has an efficient procurement staff which is the mean score of 3.33, the organization's procurement policies can be revised which accounts 3.01, and the organization has good teamwork in the procurement system which is the mean score of 3.03. Furthermore, the following three factors were how external factors of procurement affects humanitarian logistics performance at CRS, accordingly, social and cultural factors can affect the procurement activities of the organization which accounts 3.33; environmental fluctuations have the potential to affect the procurement activities of the organization which is the mean score of 3.31 and political change (change in government) can affect the procurement activities of the organization which is the mean score of 3.03. Moreover the average mean for the procurement had a means a score of 3.49. Accordingly, the analysis shows that procurement had a means score of 3.49, which the score of this variable falls in agree level therefore, this variable can be a predicted variable for the performance of humanitarian logistics at CRS.

Table 4.2.2 Warehouse management

Descriptive Statistics			
	N	Mean	Std. Deviation
The organization has accurateness in warehouse use	60	3.9000	.87721
The organization has an adequate labor force to manage the warehouse	60	3.7333	.89947
The organization has a quality labor force to manage the warehouse	60	3.6667	1.01958
The organization has met/considered the lead time	60	3.8667	.76947
The organization has adequate financial resources to stock inventory	60	3.5333	.89190
There is availability and quality of infrastructure	60	2.4167	1.12433
The organization checks the level of peace in the country	60	2.2167	.88474
The organization enables and observes unique features of the location	60	3.3333	.96843
The organization has a good inventory management system	60	2.9333	.95432
The organization has good space utilization & flexibility of arrangement	60	2.3833	1.20861
The organization has shared information on time	60	3.4000	1.12295
The organization uses appropriate technology to manage the warehouse	60	3.6000	.80675
The organization has good safety/protection management in the warehouse	60	3.3667	.80183
Warehouse management	60	3.2577	.37919

Table 4.2.2 shows how warehouse management affects humanitarian logistics performance at CRS. Accordingly, most of the respondents were somewhat suggesting neutral and agreed with those questions. The first question in which the respondents gave a higher mean score was the question supposed that the organization has accurateness in warehouse use which is the mean score of 3.90, the organization has met/considered the lead time which accounts 3.86, the organization has an adequate labor force to manage the warehouse which is the mean score of 3.73, the organization has a quality labor force to manage the warehouse which accounts 3.66

the organization uses appropriate technology to manage the warehouse which accounts 3.60. the organization has adequate financial resources to stock inventory which is the mean score of 3.53, the organization has shared information on time which is the mean score of 3.40, the organization has good safety/protection management in the warehouse which accounts 3.36, the organization enables and observes unique features of the location which is the mean score of 3.33, the organization has a good inventory management system which accounts 2.93, there is availability and quality of infrastructure which is the mean score of 2.41, the organization has good space utilization & flexibility of arrangement which accounts 2.38, the organization checks the level of peace in the country which is the mean score of 2.21, and the average mean for the warehouse management had a means a score of 3.25. Therefore, the results demonstrate that speed has a mean score of 3.25, which is close to the neutral level, implying that this variable influences the performance of humanitarian logistics at CRS in some way.

Table 4.2.3 Transportation

Descriptive Statistics			
	N	Mean	Std. Deviation
The organization has good vehicle capacity	60	3.3333	.87656
There is on-time delivery in the organization	60	3.6100	1.02841
The organization has a good fleet management system	60	3.8667	.85304
The organization severely controls transit time	60	3.7000	1.01347
The organization prepares well-organized terminal facilities	60	3.6000	.71781
The organization has cautious about the nature of the product	60	3.9000	.87721
The organization set adequate transit time	60	3.7333	.89947
The organization has a good driver management system	60	3.6667	1.01958
The organization has managed the trucking capacity of the vehicle	60	3.8667	.76947
The organization's transportation system can be affected by the environment	60	3.5333	.89190
Transportation	60	3.6800	.53640

Table 4.2.3 demonstrates how transportation affects the humanitarian logistics performance at CRS and most of the respondents agreed to those questions. The first question in which the

respondents gave a higher mean score was the question supposed that the organization has cautious about the nature of the product which accounts 3.90, the organization has a good fleet management system which is the mean score of and the organization has managed the trucking capacity of the vehicle which are the mean score of 3.86 each, the organization set adequate transit time which is the mean score of 3.73, the organization severely controls transit time which accounts 3.70, the organization has a good driver management system which accounts 3.66, there is on-time delivery in the organization which accounts 3.61, the organization prepares well-organized terminal facilities which is the mean score of 3.60, the organization's transportation system can be affected by the environment which accounts 3.53, the organization has good vehicle capacity, which is the mean score of 3.33, also the average mean for transportation had a means a score of 3.68. As a result, the analysis shows that transportation had a means score of 3.68, the score of this variable falls in agree level hence; this variable considered as a factor for the performance of humanitarian logistics at CRS.

