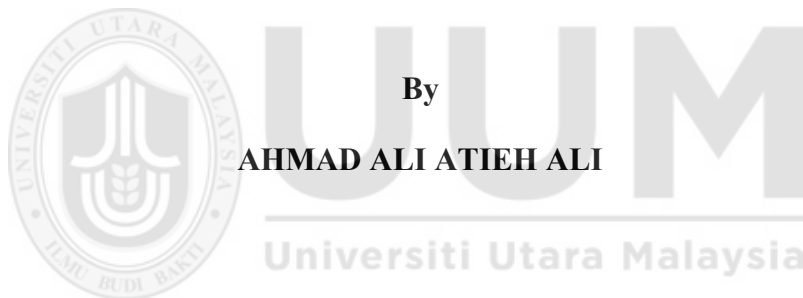


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**THE IMPACT OF SUPPLY CHAIN FLEXIBILITY, AGILITY, ALIGNMENT,
ADAPTABILITY, AND RESILIENCE ON NGO PERFORMANCE
MODERATED BY ORGANIZATIONAL CULTURE**



Thesis Submitted to
College of Business
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy



Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

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Abstrak

Rantaian bekalan kemanusiaan ialah proses dan rangkaian yang bertujuan untuk menyediakan perkhidmatan dan barangan penting kepada organisasi dan entiti dalam bidang ini. Ia dianggap sebagai tonggak asas yang memberi kesan ketara kepada prestasi pertubuhan bukan kerajaan (NGO). Walau bagaimanapun, beberapa rantaian bekalan kemanusiaan dianggap tidak kos efektif kerana ia beroperasi dalam persekitaran yang tidak stabil dan memerlukan lebih banyak pembiayaan untuk mencapai matlamat kemanusiaan yang diperlukan. Kajian ini bertujuan untuk menyiasat kesan rantaian bekalan kemanusiaan terhadap prestasi NGO dengan penyederhanaan budaya organisasi. Literatur terdahulu mengenai rantaian bekalan kemanusiaan dan prestasi NGO telah dikaji semula untuk menyokong kajian tersebut. Di samping itu, pengiktirafannya terhadap kerja kemanusiaan menjadikannya titik perubahan dalam kajian saintifik dan pelaksanaan praktikal sebagai amalan terbaik. Bantuan kemanusiaan adalah penting selepas konflik sivil, terutamanya di Jordan yang miskin sumber. Kajian ini juga berusaha untuk membantu organisasi bantuan Jordan secara saintifik. Kajian ini mengamalkan teori (*Dynamic Capabilities View* - DCV) dan soal selidik diadopsi sebagai alat bagi kajian ini, dengan pendekatan kuantitatif. Populasi kajian terdiri daripada pengarah-pengarah organisasi bantuan dan pengurus rantaian bekalan dalam organisasi-organisasi tersebut, dan sampel kajian berjumlah 310. Kaedah Separa Kuasa Dua Terkecil - Pemodelan Persamaan Struktur (*Partial Least Square - Structural Equation Modeling* - PLS-SEM) digunakan untuk menguji hipotesis. Hasil kajian ini menunjukkan impak daya ketahanan dalam konteks rantaian bekalan kemanusiaan terhadap organisasi-organisasi bantuan di Jordan. Organisasi kemanusiaan memerlukan daya ketahanan untuk bertindak balas terhadap situasi yang berubah. Sementara itu, budaya organisasi bertindak sebagai aset strategik, mempengaruhi keberkesanan organisasi dengan membentuk tingkah laku orang ke arahnya, seterusnya memberi kesan kepada prestasi. Cadangan penting daripada kajian ini ialah keperluan untuk penyiasatan lanjut mengenai rantaian bekalan kemanusiaan dan prestasi NGO di Jordan. Kajian ini menonjol sebagai salah satu daripada segelintir yang menjelaskan prestasi organisasi ini di Jordan secara khusus.

Kata kunci: rantaian bekalan kemanusiaan, Pertubuhan Bukan Kerajaan, Prestasi, budaya organisasi.

Abstract

Humanitarian supply chains are processes and networks that aim to provide essential services and goods to organisations and entities in this field. It is considered a fundamental pillar that significantly affects the performance of non-governmental organisations (NGOs). However, some humanitarian supply chains are considered cost-ineffective because they operate in unstable environments and require more funding to achieve necessary humanitarian goals. This study aimed to investigate the impact of the humanitarian supply chain on the performance of NGOs with the moderation of organisational culture. Previous literature on the humanitarian supply chain and the performance of NGOs was reviewed to support the study. The study adopts the Dynamic Capabilities View (DCV) theory the questionnaire was adopted as a tool for this study, as the quantitative approach was used. The study population consisted of directors of relief organizations and supply chain managers in those organizations, and the study sample amounted to 310. The Partial Least Square - Structural Equation Modeling (PLS-SEM) was employed to test the hypotheses. The results of this study show the impact of resilience in the context of humanitarian supply chains on relief organizations in Jordan. Humanitarian organizations need resilience to respond to changing situations. Meanwhile, Organisational culture acts as a strategic asset, influencing the organisation's effectiveness by shaping people's behaviour towards it, thereby impacting performance. A notable recommendation from this study is the need for further investigation into the humanitarian supply chain and the performance of NGOs in Jordan. This study stands out as one of the few that shed light on the performance of these organisations in Jordan specifically.

Keywords: Humanitarian supply chains, Non-Government Organizations, Performance, Organizational culture.

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I dedicate this work to the soul of my dear father. I hope to ALLAH that you are happy, Father, as you look at your son, who has finished this educational stage.



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List of Abbreviations

DCV	Dynamic Capability View
HSC	Humanitarian supply chain
INGOs,	international Non-governmental organizations
NGOs	Non-governmental organizations
OC	Organization Culture
P	Performance
RNGOs	Royal international non-governmental organizations
S C	Supply Chain
SCAD	Supply Chain Adaptability
SCAG	Supply Chain Agility
SCAL	Supply Chain Alignment
SCF	Supply Chain Flexibility
SCM	Supply Chain Management
SCP	Supply Chain performance
SCR	Supply Chain Resilience

CHAPTER ONE

BACKGROUND OF THE STUDY

1.1 Research Background

Supply chain management (SCM) and logistics are vital for any organisation aiming for efficiency and success. SCM involves strategically coordinating business functions across a company and the entire supply chain to improve performance (Mentzer et al., 2001, p. 18). On the other hand, logistics, a part of SCM, ensures the smooth flow and storage of goods, services, and information from origin to consumption to satisfy customer needs (CSCMP, 2015).

Both companies and the supply networks they rely on have grown more vulnerable to dangers as a result of the growing influence of globalisation. Both the organisational levels, with supply chain risk management (SCRM), and the beneficiary level, with humanitarian supply chain management (HSCM), are components of supply chain management (SCM) that deal with natural catastrophes. HSCM is the research subfield of SCM and logistics management that intersects with disaster management. It is also the subfield of SCRM that deals with risk resulting from catastrophes. Both subfields make up HSCM. "The process of planning, implementing, and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption to meet the requirements of the end beneficiary" is what is meant by "HSCM" (Thomas & Mizushima, 2005, p. 60).

The relationship between humanitarian and commercial supply chains is complex and multifaceted. While both supply chains share some common principles and practices,

significant differences exist in their objectives, priorities, and operational challenges (Mentzer et al., 2001, p. 18).

Humanitarian supply chains primarily focus on the efficient and effective delivery of humanitarian aid and relief in response to crises, such as natural disasters, conflicts, or epidemics. The main goal is promptly providing essential goods and services to affected populations, often in challenging and volatile environments. Humanitarian supply chains prioritise responsiveness, flexibility, and adaptability to rapidly changing circumstances (CSCMP, 2015).

On the other hand, commercial supply chains are designed to support the flow of goods and services in a profit-driven market context. The primary objective is to maximise efficiency, minimise costs, and optimise customer satisfaction. Commercial supply chains are typically characterised by longer-term planning, larger volumes, and more stable and predictable demand patterns.

While there are differences, there are also meaningful connections between humanitarian and commercial supply chains. Some NGOs may leverage commercial supply chain practices, such as procurement, inventory management, and distribution strategies, to enhance their efficiency and effectiveness. Collaboration and partnerships with commercial organisations can also support humanitarian supply chain operations by providing access to expertise, resources, and infrastructure.

