FACTORS AFFECTING SUSTAINABILITY OF HUMANITARIAN SUPPLY CHAIN: THE CASE OF INTERNATIONAL ORGANIZATION FOR MIGRATION - ETHIOPIA

By

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This is to certify that the thesis prepared by Mr. Aman Hassen Mohammednur, entitled *"Factors Affecting Sustainable Humanitarian Supply Chain: The Case of International Organization for Migration - Ethiopia"*, which is submitted in partial fulfilment of the requirements for the Masters of Art Degree in Logistics and Supply Chain Management, complies with the regulation of the university and meets the accepted standards with respect to originality and quality.

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I, **Aman Hassen**, hereby declare that thesis entitled: "*Factors Affecting Sustainable Humanitarian Supply Chain: The Case of International Organization for Migration - Ethiopia"* is my original work and that it has not been presented and will not be presented to any other Degree or fellowship award and all the sources of materials used for the thesis have been duly acknowledged.

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Acknowledgment

Praise be to Allah (S.W.T.) for granted me strength, courage, patience, and inspirations in completing this work.

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Abstract

There is a growing interest in theory and in practice regarding sustainability. The purpose of this dissertation is to study factors affecting sustainable humanitarian supply chain of IOM Ethiopia. The study adopted quantitative and qualitative research design based on the purpose and the research questions set out. The study applied descriptive and explanatory research designs. The primary data were collected using closed-ended questionnaires and structured interview. The secondary data was collected using books, articles, journals, and other published materials. This study involved 92 respondents. The Data collected from the questionnaire were analyzed through descriptive analysis with the help of IBM's Software Package for Social Science - Version 23. The outcome of the questionnaire revealed that sustainable humanitarian supply chain of IOM Ethiopia is appreciable. Moreover, on the effect on the mentioned factors, the study found that external rules and regulation is affecting the sustainable humanitarian supply chain for the organization following by socio-economic and infrastructure on their environmental sustainable humanitarian supply chain while internal policies and procedures does not affect sustainable humanitarian supply chain. Moreover, transportation, inventory and distribution practices affect the environmental aspect of sustainable humanitarian supply chain practices. The researcher recommends that IOM Ethiopia to engage in repair and maintain of damaged infrastructure, diversifying its staff from the local community, ensure fair distribution of economic impact throughout the country to help empower local suppliers in different part of the country, and keep stressing the need for sustainability with donors and stakeholders along the supply chain. Furthermore, engage in reducing greenhouse gas emissions reduction and other air pollutants in its transportation and inventory management practices and destroying/discarding waste generated from relief items in proper manner. The result of the study will enrich the literatures of sustainable humanitarian supply chain management.

Keywords: Sustainability, Sustainable Humanitarian Supply Chain

Acronyms and Abbreviations

ASD	Agenda for Sustainable Development
ECHO	European Civil Protection and Humanitarian Aid Operations
HSC	Humanitarian Supply Chain
IFRC	International Federation of the Red Cross
IOM	International Organization for Migration
MDGs	Millennium Development Goals
SC	Supply Chain
TBL	Triple Bottom Line
UN	United Nations
UNISDR	United Nations Office for Disaster Risk Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
USAID	United States Agency for International Development
WB	World Bank
WHS	World Humanitarian Submit

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CHAPTER ONE

INTRODUCTION

This chapter presents a general overview of the research topic, background of the organization, problem statement, research questions, objectives, scope of the study, delimitations, significance of the study and organization of the study.

1.1 Background of the Study

Humanitarian assistance aims to save lives and alleviate suffering during and after disasters and crises, as well as to strengthen preparedness. Humanitarian assistance is the delivery of life-saving commodities and supplies to those seeking to survive and recover in post-disaster and post-conflict emergency settings. According to the 2020 Global Humanitarian Outlook produced by the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), nearly 167.6 million people will need humanitarian assistance in 2020, representing approximately one in 45 people worldwide. Thus, the United Nations aims to assist 109 million of these people in need, which will require funding of $28.8 billion. Further increases are also expected due to the COVID-19 pandemic (USAID Report, 2020).

As disasters occurs worldwide each year, forced migrations and displacements have affected millions and has attributed to a crisis to humanity, calling for a response of solidarity, compassion, generosity, and an immediate practical commitment of resources. According to the statistics data from The United Nations Office for Disaster Risk Reduction (UNISDR), between 2000 and 2012, 1.2 million people were killed and 2.9 billion were affected by different kinds of disasters. The estimated economic impact of the damages totaled approximately USD 1.7 trillion in the same period. These numbers suggest that disaster preparation and relief have huge economic and humanitarian implications (Human rights' report, 2012).

According to Van Wassenhove (2006), disaster management has attracted contributions from researchers across the globe, which has also acknowledged that the supply chain plays a vital role in providing relief to disaster victims. He opined that disaster relief is 80 percent logistics, and in recent years contributions in the field of humanitarian logistics and supply chain have risen dramatically.

While supply chain management is the backbone for any rapid and effective humanitarian assistance to reach to affected people in the world, it is gaining momentum for improved excellence to effectively implement. Supply chain also involves through upstream and downstream linkages, in the different processes and activities that produce value in the form of products or services to the ultimate consumer (Christopher, 1998). However, the humanitarian supply chain incorporates the planning and management of all activities related to material, information, and financial flows in disaster relief. It also incorporates coordination and collaboration with supply chain members, third party service providers and among humanitarian organizations without the development aid aspect of humanitarian logistics (Kovacz and Spens, 2012). Furthermore, it is concerned with managing the efficient flow of aid materials, information and services and aim to reduce the impact of disaster on human lives (Lijo and Ramesh, 2012).

Humanitarian supply chain connects various stakeholders like government, agencies, donors… to "deliver the right relief items to the right people in the right quantity at the right time". It is also characterized by frequently occurring changes in supply and demand, short time cycles, and external constraints (financial, political, or physical constraints) (Tomasini & Van Wassenhove, 2009). But as resources are scarce and budgets limited, it has become difficult and critical to achieve the aims of humanitarian operations (saving lives and reducing human suffering), and to secure donor funding (accountability) or economic viability. For these reasons, the growing urgency of switching to sustainable is gaining ground in public opinion. Major events like the Millennium Development Goals (MDGs), the 2030 Agenda for Sustainable Development (ASD), or the 2016 World Humanitarian Submit (WHS), promoted by the United Nations confirms this global trend. Furthermore, sustainability concept in supply chain, strongly suggests that sustainability is a requirement to do business in the twenty first century (Carter & Liane, 2011).

Strong indications show that we are moving from a world of abundant, cheap energy to a world of limited and expensive energy. Sustainable humanitarian supply chain management is a systematic approach to designing, organizing, and managing key intra- and inter-organizational processes to reduce the vulnerability of certain populations by fulfilling their immediate needs and supporting them in building resilience and creating long-term prosperity prospects with minimum possible economic and environmental resources (Van Wassenhove, 2006).

IOM began its operation in early 1952, born out of the chaos and displacement of Western Europe following the Second World War, it was mandated to help European governments to identify resettlement countries for the estimated 11 million people uprooted by the war, it arranged transport for nearly a million migrants during the 1950s. Subsequently, after it broadened its scope, IOM become the leading UN agency working with governments and civil society to advance the understanding of migration issues, encouraging social and economic development through migration by upholding the human dignity and well-being of migrants. It has also been involved in many of the man-made crisis and natural disasters for the past half century till to date.

IOM works actively in supporting to ensuring the orderly and humane management of migration, to promote international cooperation on migration issues, to assist in the search for practical solutions and helping migrants in need, including refugees and internally displaced people. However, as resources are scarce and budgets are limited, it has become difficult and critical to achieve the aims of humanitarian operations (saving lives and reducing human suffering), and to secure donor funding (accountability) or economic viability. For these reasons, the growing urgency of switching to sustainable is gaining ground in public opinion. Major events like the Millennium Development Goals (MDGs), the 2030 Agenda for Sustainable Development (ASD), or the 2016 World Humanitarian Submit (WHS), promoted by the United Nations confirms this global trend. Furthermore, sustainability concept in supply chain, strongly suggests that sustainability is a requirement to do business in the twenty first century (Carter & Liane, 2011). To this end the study focused on identifying factors affecting sustainability of humanitarian supply chain in IOM Ethiopia.

1.2 Statement of the Problem

The purpose of humanitarian aid is to help people in need. Two principles guiding humanitarian operations are those affected by disaster or conflict have a right to life with dignity and all possible steps should be taken to alleviate human suffering (SPHERE, 2011). Humanitarian supply chains play a central role in several phases of a disaster relief concept such as preparedness, immediate response, reconstruction, and recovery phase (Baumgarten et al., 2010).

Supply chain management also offers a systematic approach to investigate the interface between sustainability and humanitarian operations (Starr and Van Wassenhove, 2014). It is also an area with a significant cost impact, given that more than 70% of funding is allocated to supply chain expenditures in disaster responses (HELP Logistics, 2018).

Nowadays there has been also an increasing awareness of sustainability issues in both the management and the research fields. On the one hand, many large organizations have started to report on their social and environmental performances. On the other hand, the concept of sustainability has also begun to appear in the literature of disciplines such as operations or supply chain management (Carter and Rogers, 2008). But, despite calls from research and practice for increasing sustainability of disaster rehabilitation operations (Van Wassenhove, 2006), theory on sustainable humanitarian supply chain management is still scarce.

However, humanitarian aid has been criticized for its ineffectiveness at a macro-economic level (Dollar, Hallwarred-Dremerier, Mengistae, 2004) and even condemned for constraining development (Moyo, 2009). Recently, aid effectiveness discussion has been filtered down to the operational level, making humanitarian organizations to focus on cost and time efficiency in addition to transparency. Due to these, several large donors have started to incorporate long-term objectives into their requirements of humanitarian organizations, obliging them to consider the persistence of their impact in programme planning as the long-term impacts of aid are becoming difficult to monitor and evaluate (ECHO, 2010).

Moreover, humanitarian organizations have also been criticized for short-sightedness in supply chain design (Kovács and Spens, 2011), though they have started to overcome some of that criticism by for example using local suppliers to empower local communities. For these reasons, IOM is also one of the largely funded UN agencies from those donors which results to share a great amount of responsibility to adhere and implement the needed requirement to secure future funding to execute its mandate successfully.

Furthermore, due to the increased number of natural and man-made emergencies, which are expected to intensify by many-fold around the world, IOM needs urgently redefining its emergency preparedness and response mechanisms (IOM OSD/EPC, 2020) and pursuing the United Nations Sustainable Development Goals (SDGs) indeed “are not optional, they are about survival” (Schiffling, Hannibal, Tickle, 2020). As IOM operates in often already vulnerable

regions, so to them sustainability concerns are particularly pertinent (Pedraza-Martinez et al., 2011). Additionally, humanitarian organizations are also under pressure to improve cost-efficiency due to budget constraints and engage more on socio-economic responsibilities (Beske & Seuring, 2014). In 2020, United Nations' response plan for Ethiopia was outlined for USD 1.25bn but only managed to meet 56.4% of the funding needed (OCHA, 2020). Yet, research on sustainable humanitarian operations is scarce and practitioners often find it hard to incorporate sustainability considerations into their daily operations. Hence, due to the scarcity of resources and the worrying funding gaps to humanitarian responses parallelly pursuing it's SDG, this study identifies and analyzes the factors affecting sustainability of humanitarian supply chain of IOM Ethiopia.

1.3 Research Questions

The study addressed the factors that affect sustainability humanitarian supply chain management in International Organization for Migration (IOM) - Ethiopia. In such circumstance, the study is guided to focus and answer the following research questions:

- How infrastructure affects the sustainability of humanitarian supply chain of IOM Ethiopia?
- How the socio-economic factors affect the sustainability of humanitarian supply chain of IOM Ethiopia?
- How the external rules and regulations affects the sustainability of humanitarian supply chain of IOM Ethiopia?
- How the internal policies and procedures affects the sustainability of humanitarian supply chain of IOM Ethiopia?