Table 4.2.4 Distribution of supplies

Descriptive Statistics			
	N	Mean	Std. Deviation
The organization manages distribution costs accurately	60	3.0267	1.09686
The organization uses a well-managed distribution time	60	3.2500	1.01889
The organization has to predict the environment	60	2.9000	.95136
The organization use well-organized information technology	60	2.8500	1.05485
The organization has a careful distributor perspective	60	3.0833	1.10916
The organization established an adequate communication system	60	2.8000	1.03825
The organization has an efficient resource allocation system	60	3.0176	1.09686
Distribution of supplies	60	2.9881	.79269

Table 4.2.4, demonstrates how distribution of supplies affects the humanitarian logistics performance at CRS and most of the respondents were agreed with those items the first item

which the respondents gave a higher mean score was the question supposed that the organization uses a well-managed distribution time which is the mean score of 3.25, the organization has a careful distributor perspective which is the mean score of 3.08, the organization manages distribution costs accurately which accounts 3.02, the organization has to predict the environment which is the mean score of 2.90, the organization use well-organized information technology which accounts 2.85, the organization established an adequate communication system which accounts 2.80, Thus, the analysis shows that the distribution of supplies had a mean score of 2.98, which is below the neutral level, implying that this variable can be an influence in the performance of humanitarian logistics at CRS to some extent.

Table 4.2.5 External relationship

Descriptive Statistics			
	N	Mean	Std. Deviation
There is adequate assistance from the government for humanitarian operations	60	3.3000	1.03006
There is an appropriate custom clearing process for logistics performance	60	2.7167	1.15115
There is a secured and protected working environment in working areas	60	3.0000	.93881
There is a willingness of local governments to allow staff deployment from other localities	60	3.3667	.91996
External relationship	60	3.0958	.68441

Table 4.2.5 shows how external relationship influences the humanitarian logistics performance at CRS. Hence most of the respondents were neutral and agreed with those items the first item which the respondents gave a higher mean score was the question supposed that there is adequate assistance from the government for humanitarian operations which accounts 3.30, there is a secured and protected working environment in working areas which is the mean score of 3.00, there is an appropriate custom clearing process for logistics performance which accounts 2.71, there is a willingness of local governments to allow staff deployment from other

localities which is the mean score of 3.36, also the average mean for external relationship had a means score of 3.09. Therefore, the analysis shows that external relationship has a mean score of 3.46, indicating that this variable's score is agree. As a result, this variable has an influence in CRS's humanitarian logistics performance.

Table 4.2.6 Humanitarian logistics performance

Descriptive Statistics			
	N	Mean	Std. Deviation
The organization has a specific plan to meet their goals	60	3.1833	1.04948
The organization has measurable activities	60	2.8167	.92958
The organization has achieved the planned objectives	60	2.8500	1.05485
The organization works with relevant activities	60	3.0833	1.10916
The organization met the time for the given activities	60	2.8833	.97584
The supply chain division is used resource incorporation of adequate time, staff, and money (agility)	60	2.8667	1.01625
There is a quality process in the organization	60	3.2167	.90370
There is reliable and accountable operation (accountable regards to donors and beneficiaries)	60	2.9333	.93640
The completion of the most activity is within budget (cost) and time (efficiency)	60	2.7167	.73857
Humanitarian logistics performance	60	2.9667	.61109

Table 4.2.6 indicates that humanitarian logistics performance. Since, most of the respondents somewhat suggesting neutral in the performance of humanitarian logistics in CRS. The first question in which the respondents gave a higher mean score was the question supposed that the organization has a specific plan to meet their goals which is the mean score of 3.18, the organization has measurable activities which accounts 2.81, the organization has achieved the planned objectives which is the mean score of 2.85, the organization works with relevant

activities which accounts 3.08, the organization met the time for the given activities which is the mean score of 2.88, the supply chain division is used resource incorporation of adequate time, staff, and money (agility) which accounts 2.86, there is a quality process in the organization which is the mean score of 3.21, there is reliable and accountable operation (accountable regards to donors and beneficiaries which accounts 2.93, the completion of the most activity is within budget (cost) and time (efficiency) which is the mean score of 2.71, and the average mean for humanitarian logistics performance had a means a score of 2.96. Therefore, the analysis shows that humanitarian logistics performance had a means a score of 2.96, the score falls in neutral level therefore; this variable show that there is problem in reliability, agility ,responsiveness and cost effectiveness in logistics performance at CRS.