As for the relationship between humanitarian supply chains and the performance of NGOs, it is generally recognised that well-managed supply chains can positively impact an organisation's ability to deliver aid effectively. Efficient supply chain practices can

improve responsiveness, reduce lead times, improve coordination, and enhance distribution networks. These factors can ultimately improve the overall performance of NGOs in terms of reaching affected populations, delivering the right aid at the right time, and maximising the impact of their interventions (Thomas & Mizushima, 2005, p. 60).

However, it is essential to note that the performance of NGOs is influenced by various other factors beyond the supply chain, including organisational capacity, funding, coordination with other actors, and the local socio-political context. Therefore, the relationship between supply chain performance and overall NGO performance is complex and interdependent (Balcik et al., 2010).

The environment where non-profit organisations operate continuously changes and becomes more complex, dynamic, unpredictable, and globalised. The changes in these organisations' work environments have posed opportunities and challenges. However, these organisations must adopt effective management practices such as SCM to exploit the opportunities and cope with the challenges. In highly complex work environments and witnessing many conflicts, organisations have to cooperate directly and improve their performance through their supply chain. Concerning this, findings from previous studies have found that supply chain management (SCM) plays an essential role in providing firms with the competitive advantage that they need to improve their organisational performance (Dumitrascu, Dumitrascu, & Dobrotă, 2020).

The relationship between humanitarian supply chains and the performance of NGOs is multifaceted. Humanitarian supply chains are designed to deliver aid and relief efficiently and effectively in response to crises, prioritising responsiveness, flexibility, and adaptability. NGOs can benefit from incorporating certain commercial supply chain

practices to enhance their operations. Collaboration with commercial organisations provides access to expertise, resources, and infrastructure. Well-managed supply chains positively impact the ability of NGOs to deliver aid promptly, reach affected populations, and maximise the impact of their interventions. However, the overall performance of NGOs is influenced by various factors beyond the supply chain, such as organisational capacity, funding, coordination, and the socio-political context. The relationship between supply chain performance and overall NGO performance is complex and interdependent, requiring a holistic approach to organisational management (Altay, Gunasekaran, Dubey & Childe, 2018).

Over the last decade, the demand for humanitarian assistance has grown significantly due to significant crises worldwide. One example is the increasing number of people forcibly displaced by conflicts and violence, reaching over 82 million in 2020. Additionally, the unprecedented global impact of the coronavirus pandemic has further exacerbated existing humanitarian crises and led to the emergence of new ones. These ongoing crises have placed immense pressure on Humanitarian Organizations (HOs) to deliver aid more efficiently and cost-effectively (Iriani & Andjarwati, 2020).

Unfortunately, the challenges HOs have faced recently have disrupted many humanitarian projects and programs. Some operations have been forced to operate at reduced capacity or have come to a standstill, impacting the ability to respond effectively to crises. This situation poses a gloomy outlook for future humanitarian responses. Looking ahead, projections from the World Bank indicate that the number of people in need of assistance in fragile and conflict-affected situations is expected to rise to 46% of

the global population by 2030. This signifies the growing scale and complexity of humanitarian challenges HOs will face in the coming years(Roh, Lin, & Jang, 2022).

In addition to these challenges, HOs are also expected to contribute to achieving the United Nations Sustainable Development Goals (SDGs) by 2030. These goals include eradicating poverty, ensuring access to clean water and sanitation, ending hunger, and addressing various socio-economic and environmental issues. Meeting these goals adds further impetus to the work of HOs, as they are required to address not only immediate humanitarian needs but also contribute to long-term development objectives.

In summary, HOs grapple with increasing demands and complex challenges in delivering humanitarian assistance. The rising crises, disruptions caused by the pandemic, and the need to contribute to the SDGs underscore the urgency for HOs to find innovative and practical approaches to fulfil their mission despite mounting humanitarian needs(WHO, 2022).

In the aftermath of various catastrophes, various governmental and non-governmental groups coordinate and carry out relief efforts in humanitarian assistance. The work of relief organisations includes addressing urgent problems of a humanitarian nature, including, amongst other things, the distribution of medical supplies and food aid, the provision of water and sanitation services, and the provision of shelter for the communities that have been impacted. Humanitarian groups expend a significant amount of effort to assist governments and individuals in recovering from the effects of natural catastrophes by delivering relief supplies. Disasters may be tragedies, destructive deeds, plagues, or crises. As a direct consequence, these natural calamities cause minor and significant injury to people. Therefore, it is essential to ensure that the operations of the

humanitarian supply chain are carried out effectively and efficiently to reduce the amount of suffering experienced by people (Balcik et al., 2010).

Preparations for operations related to disaster relief often begin before the disaster occurs. Humanitarian non-government organisations must predict the demand for relief supplies after the disaster/catastrophic event and purchase, store, and deliver them. Moreover, the success of HSC is affected by the planning before the disaster and the outcomes after it. Therefore, the planning operation of HSC is critical to HSC's progress (Altay, Gunasekaran, Dubey & Childe, 2018). With meagre resources and finite budgets, performance measurement is crucial to achieving humanitarian action goals (life-saving and decreasing the suffering of individuals), guaranteeing the finance of the donor (accountability), and economic efficiency. Generally, HSC is the standard for measuring its operations' success, such as efficacy or competence. This approach allows HSC to keep its location in the humanitarian responsiveness "market" (order qualifier) (Salvadó, Lauras, & Comes, 2017).

Because humanitarian organisations are also expected to exhibit efficient operations from the perspective of the beneficiaries, particularly in the event of a catastrophe with a sudden start, operational efficiency may be critical. It can contribute to the saving of lives (van Wassenhove, 2006). According to Kovacs and Spens (2007), several actors and beneficiaries are interested in NGOs' performance. These actors include humanitarian organisations, donors, implementing partners, and local governments. These actors are interested in the performance of NGOs for two reasons: to understand how it can be improved and to learn how the funds were used in the operations. It is possible to see this curiosity in humanitarian actors' efforts to quantify the effectiveness of their actions. In

addition, implementing partners are asked by significant funders like the European Development Fund and the United Nations (UN) to monitor and assess their initiatives and track their operational effectiveness (Tatham & Hughes, 2011).

The humanitarian supply chain (HSC) ensures that aid and recovery supplies reach people when, where, and how much they need (Alem et al., 2021). Governments, national and international relief organisations, and security agencies must coordinate their activities to ensure effective and efficient relief operations (de Camargo Fiorini et al., 2021; Yadav & Barve, 2015). This is necessary because no organisation can solve all the problems and challenges in the humanitarian world (de Camargo Fiorini et al., 2021). So, for effective and efficient coordination of aid activities to lower costs and increase efficiency, different actors in the network need to work together (Tomasini & Van Wassenhove, 2009; Dubey et al., 2020). Because of this, any plan to manage the HSC must be a multifaceted one that includes the management of resource procurement and the flow of supplies through humanitarian aid organisations and international agencies (Shareef et al., 2019; Yadav & Barve, 2015) with the flexibility (Altay et al., 2018a, b) to make sure that affected people get the relief items quickly.

The humanitarian supply chain's (HSC) primary goal is to ensure relief supplies are distributed to beneficiaries if a humanitarian disaster occurs (Salvadó et al., 2017). Aid organisations or humanitarian organisations (HOs) have a long history and have been praised in Eastern and Western civilisations. For example, in 1859, Henry Dunant attended the Second Italian War of Independence and healed the soldiers who suffered at the Battle of Solferino; the founder of modern humanitarianism, the Red Crescent Movement and the International Red Cross is Henry Dunant (Bürger, 2015),

Humanitarian logistics encompasses a range of activities at varying periods. In different crises, all these activities give a purpose to help individuals survive.

According to the Center for Research on the Epidemiology of Disasters (CRED), 6,637 natural disasters occurred worldwide between 1974 and 2003. These disasters affected more than 5.1 billion people, left more than 182 million homeless, caused more than 2 million deaths, and resulted in reported damages totalling USD 1.38 trillion. According to the Disaster Resource Network Humanitarian Relief Initiative, natural catastrophes were responsible for more than 180,000 fatalities and the loss of over USD 200 billion in economic activity in 2005 alone (HRI). The terrorist attacks that took place on September 11, 2001, the tsunami that struck South Asia in 2004, Hurricane Katrina in 2005, and the earthquakes that hit Pakistan in 2005 and Java in 2006 are only a few instances of the worst natural catastrophes that civilisation has seen in recent years.

