



Effects of Humanitarian Supply Chain Management Practices

On Organizational performance:

**A Case of Ethiopian Orthodox Church- Development and inter-
Church Aid Commission (EOTC-DICAC) Ethiopia**

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Declaration

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in it's entirely or in part submitted at any university for a degree.

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This is to certify that the thesis prepared by Tewodros Kassahun entitled” Effects of humanitarian Supply Chain management on Organizational Performance: A case of Ethiopian Orthodox Church-Development and inter-Church Aid Commission (EOTC-DICAC), Ethiopia, submitted in partial fulfilment of the requirements for the degree of Masters of Arts in logistics and Supply Chain Management complies with the regulations of the university and meets the accepted standards to originality and quality.

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Abstract

The purpose of this research was to assess the effects of Humanitarian Supply Chain Management on organizational performance in the Ethiopian Orthodox Church Development and Inter-Church Aid Commission (EOTC-DICAC). The study has adopted a mixed research approach. Questionnaires and semi structured interviews - were used to collect necessary data. Respondents were chosen using a simple random sampling technique for the questionnaire survey based data collection. Semi-structured interviews were conducted using a purposeful sampling technique to collect data from the managers of the two units. The analysis employed descriptive and inferential statistical techniques, as well as theme analysis. In addition, Pearson correlation analysis was used to test the framework's proposed correlations, and regression analysis was used to analyze the causal relationships. As a result, the study's findings show that two humanitarian Supply Chain Management practices (preparation practice and recovery practice) have a positive and significant effect on organizational performance. Mitigation and response activities require the attention of the EOTC-DICAC Ethiopia concerned body in order to increase organizational performance. Further research is recommended through inclusion of other supply chain stockholders such as beneficiaries, government's institutions, private companies and donor agencies as units of analysis.

Key Words: Humanitarian Supply Chain Management practices, Organizational Performance

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Acronyms/Abbreviations

BSC =	Balanced scorecard
CHS =	Core humanitarian standards
DEMATEL=	Decision making trial & Evaluation Laboratory
EOC- DICAC =	Ethiopian Orthodox Church Development & inter-church Aid Commission
EOPs =	Emergency operations plans
ETB =	Ethiopian Birr
EUISS =	European Union Institute for Security Studies
HIV/AIDS =	Human immunodeficiency virus/ acquired immunodeficiency syndrome
HO =	Humanitarian organizations
HSC =	Humanitarian supply chain
HSCM =	Humanitarian Supply chain management
ICRC =	International Committee for Red Cross
NGO =	Non- government organization
OCHA =	Office for the Coordination of humanitarian Affairs
OT =	Organizational theory
QFD =	Quality function deployment
SC =	Share company
SCM =	Supply Chain management
SCMP =	Supply chain management project
SCOR =	Supply chain organization reform
SPSS =	Statistical package for social sciences
UNHCR =	United nations higher Commission for Refugees

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

When a natural hazard, such as an intense tropical storm, flood, conflict, and a strong earthquake, interacts with a population that is exposed and vulnerable, the resulting disaster typically affects human lives and destroys infrastructure and other tangible assets. Indirect effects from lost local economic activity and ripple effects across the larger economy frequently follow direct effects such as death and morbidity, damages to fixed assets and capital, and losses of crops and raw materials (Tatham and Hughes, 2011) and Wakolbinger, et al. (2011). The longer-term implications could also include altered risk perceptions, health effects, and disruptions to social networks, all of which could be detrimental to a nation's route to investment, development, and prosperity (Noy, et.al. 2019).

As pointed out by Oloruntoba and Gray (2006), Supply chain management is central to the disaster relief operations because it shows efficiency, effectiveness, and speed in supplying beneficiaries by way of health, food, shelter, water, medicines, and sanitation are essential in an event of a disaster. Furthermore, the objective of the supply chain is to bring the right quantities, of the right supplies at the right time to the right location (Shepherd & Gunter, 2006).

According to Ichoua (2010), when a major disaster strikes, a timely response is critical to saving lives and mitigating affected population sufferings. The initial 72 hours of a disaster relief effort are dire as the chance for survival past that time gap without water or food decreases significantly. The effort is to deliver the appropriate emergency supplies in sufficient amounts when and where they are essential.

Mentzer (2001) pointed out that humanitarian supply chain management is the network produced by the transfer of service, supplies, information, and funds between beneficiaries, donors, suppliers, and other units of humanitarian aid organizations to provide physical relief to beneficiaries. Similarly, Beamon and Balcik (2008) stated that the key goals of humanitarian supply chain management (HSCM) are to alleviate human suffering to avert future loss of life and harm to humans, as well as to provide unexpected therapy to those with injuries and illnesses.

According to Lu, et.al. (2016), the concept of a performance assessment framework is widely established in commercial organizations but lags in humanitarian organizations.

Baird (2010) noted the performance assessment framework metrics encompass the important factors of quality, time, and cost in humanitarian supply chains, and enable humanitarian organizations in assessing their performances in terms of agility, responsiveness, reliability, and cost effectiveness in addition to the complete supply chain operations.

The Ethiopian Orthodox Church-Development and Inter-church Aid Commission (EOTC-DICAC) was established as a development wing of the Ethiopian Orthodox Tewahido Church with the objective of enhancing the development efforts of the country by a legal notice in 1972 under Proclamation No.621/2009 as Charity organization. It was re-registered as Ethiopian Resident Charity with certificate number 1560 on September 2016.

The EOTC-DICAC has been engaged in various development programs and brought about a significant impact on the lives of the people of Ethiopia on rural water supply & sanitation & hygiene Education, access road construction, small scale irrigation development, education, rural development, food security, prevention and control of HIV/AIDS, care, creating climate change resilient community through various capacity building interventions. Furthermore, the Commission has been embarked with development continuum upon emergency relief, rehabilitation, refugees & returnee's programs, and social accountability. Therefore, based on the above background premises, this study aims its focus on the operations department where it will be reasonable for the researcher to gain information. It assesses the effects of humanitarian supply management practices on organizational performance on ECTC-DICAC in Ethiopia.

1.2. Statement of the Problem

Supply chain management, which covers all procedures that convert raw materials into finished commodities. It encompasses all processes that transform raw materials into finished products. It is the foundation of humanitarian organizations' emergency response. Without supply chain critical input, the response strategy, rapid assessment, proposal creation, and detailed implementation plan may not be complete, satisfy the targeted beneficiary, or accomplish the desired goal.

Numerous researches have been conducted in humanitarian supply chain management, and several empirical studies have been carried out. To this end, humanitarian response in conflict (2012) on logistics challenges focusing on lessons learned from South central Somalia

concluded that logistics of humanitarian aid face many challenges and stressed the need for additional knowledge and standards to support effective and efficient humanitarian supply chains. Also, EUISS and ICRC (2012) state in a joint report on urban obstacles to humanitarian challenges that the difficulty is to concentrate projects on essential humanitarian activity while being aware that it takes place in a setting with significant structural and developmental flaws.

Similarly, the logistics cluster's response on drought crisis in Somalia, (2022) indicated that the Logistics Cluster is actively engaged in initiatives to facilitate, coordinate, and share information for common logistics services on behalf of the entire humanitarian community, ensuring that life-saving and critical supplies can make it to affected populations in some of the most remote parts of the country. A humanitarian response on floods in Benin (2011) concluded that the involvement and collaboration of key actors in logistics of humanitarian aid implementation and follow-up of the response is a key to the success of interventions in favor of persons in crisis.

According to Beamon (2004) and Van Wassenhove (2006), performance measurement is essential for humanitarian organizations, including EOTC-DICAC, to ensure accountability because it improves the efficiency and effectiveness of projects, programs, and initiatives. It is a systematic approach to collecting, analyzing, and evaluating how "on track" a project/program is to achieve its desired outcomes, goals, and objectives. Ethiopian Orthodox Church-Development and Inter-church Aid Commission in collaboration with the government of Ethiopia set which pronounce its commitment to the well-being of the vulnerable community members in accordance with the new charities and societies legislation and in development and humanitarian contexts by identifying six critical issues/themes such as youth unemployment ,Green Economy Development, Disaster risk reduction management, Human trafficking and migration, and Non-communicable diseases, to address and achieve its mission.

EOTC-DICAC has committed to running towards the major five goals that fit into its vision and mission, namely contribute to the livelihood and climate change resilience of the community in the country through disaster risk reduction, climate change adaptation and mitigation measures, donate to national social service delivery, contribute to the inclusion of refugees, internally displaced, and stateless people in mainstreaming in national systems, including education, psychosocial support, health, WASH, searching sustainable remedy to

their displacement; contribute to the national effort of prevention and control of HIV/AIDS & other communicable diseases, non-communicable diseases and improve the health status of the community, and contribute to the promotion of cultural heritage of the country.

According to EOTC-DICAC (2018-2022), the Ethiopian Orthodox Church- development and Inter-church Aid commission is committed to spend the estimated cost amounted 24.4. Million ETB to address the critical issues and the major program interventions will take 1.3 billion ETB. EOTC-DICAC is committed to discharge its duties and go along with the operation and financial layouts to implement external and internal challenges and shortcomings.

Few empirical studies have been conducted in this area, with a particular emphasis on the effects of humanitarian supply chain management on organizational performance. Kalkidan (2020), for example, conducted research on the "Effects of Humanitarian Supply Chain Management Practices on Organizational Performance" using Save the Children International Ethiopia as a case. The current study, on the other hand, differs (deviates) from Kalkidan (2020) in terms methodology, context, theory, and research philosophy. Secondly, the Kalkidan (2020) study used quantitative research approach, whereas this study used a mixed research approach.

Second, there are contextual differences between this study and Kalkidan (2020). This study focus on the effect of humanitarian supply chain Management practices on organizational performance in the Ethiopian Orthodox Church-development and inter-Church Aid Commission (ETOC-DICAC) Ethiopia, which is intended to meet the spiritual, material, and socioeconomic needs of the faithful, beliefs and norms of Ethiopian Orthodox church while, Kalkidan (2020) undertook the study by using save the Children International Ethiopia as a case.

Third, the Kalkidan (2020) study did not attempt to test relevant theories that guided the research. However, because of their relevance to the topic of ethics and to provide a deeper analysis that aligns with the thesis's goal, this study will be guided by **socialization theory and rational choice theories, among others.**

Finally, Kalkidan (2020) used a mixed approach, but it was not supported by research philosophy. However, this study will take a mixed approach, with the pragmatic paradigm guiding the research to answer three fundamental/essential questions: ontology,

epistemology, and methodology (Guba, 1990). The reason why the study will be guided by a pragmatic view is because it is a mixed research approach that aims to comprehend a phenomenon under study from the perspectives or experiences of the participants. Also, it improves the researcher's ability to derive meanings from the phenomena under study using his own experiences and the views study participants (Creswell, 2012).

As a result, the researcher was inspired to conduct this study for the three key reasons listed below. (1) The research on the effect of humanitarian supply chain management for Local non-profit organizations operating in Ethiopia is scarce and does not receive much attention. (2) Based on my work experience and lessons learned working closely as staff member at EOTC-DICAC, indicates that the organization does not directly measure organizational performance in terms of humanitarian supply chain practices (emergency phases), and standards for measuring the effect of humanitarian supply chain management practices on organizational performance have not been widely developed within the organization. (3) The researcher curiosity to study the humanitarian supply chain practices in the context of International and local non-profit organizations.

Therefore, the study will opt to concentrate on the relief actions of humanitarian organizations, specifically EOTC-DICAC in Ethiopia. The researcher's initiation to discover such studies in EOTC-DICAC is undoubtedly one of the primary motivations for performing the study.

1.4. Research Objectives

The researcher in this will aim to fill the gap by exploring a probable association between humanitarian supply chain practices and organizational performance.

1.4.1. General Objectives

The general objective of this study was to examine the effects of humanitarian supply chain management practices on organizational performance in the Case of Ethiopian Orthodox Church-Development and Inter-Church Aid Commission in Ethiopia.

1.4.2. Specific Objectives

The specific objectives of the study are:

- To assess the effect of the mitigation practice on the organizational performance of EOTC- DICAC in Ethiopia.
- To examine the effect of the preparedness activity on the organizational

performance of EOTC-DICAC in Ethiopia

- To evaluate the effect of the response practices on the organizational performance of EOTC-DICAC in Ethiopia
- To investigate the effect of the Rehabilitation activity on the organizational performance of EOTC-DICAC in Ethiopia.

1.4. Research questions/Hypotheses

The research questions should be developed based on the view what the researcher want to find out and show a clear focus on addressing a research gap in the existing knowledge.

1.4.1. Research Questions

A research question expresses a link between two or more variables in the form of a question. The research questions should stem from the main research problem. Thus, in this research, the researcher addressed the following research questions.

- How does the mitigation phase affect the organizational performance of EOTC-DICAC in Ethiopia?
- What is the effect of the preparedness phase on the organizational performance of EOTC-DICAC in Ethiopia?
- What is the effect of the response phase on the organizational performance of EOTC-DICAC in Ethiopia?
- How does the Rehabilitation phase affect the organizational performance of EOTC-DICAC in Ethiopia?

1.4.2. Hypotheses of the study

According to Kothari (2004), a research hypothesis is an analytical assertion that can be proven using scientific procedures that ties an independent variable to some dependent variables. In this study, there were not many hypothesis statements made in terms of analyzing the effect of humanitarian supply chain management methods on organizational performance. The following hypotheses were tested in this study in relation to the aforesaid research purpose.

H₀₁: There is no significant relationship among Mitigation Practice and institutional performance in EOTC-DICAC.

- Ha1: There is a significant relationship among Mitigation Practice and institutional performance in EOTC-DICAC.
- Ho2: There is no significant relationship among Preparedness Practice and institutional performance in EOTC-DICAC.
- Ha2: There is a significant relationship among Preparedness Practice and institutional performance in EOTC-DICAC.
- Ho3: There is no significant relationship among Response Practice and institutional performance in EOTC-DICAC.
- Ha3: There is a significant relationship among Response Practice and institutional performance in EOTC-DICAC.
- Ho4: There is no significant relationship among Rehabilitation practice and institutional performance in EOTC-DICAC.
- Ha4: There is a significant between Recovery Rehabilitation and institutional performance in EOTC-DICAC.