4.3 Correlation Analyses

Table 4.3.1 correlation analysis

Correlations							
		P	WM	T	DS	EX	HLP
P	Pearson Correlation	1	.279*	.366**	.119	-.134	.883**
	Sig. (2-tailed)		.031	.004	.363	.307	.000
	N	60	60	60	60	60	60
WM	Pearson Correlation	.279*	1	.345**	.471**	-.002	.567**
	Sig. (2-tailed)	.031		.007	.000	.986	.000
	N	60	60	60	60	60	60
T	Pearson Correlation	.366**	.345**	1	.385**	-.012	.598**
	Sig. (2-tailed)	.004	.007		.002	.925	.000
	N	60	60	60	60	60	60
DS	Pearson Correlation	.119	.471**	.385**	1	-.181	.507**
	Sig. (2-tailed)	.363	.000	.002		.167	.000
	N	60	60	60	60	60	60
EX	Pearson Correlation	-.134	-.002	-.012	-.181	1	-.160
	Sig. (2-tailed)	.307	.986	.925	.167		.222
	N	60	60	60	60	60	60
HLP	Pearson Correlation	.883**	.567**	.598**	.507**	-.160	1
	Sig. (2-tailed)	.000	.000	.000	.000	.222	
	N	60	60	60	60	60	60
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

Apart from the descriptive analysis, correlation analysis is used to see if there is an association between each variable. The analysis shows that all variables had a significant association with performance. Accordingly, most of the variables except external relation had a significant relationship ($p = .000$) and a positive association with performance, besides external relation has positive relation but not significant with performance as well.

4.4 REGRESSION ANALYSIS

4.4.1 Preliminary Tests

Regression analysis is a test that can be used to investigate the effect of one or more determinants of independent variables on a dependent variable. Accordingly, the table below measures the individual contribution of each independent variable to change or determine the dependent variable. It is represented by the coefficient Betas for each of the predictors.

But before running the regression analysis, a pre-test of Heteroscedasticity and Multicollinearity test were performed. Heteroscedasticity assumption refers to the variance of error terms that are similar across the value of the independent variables. When the variance of errors differs at different values of the independent variable, it means heteroscedasticity is indicated. Whereas, Multicollinearity refers to the situation where the independent variables are highly correlated in a way that has undesirable implications on the outcome of regression analysis collinearity happened when one can either remove one of the variables or create a new variable that combines the previous two that were high inter correlated because when the predictor variables are highly correlated, they share essentially the same information and together, they may explain a great deal of the dependent variables but may not individually contribute significantly to the model (Robert, 2006).

A. Multicollinearity Test

Collinearity Statistics	
Tolerance	VIF
.808	1.238
.707	1.414
.730	1.371
.678	1.475
.930	1.076

Table 4.4.1.1 Multicollinearity Test

A VIF test shown above suggested that there is no multicollinearity problem in the data. As per Table 4.4.1, the maximum VIF data is 1.475 Therefore, all variables are within an acceptable

range. On this basis, it can be concluded that there is no multicollinearity effect as all variables complying with the tolerance criteria should be > 0.2 or VIF (variance inflation factor) < 10 .

B. Normality test

One application of normality tests is to the residuals from a linear regression model. If the residuals are not normally distributed, then the dependent variable or at least one explanatory variable may have the wrong functional form, or important variables may be missing.