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of this study is to assess the factors that affect sustainability of humanitarian supply chain of IOM Ethiopia in terms of social, environmental, and economic and dimensions

1.4.2 Specific Objectives

- To assess the effect of infrastructure on sustainability of humanitarian supply chain of IOM Ethiopia in terms of social, environmental, and economic and dimensions.
- To examine the effect of socio-economic factor on sustainability of humanitarian supply chain of IOM Ethiopia in terms of social, environmental, and economic and dimensions
- To assess the effect of external rules and regulation on sustainability of humanitarian supply chain of IOM Ethiopia in terms of social, environmental, and economic and dimensions
- To examine the effect of internal policy and procedure on sustainability of humanitarian supply chain of IOM Ethiopia in terms of social, environmental, and economic and dimensions.

1.5 Significance of the Study

This study attempts to show factors affecting humanitarian supply chain management in International Organization for Migration (IOM); this is an area not studied previously with respect to Sustainability. It will also provide an insight and will be used as a stepping-stone to other researchers who would like to carry out research works, not only on the specific subject, but also in the areas of sustainable humanitarian supply chain management. The findings will also be applicable to other similar humanitarian organizations in Ethiopia.

1.6 Scope of the Study

The scope of study is limited to the conceptual framework i.e., factors affecting sustainability of humanitarian supply chain. Even though there are other Sub-Offices/ Field Offices in some part of the country of International Organization for Migration, geographically the scope is limited to the headquarters of International Organization for Migration, which is in Addis Ababa. It also only focuses on fixed term contracts i.e., it does not include temporary, intern, consultants or on-call contracted because it will be beyond the capacity of this research to cover all the employees that are employed based on contract.

Although factors that affect sustainability of humanitarian supply chain is also affected by other challenges such as organizational, political, and global conditions the study did not go to analyzing these factors, although they directly or indirectly affect sustainability of humanitarian

supply chain because the researcher assumed that in Ethiopia the major challenges are social, economic and environment that were derived from TBL model. Thus, it was limited to the factors incorporated in the framework of the study. The scope for research methodology will be limited to descriptive and explanatory method. To conduct this research the time dated for this study covered from November 2020 till the end of July 2021.

1.7 Limitation of the Study

The constraints which hindered for in-depth research on the topic was time constraints to gather all the necessary data, financial constraints that limited the extent of the researcher's travel for literature and constant visits to the case study company for on-the spot observation required for this type of study.

The study is delimited to IOM Ethiopia and the findings will also be used for only IOM Ethiopia but not to other Country Offices, UN Agencies and Humanitarian Organizations in Ethiopia. The populations were from Logistics and Procurement department because the researcher believes that the correct data would be obtained from those staffs and organize the questioner and interview through key circumstances to identify the factors that affect the sustainable humanitarian supply chain management in IOM Ethiopia.

The limited number of interview participants (because of difficulties that was faced in getting access to meet the participants) had also contributed to the decreased richness of information analyzed in the qualitative part of the study.

1.8 Operational Definition of Terms

Sustainability: means meeting our own needs without compromising the ability of future generations to meet their own needs (UAE, Office of Sustainability, 2013)

Sustainable Development: is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (International Institute for Sustainable Development, 2020)

Sustainable Supply Chain: is the management of environment, social and economic impacts, and the encouragement of good governance practices throughout the life cycles of goods and services. (UN Global Compact Website, 2020)

Sustainable Humanitarian Supply Chain Management: is a systematic approach to designing, organizing, and managing key intra- and inter-organizational processes to reduce the vulnerability of certain populations by fulfilling their immediate needs and supporting them in building resilience and creating long-term prosperity prospects with minimum possible economic and environmental resources (Helen S.Y. Chen, Luk Van Wassenhove, T.C.E. Cheng, 2020)

1.9 Organization of the Study

This study is organized into five chapters. Chapter one introduced the study by giving the background information, statement of the problem, research questions, objectives, significance of the study, scope of the study, delimitation of the study, and definition of terms. Chapter two dealt with the review of relevant literatures. Chapter three discussed the research design and methodology used to conduct the research, sampling technique, and instruments and procedures of data collection methods to analyze. Chapter four includes results, discussions, and data presentation of the findings. Chapter five is comprised of summary of the findings of the study, conclusion that is drawn from the research findings, and recommendations of the study for sustainable humanitarian supply chain.

CHAPTER TWO

RELATED LITERATURE REVIEW

This chapter tries to see and examine different literatures of supply chain management, humanitarian supply chain and sustainability to obtain an overview of what a Sustainable Humanitarian Supply Chain Management is and including conceptual framework and empirical evidence.

2.1 Theoretical Literature Review

2.1.1 Supply Chain Management

Although industry and academia have investigated the concept of supply chain management for the last decade, there is still no consistent definition of the concept. As a result, there is generally a lack of consistency in meaning and clarity across the diverse definitions of supply chain management available on the literature.

In military area, it means "the science of planning and carrying out the movement and maintenance of forces" dealing with "a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of material; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services". In commercial domain, it is defined as a planning framework for managing materials, services, information, and capital flows to convey superior customer value at the least cost (Van Wassenhove, 2006). Moreover, it is also defined as "the process of planning, implementing, and controlling the efficient, cost-minimized flow and storage of goods, and materials, as well as related information, from point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people" (Tomasini & Van Wassenhove, 2009). No matter what the definition is, the fact supply chain management has in common is that it consists of preparedness, planning, procurement, transportation, inventory, warehousing, tracking, allocation, and recipient satisfaction.

2.1.2 Humanitarian Supply Chain Management

Humanitarian Supply Chain Management has evolved over the past decades from a reactive 'fire-fighting' to a performance-oriented approach that is focusing on efficiency and effectiveness (Jahre 2008). It then emerged as a worldwide-noticeable theme as disasters, either man-made or natural, may occur at any time around the world with enormous consequences. As a result, providing timely and appropriate humanitarian relief has evolved into a global and multinational enterprise, with an increasing emphasis on optimizing the logistics and supply chains responsible for turning public and private donations into actual aid (Carroll and Neu, 2009).

Recently, the need to coordinate the logistics resources of the public and private sectors to avoid arbitrary resource allocation during disasters have increased. But the coordination of efforts between relief suppliers, logistics servers and demanders are still a major concern and lacks effectiveness. As the humanitarian remedy effort worries itself with technique of planning, managing, and controlling the environment friendly flows of relief, information, and services from the points of origin to the points of destination to meet the pressing wants of the affected humans and that in humanitarian remedy operations logistics planning and coordination want to be essential instead than in basic terms desirable" (Rickard, 2003).

Humanitarian Supply Chain Management is referred to as the technique of advantageous and least expensive plans, implementations, and controls for resource flows (i.e., materials, goods, services, economic resources, information, etc.) from the point of origin to the point of consumption with the intention of meeting the useful resource recipients' requirements. As a subset of grant chain management, it covers almost all the useful tactics that a industrial do, which includes approaches such as sourcing, procurement, stock management, logistics and distribution, records management, and so forth (Day, Melnyk, Larson, Davis & Whybark, 2012). However, not like the "financial" goals of commercial, the foremost intention for humanitarian supply chain management is to decrease human suffering more specially to prevent additional loss and damage to humans, and to treat those with accidents and sickness (Beamon and Balcik, 2008).

The humanitarian supply chain involves the planning and management of all functional activities related to material, information, and financial flows in disaster relief operations. It was further defined by The Principles of the Chartered Institute of Logistics and Transport's Humanitarian and Emergency Logistics (HELP) forum as "Right people, equipment and material, in the right place, in the right sequence as soon as possible, to deliver maximum relief at the least cost saved lives, reduced suffering and the best use of donated funds" (CILT, 2011). Notably, it also incorporates coordination, collaboration and partnership with supply chain actors, third-party service providers and other humanitarian organizations stakeholders. It is also concerned with managing the efficient flow of aid materials, information and services and aim to reduce the impact of disaster on human lives (Lijo and Ramesh, 2012).

Humanitarian supply chains play a central role in several phases of a disaster relief concept such as preparedness, immediate response, reconstruction, and recovery phase (Baumgarten et al., 2010). Each of these phases and activities require logistics support, although every phase has its requirements regarding the duration, volume, the needed as well as the variety of supplies, urgency, and procurement location. Considering this, efficient collaboration, and cooperation between the varieties of supply chain actors is one of the main criteria for the humanitarian network design. Especially in sensitive phases such as the preparedness and response phase a

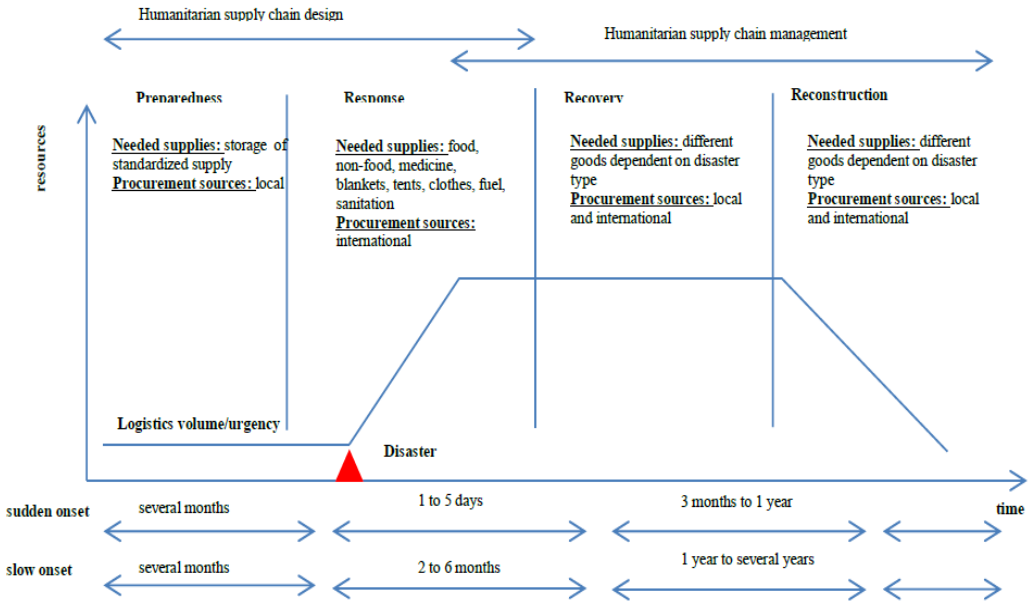

Figure 1: Humanitarian supply chain management cycle, Baumgarten et al. 2010

high need of cooperation and collaboration can be noted. The following figure underlines the specific need, the logistics volume and urgency, duration, as well as variety of supplies, procurement location change referring to the specific phase and disaster.

A humanitarian supply chain is dynamic, agile, and innovative. It is clearly unpredictable, turbulent, and requiring flexibility (Oloruntoba and Gray, 2009) because of complex environments due to the disasters that occur anywhere and anytime, unfortunately often in underdeveloped countries with poor infrastructure or political instability (Scholten et al. 2014).

2.1.3 Sustainability

Sustainable development is strongly related to the concept of progress and growth. This concept dates back as far as the Greco-Roman period, which was the starting point for formulating ideas of progress. The idea evolved over the centuries, and during the Industrial Revolution (18th Century), human progress became strongly linked to economic growth and material prosperity. Industrialization, however, also brought about a growing gap between rich and poor and environmental degradation caused by the exploitation of raw materials on an unprecedented scale. But in the 20th century, the ideas about growth and development where challenged.

In the late 1960's and 1970's, people became aware of the threats that industrial and commercial expansion posed to the environment and their own survival as human beings (pollution and resource depletion). Western societies became conscious that scientific and technological progress could not address the problems related to the massive consumption of resources. This period saw the beginning of environmental protection movements, with NGOs such as Greenpeace. The notion of sustainable development emerged, taking the word 'sustainability' from the ecology discourse. The modern idea of sustainable development was defined during The World Commission on Environment and Development (so called Brundtland Commission): "Development that meets the needs of the present without compromising the ability of the future generations to meet their own needs" (Brundtland, 1987).

Additionally, sustainability is a unique concept, and depending on the points of view of individuals, disciplines and organizations, the concept of sustainability is intended to or understood in several manner and for different purposes. From the scholarly side, whereas

sustainability is used in a 13 wide extend of logical disciplines, but it does not belong to any body of knowledge (Oloruntoba 2015), and there are no clear benchmarks and definitions. Already in 1995, scholastics anticipated that supportability would “remain fuzzy, elusive, contestable, and/or ideologically controversial for many years times to come” (Gladwin, Kennelly, & Krause, 1995).