1.5. Significance of the Study

The aim of this study is to evaluate the effects of humanitarian Supply Chain Management Practices on the organizational performance of the Ethiopian Orthodox Church-Development and Inter-Church Aid Commission. As a result, the study's findings provide EOTC-DICAC in Ethiopia with a comprehensive understanding of how HSCM practices affect organizational performance. The study also useful to other humanitarian organizations it will provide insight into humanitarian supply chain management methods and their impact on organizational performance. Above all, the study would be beneficial for policymakers in developing future HSCM policies and strategies for government and non-profit organizations, and funders gets a better understanding of the context in which humanitarian organizations operate and it could be used to stimulate further research, researchers and scholars advance the body of knowledge on humanitarian supply chain practices and their impact on an organization's performance.

1.6. Scope of the Study

The scope of the study focuses on examining the effect of four phases (mitigation, preparedness, response, and recovery) of humanitarian supply chain management practices as well as the impact on organizational performance metrics such as agility, responsiveness, reliability, and cost in EOTC-DICAC, Ethiopia. Despite the fact that various studies have been undertaken on the impact of supply chain management practices on organizational performance, this study was limited on the main office of the Ethiopia Orthodox Church-Development and Inter-Church Aid commission due to limited resources.

1.7. Limitation of the Study

The restrictions rely on the personal and external restraints. Internal abilities include time management, budgeting, and project management. External constraints limit humanitarian organizations' sensitivity in problems of data confidentiality, making things considerably more difficult. It was also difficult to find past research outputs with the exact setting.

1.8. Definition of key Terms

Humanitarian: - is a process of helping people who are suffering and saving lives any time any place in the world. It requires being responsible, conscious of the circumstances of other people's lives, and helping them based on need, without discrimination. The core principles of humanitarian are humanity, impartiality, independence, and neutrality (OCHA, 2012).

Supply chain management (SCM): - The management of the flow of goods and services between enterprises and locations. It includes the movement and storage of raw materials, work-in-process inventory, and finished items, as well as end-to-end order fulfillment from point of origin to point of consumption (Neely et al., 1995).

Humanitarian supply chain management (HSCM) is the process of planning, implementing, and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from point of origin to the point of consumption to alleviate the suffering of vulnerable people (John et al., 2018)

Organizational performance: is the organization's ability to attain its goals and objectives by using resources in an efficient and effective manner (Daft, 2015; Richardo, 2009).

1.9. Organization of the thesis

There are five chapters in this study. The first chapter begins with an introductory section that discusses the study background, problem statement, research questions, purpose and, significance of the study, scope of the investigation, study restrictions, and definitions of key terms. The second chapter reviews previous research-related material. The third chapter is about research methods. This chapter discusses the research type and design, study subjects/participants, data sources, data collection tools/instruments used, data collection techniques, and data analysis methods. The fourth chapter summarizes and analyses/discusses the study's results/findings. The fifth chapter concludes the thesis by summarizing the key findings, offering conclusions and recommendations, and recommending additional research. Supporting documents and any relevant appendices are also included in the list of references using Harvard style.

CHAPTER TWO

2. Review of the Literature.

This chapter provided a brief overview of the systematic literature review on the effects of humanitarian supply chain management practices on organizational performance in order to comprehend and develop the conceptual framework for the data collection instrument, as well as to demonstrate the empirical review and identify gaps in the literature.

2.1. Theoretical Literature Review

2.1.1. The Concepts and Theories of Humanitarian supply Chain management

The Concepts of Humanitarian: Conflict-affected areas, Core humanitarian standards (CHS), Donor, Humanitarian aid, and Humanitarian principles are all terms used in humanitarian intervention. Conflict-affected areas are those where there is a high level of armed violence. It is a region where there are worries about violations of human rights, political and civil liberties. Furthermore, a conflict-affected area could be one that is suffering some form of organized violence, as well as one that is moving from conflict to peace. The Core Humanitarian Standards (CHS) are a set of nine pledges that humanitarian organizations can use to improve the quality and effectiveness of their assistance.

A donor is someone who "gives or makes a grant". A donor is defined in this thesis as an organization that distributes aid. Humanitarian aid aims at saving lives and alleviating suffering of people during and after a natural disaster or armed conflict. Its goal is to prioritize those with the most pressing needs, save lives, and alleviate the suffering of people affected by wars or natural disasters, as well as improve communities and their ability to protect and recover after a crisis (Sida, 2020a). Humanity, neutrality, independence, and impartiality are among the humanitarian values that should drive humanitarian operations. These principles promote and act in accordance with humanitarian ideals, which is critical for on-the-ground cooperation between organizations.

Humanitarian supply chain components include procurement, shipping, warehousing, inventory management, tracing and tracking, bidding and reserve bids, reporting, and accountability to satisfy emergency needs (Oloruntoba and Gray, 2006).

According to de la Torre et al. (2011), humanitarian supply chain management entails controlling the many parts of the system in order to reduce the burden on the individuals affected by the crisis. Rescue operations, health and medical aid, food, housing, and long-term relief activities are all required for disaster relief. The logistical procedures of resource distribution are critical to the success of any relief mission.



Figure 1: A typical humanitarian supply chain model: Source. Oloruntoba and Gray (2006)

According to Twigg, J. (2004), humanitarian activities are divided into two types: development and emergency. NGOs might work in the development or emergency sectors. Some NGOs, on the other hand, operate in both sectors by having a development department and an emergency department. The development sector covers actions that take place over an extended period of time (more than a year), whereas the emergency sector focuses on short-term efforts during disasters. Donors, NGOs, local governments, and relief recipients make form the humanitarian supply chain. The figure above depicts a common humanitarian supply chain model that depicts the actors of the humanitarian aid delivery network that was adopted from Oloruntoba and Gray (2006).

The Theories of Humanitarian: There are five Humanitarian philosophies, including consequentialism, utilitarianism, deontological ethics, socialization and rational choice. The idea of consequentialism focuses on determining whether an action is ethically justified or bad depending on its consequences (Graafland & Bosma, 2013; Fitzpatrick, 2008). Second, being a consequentialist theory, Utilitarianism focuses on what consequences produce the most benefit (Graafland & Bosma, 2013; Hansson, 2009). Third, Deontological ethics places an emphasis on obligations, which determine whether a behavior or action is ethically proper (Hansson, 2009). Fourth, the Socialization hypothesis suggests how individuals and media interact with one another (Giddens & Sutton, 2013). Finally, the rational choice theory emphasizes rational behavior for individuals to achieve their goals, as well as considering costs and advantages while making a decision (Scott, 2000). As a result, these theories were chosen for their relevance to the theme of ethics as well as to provide a deeper examination, which aligns with the thesis's goal.

2.1.2. The Concepts and Theories of Humanitarian organizational Performances

Over the years, scholars have investigated issues concerning organizations, institutions, and their interactions with humans. Humanitarian supply chain (HSC) operations are mutually linked, requiring individuals to engage in order to cooperate and coordinate their efforts toward a common aim of decreasing human suffering (McCauley et al., 2007). Thus, multiple organizational theories (OT) exist in the context of humanitarian aid. The section that follows focuses on Organization theory (OT) in the humanitarian context.

(1) *Resource-based perspective*: outlines how humanitarian organizations build and maintain skills in a humanitarian situation (Kovacs and Tatham, 2009). This idea describes how organizations can acquire long-term competitive advantages. It is stated that HOs benefit from a resource configuration that is valuable, scarce, unique, and non-substitutable (Barney, 1991; Kovacs and Tatham, 2009). Capabilities, knowledge, processes, and procedures, as well as real and intangible assets, are classified as HO resources (Barney, 1991; Kovacs and Tatham, 2009). The dynamic capability view, a resource-based view extension, can also be used to investigate capabilities in a dynamic context (Teece et al., 1997).

(2) *Resource dependence theory*: explains why some HOs have a lot of power and how to counteract it (Pazirandeh and Norrman, 2014). All organizations, according to resource dependence theory, are embedded in surroundings from which they get resources (Pfeffer and Salancik, 1978). According to resource dependence theory, the environment is a source of uncertainty and restrictions (Aldrich and Pfeffer, 1976); the more organizations rely on others, the greater the uncertainty. Donors are more influential than humanitarian organizations in the humanitarian setting. In a nutshell, resource dependence theory may describe the dynamics of power struggles among various parties.

(3) *Social exchange theory* (Tatham and Kovacs, 2010) explains the social elements of all sorts of exchange partnerships. According to social exchange theory, the presence of norms (such as commitment and trust, solidarity, reciprocity, and flexibility, among others) in trade relationships is more important than power and the ability to dominate others (MacNeil, 1985; Morgan and Hunt, 1994). This theory implies that businesses conduct their business in a cooperative market in order to explain the nature of exchange interactions. Trust is a fundamental component in humanitarian collaboration (Tatham and Kovacs, 2010). Trust is one of the most important norms for humanitarian collaboration. Trust supports efficient collaboration across multiple actors, individuals, and communities in multi actor teams operating in complex and uncertain contexts, such as humanitarian emergencies (Moshtari,

2016). Competence-based trust and integrity-based trust are the two components of trust (Connelly et al., 2018).

(4) Contingency theory: explains how HOs change in response to external and internal circumstances (Haavisto, 2014). The idea explains how businesses modify their processes, procedures, and routines to accommodate contingent (contextual) aspects such as customer demand, culture, and the political climate in order to attain high-performance outcomes (Sousa and Voss, 2008). In three ways, the theory contributes to the organizational literature: First, it clarifies how different operating modes are affected by contextual circumstances. For example, distinct HSC operational modes (responsive and efficient) are determined by disaster management cycles (response and recovery phases). Disaster phases can thus be regarded as contingency (contextual) variables of HSC operational modes. Second, the theory calls for categorizing environmental components based on similarities. External elements, such as geopolitical events and socioeconomic issues, can be classified as external factors, whereas internal aspects, such as human resources and organizational routines, can be classified as internal factors (Stonebraker and Afifi, 2004). Third, this theory aids in the alignment of the operational context with the most appropriate operational mode (Drazin and Van de Ven, 1985; Sousa and Voss, 2008). A stable environment, for example, may necessitate centralized control and operations in order to develop a more efficient system.

2.2. Review of Empirical Literature

While the topic of supply chain management has undergone substantial research, its function in disaster relief operations has gotten less attention (Abhishek & Dutta, 2019). Recent dedicated special issues on Humanitarian Supply Chain Management (HSCM) and a dedicated Journal specializing on humanitarian logistics and supply chain management demonstrate the HSCM literature's growing popularity. As a result, the purpose of this component of the current study is to perform an in-depth review of existing literature published in operations and supply chain management journals, as well as notable interdisciplinary journals. As a result, the following section of the study comprises many reviews of existing literature on the topic of humanitarian supply chain management.

2.2.1. Humanitarian Supply Chain Management Practices

Humanitarian supply chain is the practice used by non-profit or donor-funded organizations to plan, implement, and control the efficient, cost-effective flow and storage of products and materials, as well as related materials, from the point of origin to the point of consumption, with the goal of alleviating the suffering of the most vulnerable and at-risk people. As a

result, the following section of the paper includes a review of the literature on humanitarian supply chain management practices.

Abdifata (2010) conducted a descriptive research study on supply chain management practices and their impact on performance among humanitarian organizations in Kenya and recommended that maintaining good supplier relations, effective and efficient internal operations, continuous improvement, flexible production processes, use of technology to speed up humanitarian work, inter-organizational integrations, and simplicity in internal operations are among the ++ Customs and habits in the relief area, a lack of financial resources, an inability to forecast calamity, bulky supplies to transport, and demand and supply uncertainty are the key problems.

Kovacs and Spens (2011) did research on humanitarian logistics and supply chain management and offered a quick assessment of the field as well as an explanation of the scope of the new journal of humanitarian logistics and supply chain management. The study goes on to show the breadth of humanitarian logistics research and summarizes the papers in the first issue. The researchers suggested that, while there has been collaboration between humanitarian and commercial organizations, there is also a need to establish humanitarian academic partnerships to improve training education and research, which should eventually result in an improvement of practices.

In addition, Mwale (2014) studied "humanitarian supply chain management practices and organizational performance" in Nairobi, Kenya. According to the study, there is a significant relationship between supply chain management practices and organizational performance, which can be explained by seven independent variables: strategic supplier partnership, customer relationship, level of information sharing, quality of information, extent of outsourcing, lean practices, and postponement. The study also revealed that all seven independent variables have a favorable impact on organizational performance; however, customer connection and strategic supplier management had the biggest impact. The research of the relationship between supply chain management practices and organizational performance revealed that the practices can have a direct impact on organizational performance.

Birhanemeskel (2018) found that the findings of a study on the "effects of supply chain management practices on organizational performance: in the case of Awash Wine S.C." in Ethiopia partially support the assumption that supply chain management practice constructs can increase organizational performance. The effect of five variables on organizational performance (Strategic Supplier Partnership, Customer Relationship, Level of Information

Sharing, Quality of Information Sharing, and Internal Lean Practices) was explored in this study. According to the research findings, Internal Lean Practices have a positive and significant effect and are the most essential factor of SCMP on which Awash Wine S.C should concentrate in order to improve their organizational performance in the long run.

Paula, et.al. (2021) carried out study on the human side of humanitarian supply chains: a research agenda and systematization framework. The study aims to investigate the current status of research on the human aspects of humanitarian supply chains, because the successful management of humanitarian supply chains requires the effective use of human resource practices, which in turn requires strong leadership in the so-called 'soft side' of management. The study revealed that: (i) HRM impacts the ability of humanitarian organizations to adequately prevent, prepare for and respond to disasters; (ii) training programs for aid personnel are a vital aspect of humanitarian responsiveness; (iii) humanitarian operations require a workforce with a variety of soft and hard skills; (iv) lack of trained staff is one of the main challenges in this field; and (v) building relationships and strengthening networks can enlarge the human resource pool available. Therefore, the findings of this study and its proposed research agenda have implications for both theory and practice.