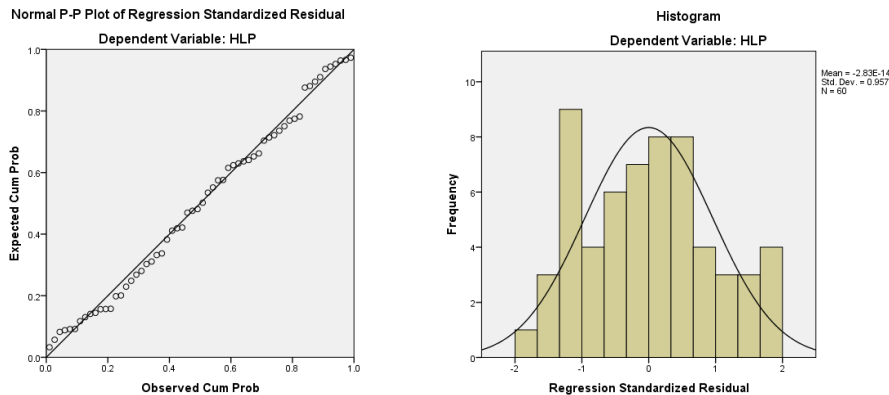


Fig. 4.1 Normality test

C. Autocorrelation Test

Although residuals are normally distributed, however, there should not also be a serial correlation between them. A Breusch-Godfrey method is one of the means to test this problem, as shown below in the table the significant value is greater than 5%, therefore, this tells us if it is not significant it is the indication of no serial correlation between residuals.

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df 2	Sig. F Change	
1	.900 ^a	.809	.801	4.43818	.809	103.286	6	146	.000	2.693
a. Predictors: (Constant), SS, F, NC, R, CS, S										
b. Dependent Variable: P										

D. Heteroscedastic Test

One of the important assumptions of the linear regression model is that the variance of each disturbance term u_i , conditional on the chosen values of the explanatory variables, is some constant number equal to σ^2 (Gujarati 2003). Although there are different ways and techniques to check the existences of heteroscedasticity, for the purpose of this research the researcher use scatter plots test

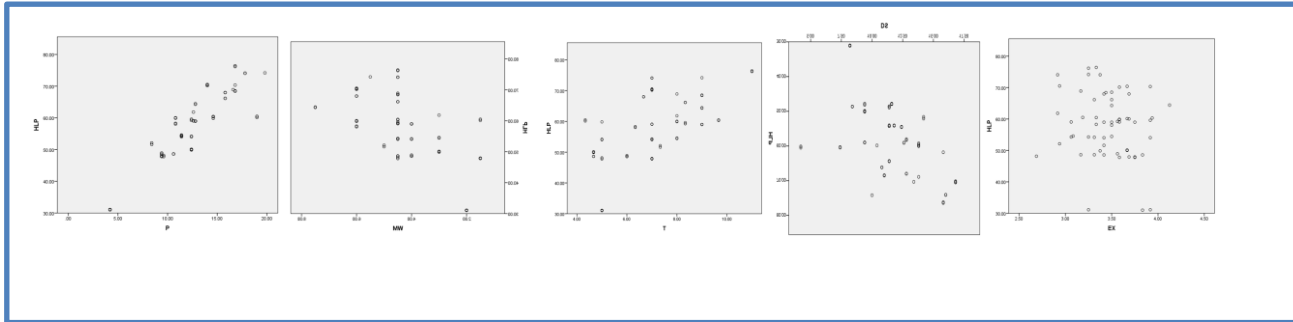


Fig. 4.2 Heteroscedastic Test

4.4.2. Regression Analysis Result

The regression model found is;

coefficients ^a						
Model		Unstandardized Coefficients		Standardize d Coefficient s	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.454	.878		.517	.607
	P	.301	.064	.334	4.729	.000
	WM	.280	.047	.276	5.965	.000
	T	.392	.097	.162	4.264	.000
	DS	.078	.064	.296	4.488	.101
	EX	.065	.039	.075	1.664	.510

a. Dependent Variable: HLP

Table 4.4.2 Regression Analysis

$$Y = a + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 * X_3 + \beta_4 * X_4 + \dots \beta_n * X_n + e$$

$$Y = 0.301P + 0.280WM + 0.392T + 0.288DS + .065EX$$

From the above table 4.4.2, humanitarian logistics performance has a positive relationship with most of variables except distribution of supplies and external relationship, besides regarding the significant level, Procurement, warehouse management, and transportation were statistically significant at the 5% significance level ($\beta = 0.301$; $p = .000 < .05$), ($\beta = 0.280$; $p = .000 < .05$), and ($\beta = 0.392$; $p = .000 < .05$) also performance has positive and insignificant relationship with distribution of supplies and external relationship ($\beta = .288$; $p = .101 > .05$) and ($\beta = 0.065$; $p = .510 > .05$).