The aftermath of these occurrences will have massive repercussions, not only in the immediate sense (in the form of injuries, deaths, and infrastructure damage) but also in the more distant sense (in the form of shifts in social and economic circumstances). Even though it was impossible to prevent these events, there were various ways in which the damage may have been mitigated, including the organisation of humanitarian aid. For instance, injuries and deaths might have been avoided after the tsunami that struck in 2004, and assistance could not be delivered to those affected by the earthquake in Pakistan owing to the logistical challenges posed by the lack of infrastructure in that country. Humanitarian OR is distinct from other applications of OR because it deals with events that are particularly singular and highly variable. These events frequently occur in environments with limited resources and infrastructure, involving multiple organisations

cooperating in response activities simultaneously. The complexity of the response to these occurrences increases due to these considerations.

Nevertheless, aid for developing the region, famine aid and operation of refugee camps differ significantly from those needed after a natural disaster (Kovács & Spens, 2007). Between now and 2025, the number of humanitarian needs is expected to rise significantly. Due to urbanisation and the unqualified hazards, our interdependence and complexity have become more evident. Unique threats like unchecked urbanisation, global warming, and societal unrest cannot be answered in isolation. The dangers and problems encountered by humanitarian workers are multiplied. Over three times as many civilians were murdered in the previous year due to violent wars, such as those in Syria, Iraq, Ukraine, and Yemen. The number of terrorist incidents is also on the increase. The overwhelming majority of global terrorism is in Iraq, Nigeria, Syria, Pakistan, Somalia, and Syria (IFRC, 2016).

The geographical location of Jordan is of strategic importance. However, with limited natural resources, the challenges were more significant than Jordan's size regarding social, economic, and political issues that faced the state since its inception; until the late 1980s, the state was the leading provider of services to the community. In Jordan, many organisations help people in need. There are many reasons why these kinds of groups exist. Humanitarian aid is needed in many situations. Because of the wars that have happened in the past, the instability caused by terrorist groups, and the fact that thousands of families have had to move, there is likely to be a need for humanitarian aid and problems with shelter and violence. In Jordan, three types of organisations help people. The first type of humanitarian organisation is funded by a private group and registered

with the NGO Council as an NGO. Other international groups like Save the Children, Oxfam, DRC, NRC, and MSF are also listed in this section. The second kind of humanitarian organisation is administered and supported by religious institutions like churches and mosques. These organisations fall under the second category of humanitarian organisations. The United Nations is the most prominent example of an international humanitarian organisation. Many humanitarian organisations are operating under the umbrella of the United Nations, such as the United Nations Children's Fund (UNICEF), which focuses on protecting the rights of children; the United Nations Development Program, which investigates problems that arise from implementing development projects in various nations; and the World Health Organization, which focuses on protecting the health of people around the world.

There are nearly two million or more refugees in Jordan, and most have Jordanian nationality. Most are registered with UNRWA, allowing them to obtain Jordanian citizens' rights and privileges. In 1967, nearly 158,000 Palestinian citizens fled from Gaza to Jordan. Migrations continued in Jordan, making Jordan a beacon for settlement in a region witnessing many conflicts (*Annual Operational Report 2017*, 2017). Since the beginning of the Syrian crisis in 2011, The Syrian civil war has led to a large influx of Syrian refugees to foreign nations within the area as well as in other regions. Jordan hosted a significant number of Syrian refugees. There are 1.2 million people (Alshoubaki & Harris, 2018).

Addressing the need for Syrian refugees has drained the Jordanian government's resources and substantially affected Jordanian society (jawazneh, 2012 Alshoubaki & Harris, 2018). Jordan is the country most affected by the Syrian crisis. Compared with

its population in the world, Jordan ranks second in respect of refugees' number, with 89 refugees per thousand population. In Jordan, most Syrian refugees reside in impoverished cities: Over eighty per cent of people live under the poverty level. Additionally, 51% are children, while four per cent are old-age individuals. The Jordanian government has attempted to create formal employment opportunities for Syrian refugees. Forty-six thousand labour permits were issued in 2017 alone (UN-Refugee-Agency, 2018). Since the crisis began, over 1 million Syrians have fled to Jordan, of which 655,624 registered refugees accounted for 10% of Jordan's total population. Of these, 516,072 (79%) live in the host country community, while the remaining 139,552 (21%) live in the camp, mainly Za'atari and Azraq. The increasing influx of refugees for six consecutive years has put much pressure on the return of Jordanian society, economy, system, and natural resource system.

However, aid groups have emphasised relief supply delivery to save needy individuals, which requires a flexible, adaptive, well-aligned supply chain. Practitioners and researchers have focused on this during the last decade. However, most businesses address agility and durability in the supply chain, although agility, adjustability, consistency, and resilience overlap (Dubey, Singh & Gupta, 2015). Supply chain agility (SCA) includes adaptability. Supply chain flexibility, agility, and alignment. Humanitarian distribution standards need flexibility, resilience, adaptation, and swift reaction (Bhattacharya, Hasija, & Van Wassenhove, 2014). Despite the significant progress in improving the humanitarian supply chain, numerous problems and repercussions still need to be addressed. Flexibility is vital for humanitarian supply chains and policymakers, which shows NGO success (Kabra & Ramesh, 2016). Thus, directors should develop a flexible organisation that adapts to beneficiary demands (Garcia-

Alcaraz et al., 2017). According to Sommanawat (Uman & Sommanawat 2019) research, flexibility improves policymakers' and practitioners' supply chains and NGO performance. Another study that conceptualises supply chain flexibility is suggested.

However, humanitarian activities rely on a solid supply chain that can deliver the correct goods at the right time and location (Boin et al., 2010). A resilient supply chain is ready, strong, flexible, and able to recover (Sawyerr and Harrison, 2019). The downstream, upstream, and focal firms and the supply chain might provide risks and uncertainties (Christopher and Peck, 2004; Giunipero and Aly Eltantawy, 2004). Supply chain risks reduce resilience (Wagner and Bode, 2006; Zsidisin and Wagner, 2010). Relief organisations are agile, which improves humanitarian SC functioning. Agility impacts company success (Yang & Liu, 2012). Supply chain agility requires consistency in reacting to performance changes. These elements should be considered while studying agility (J. Yang, 2014). HSC performance is hard to assess because of its intangible nature, limited data availability, uncertain findings, and variable work circumstances (Abidi, de Leeuw, & Dullaert, 2020). Anjomshoe et al. (2019) say HSC Performance Measurement Activities (PMA) are time-consuming and secondary. Few researchers have studied the PMA's complexities in the previous decade. Patil et al. (2020) identified 19 PMS hurdles and offered several tactical solutions to improve HSC performance assessment. Anjomshoe et al. (2019) noted that several performance evaluation frameworks had been developed. Few researchers concentrated on implementing such frameworks. They also suggested studying PMS implementation components and architectures. Lu et al. (2016) said that HSC PMS is still developing. Abidi et al. (2020) investigated PMS. They addressed various difficulties and solutions. Frameworks and

models have shaped PM literature, but many implementation components still need to be studied.

Organisational culture affects disaster relief SC teamwork and management (Altay et al., 2018). According to Rodon, Maria Serrano, and Giménez (2012), disaster relief organisations' culture determines their success. According to a field study of local assistance organisations in Jordan, 73% of their financing and contributions come from locals and non-Jordanians. These local organisations benefit 1.5 million residents. Organisational culture and support initiatives include culture, women's and children's care, education, orphans, health, human rights, and political problems (Record of Associations, 2018). Supply chain agility and organisational structure impact performance (Martinez-Sanchez & Lahoz-Leo, 2018). Most humanitarian logistics and SC academics feel that humanitarian SC's agility relies on dynamic perception skills to handle unknown threats. Thus, it is disaster-prone (Jernsittiparsert & Kampoomprasert, 2019). Although this technique asks for "disaster relief operations" to modify humanitarian actors' culture, there is no empirical evidence to support organisational culture's modest influence on HSC agility and flexibility operations on functioning (Altay et al., 2018).

Natural catastrophes devastate societies globally. Due to rapid urbanisation and environmental degradation, nature is producing numerous challenges for humans. Humans create most of these issues. The Uttaranchal flood showed that city construction errors have repercussions. Disasters are destroying lives and the economy rapidly. Government, non-profits, and private organisations must be better prepared to react to and recover from catastrophes like Hurricane Katrina and Pacific tsunamis. This requires

effective humanitarian supply systems that provide timely aid. Jordanian NGOs saved thousands of lives during the Syrian civil war, demonstrating a humanitarian approach to supply chain management. The research is consistent. This study uses secondary sources like academic research articles from throughout the globe.

Despite prior studies highlighting the importance of the humanitarian supply chain to NGOs, more needs to be done in this area. Previous research found few studies on humanitarian supply chain practices in Jordanian NGOs. This is a knowledge gap. This study is the first to investigate how humanitarian supply chain practices affect NGOs in Jordan.