Anwer et al. (2018) conducted a study titled "Best supply chain management practices and high-performance firms in Gulf manufacturing firms." The study's goal was to look at the best supply chain management (SCM) practices used by medium- and large-sized Gulf manufacturing firms (MFs). The researchers employed the t-test and multiple linear regression analyses to determine the best strategies used by medium and large-sized Gulf MFs. The research looked into seven SCM practices: supplier collaboration, partner flexibility, internet use, customer focus (CF), lean production (LP), internal integration (II), and quality management (QM). It presumes that the top-performing organizations must be those that use the best practices. The results showed that quality management (QM), customer focus (CF) and supplier collaboration are considered as best SCM practices in Gulf MFs. Usage of internet may have been the best practice previously, but not anymore. However, lean production (LP) cannot yet be qualified as, but may develop into the best SCM practice.

Maspero and Ittmann (2008) did research on the emergence of humanitarian logistics and concluded that the topic of humanitarian supply chain is relatively new, with considerable research only beginning in the last few years. According to them, it is a difficult sub-field where the disaster itself may prevent conventional distribution: in a rapid onset disaster such as an earthquake, flood, tsunami, or mudslide, transportation and communication networks

may be damaged or destroyed to such an extent that previously economically unviable transportation options such as air drops of aid may be the only way of rapidly accessing the affected population.

Torabi (2011) investigated a fuzzy stochastic technique for emergency supply pre-positioning and distribution in disaster management procedures. The study concentrated on a framework for humanitarian assistance in the United Kingdom. The study established that humanitarian supply chain management is becoming a mainstream of research among business schools in response to the growing trend of disasters around the world. The results reveal that the suggested FSBSP model performs well when compared to the extended SP model.

2.2.2. Humanitarian Organizational Performances

Organizational performance is one among the foremost important variables in the management research and arguably the most important indicator of the organizational performance. Although the concept of organizational performance is common within the academic literature, its definition is difficult due to its many meanings. For this reason, there isn't a universally accepted definition of this conception (Gavrea, Ilies & Stegorean, 2011). Organizational Performance measurement is necessary to inform decision makers at the strategic, tactical and operational level (Gunasekaran and Kobu, 2007) but is also the key to implement and realize strategic goals. It facilitates effective control and correction by reporting the current level of performance and comparing it with the desired level of performance (Melnik et al., 2013). Performance measurement and management contribute to continuous performance improvement and strategy formulation (Kaplan, 2001), control of organizational learning, management development, and operational direction with strategic goals. As a result, some of empirical studies on humanitarian organizational performance are discussed as follows.

A study by Deshpande (2012) was conducted on Supply Chain Management Dimensions, Supply Chain Performance and Organizational Performance focusing on the organizational performance aspect of the study. Organizations implementing SCM have obtained improved performance. Cost savings, increased revenues, and the reduction of defects in products are some of the chief advantages of introducing supply chain management (Shin, Collier & Wilson, 2000). It has been demonstrated that business profitability is closely associated with market and business shares (Buzzel, Gale & Sultan, 1975). Based on the long-term and short-

term goals of the SCM, the organizational performance measures identified were and financial and market performance and customer satisfaction.

Ebrahim & Kalkidan, (2020), directed a descriptive research on “effects of supply chain management strategy on organizational performance and recommended that Proper strategic supply chain framework can cope up with the changing market situations, customer demands and overcoming the various challenges. In order to foster organizational sales performance, it is also better for the organization to give due emphasis to Supply chain sales performance measures.

Ramezankhani, M.J., Torabi, S.A. and Vahidi, F., (2018) conducted a study and proposed a novel dynamic network data envelopment analysis framework as a comprehensive performance management system to dynamically assess a supply chain’s performance from both sustainability and resilience viewpoints over the course of time. The proposed model is also associated with a hybrid method using Quality Function Deployment (QFD) together with Decision Making Trial and Evaluation Laboratory (DEMATEL) to systematically select the best sustainability and resilience factors, which are then used in the data envelopment analysis model.

Tracey et al., (2005) measure performance through four separate dimensions including perceived value, customer loyalty, market performance and financial performance. Similarly, Tan et al., (2002) used six items for performance including product quality, customer service, competitive position, market share, average selling price and return on assets. Chen and Paulraj (2004a, b) used supplier performance and buyer performance to assess the financial performance of the buying firm. Vickery et al., (2003) used customer service performance followed by financial performance as the performance constructs. Jin (2006) also assessed operational supply chain role performance via three levels of performance criteria: strategic, operational and financial.

A study by Eyob (2017) on “The Effect of humanitarian Supply Chain Management Practices on Organizational Performance in the case of Modern Building Industries” stated that the results of the survey show that the implementation of modern SCM practices is weak in SCI ETHIOPIA. Similarly, except degree and quality of information sharing and lean practices, even though in a weak level, no positive relationship was observed between the other SCM practices and organizational performance in this firm. It can, therefore be concluded that the firm is doing business as usual and no attention was given to modern SCM theories and practices in the firm yet. However, the existing literature advocates that the implementation of SCM practices can considerably improve organizational performance.

Beamon and Balcik, (2008) investigated a study entitled “Performance measurement in humanitarian relief chains”. The purpose of this paper is to compare performance measurement in the humanitarian relief chain with performance measurement in the commercial supply chain, develop performance metrics for the humanitarian relief chain, and present a framework that can be used as a basis for a performance measurement system in the relief sector and proposed a three part framework performance measurement system that specialize in resource performance metrics, output performance metrics, and adaptability metrics. Also they proposed a framework of four key performance indicators, namely, appeal coverage, donation to delivery time, financial efficiency, and assessment accuracy.

A study by Bölsche.D (2013) entitled “performance measurement in Humanirian logistics” showed that the similarity between Supply Chain Operations Reference-model (SCOR) and Score Card Model as reliability and assessment accuracy, responsiveness and donation-to-delivery time, costs and financial efficiency and assets and financial efficiency. They claims that the tool of performance measurement is to not avoid the prevalence of disasters, but to progress the purposes of humanitarian logistics with each step on a complex level and as a result; it contributes to alleviate the suffering of the affected people.

According to Larrea, O. (2013,) the key performance indicators and scorecards developed by (Davidson, 2006) could be manipulated to fit the characteristics of the site of the disaster. Different types of operations produce different values in indicators performance, according to the specific conditions of each disaster.

Lu, Goh, & Souza (2016) conducted study on A SCOR framework to measure logistics performance of humanitarian organizations by applying the supply chain operations reference (SCOR) framework. The purpose of the study was to develop a set of indicators for humanitarian relief organizations (HROs) for their organizational level logistics operation and recommended a hierarchical benchmarking framework that comprises a set of 26 metrics. The validation of these metrics supports the initial work with all metrics deemed important. It also highlights the implementation difficulty as only five indicators are readily available. The authors further suggested the automation of key logistics processes, which would significantly increase the number of implementable metrics to 14 that includes five performance attributes within the original SCOR model such as Reliability, Responsiveness, Agility, Cost, and Asset Management.

The above mentioned review of literature is mainly in the area of supply chain management and organizational performance. Based on the lack of previous literature on the topic of the effect of humanitarian supply chain management practices on organizational performance the researcher seeks to address the topic in an extensive manner.

2.2.3. The Role of HSCM practices in organizational practices

Humanitarian Supply chain management practices impact not only overall organizational performance, but also competitive advantage of an organization. The following subsection presents some of empirical studies on the issue stated above.

Rosanc Perez et al. (2019) conducted a descriptive study on the role of humanitarian logistics in the Kiss nightclub fire, as well as analyzed a literature review to synthesis data on the logistics used in mass disaster management. The study focuses on the following aspects: the role and value of the media, the handling of donations, and the coordination of humanitarian logistics. The humanitarian response was deemed adequate, particularly in the treatment of survivors. An effective coordination approach was implemented, and the media played an important role in soliciting blood donations. Further study and case studies in the field of logistics are recommended to create more effective responses in mass disasters.

Birhanu, (2020), carried out a study entitled “The role of supply chain integration on performance of selected international humanitarian organizations operating in Ethiopia by applying mixed research approach. The study aimed at exploring current level of supply chain integration practices that exist across humanitarian supply chains in Ethiopia, and recommended that all humanitarian organizations should embrace all the three dimensions of supply chain integrations practices to enhance their organization overall performances.

Ozdemir, et.al. (2020) conducted a research on the role of block chain in reducing the impact of barriers to humanitarian supply chain management. The objective of the study is to investigate the role of block chain in reducing the impact of barriers to humanitarian supply chain management (HSCM) using a list of block chain benefits. The findings of the study suggest that inter-organizational barriers are the most suitable ones, the impacts of which block chain may alleviate. This study further suggests that trust turned out to be the most significant benefit criterion for the analysis.

Gupta, et.al. (2020) investigated the Role of technological dimensions of green supply chain management practices on firm performance. The results indicate that GSCM technological

dimensions (AI-based) positively influence GSCM strategy of the organizations. Further, GSCM strategy was found to positively influence GSCM process. The GSCM processes have significant effects on environmental performance, social performance and financial performance.

2.3. Summary of Gaps in the Empirical Studies

Most previous studies on humanitarian supply chain management focused on the practices and performance of the supply chain as a whole, rather than looking at it from the perspective of HSCM practices and organizational performance. The current study highlighted six research gaps as well as the primary subjects of interest and trends for the HSCM domain based on a review of the literature, which is listed below. (1) the lessons to be learned from the above scholars' recommendations in order to predict and prepare for natural catastrophes (2) the manner in which the public and private sectors' supply chains are involved and coordinated to support the HSCM phases (Mitigation, preparation, response, and recovery) in natural and man-made disasters.(3) there are challenges to making field studies feasible (4) humanitarian organizations could build resources and competencies to deal with the various types and pace of disasters(5) Natural and man-made catastrophe prevention strategies or plans are formed in humanitarian organizations and governments damaged by these calamities. (6) The researches did not reveal the method that might be taken after such catastrophes, as well as the processes by which humanitarian organizations coordinate with one another in order to help the disaster relief preparation/prevention, rapid reaction, and rehabilitation phases. Furthermore, some study was conducted on the commercial sector rather than the humanitarian sector. In terms of context, the majority of studies are conducted outside of Ethiopia, while studies conducted within Ethiopia are rare. Combining the information from our findings and research gaps and streams, it could be argued that more practitioner-focused research in the field of HSCM is needed, that academics and/or relevant authorities should address preparation and prevention, and that the supply chain context should be examined to discuss coordination between aid members. Furthermore, comprehending the indicated research gaps appears to be dependent on appreciating the resources and talents of the players and agents involved in humanitarian operations.

2.4. Measurements of Humanitarian supply chain management Practices

Mentzer et al. (2001) describe the humanitarian supply chain practices as the network created through the flow of services, supplies, information and finances between donors,

beneficiaries, suppliers and different units of humanitarian organizations, in order to provide physical aid to beneficiaries. The humanitarian supply chain practice encompasses the planning and management of all activities related to material, information and financial flows in disaster relief. Importantly, it also includes coordination and collaboration with supply chain members, third party service providers and among humanitarian organizations.

Humanitarian Supply Chain Management Practices covers a set of activities and processes from upstream and downstream and firm's internal operations. Similarly, Ballou et.al. (2000) in their research five aspects of SCM practices that were developed from previous research including Perry and Sohal (2000) and Petrovic-Lazarevic et al. (2007) are used. These five SCM practices are: supplier and customer relationship, information sharing, internal operation, IT and training.

Jahre et al. (2009) develop a model revealing the creation of humanitarian supply chain management practices network during the preparedness phase of disaster by developing collaboration to relevant actors in supply network, designing structure, and building knowledge for recombination of resources. In addition, they postulated the developing humanitarian supply chain management practices network during response phase including activities such as; setting up an operation drawing resources from multiple permanent organizations, mobilizing actors within supply network locally and internationally, and recombining resources.

Several academic researches such as Fabbe-Costes, Jahre, & Rouquet, 2006; McLachlin & Larson, 2011; Van Wassenhove, 2006) and non-academic researches have been conducted research and highlighted the measurement of humanitarian supply chain management practices includes supplier collaboration, flexibility with partners, usage of internet, customer focus, lean production internal integration, and quality management. More specifically, humanitarian supply chain management practices involves components such as procurements, transportation, warehousing, inventory management, tracing and tracking, bidding and reserve bidding, and reporting and accountability to address emergency as well as coordination mechanism Tomasini & Van Wassenhove, 2009; Van Wassenhove, 2006).

Moreover, Balcik et al (2010) and Ballou et al. (2000) conceptualise SCM as three dimensions: intra-functional coordination, inter-functional coordination, and inter-organizational coordination elaborate building coordination mechanism to work under one umbrella organizations by implementing and etc. Stephenson,(2005) referred measurement of

humanitarian supply chain management practices humanitarian network as social network (Grandori & Soda, 1995), which is characterized by coordination mechanism, collaborative procurement system, and third-party warehousing. Van der Laan et al. (2009) consider measurement of humanitarian supply chain management practices as emphasize the inter-organizational coordination between the relief actors, thereby suggest some activities which are completely discussed in the parts related to practices of humanitarian supply chain.