It is observed from the above finding, that most of the coefficients are having a positive meaning that a change in any one of the independent factors affects the performance in the same direction. Overall, the consistency of regression coefficients on the humanitarian logistics suggests that procurement, warehouse management, and transportation are important indicators to affecting the performance of humanitarian logistics at CRS to different degrees t and most of the

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995 ^a	.990	.989	1.07341

independent variables were significant

predictors of problem occurrence.

4.4.3 Model Summary

Table 4.4.3 model summary

The value adjusted R Square is shown in table 4.4.3 above. The significance, as well as the percentage of variation in error performance by an independent variable, has been explained. In this model, the value was 0.990, which indicates that 99% of the variance in the dependent variable is explained by the independent variables in the model. The model also indicated that 1% of the difference can be explained by other factors.

4.4.4 ANOVA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6289.278	5	1257.856	1091.699	.000 ^b
	Residual	62.219	54	1.152		
	Total	6351.497	59			
a. Dependent Variable: HLP						
b. Predictors: (Constant), EX, WM, P, T, DS						

Table 4.4 ANOVA

Table 4.4.4 shows ANOVA Regression Analysis results. The ANOVA table measures the p-value denoted as "Sig." if the independent variables are statistically important for predicting the dependent variable. Furthermore, if $p < 0.05$ the model is statistically important, if $p > 0.05$, then the model is statistically insignificant. As a result, the ANOVA table above shows the mode of the regression model is a good fit for the data. ($p=0.000$, which is < 0.05)

CHAPTER FIVE

5. SUMMARY CONCLUSION AND RECOMMENDATION

The result, conclusions, and recommendations made from the findings of the data collected by the questioner are presented in the concluding section of this research report.

5.1 SUMMARY

Catholic Relief Services (CRS) is an international humanitarian has a long and proud history dating back to 1958. When the Ethiopia Catholic Bishops Conference invited CRS/ Ethiopia to operate in the country with approval from the Government of Ethiopia. Since 1958, CRS has contributed to the struggle against humanitarian crises and food Insecurity, includes programs aimed at alleviating human suffering and encouraging charitable behavior. Since the drought of 1984/85, CRS has played a major role in assisting the victims of famine by distributing emergency food and providing medicines through the Joint Relief Partnership of the countries. The outcomes of this research help people in developing countries to fight against humanitarian crises and food Insecurity.

In Ethiopia, CRS played a major role in assisting the victims of famine by distributing emergency food and providing medicines through the Joint Relief Partnership of the country's three main churches, the Ethiopian Orthodox Church, the Ethiopian Evangelical Church Mekane -Jesus, and the Ethiopian Catholic Church, as well as the Lutheran World Federation. As a result, in order to properly achieve the organization's goal, CRS needed an effective logistics activity in order to enhance the organizational mission properly.

This research will look into a previously unexplored and underappreciated aspect of CRS. The research was anticipated to investigate factors affecting humanitarian logistics performance of CRS: case of Adama through five main variables which includes; procurement, warehouse management, transportation, distribution of supplies and external relationship. To achieve these goals, data was collected from the organization's personnel and processed using a quantitative descriptive method, correlation, and regression analysis.

The lion's share is collected from the demographic characteristics of respondents by 35 (58.3%) male and 25(41.7%) female respondents also, majority of male and female respondents were Bachelor degree holders. Moreover, the large number of respondents who participated in the study was from logistics directorate which is 25%. Furthermore, the large number of respondents

who participated in the study has worked from 6-to 10 years in the organization hence This indicates that the respondents' job experience provided sufficient exposure to the work area and the capacity to make change to the company. In order to response the research questions, the logit model were employed to answers the basic question. The study incorporates five independent variables in which all of them were measured on a 5-point Likert-Scale, with “1” stands for “Strongly Agree” and “5” stands for “Strongly Disagree”. The mean appears to have been utilized as a measure of central tendency. SPSS V22 was also used to encrypt, process, and analyze the data.

According to the descriptive analysis, procurement had a mean score of 3.49, indicating that this variable's score is in the agreeable range. As a result, this variable can be used to predict the performance of humanitarian logistics at CRS.

Regarding speed, the results demonstrate that speed has a mean score of 3.25, which is close to the neutral level, implying that this variable influences the performance of humanitarian logistics at CRS in some way. Also, transportation got a mean score of 3.68, which falls in the agree level, hence this element is considered as a factor in CRS's humanitarian logistics performance.