During the 2016 World Humanitarian Summit, organizations agreed to empower the local communities and improve their resilience. Nowadays, there is an accord that sustainability is the scientific and political challenge of the 21st century. Global commitments like the Millennium Development Goals (MDGs), updated by the 2030 Agenda for Sustainable Development (ASD), both promoted by the United Nations, are an attempt to define sustainable development goals with a focus on sustainability. The UN SDGs includes 17 goals with 169 targets that relate to the three dimensions of sustainability: economic, social, and environmental. Its challenges are also already being addressed by humanitarian organizations as part of their development programs, primarily during reconstruction and mitigation phases, by working on sustainable solutions that allow the impact of disasters to be reduced.

2.1.3.1 The Triple Bottom Line

Sustainability has gained recognition since the early 2000s in business. Corporate social responsibility, good governance, and many other terms have been used to define the policies, practices, and programs to incentivize the positive impacts of companies on societal aspects (Jamali, Safieddine, & Rabbath, 2008).

In the literature, it is a widely accepted notion to present organizational sustainability as a consideration of the balance between environment, society, and economy, also known as the TBL (Carter and Liane, 2011). These three pillars are also referred to as “People, Planet and Profit”. The TBL model is a systemic approach developed on the mid 90’s by John Elkington to “capture the essence of sustainability by measuring the impact of an organization's activities including its profitability and shareholder values and its social, human and environmental capital” (Savitz 2012). It stresses the need to engage on the performance achievement of these three sustainability dimensions.

This idea comes from the recognition of the environmental, economic, and social systems intersection, where sustainability is achieved (Mebratu 1998). The TBL dimensions are defined here as:

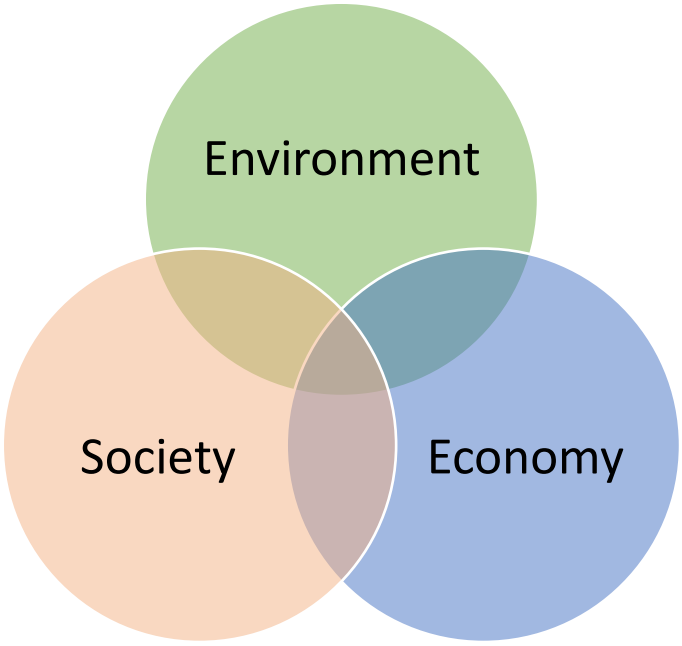

Figure 2: TBL dimensions (Mebratu, 1998)

• **Economic Sustainability or "Profit":** relates to cost and productivity considerations. An organization must use its resources so that it can consistently produce an operational profit and sustain its activities.

• **Social Sustainability or "People":** relates to proper and favorable business impact for employees, population, and the area in which the organization conducts its activities.

• **Environment Sustainability or "Planet":** relates to environmental impact. It attempts to benefit the natural setting as much as possible or at least do no damage and decrease the environmental effect.

The Triple Bottom Line (TBL) is extensively used as a substitute of sustainability in the business literature. The definition of sustainability and the categorical dimensions can describe the conceptual sustainable development, but do not provide sufficient guidance on how sustainability shall be dealt on the context of Supply Chain Operations. Moreover, some authors argue that the

TBL elements are conflicting and that their common achievement is therefore impossible (Milne and Gray 2013). Accordingly, the TBL approach, as it is currently used, reinforces a position where financial viability is prioritized, and environmental and social considerations remain an afterthought. It is considered by some as a pathway for corporations to easily ignore or bypass key sustainability issues (Sridhar and Jones 2013).

2.1.4 Sustainable Humanitarian Supply Chain Management

Sustainable humanitarian supply chain management is a systematic approach to designing, organizing, and managing key intra- and inter-organizational processes to reduce the vulnerability of certain populations by fulfilling their immediate needs and supporting them in building resilience and creating long-term prosperity prospects with minimum possible economic and environmental resources. Below explanations are the pillars of sustainable humanitarian supply chain management.

Social Sustainable

It was developed last in the triple bottom line framework which has been typically neglected in quantitative models. Labor conditions are strongly highlighted by the 2030 Agenda for Sustainable Development, which aims at enhancing prosperity by reducing poverty and economic disparity, gender equality or decent work. The labor condition objectives for the humanitarian supply chain looks to protect health, security and ensure good conditions of work for its employees (Baumann 2011).

One pillar of a humanitarian organization's strategy is to empower local communities with the aim of improving disaster resilience (Comes 2016). Community empowerment can be seen as an external influence including contribution to employment and the creation of wealth. Many authors also refer to the positive impact of local sourcing as an action in favor of community empowerment (Kunz and Gold 2017) with a positive impact on regional economic development. Therefore, the current trend is favoring local sourcing wherever possible (Haavisto and Kovács, 2014).

Environmental Sustainable

While focusing on alleviating suffering and improving life quality of the vulnerable, humanitarian operations also generate significant environmental impacts due to the materials they bring in, the consumption of natural resources, and the waste and pollutions generated (Pedraza-Martinez et al., 2011). Disaster relief operations take place in vulnerable areas and the negative environmental effects caused to them could have impacts more severe than other well-functioning regions. Neglecting these impacts can lead to a vicious cycle between disasters, increased vulnerability of the affected regions, and intensified damage afterwards (Sodhi, 2016).

The objectives of measuring environmental pollution are mostly to reduce greenhouse gas emissions, and to manage hazardous materials. Hazardous materials are rare in Humanitarian relief distribution, but they may be present as part of the wastes for medical relief organizations.

The resource conservation objective is to reduce wastes like energy, water, packaging, etc. Resources are consumed all along the supply chain processes. Inventory immobilization (contingency stock) generates significant energy consumption, especially in warm countries (air conditioning).

Economic Sustainable

It is commonly accepted that in disaster responses, concerns of economic sustainability are subordinate to easing human pain and saving lives (Haavisto and Kovács, 2014). Such perspective is rarely challenged, probably due to its moral backing in the "Rule of Rescue" which argues that society has a moral obligation to rescue individuals facing avoidable peril, even if doing so implies high economic costs or inefficiencies (Jonsen, 1986).

In humanitarian supply chain, the added value of operations is defined by accomplishing general humanitarian ambitions like "saving lives". To do so, the main criteria to evaluate sustainable humanitarian supply chain are generally effectiveness, efficiency, and equity (Gralla, Goentzel, & Fine, 2014). Effectiveness is the capability of achieving the organization's target. In a "value driven" organization, the target will be to satisfy the customer's needs. In humanitarian supply chain, donors ask for specific aims and target levels such as numbers of households that are provided with humanitarian relief items, shelter, or education. In humanitarian supply chain

literature, the effectiveness objective usually corresponds to the demand satisfied. To measure it, different KPI are proposed, like population coverage, order fulfillment, stock-out minimization, etc. By looking at the specifics of the three HSC processes, the effectiveness for key performance indicator for "source" will be defined as a measurement of effective replenishment, for "make", as the strategic contingency stock level maintenance, and for "deliver", as the needs coverage (real demand) on time. Others have used the deprivation cost approach (Holguín-Veras, Pérez, Jaller, Van Wassenhove, & Aros-Vera, 2013) or the amount of suffering of the victims.

Equity is considered as an important objective by humanitarian organizations. Here it is understood as a complement of effectiveness because it is an integral part of humanitarian principles. It also could be considered in the social dimension, as it has a direct link with societal wellbeing. In fact, equity has been defined as the intersection between people and profits (Carter and Liane 2011). Tzur measured the equity of humanitarian supply chains using the Gini Index, a non-linear measurement of inequality. Others have used disparity in demand satisfaction. Non-discriminatory distribution is an objective for the "making" and "distribution" processes (contingency stock maintenance, needs coverage) (Tzur, 2016).

Efficiency can be defined as the ability to avoid wasting resources to reach a target. In humanitarian supply chain, this dimension corresponds to the minimization of operation costs. Although making a profit is not their objective, non-profit organizations also care about financial wellbeing, since financial stability is crucial to their missions and survival.

2.2. Empirical Literature Reviews

Lack of Infrastructure

As disasters frequently cause severe damage to key infrastructures, it necessitates humanitarian organizations to operate in peculiar complex environments. One of the main challenges affecting sustainable humanitarian supply chains is poor/ damaged infrastructure. Additionally, lack of technological advancement was also one of the main challenges for sustainable humanitarian supply chain management on a study carried out in responding to refugees (Seifert, 2018). National and local government, through which humanitarian organizations must often coordinate their activities, may be severely impacted, or even uprooted in the case of a conflict situation.

The availability of a road network, railway, airports, communication, power supply, play an important role in the delivery of humanitarian aid (Chakravarty, 2011). Speed of response is often compromised under a degraded infrastructure where roads, ports, and airfields are in most cases either destroyed or not in working condition.

Disaster areas are unable to handle relief aid unless infrastructure is in place ready for receiving, storing, and distributing essential goods and services and evacuating and treating the wounded. Well-developed infrastructure will surely minimize the extent of damage and human suffering during relief operations while a poorly developed infrastructure tends to disrupt and slow down the relief response complicating the challenges and creating multifold difficulties in procurement, the supply and demand equation, supply strategy, supplier location, and transportation choice further worsen the existing challenges (Sankaranarayanan, 2021).

- ***H1a: Lack of infrastructure negatively and significantly affects the sustainability of humanitarian supply chain***

Socio-Economic

Socio-economic factors, such as the type of market economy, the presence of local suppliers, the level of education of the population, the local culture and religion will oblige relief organizations to adapt their operation to the context and can affect the sustainable of humanitarian supply chain. Moreover, Sahebi (2017), observed that disaster management in the Iranian context showed that cultural, managerial, and educational barriers in providing seamless relief activities. Furthermore, socio-economic are also described as uncertainty in demand and supply, instability of market economy, the absences of local suppliers, availability staff competition, absences of financial donors, the culture and language of the host country, high inventory and transportation cost and lack of trust among the supply chain partners (Oloruntoba & Gray, 2006).

Socio-economic such as the type of market economy, the presence of local suppliers, the level of education of the population, the local culture and religion will assist relief organizations to adapt their operation to the context and can affect the sustainability of humanitarian supply chain (Maon, 2009). In a well-developed economy, some basic supplies can be purchased from local

suppliers, and staff can be hired locally for supply chain activities. In a less developed context, all supplies must be imported, and most tasks must be managed by foreign staff.

- ***H1b: Socio-economic factors negatively and significantly affects the sustainability of humanitarian supply chain***

External Rules and Regulations

The external rules and regulations are including government and donor's factors. The government factors, such as the type of regime, the national regulations toward relief organizations, the efficiency of the state, the level of corruption, are factors which influence organizations' operational decisions and their ability to conduct humanitarian logistics operations. A government which is suspicious of relief organizations' activities will, for example, tend to restrict the entry of staff and goods in the country in the aftermath of a disaster (Seekins,2009), while a cooperative government will welcome relief organizations on its territory (Van Wassenhove, 2006). The security context in a country is also dependent from the government (or its absence), and strongly impacts the sustainability of the logistics response (Long and Wood, 1995). Sustainable humanitarian supply chain tends to be unstable, inclined toward political and military influence, and inefficient due to a lack of joint planning and interorganizational collaboration (Das, 2016).

Donor factors, such as the donation might be what is not required, trusts and foundations, conditions given by donors, meeting the budget and dependency on contributions, the donors may dictate on how the funds are to be used (McLachlin and Larson, 2011). The supplies donated may not necessarily be what are required at those times. The donors may dictate on how the funds are to be used. A situation may arise where supplies are required but the funds cannot be used to procure these supplies therefore this is a big challenge in supply chain operation (Herzer & Nunnenkamp 2012). Additionally, challenge arises regarding prioritizing objectives and settings, as many stakeholders are involved. The stakeholders may have conflicting interests and objectives which also leads to the absence of a centralized, integrated management and planning system. The lack of a comprehensive approach often leads to multiple stakeholders' parallel acts that may result in overlap or interference of relief activities (Koppiahraj, 2021).