2.5. Measurements of Humanitarian Organizational Performances.

The concept of humanitarian organizational performance measurement framework is well established in commercial organizations but generally lags in humanitarian organizations. Most humanitarian organizations recognize the importance of establishing a suitable performance measurement and the positive results it brings to their organization. It has long been recognized that humanitarian organizational performance measurement is crucial for the effective and efficient management of logistics networks (Melnyk et al., 2014). Humanitarian organizational performance is “the effective collective performance of a complex system of international, national and locally-based organizations, which works to save lives, alleviate suffering and maintain human dignity both during and in the aftermath of man-made crises and natural disasters, as well working to prevent and strengthen preparedness for the occurrence of such situations.” Several researchers argue that humanitarian organizational Performance measurement contributes to the continuous improvement of performance (Neely et al., 1997), to the deployment of strategy (Kaplan and Norton, 2001), to organisational learning (Kung et al., 2001), to managerial development (Garengo et al., 2005) and to aligning operations with strategic objectives (Taticchi et al., 2010). Hence organizational performance is vital in the successful implementation of HSCM; the following subsection presents some review of literature on the measurements of humanitarian organizational performance in detail.

Abidi, et.al. (2020) conducted a study on “Performance management practices in humanitarian organisations”. The purpose of the study was to examine how design and implementation practices for supply chain performance management that have proven successful in commercial organisations apply to humanitarian organisations (HOs) to guide the process of designing and implementing performance management in humanitarian organisations. The study shows that performance management practices used in business can be applied and are relevant for humanitarian supply chains.

Qing Lu, et.al. (2016) investigated A SCOR framework to measure logistics performance of humanitarian organizations. The purpose of this paper is to develop a set of indicators for humanitarian relief organizations (HROs) for their organizational-level logistics operations. The findings of the study proposed a hierarchical benchmarking framework and a set of 26 metrics are identified.

Bölsche, (2013) conducted study on “effective Humanitarian Organizational performance” that encompasses undertaking work in ways that are consistent with humanitarian principles, mobilizing and deploying sufficient financial, material and human resources in ways that are relevant, well-managed, accountable, impartial, durable and ensure good quality.

According to a research titled "Measuring Organizational Performance: Towards Methodological Best Practice" by Richard et al. (2009), organizational performance comprises three key aspects of business outcomes: Financial performance (profits, return on assets, return on investment, and so on); product market performance (sales, market share, and so on); and shareholder return (total shareholder return, economic value contributed, and so on).

Mahapatro (2009) conducted a study on evaluation of humanirian organizational performance index in resilient supply chain using a fuzzy-based approach and recommended that humanitarian organizational performance should be mission-driven, adaptable, customer-focused, entrepreneurial, outcomes-oriented, and sustainable.

Moreover, Neely et al. (1995) on his study entitle “performance measurement system design: a literature review and research agenda” developed a set of twenty four draft KPIs for HROs to measure and monitor their supply chain performances effectively. These metrics cover the key elements of quality, time, and cost in humanitarian supply chains, and assist humanitarian organizations to measure their performances in terms of agility, responsiveness, reliability and cost effectiveness along the whole supply chain processes.

Beamon, (2008) offered indicators for humanirian supply chain management that are categories based on resources, outputs and flexibility which are assessed based on reliability, flexibility, responsiveness, cost, quality and assets. Also, De Leeuw and Van den Berg (2011) developed framework of performance management practices such as designing performance management system and implementing performance management. Designing performance management system is the initial design phase focuses on identifying an organisation’s objectives and success factors in order to develop relevant performance indicators (Bourne et

al., 2000).

According to Reh (2011), success of supply chain improvement of humanitarian supply chain management initiative lies in selection of appropriate Key Performance Indicators (KPIs) using best suitable supply chain framework. These performance indicators should be measured, monitored and controlled with proper review mechanism. With clearly defined and documented metrics that are associated with specific individuals in your supply chain network, organizations can foster a heightened level of accountability.

In addition, Reh (2011) further asserts that organizations can initiate tasks, assign owners, set alerts based on predefined thresholds, and monitor the execution of tasks assigned to address issues. This not only allows companies to take swifter action to address poor supply chain performance, but it also enhances accountability. By leveraging the diverse functionality of supply chain performance management, organizations can measurably improve the effectiveness of supply chain operations. Besides, a plethora of performance measurement and management frameworks have been developed for business supply chains (Atkinson, 2012) including the SCOR model and the Balance Scorecard (BSC) (Kaplan and Norton, 2001). These two performance measurement frameworks are the most commonly used in supply chain management practice. The SCOR model was developed by the supply chain council with the assistance of the world's leading manufacturing companies. It is designed to evaluate the supply chain for effectiveness and efficiency of sales and operational planning (S&OP). It has been described as the "most promising model for supply chain strategic decision making". The model integrates business concepts of process re-engineering, benchmarking, and measurement into its framework. The SCOR model is based on three major principles: process modelling/re-engineering, measuring performance, and best practices. The model describes the business activities associated with satisfying a customer's demand, which include plan, source, make, deliver, return and enable. According to the SCOR model, the five key components (supply chain processes) of the supply chain are planning, sourcing, making, delivery, and returning and proposes associated performance indicators on four levels (Supply Chain Council, 2007).

Moreover, Balanced Scorecard (BSC), proposed by Kaplan and Norton (1992), is a performance measurement model which combines financial and non-financial indicators to measure the performance of a business. It has the feature of being flexible and provides an easy evaluation of the general competitiveness of the supply chain (Kaplan and Norton, 1996: 23). BSC model for the commercial sector transforms the organization's missions and

strategies into goals with its four dimensions such as customer, internal business process, financial and learning & innovation and decision-makers use the BSC to evaluate business activities from financial, customer, learning and growth, and internal processes perspectives (Kaplan and Norton, 2001). In general, the SCOR model and BSC are relevant to supply chain management as they help to derive indicators that link the environment and the strategy of an organisation. As a result, the four dimensions of BSC are explained/ presented in table below

Table 1. Kaplan and Norton, 2001 four dimensions of BSC

Dimension	General Description	HSC
Customer	Business managers identify the consumer and market in which the company competes, and undertake performance measurements. Customer happiness, customer retention, new customer acquisition, and customer profitability are the primary performance measures in the customer dimension. This dimension enables business managers to discover consumers and market-based strategies.	Recipients and donors are the two types of customers. Beneficiaries' characteristics differ from those of commercial market clients. Donors are individuals who provide monetary or in-kind contributions to humanitarian organizations.
Internal Business process	Internal business process performance measurements concentrate on internal procedures that have the biggest impact on customer satisfaction and help the company meet its financial objectives.	Successful HSC processes imply quick and effective performance for beneficiaries, as well as the use of all available resources.
Financial	This dimension typically includes standard financial performance measurements, which are typically tied to profitability. The financial performance measures (operating income, return on capital, and economic added value) are used to determine whether an enterprise's plans and implementation contribute to the business's purpose.	Donations and public support are sources of financial resources. When a crisis strikes, humanitarian organizations arrange contribution drives in which worldwide humanitarian organizations and donors are invited to join.
Learning & Innovation	The infrastructure that must be developed in order for the firm to provide long-term growth and development is determined. Dimension of learning and innovation; it covers performance measurements such as staff training, training developments, technology use, and the organization's reputation.	Humanitarian organizations must be aware of the importance of strengthening the competency of the working team through the establishment of a culture of learning from previous lessons.

2.6. Conceptual Framework

According to Wilson et al, (2015) a conceptual framework may be a graphic or written product that describes the main things to be studied, concepts, or variables and therefore show the alleged relationship between them.

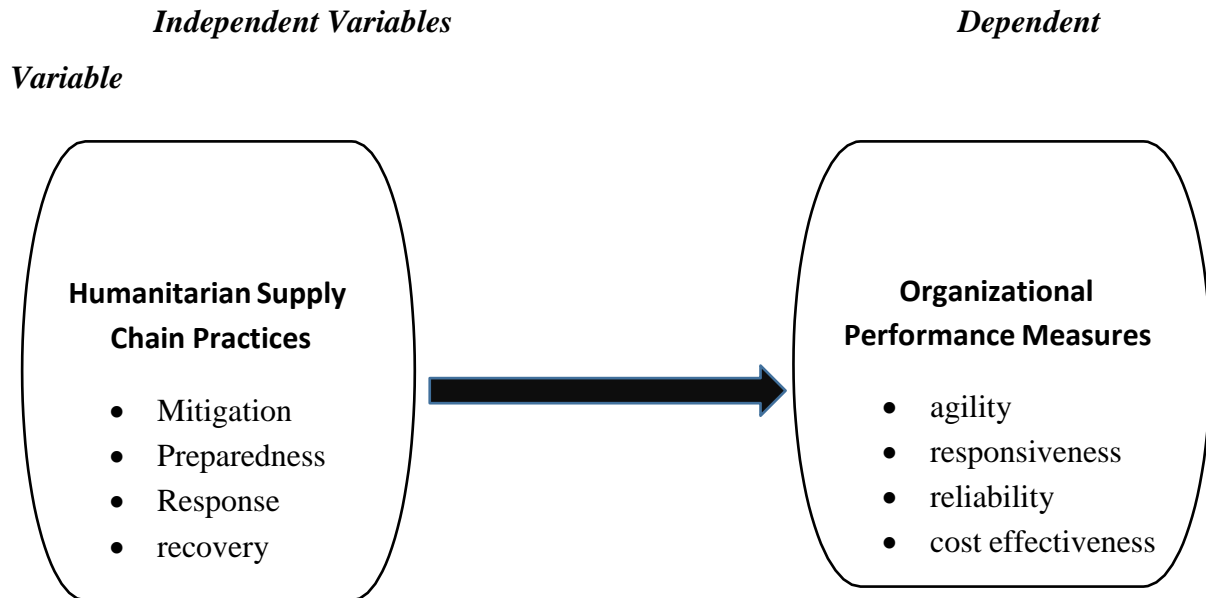


Figure 2. Conceptual framework: Source: Based on literature reviewed mainly adapted and modified from Assefa S. (2019) & Lu, Goh and de Souza, (2016).

The figure above illustrates the conceptual framework of this study. The focus of this study was to assess the effect of humanitarian supply chain management practices on organizational performance. This study had different independent variables that were investigated in relation to the dependent variable. The independent variables comprised of; mitigation, preparedness, response and recovery phases. The independent variables were investigated with regards to finding their effect on organizational performance of Orthodox Church development and inter-church Aid Commission (EOTC-DICAC) in Ethiopia.

2.7. Challenges of Humanitarian Supply Chain Management

With the presence of multiple parties and a huge quantity of resources to distribute, the management of the humanitarian supply chain can become extremely difficult. Because transportation infrastructure is deteriorating or damaged, delivery of materials may be problematic. Furthermore, there are strict time limits because failure to distribute items on time may result in death. In the humanitarian supply chain environment, humanitarian

personnel frequently interact with a wide number of stakeholders, including a big number of donors, the media, governments, the military, and the eventual beneficiaries.

In this regard, (Wassenhove, 2006) emphasized that lack of coordination amongst humanitarian organizations on the scene of a disaster is mutual, because there can be as many as several hundred humanitarian organizations on the scene to carry out relief operations, all with different political agendas, ideologies, and religious beliefs, all competing for media and donor attention. The most difficult problem is aligning them and coordinating logistical efforts without jeopardizing their missions or convictions.

Furthermore, as Oloruntoba and Gray (2005) point out, the humanitarian supply chain frequently involves significant degrees of uncertainty in terms of demand, supplies, and assessment. As a result, they are clearly unexpected, tumultuous, and require a high degree of adaptability. As the quantity and complexity of global emergencies continue to rise, this irregularity poses particular problems to the aid fulfilment system.

Another problem in the humanitarian supply chain environment is providing logisticians with the tools they need to function optimally. There is a large turnover of logisticians in the area, which is due in part to the high pressure atmosphere, but also to the lack of clear career paths, accompanying training, and experience transfer. The requirement to work in volatile circumstances frequently frustrates logisticians.

According to Rodman (2004), firms may face up to 80% yearly turnover in the field of supply chain professionals. This has significant consequences for organizations' demand for skilled logisticians in a field where experience is just as important as expertise. It also has consequences for post-event knowledge transfer, with the goal of ensuring that lessons learned are captured and translated into wisdom relevant to the type of crisis, region, and operation.

Performance management, particularly supply chain performance, is a concern for humanitarian organizations. It is not easy to manage performance in the humanitarian supply chain system. Critical concerns remain regarding which performance indicators are the most appropriate and how these aspects influence the flow of information for decision making. According to Beamon (2008), measuring success is critical for humanitarian organizations. This translates immediately into a greater emphasis on supply chain for improved operational transparency and supply chain performance measurement.

Beamon (2008) goes on to say that nowadays, contributors, donor agencies, scholars, and relief and development practitioners are all questioning if NGOs truly have a method to determine whether they practice what they teach. Organizations rely on effective and efficient supply chain processes, and performance assessment is critical for accountability.

According to Richardson (1994), as cited by Xiu Hui (2007), a number of other factors within the physical or geographic environments where disasters strike provide a more complete picture of the complexities of humanitarian supply chains logistic, thus enhancing the challenges that humanitarian organizations normally face. For example, the diversity of factors can make it difficult to understand which factors predominate and obscure the precise nature of the problem; interactivity among the factors can accelerate the rate at which the disaster may escalate; and the ambiguity of disasters makes it difficult to know the direction in which the crisis may escalate because cause-effect relationships are not clear, making it difficult for managers to forecast the implications of the disaster. According to Xiu Hui (2007), the typical example of invisibility is when foreign assistance workers misjudge the value of local customs and habits in the relief region. Despite the best efforts to estimate them, many critical elements will remain unseen without the perspective of a local partner, leaving the management uninformed of potential losses.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Introduction

The methodology is the systematic, theoretical examination of the methods used in a particular field of study. It's a theory about how an investigation should go. It entails an examination of the assumptions, principles, and procedures underlying a particular method of investigation. It consists of an intensive analysis of the body of methods and principles associated with a particular field of knowledge. It typically includes paradigms, theoretical models, phases, and quantitative or qualitative techniques (Ishak, I.S. and Alias, R.A., 2005). Thus, this chapter depicts the research paradigm, approach, methods and design being used by the study, while highlighting the population and issues related to sampling technique, sample size determination, and data collection instrument. Besides, the chapter outlines the approach to data collection and analysis for the purpose of hypotheses testing.