Also, distribution of supplies had a mean score of 2.98, which is below the neutral level, implying that this variable can be an influence in the performance of humanitarian logistics at CRS to some extent. Concerning external relationship, it has a mean score of 3.46, indicating that this variable's score is agree. As a result, this variable has an influence in CRS's humanitarian logistics performance.

Besides, the analysis result show that the mean score values for humanitarian logistics performance was to the minimum the average mean value 2.96 which really indicates the operational performance (in reliability, agility, responsiveness and cost) of CRS is poor.

Overall, the descriptive analyses reveal that the independent factors were more or less expected to have an impact on CRS's humanitarian logistical performance.

Moreover, the value of regression analysis shows that the results of the model estimation exposed that, all variables which procurement, warehouse management, and transportation, had significant effect on humanitarian logistics performance except distribution of supplies and external relationship.

On the regression analysis it shows that the three independent variables have significant effect on humanitarian logistics performance (procurement, warehouse management, and transportation) two independent variable (distribution of supplies and external relationship) has no significant effect on humanitarian logistics performance of CRS. However, the overall effect of the three variables on the operational performance is 97.3 %.

5.2 CONCLUSION

The majority of the five factors in this study were the main consequences of humanitarian logistics performance. Five research questions were designed and providentially handled, and all of them were graded by mean value. In other words, the average mean value of each attribute shows that the majority of respondents disagree about the organization's increased humanitarian logistics performance.

In procurement and logistics performance are significantly associated. The mean score of this variable indicates that were a gap logistics activity and the operational performance of the organization was dependent on this variable and the result shows that procurement has 30.1 effect on logistics' performance of the organization keeping other variables constant.

In warehouse management there is a problem of availability and quality of infrastructure, checks the level of peace in the country, inventory management system and space utilization & flexibility of arrangement however this variable has 28% significant effect on the logistics performance of the organization.

In transportation, the logistics performance of the organization is dependent on this variable since it has significant effect on the logistics performance. A change in transportation has 39.2 % of effect on logistics' performance.

As a result, three of the five factors (procurement, warehouse management, and transportation) are critical indicators that influence CRS' humanitarian logistics effectiveness. With the exception of the variables that were not significant in the analysis, the study suggests that CRS' humanitarian logistics performance in Adama branch is not as good as it seems.

5.3 RECOMMENDATIONS

Depending on the study findings, the study suggests the following ideas as all-encompassing recommendations to the problem.

- In order to improve the logistics performance, the warehouse management availability and quality of infrastructure need to be improved and checked frequently to deliver quality service on time and place for the needy.
- In distribution of supplies, the organization should enhance their forecasting strategies of the environment, also it needs well-organized information technology, even if the logistics activity take place in remote area ,the organization should develop strategies to incorporate the remote area as well.
- External relationship, with deferent stakeholders in humanitarian activity is a must. Yet the organization should harmonize the custom clearing process with stakeholder and develop well secured and protected working environment in working areas.

5.4 SUGGESTION OF FUTURE RESEARCH

Humanitarian logistics performance has other variables which can affect the logistics performance of the organization therefore including other variables and performing the research will give a better result. My research is limited to only Adama sub branch of CRS and including all CRS branches in all continent of logistics performance and doing the research will give the full picture of the factors affecting humanitarian logistics performance in the organization. This research is more quantitative however it will be a base for qualitative research which can be determined by observation to gather non-numerical data. Furthermore, two of the independent variables (distribution of supplies and external relationship) are not significant therefore further study need to be done to determine other factors of humanitarian logistics performance in the organization.

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APPENDIX

QUESTIONNAIRE

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE GRADUATE STUDIES

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

QUESTIONNAIRE TO BE FILLED BY RESPONDENTS

Dear respondents:

This questionnaire intends to gather data for a thesis to be conducted concerning the **ASSESSMENT OF FACTORS AFFECTING HUMANITARIAN LOGISTICS PERFORMANCE OF CATHOLIC RELIEF SERVICES (CRS) ETHIOPIA: CASE OF ADAMA** for the partial fulfillment of the requirements for the Master of Logistics and Supply Chain Management Degree.

Your honest reply is highly appreciated and will contribute a lot to the accuracy of this research paper. The information collected from this questionnaire will only be used for academic purposes and will be treated with strict confidentiality.

Thank you for your time and consideration! Your kind participation is much appreciated.