1.2 Problem Statement

As the number of people affected by disasters keeps going up every year, there are more academic papers proposing conceptual frameworks and optimisation models for humanitarian supply chain problems (Dubey et al., 2019; Banomyong et al., 2019). According to (Mhd Omar & Syed Ismail, 2019) there is a weakness in the performance of NGOs in Jordan, and this is due to the presence of many challenges and consequences that face the work of these organisations in Jordan, such as weak economic diversity and government procedures and instability in neighbouring countries. Thus, addressing those challenges sustainably while acknowledging the fragility and instability situation of some Arab countries, plus the geopolitical tensions, is needed.

The goals and measures of performance of humanitarian and regular supply chains are very different. In traditional supply chains, stakeholders are the "owners" of the chain. This is not the case in humanitarian supply chains, which do not have profit goals and

rely heavily on volunteers and donors. Still, the many models for building efficient supply chains based on minimising costs (or, in the same way, maximising profits) can be used directly or with some changes for humanitarian supply chains. An example of this would be an integrated multi-objective supply chain (SC) model that simultaneously employs fill rate, cost, and flexibility as measures for both strategic and operational SC planning (Abidi et al., 2020; Bag, 2016; Nurmala et al. 2017; Banomyong et al. 2019) work on stochastic production/inventory control models for recovery planning, especially for hurricanes, to figure out how long to wait to make decisions to get the best balance between logistics to cost efficiency and the accuracy of hurricane forecasts (Ramadan & Borgonovi, 2015; Aboramadan, Dahleez, Farao, & Alshurafa, 2021) There is still a lack of consensus on the main components of the performance of NGOs; most frameworks emphasise the performance of procedures/projects while ignoring organisational processes and functions. Therefore, adopting a framework covering the different NGOs' areas is necessary.

The practice framework of NGOs should apply to finance, corporate operations and processes. Only by defining goals, identifying performance indicators, data collection, and indicators analysis can the plan/project performance be implemented and end. While publications presented a couple of definitions and approaches that address functionality measurement and management in NGOs, sophisticated performance still needs to be created. Implementation and administration in the humanitarian supply chain is still a wide field for study. As Abidi, Leeuw and Klump, (2014) (Kwateng, Tetteh, Asare, & Manu, 2022) recommended, functioning and administration should be developed in the supply chain humanitarian.

Preparing for disaster relief efforts during a disastrous event is fundamental, and humanitarian organisations must anticipate the demand for relief supplies, storage, and transportation. This preparation depends on the humanitarian supply chain's effectiveness, with disaster preparations crucial to functioning (Altay, Gunasekaran, Dubey & Childe, 2018). There is a need to check each humanitarian logistics work to support the planning and implementation of basic disaster reduction operations to understand the connections between different participants and the relationships among the various phases of the disaster relief operation and propose its impact on the humanitarian logistics work. The specific effect of the field's challenges is still comprehensive (Abidi, de Leeuw, & Dullaert, 2020).

Only some studies discussed NGO Performance Management (Kraft, Rennhak, & Sauer, 2016). Researchers and practitioners have been interested in humanitarian supply chains because they improve organisations' performance. The crisis management stages covered by humanitarian supply chains include mitigation, readiness, response, and recovery. Researchers and practitioners alike have taken notice of this. They are lessening the potential for disaster to cause widespread destruction of life and property. HSC includes delivering supplies and equipment for search and rescue operations and emergency repairs to the infrastructure. Since this is the case, HSC planning is far more challenging than commercial supply chain planning. CSCs. NGO efficiency will improve due to HSCs adopting innovative strategies to improve response time and lower costs. This is according to a recent study (Altay, Gunasekaran, Dubey, & Childe, 2018).

More focus and framework are needed on development covering most logistics elements in humanitarian logistics services; there is a pressing need for research addressing the

supply chain humanitarian, and it is essential to review the history of humanitarian organisations. It is of value to practitioners in those organisations to avoid mistakes in the future and learn from these organisations' past (Bürger, 2015; Chiappetta Jabbour et al., 2017). Most NGOs and other humanitarian organisations have people in control of logistics and (SCM) who aren't specialists in this sector, so they can't fix issues during operations. As a result, there is a big difference in the objectives and performance of the humanitarian and traditional supply chains. In the HSC, the purpose is not to make profits, and volunteers and donors are considered "stakeholders" (Ku, Wu, & Chen, 2016; Jeble, Kumari, Venkatesh, & Singh, 2020). Many NGO leaders started working by taking advantage of their social sciences, development studies and legal backgrounds. However, few of the leaders of NGOs have appropriate experience in logistics management, and exact requirements pointed to an urgent need for research on humanitarian supply chains' capabilities despite some exploratory studies. Therefore, there are no effective measures within a humanitarian aid organisation. It must have experimental and conceptual work on the global humanitarian processes and not for profitability organisations (Chiappetta Jabbour et al., 2017; Agarwal, Kant, & Shankar, 2019). Therefore, it is necessary to apply the concepts of humanitarian supply chain management in different contexts, which may test the theories' global validity, which was employed in the studies addressing humanitarian supply chain management and understanding context-dependency in humanitarian supply chain management.

There are still a few pioneering studies on flexibility and its relationship to NGO performance (Jermisittiparsert & Kampoomprasert, 2019). Also, experimental research is needed to test flexibility in the performance of organisations (Fayezi & Zomorodi, 2015; Kwateng et al., 2022). Flexibility is closely related to manufacturing short product life

cycles (Qrunfleh & Tarafdar, 2014; (Ciampi, Marzi, & Rialti, 2018). Therefore, Flexibility, in general, needs more research to find the level of practice and appropriateness and to understand other organisational variables adequately, which is an essential and straightforward matter (Al-jawazneh, 2012). As a result, the supply chain has risen to prominence to enhance organisational performance. Flexibility and agility are considered supply chain components and one of the most significant elements in improving organisational performance (Garcia-Alcaraz et al., 2017). When it comes to developing communities, especially in regions prone to natural catastrophes, its significance reaches a whole new level, bringing an entirely new degree of relevance (Jermisittiparsert & Kampoomprasert, 2019). The variety of aspects involved necessitates flexibility in response to shifting demands. Flexibility maintains seamless material movement throughout a business supply chain (Karunasena and Amaratunga, 2016). In the context of HSC, flexibility refers to the actors' capacity to move fast in response to unforeseen requests and requirements from impacted individuals. For instance, how quickly catastrophe victims are provided with water, food, clothing, medications, blankets, and other supplies.

Supply chain agility (SCA), or the ability to effectively manage market relationships within an organisation, is vital to enhancing the efficiency of disaster relief efforts (Hafeez et al., 2018). Despite much research on agility in humanitarian supply chains (HSCs), there needs to be more understanding of how and when these organisations develop such agility (Kabra and Ramesh 2016; Altay et al. 2018; Ivanov 2020). Existing studies primarily focus on how HSC agility impacts the execution of humanitarian operations. Still, more research is needed on the role of crucial elements in building this agility (Gunasekaran. 2018).

Agile supply chain management requires flexibility and a constant readiness to adapt to changes, such as shifting market and customer needs. Often dealing with high-stakes threats to human life, HSCs must swiftly deliver rescue and relief goods and services to disaster-stricken areas (Jabbour et al., 2017). These chains are typically temporary and created in response to specific, unpredictable crises. They must promptly and flexibly address affected populations' diverse and unique requirements while balancing standardisation and adaptation (Heaslip et al., 2018). Achieving these extensive and varied humanitarian goals demands a high degree of agility. Hence, agile supply chain management principles are increasingly relevant in HSCs (Heaslip et al., 2018; Oloruntoba and Kovacs, 2015).

More empirical research is needed to test agility in HSC organisations (Fayezi & Zomorodi, 2015; Kabra & Ramesh, 2016). There is a need to understand the effect of SC-Agility on functioning, as our understanding of supply chain agility is limited (Altay et al., 2018). Even though research suggests that SC-Agility is a distinct ability, it concluded that the Agility supply chain positively impacts performance (Eckstein, Goellner, Blome, & Henke, 2015; (Kabra et al., 2019). The strength of the correlation shown by agility between the market and the organisation is defined as the ability of organisations to respond quickly to catastrophic changes, which helps organisations improve their performance by feeling those short-term fluctuations in the unregulated conditions that arise as a result of disasters (Jermisittiparsert & Pithuk, 2019).