- ***H1c: External rules and regulations negatively and significantly affects the sustainability of humanitarian supply chain***

Internal Policies and Procedures

According Balland (2013), internal policy and procedure factors related to employee turnover, corruption, lack of contingency plan, poor organizational structure and systems, lack of employee accountability, internal budget constraints, excessive inventory, lack of top management support and complexity of sustainability measurement and others. Moreover, Petrudi (2020) also indicated that inexperience of the top management in handling the disaster and lack of skilled workers as a major hindrance to sustainable humanitarian supply chain.

The internal policy and procedure must have a national or regional plan based on the vulnerabilities of the infrastructure, the supply chain support in the area, and governmental emergency response abilities. It is not possible to anticipate how crises evolve, but it is advantageous to have a plan. If proper planning is in place with realistic, implementation can be less challenging (Balland, 2013).

- ***H1d: Internal policies and procedures negatively and significantly affects the sustainability of humanitarian supply chain***

2.3 Conceptual Framework of the Study

The study attempts to establish factors that affect sustainable humanitarian supply chain at IOM Ethiopia. Per se, based on the discussion of different literatures, the research framework is shown in the below figure:

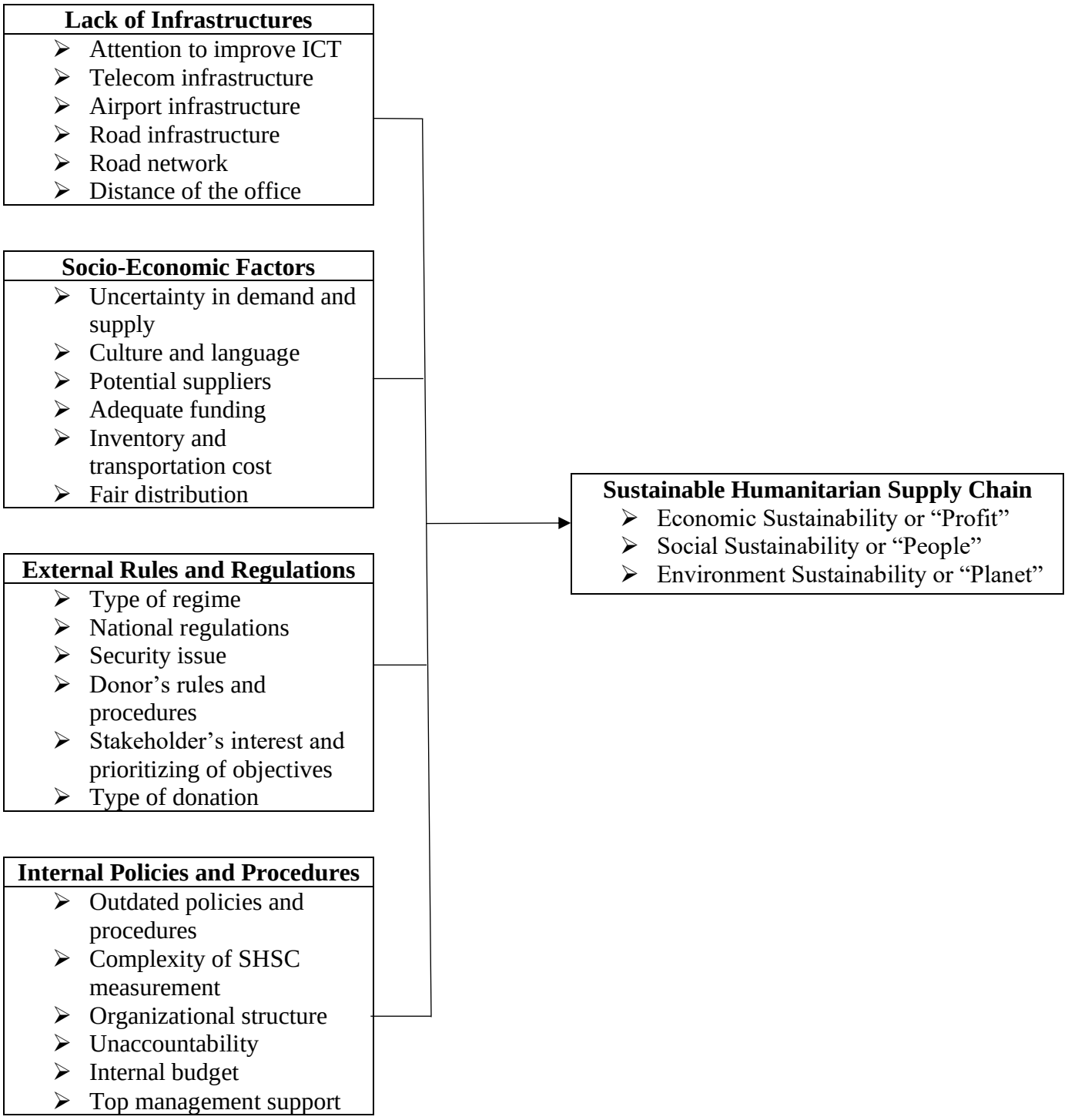

Figure: 3 Conceptual Framework

Source: Modified from J. K. Kinyua (2013) and Ira Haisto (2014)

2.4 Identified Literature Gaps

The main gap identified regarding literatures, there is almost no published studies with similar title. There is limited research on overall academic world regarding sustainable humanitarian supply chain. Most research had focused on the commercial supply chain even with the context of developed countries. It has not been researched in excessive or full approach; some of the research done on the subject matter does not discuss in detail, focusing on the general perspective of how sustainable humanitarian supply chain operation is managed.

In general, as there are few relevant literatures published, there is a need to deeply study factors that affect the sustainable humanitarian supply chain management in relation to disaster relief operation with a different scenario of disaster types and stages. Therefore, this study sought to fill the missing gaps by determining the critical factors affecting sustainable humanitarian supply chain of IOM Ethiopia.

Summary of Hypothesis:

- H1a: Lack of infrastructure negatively and significantly affects the sustainability of humanitarian supply chain
- H1b: Socio-economic factors negatively and significantly affects the sustainability of humanitarian supply chain
- H1c: External rules and regulations negatively and significantly affects the sustainability of humanitarian supply chain
- H1d: Internal policies and procedures negatively and significantly affects the sustainability of humanitarian supply chain

CHAPTER THREE

METHODS OF THE STUDY

This chapter discusses issues pertaining to the research design, the sample and sampling techniques, measuring instrument, procedures of data collection and presentation and reliability and validity test, and ethicality considerations.

3.1 Research Approach

Most writers have written exclusively on research methodology. The underlining factor in most studies is that the selection of methodology is based on the research problem and stated research questions. Unlike theories, methodology cannot be true or false; only more or less useful (Silverman 2003).

Mixed research approach i.e., quantitative and qualitative research approach is adopted in this study based on the purpose and the research questions set out. While qualitative research is based on gathering, analyzing, and understanding data and information through observing what others do and say. In contrast, quantitative research addresses research objectives through empirical assessments. It involves numerical measurement and analysis approaches using large-scale survey research, using methods such as questionnaires or structured interviews (Zikmund, 2010).

3.2 Research Design

Survey research is a research method involving the use of standardized questionnaires or interviews to collect data about people and their preferences, thoughts, and behaviors in a systematic manner (Jonker, 2010). Therefore, the research design, a non-experimental design (*i.e.*, descriptive designs) through surveys is used to examine factors affecting sustainable humanitarian supply chain. Moreover, explanatory research design is also used to focus and explain the aspects of the study in a detailed manner. The survey research design is suitable choice because it is directed at making careful observations and detailed documentation of a phenomenon of interest. These observations must be based on the scientific method (i.e., must be replicable, precise, etc.), and therefore, are more reliable than casual observations by untrained people (Bhattacherjee, 2012).

3.3 Population and Sample Design

Population is an aggregate of all the objects, subjects or members that follow to a set of specifications for the intended study. (Geoffrey, David & David, 2005). According to the Sekaran (2003), sample is defined as subgroup or subset of the population. Besides, it also can be defined as a set of respondents selected from a larger population for the purpose of a survey.

As per the gathered data from the International Organization for Migration, SLO Ethiopia, currently the organization's head office is in Addis Ababa, and has 12 field offices in different part of the country focusing on migration development projects. The organization has a total of 974 international and national staffs hired on full and temporary contractual agreement.

The members of the target population are 94 logistics and procurement staffs working in Addis Ababa and all field offices. The population to be targeted for this study consisted of 92 national respondents for structured questionnaire and 2 (1 international and 1 national) respondents are interviewed working in Addis Ababa and field offices. All staff of logistics and procurement department are taken to constitute as the study population. Due to the small number of the target population Addis Ababa including in 12 Sub and Field Offices, the researcher decided to consider the entire population in the study, i.e., to conduct census survey, rather than sampling from the population. This is based on the suggestion that if the target population is smaller (e.g., 200 or less) census survey is very appropriate and effective since virtually all population would have to be sampled in small populations to achieve a desirable level of precision (Creswell, 2003).

3.4 Data Sources, Type and Collection Procedures

To answer the research questions stated, data are gathered from both primary and secondary sources. Questionnaire and interview are used to collect the primary data from the employees of International Organization for Migration (IOM) by self-administered questionnaires that are distributed to the sampled employees. Interviews are also conducted with a mix of semi structured and unstructured questions which helped to triangulate findings of the questionnaire.

The secondary data comprises of information from the organization's published and unpublished documents such as the organization profile. Moreover, various records that are relevant to the

study is collected from research articles, books, and internet plus attempt to use different brochures and magazines and other studies done by different individuals.

3.5 Methods of Data Analysis and Presentation

Data analysis is an application of reasoning to understand, clear and interpret the data or information that have been collected through the questionnaires (Zikmund, 2010). Therefore, data collected through the questionnaire are analyzed through descriptive analysis for frequency, percentage, and standard deviation with the help of the Software Package for Social Science (SPSS). Moreover, content analysis was used for the qualitative data because the data analyzed also include semi-structured interviews to facilitate description and explanation of the findings.

SPPS is used to test the relationship between the independent variables and dependent variable through methods such as Pearson Correlation analysis, multiple regression, analysis of variance (ANOVA) and independent sample T-test. It also enables to present the data or information better through graphical presentation (e.g., bar chart, histogram).

3.6 Reliability and Validity

Reliability and Validity are important concepts in research as they are used to enhance the accuracy of the assessment and evaluation of the research work. Reliability is the degree of internal consistency with which an instrument measures the constructs it is designed to measure. Reliability is known as to what extent the research findings can be replicated, if another study is undertaken using the same research methods (Ritchie, Lewis, and Elam, 2003). This means the measure (data collection tools) should provide the same answer on another occasion or similar result should be obtained by another researcher using the same measuring instrument. Whereas validity is the extent to which it gives the correct answer (Kirk and Miller, 1986). It was conducted, as it indicates the degree to which an instrument measures what it is supposed to measure. Face validity and content validity test are used in order to test the validity of the instrument.

Cronbach's alpha is widely used in social science research to estimate the internal consistency of reliability of a measurement scale. It is calculated to estimate the internal consistency of reliability of a measurement scale. Cronbach’s Coefficient is a reasonable indicator of the

internal consistency of instruments that do not have right or wrong marking schemes, thus can be used for questionnaires using scales such as rating (Black, 1999). Cronbach's alpha coefficients should fall within a range of 0.70 to 1.00 (Sun, 2007). Hence, a Cronbach's Alpha test was performed to check the reliability of data collected instrument and the result is presented in the below table 3.1:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.819	.809	27

Table 3.1: Source: Own survey (2021)

As indicated above, the overall Cronbach's alpha score of the data collected from 92 respondents is 0.819, which is an acceptable reliability coefficient.

3.7 Ethical Considerations

While conducting the study, ethical issues are primarily considered. Before conducting the data collection all the necessary information about the study is provided to the sample respondents, i.e., who is conducting the study, for what purpose, and the like, this helped them to decide whether to participate in this study. They are also notified that their participation in the study is voluntary, that they have the freedom to withdraw from the study at any time without any unfavorable consequences, and they are not harmed because of their participation or non-participation in the study. Moreover, they are also informed that anonymity and confidentiality of their response are guaranteed.