3.2. Description of the Study area/ setting

The study "Effects of humanitarian supply chain management practices on organizational performance in the case of the Ethiopian Orthodox Church-Development and Inter-Church Aid Commission (EOTC-DICAC)" attempts to identify a potential cause-and-effect relationship between HSCM practices and organizational performance. For thousands of years, the Ethiopian Orthodox Tewahido Church, the country's largest and oldest church and spiritual institution, has addressed various socioeconomic problems. The headquarters of EOC-DICAC are in Addis Ababa, Ethiopia's capital city, near Arat Kilo and the Kebena/Ginfe River. There are currently 207 supply chain management and finance staff members working in more than 14 field offices across the country. It was founded 47 years ago with broader objectives such as assisting refugees and returnees in collaboration with the government and UNHCR, implementing church-integrated development programs, initiating and implementing water supply and environmental conservation and rehabilitation undertakings, providing relief and food supply organizing, developing, and implementing social services programs integrating the church's apostolic mission and providing education and training services. It has a yearly budget of 24.4 million ETB for addressing significant issues/themes, and major program interventions will cost 1.3 billion ETB in 2018. Youth unemployment, Green Economy Development, Disaster Risk Reduction Management, and a focus on human trafficking and migration, as well as non-communicable diseases, all consume a significant portion of the annual budget.

3.3. Research Approach

The research approach is a research strategy that progresses from a broad prospect to a comprehensive approach. According to Kumar (2018), the best method to use for a study is determined by the research objective, research data, and research questions. As a result, in this study, the researcher employed a hybrid research technique. According to Creswell, (2012), mixed research approach is preferable primarily because it helps the researcher to obtain different and multiple perspectives, integrates the benefits of both (quantitative and qualitative methods), build a comprehensive and contextualized understanding of the research problem and enhances the credibility and generalizability of the study results. Mixed research approach also contributed to ensuring that the shortcomings of one type of data are offset by the strengths of the other. The mixed research approach is in the middle of this spectrum (Creswell, 2014; Mwale, 2014). As a result of the researcher's utilized pragmatic approach in this study, to addresses the truth of all beliefs, knowledge, and scientific concepts is provisional and defined by their pragmatic use in on-going experience, rather than by correspondence with antecedent truth or reality. Furthermore, the mixed research design is the best fit for this study because it incorporates multiple methods to answer research questions (Creswell, 2015). The central premise of this type of investigation is that combining qualitative and quantitative approaches yields a more complete understanding of a research problem than either approach alone. In this regard, Kabra and Ramesh, (2021), and Abidi, et.al.,(2020) conducted an empirical studies on performance management practices in humanitarian organizations as well as enablers in humanitarian supply chain management by using mixed approach and recommended that there is a strong need to establish for more effective and efficient monitoring systems.

3.4. Research Design

According to Bogdan and Biklen (2007) and Saldana (2009), there are five types of study designs. These are exploratory (emphasizes idea and insight discovery), descriptive (concerned with determining the frequency with which an event occurs) and explanatory (ascertain how or why a particular phenomenon is occurring and predict future occurrences), experimental (aims to look at a problem scientifically and is concerned with determining cause-and-effect relationships), and correlational design (establishes a relationship between two related variables). In this regard, Mwale, (2014), as well as Ebrahim & Kalkidan, (2019) conducted descriptive study on organizational performance and noted that using a descriptive research design enhances to investigate the impact of humanitarian supply chain management

strategies on organizational performance. The descriptive research design was used to describe the mean and outputs as well as to collect information about the current state of a phenomenon in order to describe "what exists" in terms of variables or conditions in a situation. A variety of techniques were employed, including surveys that describe the current situation, correlation studies that look into the link between variables.

3.5. Population and Sampling

Polit and Beck (2012:11), pointed out sampling as a process of selecting an appropriate population to represent the entire population in order to provide rich information on the phenomenon of interest. It is the process of collecting data from a small subsection of the population and then using it to generalize over the entire set. A sample design is a specific strategy for selecting a sample from a given population. It refers to the method or procedure used by the researcher to select items for the sample. Sample design also results in a procedure for determining the number of items to be included in the sample, i.e., the sample size. Sampling is the selection of a subset of individuals from a population in order to estimate the characteristics of the entire population. Sampling has two main advantages such as allowing faster data collection and lower costs. As a result, the researcher employed simple random sampling to pick up respondents for this research. The basic assumption to employ simple random sampling is that it ensures that results obtained from your sample should approximate what would have been obtained if the entire population had been measured and allows all the units in the population to have an equal chance of being selected (Shadish et al., 2002). Moreover, the researcher employed purposive sampling was employed to pick up (include) managers, and department heads and team leaders with the premises of intentionally selecting participants based on their characteristics, knowledge, experiences, or some other criteria (Creswell, 2012). As a summary, the respondents for this study were chosen using simple random and purposive sampling procedures.

3.5.1. Sample Size

According to Richard and Towne (2002:92), a population is defined as all participants, objects, research components, or any entity with the characteristics that the researcher wants to draw a scientific inquiry about the study. It is the entire set of items from which you draw data for a statistical study. It can be a group of individuals, a set of items, etc. Also, Brown (2006) defined sample size as a research term that refers to the number of people included in a research study to represent a population. It is the number of subjects/participants included

in a research/ study to represent a population. The sample size for this study was determined using the confidence interval method.

As a result, according to ETOC-DICAC (2022), statistics there are 207 supply chain management, program department and finance staff members working in more than 14 field offices across the country. In this study, the researcher included 136 respondents from the supply chain department, the finance & program department, and managers from the overall target population (207). Tamaro Yamane's sample size determination formula method (Yamane, 1967) to determine the sample size, (n), given the population size (N), and a margin of error ((e=0.05) mean 95% confidence levels) which is computed as:

$$n = N / (1 + N (e)^2)$$

$$207 / (1 + 207 * (0.05)^2) = 136$$

So, by applying the sample determination formula, the sample size of the study is 136.

3.6. Data Collection

The data used in this study was collected a variety of strategies. The researcher gathered both primary and secondary sources of data. The primary data for the research was gathered from employees, directors, coordinators, and managers of the target units, which are the supply chain and finance departments, and the secondary data, was gathered from literature and EOC-DICAC policy documents such as scholar journals, books, articles, organizational web sites, organizational reports, strategic plans, guidelines, and manuals.

Data was obtained from key informants via questionnaires in an attempt to obtain first-hand information. Open-ended interview and closed-ended structured questionnaires were used to collect primary data. The structured questionnaire was distributed to the key informants by the researcher. The questionnaire was divided into three pieces. The first section dealt with the respondents' and the organization's profiles, while the second section contains closed-ended information on research objectives that was designed in the form of a Likert scale, with respondents indicating their views on a scale of 1 to 5, ranging from strongly disagree to strongly agree. The three sections contain an open-ended face to face interview guide questions which requires the key informants' thoughts, opinions, and perspectives about the problem under research. With the assistance of the supply chain director, the researcher distributed the questionnaire to the respondents in hand.

A pilot study was carried out, in which questionnaires were distributed and ambiguous questions were distinguished from respondents. Concerned organizations prepared and distributed questionnaires to the study area. Data collection allows the researcher to gain first-hand knowledge and unique insights into the issue statement, whether the researcher is conducting research for commercial, public, or educational purposes (Pritha Bhandari, 2020). A sim-structured interview would be conducted with top and middle-level managers.

To ensure the validity of the constructs and scales used in this study, the majority of the questionnaires were developed based on a careful review of the literature, a problem statement, and a conceptual framework, while a few questionnaires will be adapted from previous research with modifications by indicating the research title. A literature review and policy documents such as EOC-DICAC manuals, guidelines, and internet sources were used to supplement the data obtained from key informants, and the researcher will prepare the final report using tables, graphs, and charts.

3.7 Data Analysis

The collected data was systematically sorted and evaluated for completeness after the data collection procedure has been completed in a way that allows for analysis. The study used descriptive and inferential statistical analysis. For descriptive analysis, percentages and frequencies, mean and aggregate standard deviation were calculated, and general information about the respondents and their respective organizations was provided in the first section of the questionnaires. An inferential statistical technique, on the other hand, will be used to evaluate data related to the study's objectives. The data was then sorted and coded before being entered into and analyzed by the Statistical Package for Social Sciences program (SPSS). Pearson's correlation was calculated in inferential statistics to demonstrate the relationship, as well as the degree and direction of relationships between variables.

The second part of the variable relationship (the independent variables and the dependent variables) was investigated by using multiple regression such as normality test, Multicollinearity test, linear test, Homoscedasticity Test, scatter plot, summer model and ANOVA and Beta coefficient were calculated on the form of the relationships to find a mathematical expression that allows us to predict the score of the dependent variable based on the scores of the other variables (the independent variables). The information gathered via an open-ended questionnaire and interview will be organized into narrative description.

3.8. Scale Reliability and Validity

The reliability of findings is referred to as stability, whereas the truthfulness of findings is represented by validity (Altheide & Johnson, 1994). Reliability refers to internal consistency, whereas validity refers to the accuracy of the measure.

3.8.1 Reliability

A measurement is reliable if produces consistent results with equal values (Blumberg et al., 2005). It assesses the research's consistency, precision, repeatability, and credibility (Chakrabartty, 2013). It indicates the degree to which it is free of bias (error) and thus ensures consistent measurement over time and across the various instruments (the observed scores). Reliability is used to assess the consistency of measures given to the same people at different times, as well as the equivalence of sets of items from the same test (Kimberlin & Winterstein, 2008). In this study, the more accurate the results were, the more likely it was that the option would be the right one. This reliability can be tested by comparing the results of repeated measurements. The consistency with which an instrument measures the constructs for which it is designed is referred to as its reliability. The extent to which the research findings can be replicated if another study is conducted using the same research methods is known as reliability (Ritchie and Lewis, 2003).

As stated by Burns, (2008) Reliability refers to the consistency and stability of findings that enables findings to be replicated". "Cronbach's Alpha is very useful in developing attitude scales and questionnaires as the alpha level (or reliability) indicates if the items are measuring the same construct. Items that are not measuring what the rest are can be identified and deleted. Bryman and Bell, (2007) also stated that a reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations. As seen in the table below, to assess the consistency of each construct, a reliability test was conducted. The Cronbach's alpha coefficient of 130 responses is 0.958, signifying that the responses have high consistency. Thus, making all the variables used in the research highly reliable for data analysis.

Table 2: Summary of Reliability test

No.	Name of Items	Number of Items	Cronbach's Alpha
1	Mitigation Practices	5	0.856
2	Preparedness Activities	10	0.882
3	Response Practices	8	0.888
4	Recovery Practices	8	0.884
5	Organizational Performance	4	0.785
6	Sum	35	0.958

3.8.2 Validity

The extent to which an instrument measures what it claims to measure is frequently defined as validity (Blumberg et al., 2005). Validity means an instruments ability to measure what is meant to be measured (Wiedersheim Paul and Eriksson, 1991). The validity of a research instrument evaluates how well the instrument measures, what it is intended to measure. It is the degree to which the outcomes are accurate. As a result, a research instrument (questionnaire) is required to accurately measure the concepts under study (Pallant, 2011). The extent to which the requirements of the scientific research method were followed during the process of generating research findings is referred to as research validity.

In other literature according to Kothari, (2004), validity indicates the degree to which the instrument measures what it is supposed to measure. To confirm the face validity, the items were looked over with the help of experienced supply chain experts and academicians in the area of Humanitarian aid and literature related to humanitarian supply chain management practices and organizational performance were consulted. The humanitarian supply chain management questionnaire was standardized and adopted from Assefa S. (2019) and for the organizational performance it was adopted and modified from Lu, Goh and de Souza, (2013).

Validity according to Kothari (2004), sources of error in research can include respondents, situations, the interviewer, and the data collection instrument. Errors may occur as a result of a faulty measuring instrument (E.g., the questionnaire in this study). The use of complex words that are beyond the comprehension of the respondents, ambiguous meanings, poor printing, insufficient space for responses, response choice omissions, and other factors can render the measuring instrument defective and lead to research measurement errors. Validity

is concerned with two major issues: whether the measurement instruments are accurate and whether they are measuring what they are supposed to measure. Internal and external validity are two distinct dimensions of the concept of validity (winter, 2000).

Internal validity ensures that the researcher is actually carrying out the research that he or she claims to be carrying out. Internal validity is the extent to which the questionnaire's measurement provides the data needed to meet the study's purpose, whereas validity is the extent to which the questionnaire measures what the researcher intends to measure in order to ensure internal validity. The extent to which research findings can be generalized to a larger population is addressed by external validity. In this study's questionnaire is based on a thorough review of related literature as well as a well-documented and regularly reviewed supply chain operation reference (SCOR) model. As a result, the researcher believes the data collection tool will function properly. This indicates that internal validity has been attained. Because this is a case study, the results couldn't be generalized to the entire population. As a result, external validity is a common gap in the study.

To ensure the validity of the constructs and scales used in this study, the majority of the interview and focus group discussions guiding questions will be developed based on a careful review of the literature, a problem statement, and a conceptual framework, while a few questionnaires will be adapted from previous research with modifications by indicating the research title. A literature review and policy documents such as EOC-DICAC manuals, guidelines, and internet sources will be used to supplement the data obtained from key informants, and the researcher will prepare the final report using tables, graphs, and charts.

3.9. Ethical Considerations

Ethical principles should be relevant to specific research methods, contexts, and processes (Mokake, 2005; Murphy and Dingwall, 2001). Ethical concerns were raised throughout the research process, beginning with data collection and continuing through analysis and writing up the final report and presentation. Thus, in this study ethics of the Ethiopian Orthodox church extends beyond obtaining consent, to providing privacy and confidentiality. Because EOC-DICAC is a religious-based humanitarian organization, the researcher will consider or emphasize the church's social concern (church norms, values, and doctrine) during data collection. Before deploying the questionnaire, an official letter from Addis Ababa University's School of Commerce Department of Logistics and Supply Chain Management will be sent to the respondents to obtain their permission to collect the necessary data.