According to Eckstein et al. (2015), there is a need to integrate SC alignment with SC Agility and adaptability. It has been found that SC Alignment is a strong predictor of

human and logistical functioning. However, questions still need to be addressed: How complimentary is supply chain agility in an NGO's performance? (Gunasekaran et al., 2018).

The supply chain alignment has a significant influence on the performance of NGOs. The performance of organisations can be improved through alignment, as alignment enhances transparency, cooperation and risk-sharing (Dubey, Singh, & Gupta, 2015; Dubey et al., 2018). Humanitarian NGOs must improve their performance by merging their functions and reducing administrative levels. This merging will lead to measuring the functioning of the NGO's performance more efficiently, so from here emerges the necessary need to align and conduct additional experimental studies (Agarwal, Kant, & Shankar, 2019). In addition, many scholars have made many contributions, but they are all from a commercial supply chain perspective. Each of these was considered an influencer but did not consider the essential characteristics of supply chain alignment. This impact on the performance of the humanitarian supply chain has yet to be thoroughly investigated (Dubey & Gunasekaran, 2016). Even though scholars have made significant contributions to supply chain alignment, It is still being determined how much of an influence they have on the performance of NGOs or what their connection is (Dubey et al., 2015). Several authors have proposed alignment and improved performance (Huang, 2014).

Moreover, there's a need to conduct further research on the supply chain adaptability capacity to understand the organisation's role in improving its performance through adaptability (Dubey et al., 2018). There is a need to expand our understanding of enabling people, Systems and structures to apply organisational adaptability; many leaders of organisations face a dilemma of how to help organisations to adaptability; it is the main

challenge that faces leaders working within those organisations (Uhl-Bien & Arena, 2018). Scholars believe that HSC adaptability plays a crucial role in cost-cutting and saving. Moreover, response time can be improved with flexibility. One way of doing so is outsourcing; the overall performance of an NGO can be upgraded through adaptability as well (Jermisittiparsert & Kampoomprasert, 2019). To achieve better disaster relief operations, there is a need for a higher level of adaptability to domestic circumstances, adequate experience and skilful staff. In Confusion's case, even though research proposed that SC-Adaptability is a distinct capability, little is understood regarding its performance implications and the situations in which it is valid (Zapke et al., 2021). Nevertheless, supply chain adaptability is a significant factor in companies, particularly in humanitarian work (Marin-Garcia, Alfalla-Luque, & Machuca, 2018).

One definition of resilience is "the capacity of an organisation that allows the organisation to survive in a chaotic environment." Resilience may be defined as the ability of the organisation that enables the organisation to survive. Resilience supply chains have attracted significant attention from scientists because of their role in improving the performance of organisations and their ability to return to normal after the occurrence of a disaster quickly (Altay et al., 2018). The development of resilience occurs when humanitarian organisations involve their humanitarian workers in comprehending the needs of those impacted by disasters and interpreting these needs in such a way that they are successfully disseminated across the system (Tabaklar 2017).

The success of senior management in NGOs depends on resilience and its ability to meet internal and external environmental challenges (Abeysekara, Wang, & Kuruppuarachchi, 2019). Building the capacities of humanitarian supply chains based on resilience is vital

to mitigate risks during disaster response, which is reflected in the performance of organisations. The capability to bounce back from such incidents is known as supply chain resilience.

There is a need for more studies on supply chain resilience, primarily to address the shortage of research regarding the flexibility and functioning of Humanitarian supply chains in the regions affected by natural disasters, among others. Some authors have argued that agility can primarily achieve resilience (Umar, Wilson, & Heyl, 2017).

As shown by foreign policy discussions and national and local-level activities, partnerships are critical to mitigating vulnerability and improving community resilience, settlements, and countries. The structure of relationships, on the other hand, needs to change. Humanitarian and development players can collaborate more, or at least in parallel, globally (IFRC, 2016).

Collaboration cannot be limited to direct supply chain members; state agencies and non-governmental organisations must also be involved in the supply chain apparent as direct supply chain members cannot do all; this shows the role you play in supply chain resilience during or after disruption of public and private collaboration shows the critical role played by not-for-profit organisations in providing relief to affected populations. To achieve supply chain resilience during or after a disruption (Relief & Program, 2017). Extending the studies is necessary to understand resilience's impact on NGO performance (Gunasekaran et al., 2018). Consequently, catastrophe resilience has been studied in recent years, yet resilience in humanitarian work is still a relatively new field of study.

Finally, "organisational culture" refers to the collection of shared beliefs, attitudes, and practices that differentiate one organisation from another. This is the description that is most often recognised. It dramatically impacts employee motivation and contentment at work, which, in turn, may have either a favourable or lousy effect on performance. (Behl et al., 2021). Further research is necessary to address organisational culture, its impact on the HSC in general, and its effect on NGO performance (Dubey & Gunasekaran, 2016).

More research is needed to address organisational culture's role in the performance of non-governmental organisations (NGOs), given its importance in humanitarian supply chains (Dubey et al., 2015; Kabra & Ramesh, 2016). Organisational culture significantly influences whether learning is encouraged or discouraged. It's essential in bridging the gap between primary and performance organisations, particularly regarding the interaction effects of supply chain agility and resilience (Altay et al., 2018).

For NGOs to achieve their goals and maintain financial adaptability, they need to adhere to business strategies that encompass communication, human development, operations and supply chain management, project management, organisational culture, success metrics, partner management, and financial management (Aboramadan, 2018)

Future research on organisational performance could consider the potential mediating role of organisational culture (Martinez-Sanchez & Lahoz-Leo, 2018). Indeed, several researchers argue that corporate culture is a crucial determinant of performance (Samad, Alghafis, & Al-zuman, 2018).

However, disaster relief workers often need more understanding of local cultures, hindering operations (Papadopoulos et al., 2016). Despite the practical need for disaster

relief operations to align with the cultural backgrounds of humanitarian actors, there's limited empirical research examining the moderating effect of organisational culture on the impact of agility and resilience practices in humanitarian supply chains (HSCs) on overall functionality (Altay et al., 2018).

1.3 Research Questions

Based on the above-stated issues, the present research seeks to expand the knowledge and understanding of variables affecting the NGO's performance in Jordan. Precisely, the main research questions are as stated below:

- What is the relationship between (Flexibility) and NGO performance in Jordan?
- What is the relationship between (Alignment) and NGO performance in Jordan?
- What is the relationship between (Adaptability) and NGO performance in Jordan?
- What is the relationship between (Resilience) and NGO performance in Jordan?
- What is the relationship between (Agility) and NGO performance in Jordan?
- To what extent does organisational culture influence the relationship between the HSC (Agility, Resilience) and NGO performance in Jordan?

1.4 Research Objectives

Based on the above-stated issues, the present research seeks to expand the knowledge and understanding of variables affecting the NGO's performance in Jordan. Precisely, the main research Objectives are as stated below:

- To examine the relationship between (Flexibility) and NGO performance in Jordan.

- To examine the relationship between (Alignment) and NGO performance in Jordan.
- To examine the relationship between (Adaptability) and NGO performance in Jordan.
- To examine the relationship between (Resilience) and NGO performance in Jordan.
- To examine the relationship between (Agility) and NGO performance in Jordan.
- To examine the moderating role of organizational culture between Agility and resilience towards NGO performance in Jordan.

1.5 Significance of the Study

The significance of humanitarian supply chains (HSCs) on the performance of relief organisations in Jordan is profound. These chains expedite swift response during crises, promptly ensuring critical aid delivery. HSCs enable effective coordination among stakeholders - international aid bodies, local NGOs, and government entities, aligning their objectives for cohesive efforts. Efficient supply chain management minimises resource wastage and ensures optimal distribution, enhancing relief operations. By boosting efficiency, HSCs also help to reduce operational costs, allowing more resources for direct aid activities. Crucially, these chains must exhibit flexibility and adaptability to the fast-paced changes in disaster-hit areas, impacting relief organisations' effectiveness. They must also consider local culture and norms to make relief operations more acceptable and effective. In a region like Jordan, which is dealing with an extensive refugee influx, chiefly from Syria, an efficient HSC is vital for crisis management and

providing necessary humanitarian aid, directly affecting the performance of relief organisations (Ramadan, 2015).

Humanitarian supply chain operations assessed commodities and information as solitary resources to increase performance. This study explored Jordanian NGOs' humanitarian supply chain aspects and organisational performance. This inquiry also supplied progress-enabling information. This research improved crisis management supply chain humanitarian knowledge. The study defined the organisation's performance and humanitarian supply chain aspects in knowledge accessing and coevolving among NGO supply chain partners.