CHAPTER FOUR

RESULTS, DISCUSSIONS, AND INTERPRETATION

This chapter presents analysis, interpretation of results and discussion of the study as set out in the research methodology. The data was gathered exclusively from questionnaire and interview as the research instrument. The questionnaire and interview questions were prepared in line with the specific objectives of the study and their findings were analyzed and presented in the form of frequency tables and latter regression analysis was made.

4.1 Response Rate

The study was conducted on total census which targeted Head Office and 12 Sub and Field Offices throughout Ethiopia namely Addis Ababa, Dire Dawa, Jigjiga, Dollo Ado, Assosa, Semera, Mekelle, Hawassa, Gambella, Bule Hora, Gonder, Wellega and Moyale. The study administered 92 questionnaires to logistics and procurement staffs located in the above-mentioned offices and all of them completed and returned the questionnaires. 2 (1 international and 1 senior national) staffs interviews were also conducted in Addis Ababa, to collect qualitative data that was in line with the quantitative data from the questionnaire. The response rate for the study was 100% of the total (92) respondents. The distributed questionnaires have been analyzed using the descriptive statistics (frequency statistics) and inferential statistics. And the frequency and the percentage of the characteristics of respondents are summarized in the table below.

4.2 Demographic Profile of the Respondents

On the first part of the questionnaire, respondents were asked about their general demographic data. They were asked about their sex, age, qualification, and work experience. Responses of respondents are depicted below on table 4.2

Demographic Data		Frequency	Percent
Sex	**Female**	9	9.8%
	Male	83	90.2%

	Total	92	100%
Age	**18-35**	47	51.2%
	36-45	36	39.1%
	46 & above	9	9.8%
	Total	92	100%
Qualification	**Certificate**	0	0%
	Diploma	3	3.3%
	Degree	71	77.2%
	Masters & above	18	19.6%
	Total	92	100%
Work experience	**0-5**	28	30.4%
	6-10	31	33.7%
	11 & above	33	35.9%
	Total	92	100%

Table 4.2: Source: Own survey data, 2021

As described on table 4.2 above, out of 92 respondents there are 9 females which constitute 9.8% and 83 males constituting 90.2% of total respondents. These implies that there is a disproportionate of sex distribution in the organization. And out of total 92 respondents in age group classification, 46 (50%) respondents are between 18-35 age group, 37 (40.2%) respondents are between 36-45 age group and the remaining 9 (9.8%) respondents are 46 and above. This implies that most of the respondents are categorized in young and productive age groups. It also implies that there is lower rate for resistance for learning and continuous improvement can be achieved easily.

Responses obtained on qualification status of survey respondents reveals that, out of total 92 respondents, there was no respondents who hold certificate, 3 (3.3%) of the respondents have diploma, 71 (77.2%) have degree and the remaining 18 (19.6%) of respondents holds masters and above. A survey finding on qualification status of respondents reflects that; high proportions

of employees are well educated that they can be concluded that almost all employees are capable of understanding and answering the questions of the questionnaire.

The above table also put respondents' work experience. Among the total 92 survey respondents, 28 (30.4%) respondents have working experience of 0-5 years, 31 (33.7%) respondents have working experience of 6-10 years, and the remaining 33 (35.9%) respondents have working experience of 11 years and above-25. This shows all the respondents have appropriate work experience so that they can give accurate and reliable information to the research questions.

4.3 Descriptive Analysis for Factors Affecting Sustainable Humanitarian Supply Chain

This section discusses factors affecting sustainable humanitarian supply chain of IOM Ethiopia that were identified. The section is divided into five outputs. It begins with lack of infrastructure variables affecting SHSC followed by socio-economic factors, external rules & regulations, internal policies & procedures variables and the practices affecting SHSC of IOM Ethiopia.

Table 4.3.1: Lack of infrastructure variables affecting sustainable humanitarian supply chain

Indicators	Mean	Stdv.
Lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	4.3043	.98046
Lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices negatively affecting the ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	2.6087	1.27492
Lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices negatively affecting the ***environmental sustainability*** of the humanitarian	2.6087	1.25756

supply chain management practices of IOM Ethiopia		
Mean Average	**3.1739**	

The above table 4.3.1 shows that, most respondents strongly agreed that lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices is negatively affecting the economic sustainability of the humanitarian supply chain management practices of IOM Ethiopia (4.3043 mean score). On the other hand, majority of the respondent have disagreed lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices negatively affecting the social (2.6087 mean score) and environmental (2.6087 mean score) sustainability of the humanitarian supply chain management practices of IOM Ethiopia.

The Procurement and Logistics Officer backed it view by responded that "although in general lack of infrastructure is a challenge while carrying out humanitarian operation; lack of adequate airport, road infrastructure, road network and distance of offices are hindering the humanitarian response affecting the economic SHSC. The Officer continued saying it further exacerbates the problem when conflicts erupt and leads to road closures which leads to halting the operation and/or rerouting convoys which result in delayed delivery of the humanitarian aid. Broken bridges, rough roads where vehicles/ trucks break down and at times of rainy season, it greatly hampers the humanitarian efforts and prolongs the humanitarians response including costing more for the operations. The Officer further supported saying that, infrastructure plays substantial role on sustainable humanitarian supply chain since it supports mainly the supply chain responsiveness, which is our main challenge to our effective and efficient responsiveness to humanitarian aid

In relation to lack of significant attention to improve its ICT resources and distance of respective offices, respondents have disagreed implying IOM gives great amount of attention to improve its ICT which was also backed by the interview conducted with Senior Logistics and Procurement Assistant saying "IOM gives great amount of attention to its ICT resources including personnel and giving relevant training and development program to its staff in its utmost capacity citing IOM they have been using SAP since 2006 and is very serious for efficient, secured and

transparent in its logistics transaction. The Senior Procurement and Logistics Assistant further said, “the distance of our field offices doesn’t affect much as most of our sub/field-offices are government & beneficiaries centered locations where suppliers are relatively easy to contact. Additionally, other work modalities are also applied and arranged by telecommuting with concerned stakeholders and implementing partners where it is possible.

The Procurement and Logistics Officer continued saying IOM understands the footprint of electronic wastage, energy consumption and the emissions it is creating from its ICT and is greatly committed to reduce this wastage and emissions by using low energy consumption ICT resources citing IOM prioritizes clean energy procurements as much as possible like energy efficient technologies, such as lighting based on LEDs, solar technologies where it deemed possible and energy efficient laptops.

Table 4.3.2: Socio-economic factors variables affecting sustainable humanitarian supply chain

Indicators	Mean	Stdv.
Socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	4.3043	.98046
Socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices negatively affecting the ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	2.6739	1.32689
Socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices negatively affecting the ***environmental sustainability*** of the	2.5435	1.14271

humanitarian supply chain management practices of IOM Ethiopia		
Mean Average	**3.1739**	

According to the findings in Table 4.3.2, most of the respondents strongly agreed regarding the socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices is affecting the economic (4.3043 mean score). On the other hand, majority of the respondents strongly disagreed that the socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices is affecting the social (2.6739 mean score), while majority of the respondents disagreed also that the socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices is affecting environmental (2.5435 mean score) sustainability of the humanitarian supply chain management practices of IOM Ethiopia.

Concerning the socio-economic factors on economic SHSC, the Senior Logistics and Procurement Assistant stressed that there an increasing shift of uncertainty of demand and supply. Both man made and natural disasters are occurring more frequent and on the other hand there is also increasing gap between humanitarian needed aid and availability of funding. And these challenges of uncertainty are affecting to meet economic SHSC. The interview response also stated absence of local suppliers to accommodate is another challenge that affects our socio-economic aspect citing some areas that are affected with disaster especially in the rural part of the area of the country are difficult to find suppliers not only to accommodate the needed quantity but also quality of the items that we're looking for.

Regarding socio-economic responsibility of social SHSC, the Procurement and Logistics Officer also agreed and explained that IOM understands very well how different languages and cultures that can create an obstacle to the delivery of relief items. Due to these, we promote and prioritize recruiting staffs from the local community so that communication barriers that come from culture and language will not be an issue in carrying out our humanitarian response in its supply

chain network. The Officer also responded stating, IOM believes working hand in hand with our local supplier wherever is possible because we've the responsibility on improving socio-economic sustainability, and with that, not only the suppliers' capacity will improve but also our organization's responsiveness in its humanitarian aid will also improve. The Officer further said, our distribution practices are also non-discriminatory ensuring fair and equal distribution to our beneficiaries with utmost professionalism.

In relations to environmental SHSC, the Procurement and Logistics Officer said also IOM plays its socio-economic responsibility on environmental SHSC saying it strictly dictates its suppliers to comply with our ethical working practice in a way that promotes health and safety, human rights standards, labor rights, prohibiting child labor, and others to ensure the social-economic growth without influencing human well-being along the supply chain and our staff are also there to ensure the compliance.

Table 4.3.3: External rules and regulation variables affecting sustainable humanitarian supply chain

Indicators	Mean	Stdv.
External rules and regulation (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	3.8152	1.02635
External rules and regulation (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	3.8152	1.18534
External rules and regulation (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting the ***environmental sustainability*** of the humanitarian supply	3.7609	1.09313

chain management practices of IOM Ethiopia		
Mean Average	**3.7971**	

From the above table, majority of the respondents agreed on external rules and regulation (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting the economic (3.8152 mean score), social (3.8152 mean score) and environment (3.7609 mean score) sustainability of the humanitarian supply chain management practices of IOM Ethiopia.

The Procurement and Logistics Officer has supported by saying the regime often tends to influence the humanitarian response because they hold the ultimate control with its political and economic power in the country which can affect the humanitarian supply chains by creating unnecessary bottlenecks like regulation which relief items can enter the country, regulation import barriers and regulating the activities of our organizations which hampers the economic SHSC. The interviewer further stated that, security issues throughout the country is also another key external rules and regulation factor that hampers our operations forcing our convoys taking longer route to avoid security related issue especially at conflict affected areas. Donor's rules and procedures also hampers in attaining economic SHSC when our donors dictate the terms of each supply chain practices. Furthermore, the Officer said type of donation also hampers where unsolicited donations affect the environment SHSC which often have no other choice than having these donations destroyed at great costs on top of freight, warehousing, transportation costs.

The interview conducted with the Senior Procurement and Logistics Assistant also weighed on stakeholder's interest and prioritizing of objectives affects the social SHSC. Each stakeholders have its own mandates, interests, capacity, and capabilities which dictates to affect the social SHSC. Donor rules and regulations and type of donations can also affect our social SHSC where the donor requires us to conform us on our supply chain practices. The Officer further said also blockade hampers our operation affecting our supply chain networks.

The Senior Procurement and Logistics Assistant interviewer also states that the regime often add complexity to the situation in addressing environmental regulations issue like on expertise, bureaucracy, location preferences of hazardous and non-hazardous.

Table 4.3.4: Internal policies and procedures variables affecting sustainable humanitarian supply chain

Indicators	Mean	Stdv.
Internal policies and procedures (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top management support) is negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	2.0326	.89505
Internal policies and procedures (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top management support) is negatively affecting the ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	2.4783	1.30492
Internal policies and procedures (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top management support) is negatively affecting the ***environmental sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia	1.7717	.75743
Mean Average	**2.0942**	

According to the findings, majority of the respondents disagreed that internal policies and procedures (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top management support) are negatively affecting the economic (2.0326 mean score), social (2.4783 mean score) and environment (1.7717 mean score) sustainability of the humanitarian supply chain management practices of IOM Ethiopia.

The Procurement and Logistics Officer response also backs the respondents result by saying IOM is pretty much updated in its internal policies and procedures and ensure the compliance of it as well. They regularly review and revise our policies and procedures keeping IOM UpToDate with the latest regulations as well as consistent with UN best practices available. The Officer further said, “since we’ve also aligned our projects in line with Agenda 2030, cost related to sustainability are put into considerations while preparing budget and that there’s no complexity in measuring sustainable humanitarian supply chain as we’ve standard indicators to measure for each economic, social, and environmental sustainability in our humanitarian supply chain”.