Respondents were assured that the information they provide will not be used against them, that their identities, as well as the church's values and norms, will not be disclosed, and that any information obtained will not be conveyed to any other third party or used for any purpose other than academia.

CHAPTER FOUR

RESULTS AND DISCUSSION

4. Introduction

This chapter delves into the study's analysis, interpretation of results, and debate. The information was gathered entirely through the use of a questionnaire as an instrument. The questionnaire was designed to meet the study's objectives. A five-point Likert scale was used to evaluate the extent to which the factors were practiced in order to increase the quality of the data collected. Descriptive statistics such as percentage, mean, and standard deviation were used to assess the demographic features and HSCM practices of EOTC-DICAC, Ethiopia and organizational performance. The study also used correlation analysis, notably Pearson correlation, regression; normality test, Multicollinearity test, linear test, and ANOVA test to analyze the relationship between the variables under consideration. The impact of the independent and dependent variables was investigated further using regression analysis.

4.1. Response Rate

After being examined for discrepancies, 130 of the 136 surveys were returned. Omena (2013), Kraut (1996), and Balakrishman et al. (2007) all agree that a response rate of 50% is appropriate, a rate of 60% is good and a rate of 70% or above is excellent. This study had a 95.59% response rate, which was valid and used for analysis (Taherdoost, 2017). SPSS statistical software was used to present and analyze the data.

4.2 Demographic Information of the Respondents

The researcher first endeavoured to determine general information on EOTC-DICAC, Ethiopia, employees involving in the study in terms of age, gender, level of education, and organizational work experience. The material on the board includes the respondents' sufficiency and appropriateness in responding to study questions about humanitarian supply chain methods and their impact on the organization's performance.

Table 3. Demographic information of the participants

Age	Description	No.	By Percent (%)	Remarks
	20-25	10	7.7	
	26-30	17	13.1	
	31-35	19	14.6	
	36-40	25	19.2	
	41-45	40	30.8	
	46-50	12	9.2	
	51 & above	7	5.4	
	Sex	Male	80	61.5
Female		50	38.5	
Educational status	Diploma	15	11.5	
	BA/BSC	61	46.9	
	MA/MSc	54	41.6	
Work experience	< 2	14	10.8	
	2-5	20	15.3	
	6-10	25	19.2	
	11-15	53	40.8	
	16 & above	18	13.9	

The average age, according to the figures, was 41-45 (30.8 %). The second most prevalent age range was 36-40 (19.2 %), with 31-35 (15.3%) coming in third. Participants ranged in age from 20 to 30, with 17 (12.4%) between the ages of 20 and 30, and 12 (8.8%) between the ages of 46 and 50. Ten percent of key informants were between the ages of 20 and 25, while seven percent of participants were between the ages of 51 and above.

Table 4.1 also depicts the gender distribution of key informants at EOTC-DICAC, Ethiopia, with 80 (61.5%) males and 50 (38.5%) females. This means that the operations department of EOTC-DICAC Ethiopia, and particularly the responders, are dominated by men.

According to the table, the majority of responders (63%) had a bachelor's degree or higher. 56 (40.9%) of participants have a Master's degree, while 17 (12.4%) have a Diploma. This means that 119 (86.9%) of the respondents had a first degree or higher, demonstrating that the majority of EOTC-DICAC staff are skilled professionals who can easily understand and react effectively to the questionnaire.

Finally, the table shows the participants' employment history. As a result, 14 (10.2%) of those polled have less than two years of experience at Ethiopia's EOTC-DICAC. Twenty (14.6%) have two to five years of experience, while 27 (19.7%) have six to ten years. Furthermore, 55.1% of participants have 11-15 years of work experience, while the remaining 20.6% have 16 or more years of work experience at the company. This shows that the EOTC-DICAC Ethiopia operations department has significant work experience at the organization and can provide concrete information about it.

4.3 Descriptive analysis of the HSCM practices and organizational performance of the EOTC-DICAC

This section of the study focuses on the HSCM practices and organizational performance. The respondents were asked to indicate the HSCM practice of their organization and also the organizational performance. Accordingly, primary data were collected about the HSCM Practices (mitigation, preparedness, response and recovery) and the organizational performance. The research questionnaire was designed with a 5-point Likert scale to collect appropriate responses; respondents indicated their level of agreement with the statements by selecting: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, and 5-Strongly Agree. According to Akmaliah (2009), a score means of 0-1.5 indicates that respondents strongly disagreed, 1.51 to 2.50 indicates that respondents disagreed, 2.51 to 3.50 indicates that respondents were neutral, 3.51-4.50 indicates that respondents agreed, and a mean above 4.51 indicates that respondents strongly agreed. Also, the section depicts the Mean and Standard deviation for the HSCM practices and organizational performance. The 0.8 served as a boundary for each elements of the measurement in the questionnaire. Coming to the standard deviation of the variables Small variance indicates that data are close to the mean whereas a large variance indicates that the points are distant from the Mean. Standard deviation is a measure of how well the mean represents the data. In other words Standard deviation shows how different the responses of respondents are for a given idea. High Standard Deviation means that the data is wide spread, which means that respondents give variety of opinion and low standard deviation means that respondents had almost similar opinion.

4.3.1. Descriptive Statistics

Table 4: Descriptive Statistics

Descriptive Statistics			
	N	Aggregate Mean	Std. Deviation
Mitigation	130	3.4265	1.17147
Response	130	2.4412	1.43380
Recovery	130	3.0662	1.37276
preparedness	130	3.1029	1.23696
Organizational performances	130	3.0662	1.36736
Valid N (list wise)	130		

According to the table, the Aggregate Mean and standard deviation of the respondent's mitigation were 3.4265 and 1.17147 respectively. The findings indicated that the organization has a medium level of a plan of action to mitigate disaster, adequate human resources, create awareness, and adequate budget allocated for the mitigation of disaster. In addition, the researcher interviewed two department heads to offer their perspectives on the influence of the mitigation phase on EOC- DICAC performance in Ethiopia. According to the respondent, mitigation minimizes vulnerability to disaster impacts (such as property damage, injuries, and loss of life). Mitigation assists the EOC DICAC organization in preventing future catastrophes and mitigating their effects. It also aids in the protection of persons and property, as well as the reduction of risks and repercussions associated with a certain disaster event. According to Yigezu, T (2016), the existence of a plan of action before the occurrence of any disaster the organization conducts an initial and all-inclusive assessment.

In other cases, the Aggregate Mean and standard deviation of preparedness were 3.1029 and 1.23696 respectively. As aggregate mean indicating that the organization has a medium practice for training, personnel preparedness, well develop plans and action, timely procurement, collaboration and coordination, and stock management. Furthermore, the researcher interviewed two department heads to offer their perspectives on the influence of the preparedness phase on EOTC-DICAC performance in Ethiopia. According to the respondent, the preparedness phase affects the organizational performance. It is helpful for our organization to understand how a disaster might affect overall productivity and the bottom line. The readiness phase affects the organizational performance. EOTC-DICAC also provide appropriate education while putting preparedness measures into place. It also provides appropriate education while putting preparedness measures into place.

As shown in the table above the Aggregate mean and standard deviation of the response phase were 3.0662 and 1.37276 respectively. This result shows the organization's medium of communication, the action of the plan at the exact time, the response within 72 hr, and security operations. The researcher interviewed the managers of the two units about the critical impact of the response phase. They revealed that the impact of the response phase in EOC-DICAC is to protect people and property in the wake of an emergency, disaster, or crisis. Organizations must focus their attention on addressing immediate threats to people, property, and business. Occupant safety and well-being largely depend on preparedness levels before disaster strikes.

The researcher analyzed the recovery procedures of EOTC-DICAC Ethiopia with an aggregate mean of 3.0662 and a standard deviation of 1.37276. This key informant questionnaire response shows that medium-level plans of action incorporates mitigation and evaluate relief operation, well-established procedures, good inventory, and adequate budget allocation. The researcher conducted interviews with managers and asked those questions about it. They indicated that the recovery phase assists in rebuilding after a disaster in order to bring EOTC-DICAC operations to normal. It also aids in the recovery of an organization following the effects of a calamity. At this point, the organization has attained some level of physical, environmental, economic, and social stability. As revealed in the table above the Aggregate mean and standard deviation of 3.0662 and 1.36736. As these results show that medium levels of EOTC-DICAC are the process of procurement, response time to external risk, contingency plan, and monitoring and evaluation processes.

4.4 Analysis of the Effects of Humanitarians supply chain management practices on organizational performances of the ETOC-DICAC.

Correlations

	mitigation	preparedness	responsiveness	Recovery	Performances
Organizational performances	.921**	.968**	.918**	.996**	1
Pearson Correlation		.000	.000	.000	
Sig. (2-tailed)	.000	.130	.130	.130	
N	130				

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

This section of the study presents the multiple linear regression analysis to test the effect of Humanitarian Supply Chain Management Practices on organizational performances of the EOTC-DICAC. The analysis is undertaken as necessary steps of hypothesis testing.

Pearson correlation coefficients were determined with the goal to obtain evidence about the relationships between the dependent and independent variables. As seen on the table, above Mitigation has a positive and significance influence on organizational performance of EOTC-DICAC Ethiopia. $r(130) = .921, p \leq 0.01$. As stated by Evans (1996) this shows the extent of correlation, the relationship between the two variables is strong. Preparedness with a significance measure of $r(130) = .968, p \leq 0.01$ has a positive and significant relationship with the dependent variable which is the organizational performance. This finding according to Evans (1996) shows the extent of correlation and the relationship between the two variables is moderate. With a significance level of $r(130) = .918, p \leq 0.01$ response has a positive and significant relationship with the organizational performance in this case the relationship between them is moderate. Finally with a significance level of $r(130) = .996$ recovery has a positive and significant relationship with organizational performance.

The relationship between the two variables is considered strong. In General, the correlation analysis presented a positive and significant relationship between humanitarian supply chain management practices and organizational performance of EOTC-DICAC, Ethiopia.

4.4.2 Regression Analysis

As described by Burns & Burns, (2008) the practice of regression allows researchers to make predictions of the likely values of the dependent variable from known values of independent variable in a simple linear regression or multiple linear regression. The study will bear a multiple linear regression because it has more than two independent variables. The regression analysis in the study was conducted to find out how much the independent variable (Mitigation, Preparedness, Response and Recovery) affect the dependent variable (Organizational Performance).

4.4.2.1 Testing assumptions of Regression Analysis

A. Normality Distribution Test.

This Multiple regression analysis requires the independent variables to be normally distributed. As defined by Smith and Wells (2006), kurtosis is defined as “property of a distribution that describes the width of the tails. The width of the tail comes from the quantity

of tallies falling at the extremes relative to the normal distribution. And Skewness is a measure of symmetry. A data set is symmetric if it's equivalent to the left and right of the middle point. The skewness and kurtosis test results of the data is within the acceptable range is (-1.0 to +1.0) and it can be determined that the data is normally distributed.

Table 5. Normality distribution test

Items	N	Skewness		Kurtosis	
		Statistics	Std. Error	Statistics	Std. Error
Mitigation	130	.578	.208	.559	.413
Preparedness	130	.040	.028	1.087	.413
Response	130	.441	.208	1.387	.413
Recovery	130	.086	.208	1.201	.413
Org. Per.	130	.608	.208	1.206	.413
Valid N	130				

As indicated in table 4.8, it is acceptable because the result of kurtosis and skewness lies between -1.0 to +1.0.

B. Multicollinearity Test

Multicollinearity refers to the situation in which the independent/predictor variables are highly correlated. Menard, (1995) and Moyers, (1990), assert that tolerance should be more than 0.2 and VIF should be less than 10 so the result obtained confirmed this one and acceptable. According to Field, (2009) a perfect Collinearity exists when at least one predictor is a perfect linear combination of the others.

If there is perfect Collinearity between predictor it becomes impossible to obtain unique estimates of regression coefficients because there is an infinite number of combinations of coefficient that would work equally well. The regression coefficients become less reliable as the degree of correlation between the independent variables increases. If there is a high degree of correlation between independent variables, there is a problem of Multicollinearity.

Table 6. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Mitigation	.104	9.635
Preparedness	.040	8.256
Response	.103	9.743
Recovery	.057	9.256

a. Dependent Variable: Organizational performance

Table 4.9 illustrates that the Variance inflation factor Value ranges from 8.256 to 9.743 whereas the tolerance value ranges from 0.040-0.104. While, tolerance and VIF values that shows there is no Serious Multicollinearity problem with in predictable variables.

C. Linearity Test

The linearity test is a requirement in the correlation and linear regression analysis. Linearity is usually measured in terms of a deviation, or non-linearity, from an ideal straight line and it is typically expressed in terms of percent of full scale, or in ppm (parts per million) of full scale.

Typically, the straight line is obtained by performing least-squares fit of the data. Thus, the Linearity test was conducted by producing scatterplots of the relationship between each independent and dependent variable. According to Balance, (2004) Linearity defines the dependent variable as a linear function of the predictor (independent) variable.