Humanitarian supply chains (HSCs) are crucial for the performance of relief organisations in Jordan and across the globe. Here are a few reasons:

1. **Rapid Response:** In disaster situations, time is of the essence. Efficient HSCs allow relief organisations to respond swiftly to emergencies, promptly delivering critical goods and services to affected populations.
2. **Coordination:** HSCs facilitate effective coordination among various stakeholders, including international aid agencies, local NGOs, government bodies, and others, ensuring everyone is working towards the same objectives.
3. **Optimal Resource Utilization:** Effective supply chain management helps prevent the wastage of resources and ensures they are distributed where most needed, improving the overall performance of relief operations.
4. **Reduced Costs:** By enhancing efficiency, HSCs can lower operational costs, allowing relief organisations to direct more resources towards actual relief activities.

5. Flexibility and Adaptability: HSCs must be agile to adapt to rapidly changing conditions in disaster-stricken areas. The ability to pivot operations as per the evolving needs significantly impacts the performance of relief organisations.
6. Cultural Understanding: Efficient HSCs consider the local culture, norms, and specific needs of the affected populations, ensuring the relief operations are better received and more effective.

In Jordan, where the country has dealt with a substantial influx of refugees, mainly from Syria, an efficient and effective HSC is crucial for managing the crisis and providing necessary humanitarian aid. Effective supply chain management enables relief organisations in Jordan to deliver timely and appropriate assistance to those who need it most.

Jordan has the most under-30s at 10.9 million. Jordan is resource-poor. Due to a lack of farmland, it needs help to eat. It also lacks water. Jordan had around 750,000 Syrian refugees in July 2021. The world's second-highest refugee rate is 89%. Approximately 83 Janaiba of Paradise reside nearby, while 17% dwell in Jassim Al-Zaatari and Azraq. Security predicts world hunger will be 8.8 in 2020. Poverty, poor economic development, and increased living expenses threaten food security. Help has come, raising optimism. Families with low incomes are more likely to go hungry. Ninety-three per cent of refugees live in severe poverty. In 2020 and 2021, Jordan had a 25% unemployment rate and a 50% youth unemployment rate. Income losses worsened. Aspect also impacts mental and physical health, home surroundings, digital access, food insecurity, and education,

making individuals more susceptible. The World Food Program and Raha, a Jordanian government strategic and operational partner since 1964, allow them to say farewell and tidy up.

The current research is necessary because it addresses the humanitarian sector in Jordan, where 1640 relief organisations work to alleviate refugees' suffering from civil wars in their countries. Jordan was welcomed 100 years ago. It resettled Palestine refugees. Jordan accepted refugees from numerous nations for 50 years, straining its meagre resources. Thus, Jordanian relief groups are significant conduits for government recruitment and refugee support. I must conquer their trials. As said, Jordan's humanitarian sector is crucial to community development and asylum reduction. Many Jordanians work in aid agencies in a nation with severe unemployment, providing jobs for locals and refugees. Jordan cannot ignore this industry because of its advantages for parties, locals, and refugees.

Due to a lack of knowledge, there needs to be an agreement on NGO performance's significant features and measurements despite various notions and tactics for regulating it in the literature. According to the literature, the performance improvement system partially addressed operational and internal metrics. Most systems prioritise program/project performance above functional structures and functions. Thus, NGOs need a comprehensive structure (Ramadan, 2015).

Kovács and Spens (2007) recommend that scholars prioritise empirical research to support this approach. Most humanitarian logistics studies focus on preparing before disaster gives, emphasising quick post-disaster response. Preparing for pre- and post-disaster periods is crucial to recovery. This region ultimately faces obstacles.

Prepare for disaster aid before it happens. Humanitarian groups should procure, store, and distribute relief goods after disasters. The humanitarian SC's preparation phase is crucial to NGO success (Altay et al., 2018).

1.6 Limitations and Scope of Study

This study investigates the critical impact of the Humanitarian Supply Chain (HSC) on NGO performance in Jordan, with an emphasis on non-governmental organisations (NGOs) (Tatham, 2009). Unlike traditional supply chains, HSC prioritises cost reduction and efficiency improvement rather than profitability, making it significantly different (Van Wassenhove, 2006).

Given the volatile environments in which NGOs operate, understanding HSC's impact on their performance becomes indispensable (Holgun-Veras et al., 2012). HSC covers four aspects of an NGO's performance - mitigation, preparedness, response, and recovery (Van Wassenhove, 2006). These involve managing evacuation, healthcare, food and water delivery, and refugee camps (Thomas and Kopczak, 2005). While several literature reviews have been conducted in the HSCM field, only some have specifically addressed the issue of refugee situations (Banomyong et al. 2017), a gap this paper aims to fill.

Applying HSC can bring substantial benefits to NGOs and Jordanian governmental relief organisations, which play a crucial role in relief efforts in Jordan (UNHCR, 2018). There are 6582 registered NGOs in Jordan, many of which are involved in relief operations, supporting refugees fleeing conflicts in neighbouring countries (Ministry of Social Development in Jordan-Mosd, 2018).

This study utilises a quantitative research design based on a survey questionnaire to identify the elements that impact HSC in Jordan and the role of organisational culture (Sekaran et al., 2009). Descriptive statistics and regression analysis will be used to examine the developed hypotheses. A simple random sample is a subset of individuals (sample) chosen from the largest group (population). Everyone is chosen randomly and entirely by chance, so everyone has the same probability of being selected. The current study separated a population of 1,640 local and international NGOs based on the abovementioned criteria. Based on these criteria, 308 domestic and international NGOs have been chosen out of 1,640 international and domestic organisations MOSD (2018). Since only 308 domestic and international associations qualify by the criteria, all 312 local and international associations selected were used as a sample in this study. Dynamic Capability View (DCV) theory was adopted based on previous studies dealing with the variables the current research will cover. The study includes a random sample of 308 local and international NGOs, with data collection to be conducted via an online survey. In summary, this study strives to comprehend the influence of HSC on NGOs in Jordan, delving into the role of organisational culture and its specific application to refugee situations.

1.7 The Structure of the Thesis

The research is broken up into five chapters, which are as follows:

Chapter 1 initiates the discourse by providing a historical background to the research, outlining the problem statement, defining the objectives, formulating the research questions, and underscoring the study's significance, scope, and limitations.

Chapter 2, we delve into an extensive literature review on supply chain management, focusing mainly on the humanitarian supply chain and the performance of NGOs. This chapter also provides a comprehensive overview of NGOs in Jordan.

Chapter 3 presents the research framework and assumptions that are the basis of this study, which is based on the DCV theory.

Chapter 4 describes the research approach. It supports the research paradigm, technique, study design, case selection criteria, data collecting, and analysis. It also analyses the study's flaws, how to overcome them, and the researcher's ethics. It finishes with possible interpretations of the survey results, respondent comments, and testimonies.

Finally, Chapter 5 encapsulates the research findings and their interpretation. The references and appendices are provided at the end of this chapter.

1.8 Summary

The first chapter of the study presented several essential points that serve the research in strengthening its thesis regarding humanitarian supply chains and the performance of relief organisations in Jordan. Due to the nature of its work in Jordan, we moved to the research problem, which is the heart of the research and its most important pillars. The research problem addressed the most critical issues facing the performance of organisations and the scientific and practical gaps facing the work of both the performance of organisations and humanitarian supply chains. The problem of the study was raised and arranged based on many variables, and then the study questions and objectives were included. The importance of the study that followed and the first chapter,

which concluded with the scope and limitations of the analysis and what was mentioned above, will be explained in detail in chapter two.



CHAPTER TWO

REVIEW OF THE LITERATURE

2. 1 Introduction

One of the main goals of a humanitarian organisation is to lessen human suffering. For a long time, it has been acknowledged that an effective relief response hinges on delivering the appropriate resources to the correct location at the right time. As a result, humanitarian groups have focused on improving their performance. With an eye on HSC operations, we have discovered several potentials for improving the balance between effectiveness and efficiency to increase the economic component (Laguna Salvadó, Lauras, Comes, & Van de Walle, 2015).

Over time, supply chain management has proven beneficial to businesses, but this benefit needs to be more evident in humanitarian assistance (Fawcett and Waller, 2013). This discrepancy arises because the demand in commercial supply chains can generally be estimated with relative accuracy due to substantial data, observable outcomes, and sufficient capacity (Beamon and Fernandes, 2004). However, the demand for humanitarian assistance is more challenging to predict, must be addressed promptly, and is often supply-constrained. This means that the targeted levels of profitability cannot be achieved (Tomasini and Van Wassenhove, 2009). Additionally, funding is usually available only for a limited time (Balland and Sobhi, 2013), and it is challenging to quantify and assess the results of relief operations (Nikbakhsh and Farahani, 2011). The inefficiency of the aid distribution system could potentially result in a significant loss of life (Balland and Sobhi, 2013).