Additionally, the Procurement and Logistics Officer said IOM's organizational structure is highly decentralized, and that has enabled us to acquire the capacity for strong planning, coordinating and support functions in attaining sustainable goals in our humanitarian supply chain. Top management personnel also promote strong internal controls, high level of professionalism, greater awareness and respect for ethics, values, and code of conduct in attaining the SHSC. There’s also high levels of responsibility and accountability together with appropriate disciplinary measures for non-compliance which is part of our department’s integral culture.

Table 4.3.5: Procurement variables affecting sustainable humanitarian supply chain practices

Indicators	Mean	Stdv.
Achieves economies of scale in procurement practices (such as needs recognition, purchase requisition, requisition review, solicitation process, evaluation and contract management, order management, invoice approvals and disputes management and record keeping)	4.3043	.98046
Social impacts of procurement is taken into consideration by sourcing goods and services from local suppliers	3.6522	1.18075
Environmental-friendly products are given priority in IOM’s procurement to minimize environmental impacts during needs recognition, purchase requisition, requisition review, solicitation process, evaluation and contract management, order management., invoice approvals and disputes management and record keeping)	3.5761	1.12155
Mean Average	**3.8442**	

According to table 4.3.5, majority of the respondents have strongly agreed (4.3043 mean score) that IOM achieves economies of scale in procurement. This indicates best value for money, price, quality, quality, availability, functionality of sourcing is implemented by driving increased efficiency, helping to develop local markets and suppliers.

Moreover, majority of the respondents have agreed (3.6522 mean score) that social impact is taken into consideration in sourcing from the local suppliers. This suggests that the organization is playing its role in social responsibility in supporting the local suppliers. It also implies that the organization considers the positive effect on people and communities that happen because of actions, activities, projects, and programme.

Likewise, most of the respondents have also agreed (3.5761 mean score) that environmental-friendly products are given priority in IOM's procurement practice to minimize environmental impacts. This indicates the organization is prioritizing procuring eco-friendly materials that do not harm the environment whether in their usage or disposal. This helps to reduce environmental impact, improve continuity of supply, protecting against reputational damage and helps in wining more projects to address its humanitarian activities.

Table 4.3.6: Transportation variables affecting sustainable humanitarian supply chain practices

Indicators	Mean	Stdv.
IOM achieves economies of scale in transportation management practices (plan, execute, and optimize the physical movement of relief items to beneficiary destinations	3.3913	1.23996
Local transport service providers are contracted as well as public buses are used in its humanitarian operations to benefit from their transportation services (in planning, execute, and optimize the physical movement of relief items to beneficiary destinations)	3.8587	1.36343
IOM actively engages in reduction of greenhouse gas emissions in fleet management (in planning, execute, and optimize the physical movement of relief items to beneficiary destinations)	2.2717	1.07011

Mean Average	3.1739	

With regards to transportation practices, majority of the responded agreed (3.3913 mean score) that IOM achieves economies of scale in transportation management practices. This implies that theirs optimization in their fleet management which in turn will benefit in efficient use of transportations modes of the organization. Moreover, most of the respondents have also strongly agreed (3.8587 mean score) that local transport service providers are contracted as well as public buses are used in its humanitarian operations to benefit from their transportation services. This implies IOM is playing its role in achieving the social responsibility in supporting and empowering the local economy by partnering and engaging with the local suppliers.

On the contrary, majority of the respondents have disagreed (2.2717 mean score) that IOM actively engages in reduction of greenhouse gas emissions in fleet management. This implies that IOM is producing emissions such as CO2 impacting the environment and further exacerbating to the climate effect by producing emissions.

Table 4.3.7: Warehouse variables affecting sustainable humanitarian supply chain practices

Indicators	Mean	Stdv.
IOM achieves economies of scale in warehouse management (during receiving, putaway, storage, picking, packing, and shipping)	3.5870	1.19663
Occupational health and safety practices are applied in warehouses and facilities (during receiving, putaway, storage, picking, packing, and shipping)	3.6522	1.07350
Warehouses and facilities are in compliance with applicable environmental laws and regulations (during receiving, putaway, storage, picking, packing, and shipping)	3.6739	1.16834
Mean Average	**3.6377**	

According to table 4.3.7, majority of the respondents have agreed (3.5870 mean score) IOM achieves economies of scale in warehouse management. This implies that it optimizes its

capacity to full potential of storing capacity of relief items and ensuring the efficient transactions in the warehouse operations.

Similarly, majority of the respondents have agreed (3.6522 mean score) that occupational health and safety practices are applied in warehouses and facilities are applied. This implies the proactive management of safety and health in the workplace is applied which prevents injuries and ill health works. This in turn helps to reduce the personal loss caused because of accidents and ill-heath at work. This can further imply that it can create job satisfaction among warehouse staff of IOM which also leads to low turnover of warehouse staff. Furthermore, majority of the respondents have agreed (3.6739 mean score) that warehouses and facilities are following applicable environmental laws and regulations. This shows that IOM maintains and promotes healthy warehouse and facilities surroundings and reducing waste, pollution, and emissions.

Table 4.3.8: Inventory variables affecting sustainable humanitarian supply chain practices

Indicators	Mean	Stdv.
Value of money (cost optimization) for managing stocks is applied during ordering, storing and using a organization's inventory	3.7391	1.02571
Reserve inventories are kept in place for rapid humanitarian response for beneficiaries affected during ordering, storing, and using a company's inventory	3.3152	1.20374
Reduction of greenhouse gas emissions and energy consumption are taken into account in inventory management practices of IOM during ordering, storing and using organization's inventory	2.5761	1.27731
Mean Average	**3.2101**	

Table 4.3.8 shows that majority of the respondents have agreed (3.6739 mean score) that value of money for managing stocks is applied during ordering, storing, and using organization's inventory. This shows that the organization understands the cost value of the stocks management practices good stock control and movements of inventories. Moreover, the majority of the

respondents also agreed (3.6739 mean score) that reserve inventories are kept in place for rapid humanitarian response for beneficiaries affected during ordering, storing, and using a company's inventory. This shows that the organization is always on standby to respond for any humanitarian disaster relief response to elevate the suffering of the affected areas.

However, most of the respondents disagreed (3.6739 mean score) reduction of greenhouse gas emissions and energy consumption are taken into account in inventory management practices of IOM during ordering, storing and using organization's inventory. This shows that the organization is producing ecological footprint causing environmental emissions.

Table 4.3.9: Distribution variables affecting sustainable humanitarian supply chain practices

Indicators	Mean	Stdv.
Effective and efficient distribution of relief aid reaches to beneficiaries	3.6848	1.05798
Aids are furnished to beneficiaries located in the affected areas with relief at the right time	3.4130	1.20578
Waste generated from relief items (food and non-food items) such as food, medical and other materials are disposed as per the environmental laws and regulations	2.6087	1.27492
Mean Average	**3.2355**	

From the above table 4.3.9, majority of the respondents have agreed (3.6848 mean score) that there is effective and efficient distribution of relief aid reaches to beneficiaries. This implies that the responsiveness approach to the affected areas for distribution of relief items are productive. In addition, majority of the respondents have also agreed (3.4130 mean score) that aids are furnished to beneficiaries located in the affected areas with relief at the right time. This implies aid distribution are reaching to beneficiaries at the right time elevating the suffering of those who are affected.

On the other hand, most of the respondents disagreed (2.6087 mean score) that waste generated from relief items such as food, medical and other materials are disposed as per the environmental

laws and regulations. This implies that the organization producing waste products and producing CO2 emissions causing ecological footprint.

4.4 Inferential Statistics for factors affecting Sustainable Humanitarian Supply Chain of IOM Ethiopia

4.4.1 Regression Analysis

The study applied the statistical package for social sciences (SPSS Version 23) to code, enter and compute the measurements of the multiple regressions for the research. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (sustainable humanitarian supply chain of IOM Ethiopia) that is explained by all the independent variables.

4.4.1.1 Multi Collinearity Test

Multi Collinearity test of independent variables was conducted to check whether the assumptions for regression analysis are met or not. According to Mendard, (1995), Tolerance should be more than 0.2 and VIF (Variance Inflation Factor) should be less than 10 (Myers, 1990).

Table 4.4.1: Multi collinearity test of independent variable

Independent Variable	**Collinearity Statistics**	
	Tolerance	**VIF**
Lack infrastructure	.705	1.419
Socio-economic factors	.756	1.323
External rules and regulations	.837	1.195
Internal policies and procedures	.973	1.027

a. Dependent Variable: Sustainable humanitarian supply chain management practice

The result in table 4.4.1 above shows that the collinearity between independent variables shows that no series problem because the value of tolerance for all independent variable is greater than 0.1 and all VIF is less than ten (VIF<10). Therefore, the regression analysis for all independent variables are met.

4.4.1.2 Model Summary

The independent variables that were studied, explains 63.4% of the sustainable humanitarian supply chain in IOM Ethiopia as represented by the R2. Therefore, it means that other factors that affect sustainable humanitarian supply chain not studied in this research contribute 36.6% of the sustainable humanitarian supply chain of IOM. Hence, further studies should be conducted to examine the other factors affecting the sustainable humanitarian supply chain by 36.6%.

Table 4.4.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig.
1	.806[a]	.650	.634	.31767	.000

a. Predictors: (Constant), Internal policies and procedures, External rules and regulation, Socio-economic factors, Lack of infrastructure
b. Dependent Variable: Sustainable humanitarian supply chain management practice

4.4.1.3 ANOVA Results

The below table 4.4.3 is to test the fitness of the model in estimating the effects of the independent variables on the sustainable humanitarian supply chain at IOM, two-way ANOVA was carried out where the statistics (F) = 40.462, p-value = 0.000 was realized as is shown in table 4.13 below: it indicates that the overall model was fit and there was a statistically significant association between the independent variables and showing that it was significantly used in predicting the effects of independent variables on sustainable humanitarian supply chain at IOM Ethiopia.

Table 4.4.3: ANOVA Results

Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Regression	16.333	4	4.083	40.462	.000[b]
Residual	8.779	87	.101		
Total	25.112	91			

a. Dependent Variable: Sustainable humanitarian supply chain management practice
b. Predictors: (Constant), Internal policies and procedures, External rules and regulation, Socio-economic factors, Lack of infrastructure
`

4.4.1.4 Coefficient of Determination

The below table 4.4.1.4 shows that Beta coefficient for lack of infrastructure is .0520 (β = 0.520); socio-economic factors is .278 (β = .278); external rules and regulations is .181 (β = .181) and internal policies and procedures is .095 (β = .095).

Table 4.4.4 Coefficient Determination

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.965	.232		4.163	.000
Lack infrastructure	.306	.044	.520	6.892	.000
Socio-economic factors	.222	.058	.278	3.810	.000
External rules and regulations	.137	.052	.181	2.616	.010
Internal policies and procedures	.074	.050	.095	1.476	.144

a. Dependent Variable: Sustainable humanitarian supply chain management practice

The standardized coefficient Beta value shows the sequence of contribution of individual independent variables on sustainable humanitarian supply chain. This demonstrates that lack of infrastructure (β = .520) is critical factor affecting sustainable humanitarian supply chain in IOM Ethiopia followed by socio-economic factors (β = .278) and external policies and procedures (β = .181).

Table 4.4.5: Hypothesis Summary

Hypothesis Summary	Standardized Coefficients	P value	Decision
H1a: Lack of infrastructure negatively and significantly affects the sustainability of humanitarian supply chain	.520	.000	H1a Rejected
H1b: Socio-economic factors negatively and significantly affects the sustainability of humanitarian supply chain	.278	.000	H1b Rejected
H1c: External rules and regulations negatively and significantly affects the sustainability of humanitarian	.181	.010	H1c Rejected

supply chain			
H1d: Internal policies and procedures negatively and significantly affects the sustainability of humanitarian supply chain	.095	.144	H1d Accepted

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

In this chapter, the findings with regards to the research questions are summarized and conclusions are presented based on the findings of the study. The researcher then presents recommendations and suggestions for further research are also presented on factors affecting sustainable humanitarian supply chain of IOM Ethiopia.