Instruction:

Please, put a tick (✓) mark in which you want to select

Don't write your name on the answering sheet

Part I. Demographic characteristics of the respondent

1. **Gender:** Male Female

2. Educational level:

College Diploma Degree Master's PHD

Others please specify -----

3. Your current position in the organization:

Resource Mobilization & Fund Administration Directorate

Response & Rehabilitation Directorate

Logistics Directorate Disaster Reduction Directorate Main Warehouse

Supervisor CRS Admin staff Technical staff others please specify-----

4. Work Experience in the organization (CRS):

5 years 6-10 Years More than 10 years

Part II: Questions related to humanitarian logistics management practices. To be answered the question use a tick (✓) mark. The five Likert Scale points denote: 1=Strongly Disagree, 2=Disagree, 3=Neutral 4=Agree 5= Strongly Agree. The questions grouped into five topics are

1. Procurement

No	Internal procurement factors	1	2	3	4	5
1	The organization has regular procurement activities to support the operation of the organization					
2	The organization has its database/catalog for the regularly procuring items					
3	The organization has successful procurement involvement in budgeting systems					
4	The organization has good teamwork in the procurement system					
5	The organization has an efficient procurement staff					
6	The organization's procurement policies can be revised					
7	The procurement process has met the budget of the organization					
8	There is effectiveness in E-procurement(Information technology)					
9	Does the organization use digitalization of procurement to respond quickly in emergencies					
10	The organization has regular procurement activities in order to support the operation of the organization					

External procurement factors					
11	Political change (change in government) can affect the procurement activities of the organization				
12	Social and cultural factors can affect the procurement activities of the organization				
13	Environmental fluctuations have the potential to affect the procurement activities of the organization				

Please indicate any other factors that can affect the procurement performance of CRS?

2. Warehouse management

No	Item	1	2	3	4	5
1	The organization has accurateness in warehouse use					
2	The organization has an adequate labor force to manage the warehouse					
3	The organization has a quality labor force to manage the warehouse					
4	The organization has met/considered the lead time					
5	The organization has adequate financial resources to stock inventory					
6	There is availability and quality of infrastructure					
7	The organization checks the level of peace in the country					
8	The organization enables and observes unique features of the location					
9	The organization has a good inventory management system					
10	The organization has good space utilization & flexibility of arrangement					
11	The organization has shared information on time					
12	The organization uses appropriate technology to manage the warehouse					
13	The organization has good safety/protection management in the warehouse					

Can you please indicate any other factors that can affect the Warehouse management performance of CRS?

3. Transportation

No	Item	1	2	3	4	5
1	The organization has good vehicle capacity					
2	There is on-time delivery in the organization					
3	The organization has a good fleet management system					
4	The organization severely controls transit time					
5	The organization prepares well-organized terminal facilities					
6	The organization has cautious about the nature of the product					
7	The organization set adequate transit time					
8	The organization has a good driver management system					
9	The organization has managed the trucking capacity of the vehicle					
10	The organization's transportation system can be affected by the environment					

If any factors that can affect the transportation performance of CRS please specify them below?

4. Distribution of supplies

No	Item	1	2	3	4	5
1	The organization manages distribution costs accurately					
2	The organization uses a well-managed distribution time					

3	The organization has to predict the environment					
4	The organization use well-organized information technology					
5	The organization has a careful distributor perspective					
6	The organization established an adequate communication system					
7	The organization has an efficient resource allocation system					

Please indicate any other factors that can affect the distribution of supplies of CRS?

5. External relationship

No	Item	1	2	3	4	5
1	There is adequate assistance from the government for humanitarian operations					
2	There is an appropriate custom clearing process for logistics performance					
3	There is a secured and protected working environment in working areas					
4	There is a willingness of local governments to allow staff deployment from other localities					

6. Humanitarian logistics performance

No	Item	1	2	3	4	5
1	The organization has a specific plan to meet their goals					
2	The organization has measurable activities					
3	The organization has achieved the planned objectives					
4	The organization works with relevant activities					
5	The organization met the time for the given activities					
6	The supply chain division is used resource incorporation of adequate time, staff, and money (agility)					
7	There is a quality process in the organization					

8	There is reliable and accountable operation (accountable regards to donors and beneficiaries)					
9	The completion of the most activity is within budget (cost) and time (efficiency)					

Please indicate other factors that can affect the Humanitarian logistics performance of CRS?

And explain how it affects the organization?

THANK YOU FOR YOUR VALUABLE INPUT, TIME, AND UNLIMITED COOPERATION