Figure 3: P.P Plot

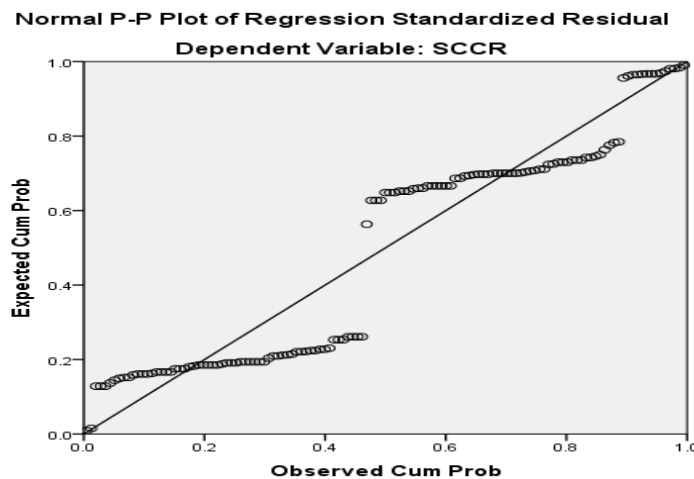
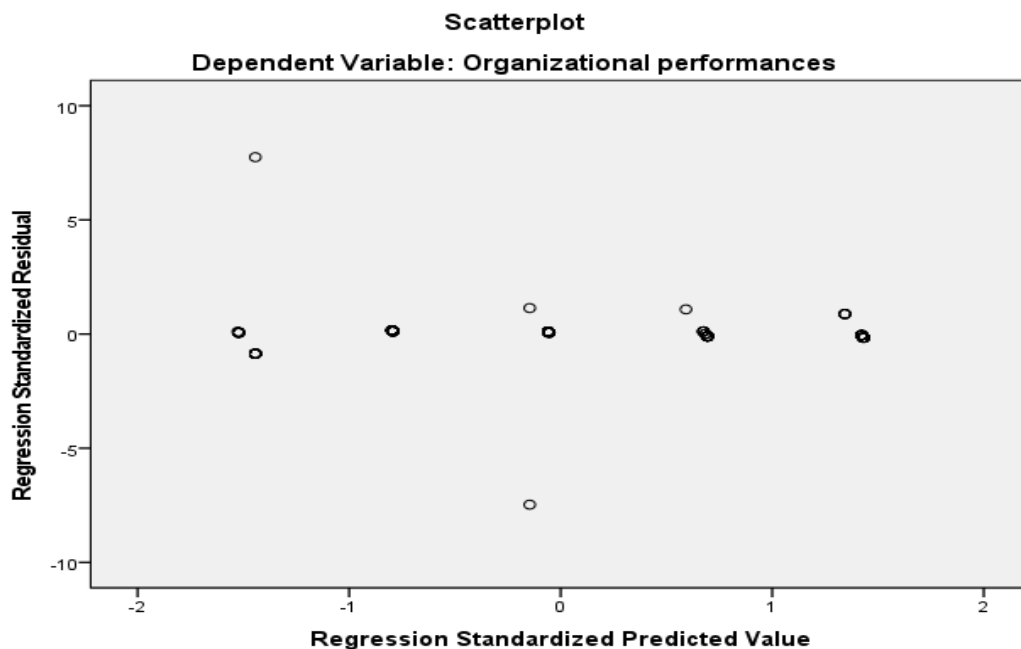


Figure 4.1 shows that the dots substantially follow the line, despite the fact that there appears to be some little deviation; yet, there is a least-squares fit of the data, indicating that the connection between the independent and dependent variables appears to be linear.

D. Homoscedasticity Test

Homoscedasticity means the error is constant across the values of the dependent variable. The easiest way to check homoscedasticity is to make a scatterplot with the residuals against the dependent variable. If a model violates homoscedasticity, it will exhibit hetero-scedasticity. Hills, A.M. (2001), state that the residuals at each level of the independent variable should have the same variance (homoscedasticity). When the variances are significantly dissimilar, homoscedasticity is stated to exist. The homoscedasticity test refers to mistakes having the same variance at all levels of the independent variables. This suggests that errors are evenly distributed among the variables. This is evident when the variance around the regression line is the same for all independent variable values. A visual study of a plot of the standardized residuals by the regression standardized predicted value can be used to verify for homoscedasticity.



Even if the residuals are scattered, as illustrated in the figure above, there is consistency because the residuals are not that far apart.

E. Auto-correlation test

The degree of correlation between the values of the same variables across various data observations is referred to as autocorrelation. The coefficient shows the relationship between the residuals at time t and the same residuals when they are one unit ahead in time. The Durbin-Watson test is a frequently used technique for determining autocorrelation. When performing a regression analysis, statistical software like SPSS may offer the option of executing the Durbin-Watson test. A regression model's output can be tested for autocorrelation using the Durbin-Watson statistic. The DW statistic has a range of zero to four, but a value of 2.0 indicates zero autocorrelation (no autocorrelation). Positive autocorrelation is indicated by numbers below 2.0, whilst negative autocorrelation is indicated by values over 2.0.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.996 ^a	.993	.993	.11616	1.854

a. Predictors: (Constant), mitigation, Reaction, Rehabilitation , preparedness

b. Dependent Variable: Organizational performances

The autocorrelation regression coefficient for this study was 1.854, which indicates a positive value. However, as a rule of thumb, DW test statistic values between 1.5 and 2.5 are considered to be fairly normal. However, in the opposite situation, DW less than 1.5 or larger than 2.5 may indicate a major autocorrelation problem.

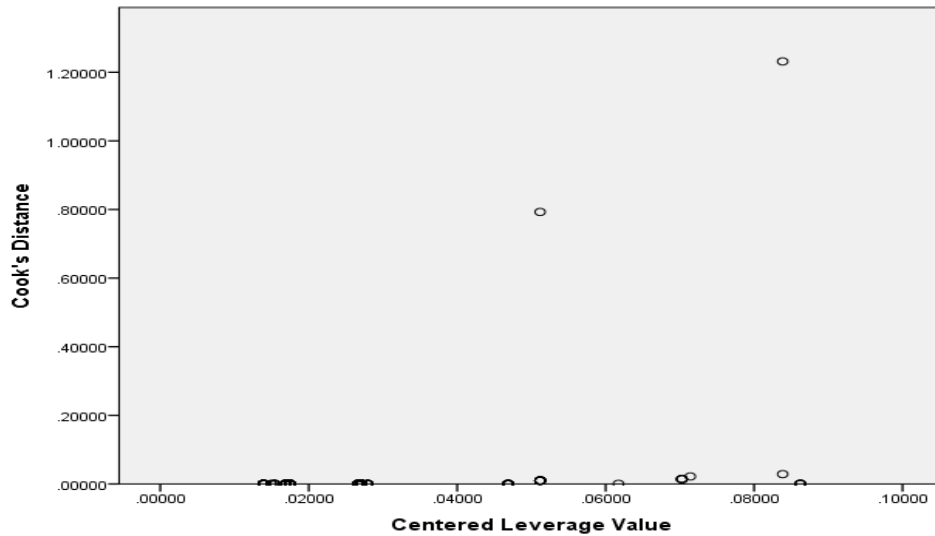
F. Sample size Adequacy

Sample size refers to the number of participants or observations included in a study. This number is usually represented by n . The size of a sample influences two statistical properties: the precision of our estimates and the power of the study to draw conclusions. Power refers to the probability of finding a statistically significant result.

G. Outlier, leverage and influential point

A point with a high residual is considered an outlier. An outlier is a data point that differs significantly from the rest of the data in some way. An outlier is a data point whose reaction deviates significantly from the overall pattern of the other data. A point that significantly affects the regression is referred to as an influential point. The term "leverage" is frequently used to describe an unfavourable effect that can be obtained via regression analysis (as well

as from other techniques). Essentially, it indicates that the regression curve that results from a single data point that is placed far away from the majority of the data (an "outlier") has an excessively proportionate impact. The figure below shows outlier, leverage and influential point detail information.



The above graph displays less inflated and high leverage. It provides a measurement of how far an observation's independent variable values are from those of the other observations. A very large Cook's distance for a point indicates a potential influence on the fitted regression line.

4.4.3 Regression Model Fit Test

The regression model summary reports the strength of the relationship between the model and the dependent variable, Organizational Performance and the independent variables such as the mitigation, preparedness, response and recovery. As seen on the table below regression analysis was used to express the relationship between the independent and dependent variables. The ability of independent variables to illuminate the changes in dependent variables was measured by adjusted R-square which happened to be 52% meaning that other factors not overseen in this research contribute around 48% of the effects on organizational performance.

Table 7. Model Summary ^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.996 ^a	.993	.993	.11616	1.854

a. Predictors: (Constant), Recovery, Response, mitigation, preparedness

b. Dependent Variable: Organizational performances

In the model summary table above the coefficient R, indicates a strong correlation of .996 between humanitarian supply chain practices and Organizational performance. The R² (coefficient of determination), with a value of .993(99.3%) suggests relative contribution of humanitarian supply chain practices in construing the organizational performance, the remaining 0.7% of the changes can be credited to other factors. The adjusted R² is .993, which implies that humanitarian supply chain practices can account for 99.3% of the difference in organizational performance. Humanitarian supply chain techniques explain about 0.7% of the variable in organizational performance, even though there may be many other factors involved. This suggests that the suggested humanitarian supply chain techniques are unable to account for the remaining 0.7% of the variation in organizational performance.

4.4.4: ANOVA

The beta coefficient is the degree of change in the outcome variable for every 1-unit of change in the predictor variable. ANOVA (*Analysis of Variance*) is a framework that forms the basis for tests of significance & provides knowledge about the levels of variability within a regression model.

Table 8: ANOVA Results

ANOVA ^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	250.637	4	62.659	4819.923	.000 ^b
	Residual	1.768	131	.013		
	Total	252.404	135			

a. Dependent Variable: Organizational performances

b. Predictors: (Constant), Recovery, Response, mitigation, preparedness

The above table 4.12, indicates that the significance value (p-value) = 0.000 in the study is less than 0.05 and the F value calculated from the ANOVA in the table above is 4819.923, thus the model is statistically significant in predicting how the effect of independent variables on organizational performance in EOTC-DICAC Ethiopia.

4.4.5. Statistical Significance Analysis of the Regression Coefficients to test the Hypotheses

The parameter β (the regression coefficient) signifies the amount by which change in x must be multiplied to give the corresponding average change in y, or the amount y changes for a unit increase in x. It represents the degree to which the line slopes upwards or downwards.

Table 9: Coefficients of Humanitarian supply chain practices

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.014	.035		-.417	.677
	Mitigation	-.005	.026	-.004	-.172	.864
	Preparedness	.112	.040	.102	2.796	.004
	Response	.012	.022	.013	.574	.567
	Recovery	.886	.030	.890	29.075	.000

a. Dependent Variable: Organizational performances

According to Sella and Borella (2021), if the P value is smaller than .05 (.01.0001, etc.), the variable is making a significant exclusive contribution to predicting the dependent variable. If the value is more than 0.05, you can conclude that variable is not making a significant distinctive contribution to the prediction of your dependent variable. This could be due to model overlap with other independent variables. Because the researcher is interested in assessing the contribution of each independent variable as shown in the table above, the model's constant was -.014 and was statistically significant (p-value= 0.677). The Recovery Practice has the highest statistically significant coefficient of .886 (P. Value= 0.000). This was followed by preparedness practice with a coefficient of 0.112 (p-value=0.006). The coefficients for mitigation and response variables were (-.005 and .012), respectively, although they were statistically insignificant with coefficients of (p-value= 0.864 and 0.567). According to the statistics shown above, the humanitarian supply chain management practice

that had a substantial and distinctive influence on organizational performance were recovery and preparedness.

Unstandardized beta coefficient (β)

The first symbol is the unstandardized beta (B). This value represents the slope of the line between the predictor variable and the dependent variable. The unstandardized coefficients (X1 up to X4) are coefficients of the assessed regression model. Hence, together with the error term (ϵ), the model for organizational performance can be written as; $= \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \epsilon$,

Where; Y = Organizational performance

X1 = Mitigation

X2 = Preparedness

X3 = Response

X4 = Recovery

ϵ = Error term

β_0 = Constant factor

β_1 = Coefficient of Mitigation

β_2 = Coefficient of Preparedness

β_3 = Coefficient of Response

β_4 = Coefficient of Recovery

$$Y = 4.88 + .204X_1 + (-0.1) X_2 + (-0.7) X_3 + .359X_4 + \square$$

The constant value ($\beta_0 = .035$) suggests that organizational performance of EOTC-DICAC Ethiopia would be .014 if other variables of the model happened to be zero. Moreover, a beta coefficient of .112 indicates that a change in preparedness leads to a change in the organizational performance of EOTC-DICAC Ethiopia by .112. On the other hand the Error term (\square) estimate was assumed to be zero. Also a beta coefficient of .886 indicates that a change in response leads to a change in the organizational performance of EOTC-DICAC Ethiopia by .recovery. On the other hand the Error term (\square) estimate was assumed to be zero.

Finally the regression coefficient outcomes show that two out of the four variables are statistically significant in predicting the organizational performance of EOTC-DICAC Ethiopia. The statistically significant variables are preparedness and recovery as shown by their P-values (P values ($P < 0.05$)). This point toward as an increase in these variables results in an increase in the organizational performance of EOTC-DICAC Ethiopia.

4.4.6. Summary of the Hypotheses Test Results

An approach to statistical inference is hypothesis testing. When determining if a claim about a population parameter is statistically significant, this method is employed. Hypothesis testing is a powerful tool for testing the power of predictions. In hypothesis testing, P values are employed to determine whether to accept or reject the null hypothesis. How likely it is for your data to have occurred under the null hypothesis is shown by the p-value or probability value. The likelihood of rejecting the null hypothesis increases with decreasing p-value. The most frequent cut-off is $p < 0.05$, which denotes that the probability of the data occurring under the null hypothesis is less than 5%. According to the statistical presumptions, there were significant differences between the preparedness and recovery null hypothesis and the organizational performance in EOTC-DICAC Ethiopia. Therefore, the null hypothesis is rejected and the alternative hypothesis was accepted. However, in the case of mitigation and response, there were no significant differences in the organizational performance in EOTC-DICAC Ethiopia. Therefore the null hypothesis was accepted and the alternative hypothesis was rejected. These values of the static test are more related to the characteristics of the organization which focus on recovery and preparedness. Finally according Social scientists have generally accepted that if the p-value is less than .05 then the result is considered statistically significant. A significance less than .05 ($p < .05$) means that there is less than a 5% probability this relationship occurred by chance (George & Mallery, 2020).