5.1 Summary of Findings

Based on the analysis and interpretation of the data collected from all respondents, the researcher has come up with the following summary of findings:

- Based on the findings of this study, it is believed that lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices is negatively affecting the economic sustainability of the humanitarian supply chain. However, lack of infrastructure doesn't affect the social and environmental sustainability of the humanitarian supply chain management practices IOM Ethiopia.
- While socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices is negatively affecting the economic sustainability, it's not affecting the social and environment sustainable humanitarian supply chain management practices of IOM Ethiopia.
- Concerning external rules and regulation, it is believed that (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting the economic, social, and environmental sustainability of the humanitarian supply chain management practices of IOM Ethiopia
- Regarding to internal policies and procedures factors (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top

management support) doesn't negatively affect the economic, social, and environmental sustainability of the humanitarian supply chain management practices of IOM Ethiopia

- In relation to procurement and warehouse practices, the organization achieves economic, social, and environment sustainable humanitarian supply chain management practices. But in relations to transportation, inventory, and distribution practices, while the organization is achieving the economic and social sustainable humanitarian supply chain, it is lacks achieving the environmental sustainable humanitarian supply chain management practices.

5.2 Conclusions

The purpose of this research was to analyze the factors affecting sustainability of humanitarian supply chain of IOM Ethiopia. The findings of this research attest to the benefits that accrue from the implementation sustainability of humanitarian supply chain of IOM Ethiopia. The research was guided by specific objectives i.e., to assess the effect of infrastructure on sustainability of humanitarian supply chain, to examine the effect of socio-economic factor on sustainability of humanitarian supply chain, to assess the effect of external rules and regulation on sustainability of humanitarian supply chain, to examine the effect of internal policy and procedure on sustainability of humanitarian supply chain of IOM Ethiopia in terms of social, environmental, and economic and dimensions.

The study conducted quantitative and qualitative research data analysis of Logistics and Procurement department of IOM Ethiopia. It has conducted interview with 2 (1 international and 1 national) personnel of the department. From the distributed 92 questionnaires, all have responded to several questions related to factors affecting sustainable humanitarian supply chain and the sustainability of humanitarian supply chain practices in IOM Ethiopia.

In relations to factors affecting sustainable humanitarian supply chain in IOM Ethiopia, the study concludes that infrastructure and socio-economic moderately affects the economic sustainable humanitarian supply chain. It also concludes that external rules and regulation affects the economic, social, and environmental sustainable humanitarian supply chain. However, regarding the internal policies and procedures, it does not the affect the sustainable humanitarian supply chain of IOM Ethiopia.

Moreover, regarding to sustainable humanitarian supply chain practices in IOM Ethiopia, the study concludes there's good and appreciable practices of procurement and warehouse but on the other hand, when it comes to transportation, inventory, and distribution practices, it is producing greenhouse gas emissions and inappropriate disposing of waste generated from relief items. Furthermore, its energy consumption emissions in its inventory management activities is also causing ecological footprints.

In this study, a concrete, substantive, and reliable framework was proposed to help humanitarian supply chain practitioners overcome factors affecting sustainable humanitarian supply chain. This study is specifically important for humanitarian organizations in carrying out successful sustainable humanitarian supply chain management practices. The challenges addressed and discussed in this study gives adequate information to the stakeholders involved in sustainable humanitarian supply chain management. Moreover, the outcome of this study can serve as a significantly guide to coordinate sustainable humanitarian supply chain activities in other developing countries.

The result given on the conclusion entails that, the research questions were considerably assessed strongly by which indicates the sustainability humanitarian supply chain practice is required in our today's world to reach and elevate the suffering of the affected people.

5.3 Recommendations

Based on the major findings, sustainable humanitarian supply chain of IOM Ethiopia is appreciable. However, it needs to address and improve the unachieved remnant to attain fully sustainability in its humanitarian supply chain management. Hence, by relying on the study findings, the researcher recommends the below points to the problems faced. Therefore, based on the major findings that have been discussed so far, the following points are recommended for supply chain professionals in IOM Ethiopia to achieve sustainability in its humanitarian supply chain management:

- Infrastructure is not something left for the government, its rather for all stakeholder who are involved in the humanitarian operation response. Hence, IOM should play its role in improvement and development of infrastructures including engaging in repair and maintain of damaged infrastructure. Strong negotiations with concerned stakeholders are

also needed for the release of different cut-off infrastructure to resume. Especially in conflict zone, it should step up its effort in stressing stakeholders in opening closed roads/airports or safe passage for humanitarian relief.

- It is usual for organizations to act within relatively higher degrees of uncertainty. IOM should be able to cope with high degree of uncertainty in demand and supply. IOM Ethiopia must ready itself to respond to supply disruptions in different part of the country and position itself to counter rapidly by partnering with local potential suppliers which leads to empower the local supplier and cost-minimization. Moreover, it should work in diversifying its staff from the local community to mitigate problems that may arise from cultural and language difference in its supply chain. Furthermore, IOM should ensure fair distribution of economic impact throughout the country to help empower local suppliers in different part of the country.
- It is recommended that IOM develops a better understanding of the motivations of the regime that affects the sustainability humanitarian supply chain, and to proactively engage and negotiate with the regime as much as possible. As the regime is gatekeeper in setting and monitoring the rules and regulations for economic, social, and environmental activities, IOM should ready itself to be flexible and proactive where it's possible in adopting the best available option to attain sustainable humanitarian supply chain. Moreover, as for donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation, IOM should keep stressing the need for sustainability in its HSC. Furthermore, as security is an impediment to any humanitarian operation, IOM, keeping its own security first, it should keep working with all conflicting parties/ stakeholders within the humanitarian principles of humanity, neutrality, impartiality, and independence in its operations to alleviate the suffering of the affected communities.
- In relation to transportation practices, IOM should emphasis on greenhouse gas emissions reduction and other air pollutants in its fleet management to protect the environment. IOM Ethiopia can find cost effective ways to reduce the greenhouse gas emissions from their fleets and still meet the humanitarian operations of their fleet drivers. There are creative opportunities available and best practices to reduce the environmental impact of the fleet by reducing greenhouse gas emissions and other air pollutants which can lead to increase of fuel efficiency.

- Sustainable inventory management approach helps the organization to reduce the operation cost and improve the efficiency of the humanitarian operation. As Inventory of relief items are asset, it needs proper management, as it produces greenhouse gas emissions energy consumption while managing it. Hence, the sustainability of inventory management approach can be improved through the implication of energy saving LEDs, Solar energy, digitalize, just-in-time approach where it is applicable, using fuel efficient forklift, zero/ low emission materials inventory management and others as well are some of initiatives to take in protecting the environment from pollutions. Furthermore, adequate training for the supply chain staffs on reduced carbon emissions are considered as some important initiatives for the organization to maintain sustainability in the inventory management system.
- Regarding distribution practices, waste generated from relief items places more burdens on communities already struggling to cope with the disaster. Unless it is destroyed or discarded in a proper way, it is a threat to public health, safety, accessibility, and the environment, and can also be a major impediment to carry on distribution of humanitarian relief aid including increases of the overall operational costs. IOM should be able to manage waste generated from distribution of relief items as it poses risks to life and health and shall have a sustainable waste management mechanism for distributed relief items so that it can protect the environment. Furthermore, it can also simultaneously seize these opportunities from the waste generated of distributed relief items to support recovery and development outcomes.

References

Balcik, B., Beamon, B. M. (2008), Facility location in humanitarian relief. International Journal of Logistics: Research and Applications. Vol. 11, No. 2

Balcik, B., Beamon, B. M., Krejci, C. C., Muramatsu, K. M., & Ramirez, M. (2010), Coordination in humanitarian relief chains: Practices, challenges, and opportunities. International Journal of Production Economics, 126(1), 22–34.

Bamford, J. D., Gomes-Casseres, B., & Robinson, M. S. (2003), Mastering alliance strategy: A com- prehensive guide to design, management, and organization. SanFrancisco: Jossey-Bass.

Baumann, E. (2011), Modèles d'évaluation des performances économique, environnementale et sociale dansles chaînes logistiques (Phd thesis). INSA de Lyon.

Baumgarten, H., Kessler, M., Schwarz, J. (2010), Performance Measurement in Humanitarian Logistics a process-oriented perspective

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

Beske, P., & Seuring, S. (2014), Putting sustainability into supply chain management. Supply Chain Management: An International Journal, 19(3), 322–331.

Bhattacherjee P. (2012), Spirituality at work: Definitions, measures, assumptions, and validity claims. Paper presented at the Academy of Management, Toronto.

Black H. (1999), "Intuitive Biostatistics: A Nonmathematical Guide to Statistical Thinking," Vol.1 Madison, New York: Oxford University.

Brundtland, Gro Harlem. (1987), Our Common Future. Brussels, Belgium: United Nations World Commission on Environment and Development.

Cao, M., & Zhang, Q. (2012), Supply chain collaboration: roles of interior generational systems, trust, and collaborative culture. Springer Science & Business Media.

Carroll, A and Neu J. (2009), Volatility, Unpredictability and Asymmetry: an Organising Framework for Humanitarian Logistics Operations? Management Research News, 32 (11), 1024-1037

Carter, C. R., & Rogers, D. S. (2008), A framework of sustainable supply chain management: moving toward new theory. International Journal of Physical Distribution & Logistics Management, 38(5), 360–387.

Carter, C. R., & Liane Easton, P. (2011), Sustainable supply chain management: evolution and future directions. International Journal of Physical Distribution & Logistics Management, 41(1), 46–62.

CILT. (2011), Humanitarian and Emergency Logistics Professionals (HELP) Forum.

Christopher, M.G., (1998), Logistics and Supply Chain Management; Creating Value-Adding Networks. 3rd edition, Henry Ling Limited the Dorset Press, Dorchester.

Clemens, M.A., Radelet, S., Bhavnani, R. and Bazzi, S. (2004), "Counting chickens when they hatch: The short-term effect of aid and growth", Working Paper No.44, Center for Global Development.

Comes, T. (2016), Designing for Networked Community Resilience. Procedia Engineering, 159, 6–11.

Creswell, J. W. (2003), Research Design: Quantitative, Qualitative, and Mixed Methods

Dalgaard, C., Hansen, H and Tarp, F. (2004), "On the empirics of foreign aid and growth", Journal of Development Studies, No.37, pp.17-41.

Das, L. Role of Humanitarian Supply Chain Management in Various Disaster Situations across the Globe. In Managing Humanitarian Logistics; Springer: Berlin/Heidelberg, Germany, 2016; pp. 253–271.

Day, J. M., Melnyk, S. A., Larson, P. D., Davis, E. W., & Whybark, D. C. (2012), Humanitarian and disaster relief supply chains: a matter of life and death. Journal of Supply Chain Management, 48(2), 21–36.

Dollar, D., Hallward-Dremerier, M., Mengistae, T. (2004), Investment climate and international integration. Policy Research Working Paper 3323, Washington, DC: World Bank.

ECHO (Humanitarian Aid and Civil Protection department of the European Commission). (2010), "Rules and procedures applicable to property, supply, works and service contracts awarded within the framework of humanitarian actions financed by the European union", Version October 2010.

Geoffrey, M., David, D., & David, F. (2005), Essentials of Research Design and Methodology. 1sted. New Jersey, John Wiley & Sons, Inc.

Ghasemian Sahebi, I.; Arab, A.; Sadeghi Moghadam, M.R. Analyzing the barriers to humanitarian supply chain management: A case study of the Tehran Red Crescent Societies. Int. J. Disaster Risk Reduct. 2017, 24, 232–241

Gladwin, T. N., Kennelly, J. J., & Krause, T.-S. (1995), Shifting paradigms for sustainable development: Implications for management theory and research. Academy of management Review, 20(4), 874–907.

Gralla, E., Goentzel, J., & Fine, C. (2014), Assessing Trade-offs among Multiple Objectives for Humanitarian Aid Delivery Using Expert Preferences. Production and Operations Management, 23(6), 978–989.

Haavisto, I., & Kovács, G. (2014), Perspectives on sustainability in humanitarian supply chains. Disaster Prevention and Management: An International Journal, 23(5), 610–631.

Hart, S. L. (1996), Beyond greening- Strategies for a Sustainable World. Harvard Business Review, 66–78.

Hashemi Petrudi, S.H.; Tavana, M.; Abdi, M. A comprehensive framework for analyzing challenges in humanitarian supply chain management: A case study of the Iranian Red Crescent Society. Int. J. Disaster Risk Reduct. 2020, 42, 101340

Helen S.Y. Chen, Luk Van Wassenhove, T.C.E. Cheng. (2020), Designing Sustainable Humanitarian Supply Chains

Help Logistics, A., Kuehne Logistics University, IFRC & ICRC, (2018), Supply Chain Expenditure and Preparedness Investment Opportunities.