For instance, the 2004 Asian tsunami exposed problems with the quality and appropriateness of relief provided and highlighted deficiencies in areas such as transportation and storage, along with insufficient coordination amongst numerous humanitarian actors (Telford and Cosgrave, 2007). This led to increased inventory costs, extended lead times, and fewer people receiving aid (Tomasini and Van Wassenhove, 2009; Balcik et al., 2010). Schulz and Blecken (2010) stressed the importance of critical humanitarian players collaborating to share valuable resources such as information, finances, skills, products, and human resources. By doing so, they can mitigate the risks of poor coordination, take advantage of economies of scale, and enhance supply chain adaptability. This view was supported by both Cooper et al. (1997) and Porter (1998), who suggested that cooperation is a "silver bullet" that helps organisations achieve better value, enhance supply chain performance, and assist impacted communities in becoming more resilient and regaining their footing (Chandes and Pache, 2010). While they all have different goals and reasons for their engagement in the humanitarian sector, international non-governmental organisations (INGOs), local non-governmental organisations (LNGOs), commercial entities, governments, and the military do occasionally collaborate. NGOs, for example, work together to sharpen their organisational capabilities and increase the effectiveness and efficiency of their humanitarian actions (Snaveley and Tracy, 2000). Governments, including the military, seek assistance from each other when they cannot handle a situation independently (Collier, 2010). Private companies collaborate to enhance their brand image and productivity (Gray and Stites, 2013). However, such collaborations often face substantial challenges, such as a lack of mutual benefit, ineffective communication channels, and unreliable resource accessibility (Kovacs and Spens, 2010; Balcik et al., 2010).

Recently, there has been a significant focus on the collaboration between international and local NGOs. This arises from international non-governmental organisations (INGOs) having access to global resources but needing more knowledge about newly affected regions (Svoboda and Pantuliano, 2015). Conversely, local non-governmental organisations (LNGOs) possess extensive knowledge about their nation's laws and clients' locations but need more financial resources to provide aid (Svoboda and Pantuliano, 2015). Thus, partnering and coordinating within and across organisations could result in a more efficient and effective use of resources, along with additional benefits that a single entity could not achieve independently. Aid delivery is a relatively recent phenomenon (Day et al., 2012).

Most of the research conducted thus far has focused on whether or not the supply chain methods used in the "commercial" sector could also be applied in the "humanitarian" sector. However, implementing ideas and frameworks from the corporate sector to humanitarian supply chains might not yield similar benefits due to differing contexts (Fawcett and Waller, 2013). Consequently, operational failures in the humanitarian sector, such as "lost time, wasted resources, and increased casualties among displaced individuals and communities typically stem from a profoundly chaotic supply chain", are still common. Hence, this research investigates how collaborative supply chains can be leveraged in the humanitarian sector for competitive advantage. This is because collaborative partnership frameworks common in the commercial supply chain have been thrust into the humanitarian sector without confirming their suitability or receiving adequate attention, leading to numerous problems (Day et al., 2012). To achieve this, we will examine the factors contributing to the success of partnerships between INGOs and LNGOs and the factors causing difficulties in such collaborations. Given the scale of

recent natural disasters and the consequences of poor coordination in delivering aid, supply chain collaboration has received increased attention in the humanitarian sector (Thomas and Kopczak, 2005). Collaboration has been referred to as a "magic bullet" due to its potential to assist organisations in achieving more excellent value (Porter, 1998; Cooper et al., 1997). However, supply chain collaboration has only recently been employed in the humanitarian aid sector (Day et al., 2012; Fawcett and Waller, 2013). Hence, practices used for a considerable time in the commercial supply chain have been transferred into the humanitarian sector without verifying their effectiveness (Day et al., 2012).

2.2 Supply Chain Management

In many parts of the globe, "logistics" and "supply chain management" are each understood to mean something somewhat different. In the context of the military, this term refers to "planning and implementing the science of movement and maintenance of troops," which includes the following activities: "a. Material design and development, acquisition, storage, movement, distribution, maintenance, evacuation and disposal; personnel movement, evacuation and Hospitalization; c. Purchase or construction, maintenance, operation and disposal of facilities; d. Purchase or provision of services". The labour market is regarded as a planning framework for administering material, service, data, and movement of capital to provide outstanding customer value at the lowest possible cost (Van Wassenhove, 2006). The management of supply chains incorporates the requirements of customers, internal operations, and the activities of suppliers (Paulraj & Chen, 2007).

The growing importance of global supply chains has dramatically impacted the structure of the world's economy and the production of various goods. More than two-thirds of international trade is still comprised of transactions made possible by global supply chains, even though the proportion of international commerce facilitated by global supply chains decreased during the global financial and economic crisis between 2008 and 2010. The United States and China, in addition to the vast majority of other countries, are less interwoven than the European Union is in these many industrial chains. The pandemic caused disruptions in many supply chains when it first began, and the subsequent economic recovery, which was the strongest on record, placed enormous additional strain on the global supply system. The "perfect storm" was created when surging demand was combined with shortages of workers, ships, containers, air cargo space, and clogged pores. The economic recovery is starting to feel the consequences of bottlenecks in supply chains, which are lowering growth, generating delays, preventing the industrial sector from recovering and fuelling inflation.

The processes and organisations that go into producing a product make up its supply chain. For several decades, supply chain management has become essential to an organisation's ability to compete effectively and efficiently. On the other hand, it is still in its infancy for several businesses (Womack and Jones, 2005). In the context of humanitarian work, the Fritz Institute defines it as "a planning process for organising, directing, and controlling the effective flow" and "efficient means regarding the cost of storing goods and raw materials needed for relief and relevant information from the organisation to the destination for relief." The goal of this process is to alleviate the suffering of those who need assistance, also known as "group pain" (Thomas & Kopczak, 2005: 2). Despite the definition, the fact that supply chain management includes

preparedness, preparation, sourcing, storage, inventory, warehousing, monitoring, allocation, and recipient fulfilment, and regardless of the term used, supply chains are subject to a variety of threats at all levels and operate in a world that is constantly changing, supply chains are vulnerable to a variety of threats. This climate is in a continual state of change for many reasons. A significant number of supply chains span extensive geographical areas and are vulnerable to a variety of dangers on a global scale (Butner 2010). Customers have high expectations about the product's ability to be customised, the price, and the quality of the service (Christopher 2016). Because of the quick speed of technological advancement and the continuous introduction of innovative "items to the market," the level of complexity of goods is also increasing. This is due to the fast clock pace in many different industries (Simchi-Levi, Kaminsky & Levi, 2003).

Still, another set of researchers (Handfield et al., 2015) suggested that businesses may become practical and adaptive by cultivating ambidexterity as a core competence. An ambidextrous firm is effective and aligned in meeting the commercial demands of the contemporary world. It is flexible enough to adjust to rapid environmental changes to maintain its competitive edge. For example, (Masteika and Epinskis, 2015) provided a scenario in which a Toyota subsidiary could obtain cost reductions connected to repetitive tasks by separating its activities while concurrently studying novel manufacturing process options. Other academics in operations management have shown that businesses with operational ambidexterity can use and analyse the processes already in place, ultimately resulting in improved operational performance. A very long time ago, the concept of operational ambidexterity was taken outside the boundaries of a company and applied to SC (McAdam et al., 2017). The strategic choice made by a company to participate in both supply network exploration and exploitation at the same time is an example of supply

chain ambidexterity. This concept was presented by academics, who stated that firms had an obligation to choose the correct form of the supply chain when dealing with certain functional commodities. These commodities will be provided utilising newly manufactured goods and efficient supply chain activities. Therefore, SC ambidexterity indicates that managers do not face an either-or choice (Khan and Mingyi, 2018; Khemili and Belloumi, 2018), even though, in the case of certain items, they may be presented with both an efficient and flexible supply chain. This is because SC ambidexterity indicates that managers do not face an either-or choice.