Table 10: Summary of Hypotheses

	Hypotheses	Decision/Result
H ₁	Ha1: There is a significant relationship among Mitigation Practice and institutional performance in EOTC-DICAC.	Rejected
H ₂	Ha2: There is a significant relationship among Preparedness Practice and institutional performance in EOTC-DICAC.	Accepted
H ₃	Ha3: There is a significant relationship among Response Practice and institutional performance in EOTC-DICAC	Rejected
H ₄	Ha4: There is a significant between Recovery Rehabilitation and institutional performance in EOTC-DICAC.	Accepted

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Summary of Findings.

The overall goal of the study was to determine how humanitarian supply chain management practices affected organizational performance in EOTC-DICAC Ethiopia. The specific aim of the study was to look into the impacts of mitigation practices, preparedness practices, response practices, and recovery practices, as well as their effects on EOTC-DICAC Ethiopia's organizational performance. The results were displayed above in chapter 4, and the summary of the main conclusions is offered as follows in light of those results.

Assessing the effect of the mitigation approach on organizational performance was one of the specific objectives of the study. Therefore, descriptive analysis reveals that the respondents' mean score is less than 3.2, indicating that majority of them have a neutral opinion of the mitigation practice. Additionally, a correlation analysis of the study's findings reveals a considerably strong association between organizational performance and mitigation, with a $r=0.921$ correlation coefficient and a significance level of less than 0.01. With a beta coefficient of 0.005 at a significance level of 0.864, which indicates a statistically insignificant predictor of organizational performance, the results of the regression analysis showed that it is one of the strong predictors of the dependent variable, which is organizational performance.

The study also looked at how preparedness practices affected how well organizations performed. As a result, it can be inferred from the descriptive analysis that their mean score is less than 3.16, indicating that some of them are neutral but some do agree with the statement. Additionally, the correlation analysis revealed a moderate correlation between the Preparedness practice and organizational performance, with correlation coefficient of 0.918 ($r=0.968$) correlation coefficient with a significance value of 0.000 and a beta coefficient statistically significant predictor of organizational performance.

The study also pays adequate attention to looking into how Response practice affects organizational performance. According to the descriptive analysis, the respondents' mean score is often around 2.5, which indicates that they have a neutral opinion of the statement. According to the results of the correlation analysis, there is statistically insignificant predictor of organizational performance beta coefficient of 0.012 at significance level of 0.567 and

significantly moderate correlation between response practice and organizational Performance, with correlation coefficient of 0.918 ($r=0.918$) with significance value less than..

Additionally, the mean score for this study's descriptive analysis, which assesses the impact of rehabilitation practice on organizational performance, is 3.08. Rehabilitation practice shows a significant association with coefficient of 0.996 ($r=0.996$) and significance value of 0.00, according to correlation analysis. It is a statistically significant predictor of organizational success since, at a significance level of 0.000, its beta coefficient is 0.886.

Finally, the results of the regression analysis demonstrated that the effectiveness of organizations is significantly impacted by two humanitarian supply chain strategies (recovery and preparedness). Additionally, the impact of humanitarian supply chain practices on organizational performance is addressed by the regression model summary, $R^2 = 0.993$, which showed that the model accounts for 99.3% of the variation in organizational performance is explained by the linear correlation of all the independent variables of the humanitarian supply chain practices in the EOTC-DICAC Ethiopia nation. The results of the ANOVA test revealed that R and R^2 were statistically significant at ($F=4819.923$), P , and $P<0.001$, respectively

5.2 Conclusion

The findings of the study support the assumption that humanitarian supply chain management practice concepts can increase Organizational Performance. It shows clear links between Humanitarian Supply Chain Management Practice and Organizational Performance, which helps understand their relationship. Higher levels of HSCM practice can result in a stronger competitive advantage and better organizational performance. Furthermore, competitive advantage has a direct and positive impact on organizational performance. Humanitarian Supply Chain Management Practice and Organizational Performance, which aid in understanding their relationship is based on previous theories and research in the fields of Supply Chain Management, specifically humanitarian supply chain management practices and their outcomes. The key informant data confirms that humanitarian supply chain management practice concepts can increase organizational performance in part. Thus, the researcher concludes that humanitarian supply chain practices were practiced to some extent in EOTC-DICAC Ethiopia based on the findings of the descriptive and inferential statistical analysis of the humanitarian supply chain practices.

According to the findings of this study, Preparedness and Recovery Practices and EOTC-DICAC Ethiopia's organizational performance are positive relations and statically significant with organizational performances. Mitigation and response practices, on the other hand, were not statistically significant in influencing organizational performance but with positive relationships. Furthermore, the study concluded that the independent variables of preparedness and recovery practices had predicting power on the organizational performance of EOTC-DICAC Ethiopia, whereas mitigation and response practices had no effect on the organizational performance of EOTC-DICAC Ethiopia. Despite the fact that most research outlines them as significant areas of humanitarian supply chain activities, it is possible to conclude that EOTC-DICAC Ethiopia is not adequately addressing these practices.

5.3 Recommendations

Based on the study's findings, the following recommendations are made: According to the findings of the study, preparedness and recovery activities positively predict organizational performance. As a result, the study recommends that EOTC-DICAC Ethiopia consider strengthening multi-sectorial relationships between different actors, particularly the government and the community of the affected area. EOTC-DICAC Ethiopia should also emphasize on creating awareness and work toward obtaining funds from any concerned body.

Based on the study recommended that the concerned body of EOTC-DICAC Ethiopia should include mitigation practices in the strategic plan to further improve the practice. They should work on building the capacity of the personnel, it is also important to collaborate with other humanitarian supply chain actors. Similarly, the study established that Response practice has need more attention in the organization to improve the performance of the organization. Therefore this study recommended that managers and concerned bodies of EOTC-DICAC Ethiopia should work better on coordination and collaboration with other relief organizations to better the existence of the response practice in EOTC-DICAC Ethiopia. Thus, the researcher suggests that the organization focus on improving interactions with other humanitarian supply chain actors and other stakeholders. EOTC-DICAC Ethiopia should also update any inquiries on receiving increased funding from donors, improve the utilization of information technology throughout its organization structure, ensure a better security advisory, modernize its warehousing system, and most importantly, transform the capacity-building mechanism.

According to the findings of the study, EOTC-DICAC Ethiopia employs humanitarian supply chain management practices such as supplier relationship management, customer relationship management, supply chain integration, supply chain responsiveness, and information sharing with others. The study did, however, identify significant obstacles, such as an insufficient information infrastructure and difficulty synchronizing all operations.

Given the aforementioned constraints, the researcher suggests that the organization prioritize appropriate humanitarian supply chain management, advised to improve better integration practices in all the dimensions of integration so as to reap the benefits from it and encourage information sharing among all humanitarian supply chain management tasks.

5.4 Areas for Further Study

The purpose of this study was to concentrate on humanitarian supply chain management methods and their impact on organizational performance in EOTC-DICAC Ethiopia. This research can be expanded by investigating humanitarian Supply chain management characteristics and activities, as well as others that may influence Organizational Performance. The study also laid the groundwork for future research on the problems of these humanitarian supply chain strategies and the factors that influence them. The findings also encourage future researchers to conduct additional research on the implications of humanitarian supply chain management strategies on the humanitarian sector in the government and non-governmental organizations.

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Appendix I: Questionnaire
Addis Ababa University
School of commerce
Departments of Logistic and supply chain Management
School of Graduate Studies

The questionnaire is prepared to collect primary data to conduct research on the “Effects of humanitarian supply chain Management on organization performances in the case of Ethiopia for the partial fulfilment for the attainment of master’s degree in logistic and supply chain management (LSCM) from AAUSC permanent employees of the organization are to fill the questionnaire. The focus of all the questions is on the effects of humanitarian supply chain management on organizational performances in the case of Ethiopian Orthodox Church Development and inter-church aid commission (EOTC-DICAC) Ethiopia. The question is intended to assess demographic of the respondents, the humanitarian supply chain managements of the organization and performances of the organization. The information in these Questionnaires will be used to only for this thesis none of the responses will be used against the organization or employees. Genuine responses are appreciated as they make the analysis more realistic. Name of the respondents are not required. The questionnaire shall be returned with few days as much as possible. Please if you want further communication is well come through cell phone: 0912048321.

Thank you for your Willingness!!!

Tewodros Kassahun

Part One: Demographic Data

Please put a “x” mark on the boxes provided for each question. Please provide one answer for one question.

1. **Age:** 20-25 -----26-30 -----31-35 -----36-40-----41-45-----46-50----- 51-55 & above----
2. **Sex:** Male----- Female ----- 3.**Department:** Supply chain----- Finance -----
4. **Your Position:** -----5.**Level of Education:** Diploma ---- Bachelor degree ---- Master’s degree-----PhD-----
6. **Work experience in EOTC-DICAC:** Less than 2 Years-----2-5 years---- 6-10 years---- 11-15 years----- 16 & above years-----
7. **Total Work experience in EOTC-DICAC:** Less than 2 Years----- 2-5 years----- 6-10 years----- 11 – 15 years; 16 & above years-----

Part Two: Humanitarian Supply Chain Management Practices

The questions below concern how your organization has implemented humanitarian supply chain management practices. Please use the X symbol to indicate how strongly agree up to strongly disagree with each of the following statements based on your experience working in this organization. The item scales are five-point Likert scales with (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree) as the response options.

M	Mitigation	1	2	3	4	5
1	There is plan of action for eliminating or reducing the probability of occurrence of rapid onset disaster.					
2	There is a process for developing a plan to mitigate disaster					
3	There are adequate human resources available for disaster management.					
4	There is a plan to create awareness of disaster risk factors at the community level and public information projects					
5	There is budget allocated for mitigation for rapid onset relief operation.					
R	Preparedness	1	2	3	4	5
1	There is training for personnel's /professional					
2	There exists personal preparedness, focuses on preparing equipment and procedures for use when rapid disaster occurs					
3	There exists a plan of action for disaster management in relief operation					
4	There is procurement of relief items before the occurrence of a disaster					
5	There exists evacuating of action for disaster threatened populations					
6	There exists a program & procedures for mutual assistance between humanitarians players					
7	There exists collaborations & coordination between various actors in humanitarian relief operation					
8	The procurement of relief items is done locally to achieve effectiveness and efficiency					

9	There is a good inventory/stock management process					
10	There is a well-established process for handling ,sorting and Packaging relief items for storage to receivers					
R.	Response	1	2	3	4	5
1	There is initial assessments for a relief operation					
2	There is comprehensive assessments for a relief operation					
3	Within 72 hours after rapid onset disaster occurrence initial assessment teams reach to the disaster location and logistics information are allocated and communicated to the head office(A.A)					
4	There is action plan to provide the exact items requested to those who truly need at minimum costs.					
5	Within 72 h. response are given to the affected community					
6	There is a plan of action for activating the emergency operations center within 72 h. of the occurrence of a disaster					
7	There is Emergency rescue and search plan					
8	There exist increasing security operations during the occurrence of rapid onset disaster					
R	Recovery	1	2	3	4	5
1	There are plans to identify needs and defineresources.					
2	There are plans provide housing, restore security,amend infrastructure, and promote community restoration					
3	There is a plan of action to incorporate mitigationmeasures and techniques					
4	There is a procedure of keeping records of past orpervious disasters					
5	There is exists plan to evaluate the relief operation and toidentify lessons learned					
6	There is a plan to develop initiatives to mitigate theeffects of future incidents					
7	There is a good inventory/stock management process					
8	There is budget allocated for recovery,and rehabilitation.					

Part 3: Organizational Performance

The questions below concern how your organization has measured organizational performance in terms of Agility, Reliability, Responsiveness, and Cost Effectiveness. Please use the X symbol to indicate how strongly agree up to strongly disagree with each of the following statements based on your experience working in this organization. The item scales are five-point Likert scales with (1 = strongly disagree, 2 =disagree, 3 =neutral, 4 = agree, and 5 = strongly agree) as the response options.)

No	Organizational performance	1	2	3	4	5
1	The sum of time to place a purchase order and supplier lead times gives an overall cycle time from purchase request to procurement, and finally to goods receipt in the organization is sufficient.					
2	The average response time to an external risk event from the onset of the event, including detection lags is sufficient in the organization.					
3	EOTC-DICAC Sources with documented contingency plans and sourced items with alternate or redundant sources.					
4	The total cost associated with assessing supply chain performance, including cost associated to the monitoring of both internal and external players such as suppliers and shippers in EOTC-DICAC Ethiopia can be considered effective.					

Appendix II
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Interview guide for top, middle & Line Managers of EOC-DICAC

The interview guide is prepared to collect primary data to conduct research on the “Effects of humanitarian supply chain Management on organization performances in the case of Ethiopia for the partial fulfilment for the attainment of master’s degree in logistic and supply chain management (LSCM) from AAUSC permanent employees of the organization are to fill the questionnaire. The focus of the interview is on the effects of humanitarian supply chain management on organizational performances in the case of Ethiopian Orthodox Church Development and inter-church aid commission (EOTC-DICAC) Ethiopia. The information in these Questionnaires will be used to only for this thesis none of the responses will be used against the organization or employees. Genuine responses are appreciated as they make the analysis more realistic. Name of the respondents are not required. Please if you want further communication is well come through cell phone: 0912048321.

- 1) What is the main cause-and-effect relationship between HSCM and the organization in Ethiopia's EOC-DICAC? -----
- 2) Briefly explain the impact of the mitigation phase on EOC-organizational DICAC's performance in Ethiopia. -----
- 3) How does the readiness phase affect the organizational performance of EOC-DICAC in Ethiopia? -----
- 4) Explain the critical impact of the response phase on EOC-organizational DICAC's performance in Ethiopia. -----
- 5) What are the determine factor that affect the key impact of the recovery phase on EOC-organizational DICAC's performance in Ethiopia. -----

Thank you for your Willingness
Tewodros Kassahun