Holguín-Veras, J., Pérez, N., Jaller, M., Van Wassenhove, L. N., & Aros-Vera, F. (2013), On the appropriate objective function for post-disaster humanitarian logistics models. Journal of Operations Management, 31(5), 262–280.

IFRC. (2014), Global Logistics Services Annual Report.

IOM OSD/EPC Report. (2020)

Jahre, M. (2008), The organizational change of logistics in International Federation of the Red Cross and Red Crescent Societies. Case Study, HUMLOG-NET Project.

Jonker S. (2001), "Doing Critical Management Research" (1 ed. Vol. 1). London: SAGE

Jonsen, A. R. (1986), Bentham in a box: technology assessment and health care allocation. Law, Medicine and Health Care, 14, 172-174.

Kirk M.H. and Miller F. H. (1989), Tools and methods for the improvement of quality. Homewood IL: Irwin.

Kovács, G., & Spens, K. M. (2011), Trends and developments in humanitarian logistics – a gap analysis. International Journal of Physical Distribution & Logistics Management, 41(1), 32–45.

Kovacs, G., & Spens, K. (2012), Humanitarian logistics in disaster relief operations. International Journal of Physical Distribution and Logistics Management

Kunz, N., & Gold, S. (2017), Sustainable humanitarian supply chain management – exploring new theory. International Journal of Logistics Research and Applications, 1–20.

Laura Laguna Salvado. (2018), Towards a sustainable humanitarian supply chain: characterization, assessment, and decision-support

Li, C., Zhang, F., Cao, C., Liu, Y., Qu, T., (2019), Organizational coordination in sustainable humanitarian supply chain: an evolutionary game approach, Journal of Cleaner Production, 219, 291- 303.

Lijo, J., Ramesh A. (2012), Humanitarian supply chain management in India: A SAP-LAP framework. Journal of Advances in Management Research 9 (2): 217-235.

Mangan, J., Lalwani, C., Butcher, T. (2008), Global Logistics and Supply Chain Management. Anthony Rowe Lt., Wiltshire.

Mebratu, D. (1998). Sustainability and sustainable development: historical and conceptual review. Environmental impact assessment review, 18(6), 493–520.

Milne, M. J., & Gray, R. (2013), W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting. Journal of Business Ethics, 118(1), 13–29.

Moyo, D. (2009), Dead Aid: Why Aid Is Not Working and How There Is a Better Way for Africa, Allen Lane, London, UK

Oloruntoba, R., & Gray R. (2009). Humanitarian aid: an agile supply chain? International Journal of Physical Distribution & Logistics Management, 39(6), 486–505.

Oloruntoba, R. (2015), A Planning and Decision-Making Framework for Sustainable Humanitarian Logistics in Disaster Response. In Humanitarian Logistics and Sustainability. Springer.

Ozdemir, A.I.; Erol, I.; Ar, I.M.; Peker, I.; Asgary, A.; Medeni, T.D.; Medeni, I.T. The role of blockchain in reducing the impact of barriers to humanitarian supply chain management. Int. J. Logist. Manag. 2020.

Pedraza-Martinez, Stapleton O., & Van Wassenhove L. (2011), Field Vehicle Fleet Management in Humanitarian Operations: A case-based approach. Journal of Operations Management, 29, 404-421.

Red Crescent Societies. (2015), Humlog-Net Project

Rickard, J. (2003), A Logistician's Plea. Forced Migration Review

Ritchie, J., Lewis, J. and Elam, G. (2003), Designing and Selecting Samples.

Savitz, A. (2012), The Triple Bottom Line: How Today's Best-Run Companies Are Achieving Economic, Social and Environmental Success -- and How You Can Too. John Wiley & Sons.

Scholten, K., P. Sharkey Scott, and B. Fynes H. (2014), Mitigation processes-antecedents for building supply chain resilience. Supply Chain Management: An International Journal, 19(2): 211-228

Seifert, L.; Kunz, N.; Gold, S. Humanitarian supply chain management responding to refugees: A literature review. J. Humanit. Logist. Supply Chain Manag. 2018, 8, 398–426.

Sekaran, U. (2003), "Research Methods for Business: A Skill Building Approach", 4edn. New York, John Wiley, and Sons Inc.

Silverman, D. (2003), "Doing Qualitative Research" (Third ed. Vol. 1). London: SAGE.

SPHERE. (2011), Humanitarian Charter and Minimum Standard in Humanitarian Response, 3rd ed. The Sphere Project, Practical Action Publishing, Bourton on Dunsmore, UK

Starr K. & Van Wassenhove N. (2014), Introduction to the special issue on humanitarian operations and crisis management. Production and Operations Management, 23, 925-937.

Sodhi, M. S. (2016), Natural disasters, the economy and population vulnerability as a vicious cycle with exogenous hazards. Journal of Operations Management, 45, 101-113.

Sun, W., Chou, C., Stacy, A.W., Ma H., Unger, J., and Gallaher, P. (2007), "SAS and SPSS Macros to Calculate Standardized Cronbach's Alpha Using the Upper Bound of the phi Coefficient for Dichotomous Items". Peer Reviewed Journal, 39(1), pp.71-81.

Taupiac, C. (2001), Humanitarian and development procurement: a vast and growing market. International Trade Forum, 4, 7-10.

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

Tzur, M. (2016), The humanitarian pickup and distribution problem. Presented at the EuroHope mini-conference, Hamburg.

UNISDR. (2009), Terminology on Disaster Risk Reduction.

United Nations. (2018), OCHA and Slow Onset Emergencies.

UNOCHA. (2020), Financial Tracking Service

USAID Report. (2020)

Van Wassenhove, L. N. (2006), Humanitarian Aid Logistics: supply chain management in high gear. Journal of the Operational Research Society, 57(5), 475–489.

Schiffling, S., Hannibal, C., Tickle, M. et al. (2020), The implications of complexity for humanitarian logistics: a complex adaptive systems perspective.

Zikmund, W. G. (2010), "Business Research Methods". Thomson-South-Western, Ohio publisher

Addis Ababa University School of Commerce

Department of Logistics and Supply chain Management

Questionnaire to be filled by Employees of

International Organization for Migration (IOM)

Dear Respondents,

The questionnaire is prepared for the partial accomplishment of Masters of Arts in Logistics and Supply Chain Management titled "Factors Affecting Sustainability Humanitarian Supply Chain: The Case of International Organization for Migration - Ethiopia".

You are kindly required to fill the entire questionnaire with utmost honesty and confidence. The researcher does assure that the information given by you will be kept confidential and will be used only for the academic purpose and won't affect your carrier in any ways.

Thank you in advance for your full cooperation.

Sincerely,

Aman Hassen

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PART I

Demographic Profile of the Respondents

Instruction: Please fill your personal information for the demographic data by putting "√" mark

Sex: Male □ Female □

Age: 18-35 years □ 36-45 years □ 46 & above □

Qualification: Certificate □ Diploma □ Degree □ Masters and above □

Work experience: 0-5 years □ 6-10 years □ 11 & above □

PART II: Objective wise questions

Instruction: Describe your agreement towards factors affecting sustainable humanitarian supply chain management by indicating to what level you agree or disagree with the statements. Please tick "√" on one answer assuming 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree

PART II-A:FACTORS AFFECTING SUSTAINABILITY OF HUMANITARIAN SUPPLY CHAIN OF IOM ETHIOPIA

S/No.	*Factors affecting the sustainability of humanitarian supply chain*	*Scale*				
A	**LACK OF INFRASTRUCTURE**	***1***	***2***	***3***	***4***	***5***
1	Lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
2	Lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices negatively affecting the ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
3	Lack of adequate infrastructure (such as lack of ICT, telecom, road, and airport infrastructure as well as poor road network and distance of the office) throughout the country offices negatively affecting the ***environmental sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
B	**SOCIO-ECONOMIC FACTORS**	***1***	***2***	***3***	***4***	***5***
4	Socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
5	Socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices negatively affecting the ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					

6	Socio-economic factors (such as uncertainty in demand and supply, culture and language barrier of the working environment, absence of potential suppliers, lack of adequate funding, high inventory and transportation cost and lack of fair distribution) throughout the country offices negatively affecting the ***environmental sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
C	**EXTERNAL RULES AND REGULATIONS**	***1***	***2***	***3***	***4***	***5***
7	External rules and regulation (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
8	External rules and regulation (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
9	External rules and regulation (such as the type of regime, national regulations, security issue, donor's rules and procedures, stakeholder's interest and prioritizing of objectives and type of donation) is negatively affecting the ***environmental sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
D	**INTERNAL POLICIES AND PROCEDURES**	***1***	***2***	***3***	***4***	***5***
10	Internal policies and procedures (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top management support) is negatively affecting the ***economic sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
11	Internal policies and procedures (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top management support) is negatively affecting the ***social sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					
12	Internal policies and procedures (such as lack of updated policies and procedures, complexity of sustainable humanitarian supply chain measurement, poor organizational structure, lack of accountability, lack of internal budget and top management support) is negatively affecting the ***environmental sustainability*** of the humanitarian supply chain management practices of IOM Ethiopia					

Part II-B: *SUSTAINABLE HUMANITARIAN SUPPLY CHAIN MANAGEMENT PRACTICES IN IOM ETHIOPIA*

S/No.	***Sustainable humanitarian supply chain management practices in IOM Ethiopia***	***Scale***				
A	**Procurement practices of IOM**	***1***	***2***	***3***	***4***	***5***
1	Achieves economies of scale in procurement practices (such as needs recognition, purchase requisition, requisition review, solicitation process, evaluation and contract management, order management, invoice approvals and disputes management and record keeping)					
2	Social impacts of procurement is taken into consideration by sourcing goods and services from local suppliers					
3	Environmental-friendly products are given priority in IOM's procurement to minimize environmental impacts during needs recognition, purchase requisition, requisition review, solicitation process, evaluation and contract management, order management., invoice approvals and disputes management and record keeping)					
B	**Transportation practices of IOM**	***1***	***2***	***3***	***4***	***5***
4	IOM achieves economies of scale in transportation management practices (plan, execute, and optimize the physical movement of relief items to beneficiary destinations					
5	Local transport service providers are contracted as well as public buses are used in its humanitarian operations to benefit from their transportation services (in planning, execute, and optimize the physical movement of relief items to beneficiary destinations)					
6	IOM actively engages in reduction of greenhouse gas emissions in fleet management (in planning, execute, and optimize the physical movement of relief items to beneficiary destinations)					
C	**Warehouse practices of IOM**	***1***	***2***	***3***	***4***	***5***
7	IOM achieves economies of scale in warehouse management (during receiving, putaway, storage, picking, packing, and shipping)					
8	Occupational health and safety practices are applied in warehouses and facilities are applied (during receiving, putaway, storage, picking, packing, and shipping)					
9	Warehouses and facilities are in compliance with applicable environmental laws and regulations (during receiving, putaway, storage, picking, packing, and shipping)					
D	**Inventory practices of IOM**	***1***	***2***	***3***	***4***	***5***
10	Value of money (cost optimization) for managing stocks is applied during ordering, storing and using a organization's inventory					

11	Reserve inventories are kept in place for rapid humanitarian response for beneficiaries affected during ordering, storing, and using a company's inventory					
12	Reduction of greenhouse gas emissions and energy consumption are taken into account in inventory management practices of IOM during ordering, storing and using organization's inventory					
E	**Distribution practices of IOM**	***1***	***2***	***3***	***4***	***5***
13	Effective and efficient distribution of relief aid reaches to beneficiaries					
14	Aids are furnished to beneficiaries located in the affected areas with relief at the right time					
15	Waste generated from relief items (food and non-food items) such as food, medical and other materials are disposed as per the environmental laws and regulations					

Thank you very much!

Interview Questions

Interview questions for factors affecting sustainable humanitarian supply chain: The case of International Organization for Migration - Ethiopia

1. How infrastructure affects the sustainable humanitarian supply chain of IOM Ethiopia?
2. How socio-economic affects the sustainable humanitarian supply chain of IOM Ethiopia?
3. How external rules and regulation affects the sustainable humanitarian supply chain of IOM Ethiopia?
4. How internal policy and procedure affects the sustainable humanitarian supply chain of IOM Ethiopia?