Businesses must be resilient and have high stability, risk reduction abilities, and structural adaptability to succeed in such a complex context. This will allow them to react rapidly to the difficulties that they face because of several factors, including economic (cost of electricity, value of raw materials besides supply, currency rate), social (insecurity, consumer expectations), and natural (extreme weather conditions, seismologist, tsunami). It defines the external environment and flexible structure as the supply chain's highly competitive capability to adapt to drastic changes in the market climate, as discussed in Christopher and Holweg's (2011) article. Threats to a company's supply chain may come from various sources, both within and outside the company itself, and can affect the environment, society, and economy. External risks to the supply chain, such as global pandemics, financial crises, trade wars, and variations in the oil market, have an immediate impact on operational efficiency and potentially create disruptions in the supply chain. Companies will want to continue to construct and enhance their supply chain risk management systems due to the increasing complexity of the global supply chain and the increased number of difficulties and variability it will face. Researchers shed light on why supply chain risk management techniques are crucial for long-term

performance and how firms could encourage healthier and more robust supply chains in this manner (Rha, 2020).

Different aims will lead to managers making self-serving choices, which will constantly conflict with the decisions made by other supply chain members. As a result, there is a standstill in the partnership. The personnel who make up SC can only produce and manage competitive goods or services to achieve long-term success when they "pull in the same direction" or strive towards a shared objective. This is because the potential advantages of SCM are enormous. It is easy to see why businesses may want to implement SCM to take full advantage of these advantages.

On the other hand, advantages can only be obtained once the obstacles that stand in the way of these benefits have been removed. When bringing together a company's procedures, structures, and cultures, supply chain management hurdles are categorised under organisational difficulty and incompatibility. Unsuitable measurement methods, a corporate culture that is incompatible with the structure, and an organisational structure that is incompatible with organisational culture are all examples of administrative complexity obstacles (Abualrejal, Abu Doleh, Salhie, Udin, & Mohtar, 2017).

The company's supply chain is becoming an increasingly important focal point in the organisation's attempts to create a competitive advantage. The management of supply chains focuses on increasing the firm's overall value by improving the efficiency with which its resources are used and distributing those improvements more widely throughout the organisation. A supply chain may be defined as "the collection of activities that bring value to the connection between an enterprise's suppliers and its customers." This is only one explanation of what a supply chain is. The fundamental idea behind the supply chain

activity is getting input from a company's suppliers, adding value to that input, and then distributing the final product to customers (Levi et al., 2004).

A supply chain comprises all of the many parties that are somehow involved in fulfilling an order placed by a client, whether they are doing so directly or indirectly. The customer is also included in the supply chain, along with the manufacturer, the suppliers, the transporters, the warehouses, the merchants, and so on. The term "supply chain" refers to the collection of interconnected processes that must take place inside a single organisation, such as a factory, before a customer's request may be processed and satisfied. These functions include creating new products, marketing, operations, distribution, finances, customer support, and other tasks pertinent to meeting customers' needs. In addition, these functions encompass any other activities relevant to satisfying customers' requirements (Chopra and Meindl, 2007). It is essential to have an adequate supply chain management system to build and keep a competitive advantage in the goods and services the firms provide. Gunasekaran and Ngai (2004) and Sufian (2010) stated that the performance of the supply chain was influenced by regulating and integrating critical parts of information into their supply chain. This was done to improve supply chain performance. This was done in the interest of achieving higher levels of performance. It is only possible for companies to efficiently integrate their supply chains by using information technology, which is why businesses must embrace it (Handfield and Nichols, 1999; Sufian, 2010). According to Brandyberry et al. (1999), when using information technology, businesses can control the flow and effect of numerous supply chain dimensions, such as quality, cost, flexibility, delivery, and profit. This may be accomplished by applying information technology. Byrd and Davidson (2003) concluded that the use of information technology affects the effectiveness of the supply chain. They

said that the development of new information technologies and the continued use of those technologies over an extended period improved the firm's return on investment (ROI), return on equity (ROI), and market share. It was shown by Vickery and colleagues (2003) that the use of integrated information technology directly impacts the financial performance of enterprises, which, in turn, makes it simpler to complete supply chain coordination and integration. According to Sufian (2010), to acquire a competitive advantage and better performance, the supply chain management strategy has to support the organisation's plan.

According to Barbosa-Póvoa (2014), the term "Sustainable Supply Chain" (SSC) refers to "complex network systems that involve diverse entities that manage the products from suppliers to customers and their associated returns, accounting for social, environmental, and economic impacts." In other words, SSCs are "complex network systems that involve diverse entities that manage the products from suppliers to customers and their associated returns." In these systems, various organisations are responsible for managing the items as they move from suppliers to consumers and the refunds linked with these transactions. The management of these systems has recently acquired a discernible amount of significance due to businesses' difficulty coping with sustainable challenges due to an increasing society's awareness of environmental and social concerns. Specifically, this difficulty has been brought about by the fact that businesses have been forced to compete in an increasingly globalised. According to the United Nations study on global corporate sustainability, organisations have shifted a considerable mentality towards sustainability. Even though the current economic downturn is one of the worst in over a century, the number of businesses committed to implementing sustainable supply chain principles has

reached an all-time high. This is despite the economy experiencing one of the worst downturns in over a century.

However, although companies are making progress in setting expectations for the environmental friendliness of the supply chain, the great majority of them are failing to make actual efforts to encourage compliance with such programs. This is even though these firms are making progress. There are several reasons to believe that this stance is correct. The first problem relates to the companies' degree of grasp regarding the actual relevance of SSC and the method by which this idea has to be handled across the many organisations involved. This matter needs to be addressed before moving on to the next issue. In addition, as more people become interested in responsible supply chain management (SCM), many efforts have emerged in every sector to promote different methodologies and standards. Because of this, companies now have the challenge of determining which business procedures are the most effective ones to implement. Because of this, having a solid understanding of the concept of SSC and knowledge of the aspects that are critical at the corporate level is essential. Firms just beginning on the road to sustainability require tools to help their decision-making process at all levels, from the strategic to the operational. This is necessary because of global SC's sheer magnitude and complexity, which is why many businesses are only starting. This is because uncertainty and risk are continuously expanding realities that require attention.

2.3 Supply Chain Performance (SCP)

In recent years, researchers' and practitioners' interest in the supply chain's performance has increased, underlining expense minimisation or gain enhancement (Chen and Yano, 2010; Watanarawee, 2010). Modern SC plan contains a set of steps necessary for

achieving superior SC and actual value, including employing the proper individuals, adopting adequate technology, external cooperation, internal cooperation, and administrating changes in SC (Slone, Dittmann and Mentzer, 2010). Today, market competition is more concentrated among SCs than individual firms. As a result, effective supply chain management became a robust plan that guarantees a competitive advantage for the market competition (Li, Ragu-Nathan, Ragu-Nathan & Rao, 2006). So, for industry players, enhancing SCP became a top priority (Agami et al., 2012). SCM activities have a constructive and vital association with strategic advantages, according to Li et al. (2006). Several companies still use SCM as a strategic tool to increase performance. (Hult, Ketchen, & Arrfelt, 2007).

Performance may be classified into three divisions in the resource-based view (RBV), which are environmental, organisational, and financial performance (Shi, Koh, Baldwin, & Cucchiella, 2012). Since supply chain organisational efficiency significantly affects performance, this study (Agami et al., 2012) is based on it. Processing raw materials or intermediate products into finished items is a typical practice and method in supply chain operations (Bharati & Chaudhury, 2006). Typically, SCP is measured based on dependability, responses, resilience, and expense (Agami, Saleh & Rasmy, 2012). SCP usually depends on reliability, responsiveness, versatility, cost, and asset management, all critical factors to consider. It focuses on operating functioning, credibility, responses, and resilience in addition to the prices of SC, which will become the yardstick for measuring performance. The ultimate goal of the supply chain is to provide customers with goods and services in the shortest possible time, with the lowest total cost and higher quality. It is supported by a study by Jacques (2012) and Omar et al. (2006); firms can struggle if they are unaware of the realities of the supply chain performance aspect, such

as low costs (SC-Costs), good efficiency (SC-Reliability), flexibility. A distinction exists among SC in addition to general organisational success. Real intra-organizational and inter-organizational production or outcomes are what supply chain efficiency is searching for. Organisational efficiency is intra-organizational or human, administrative real work or goods (Huisman & Smits, 2007).

Over the past decade, many industries have identified supply chain performance (SCP) as a crucial source of long-lasting competitive advantage (WH Ip et al., 2011). They assert that if a company wants to excel in the global business environment, it needs to continuously improve its supply chain performance (Acar & Uzunlar, 2014). However, despite various studies on supply chain practices and theories, sufficient attention has yet to be paid to the performance aspect of supply chains.

Today, firms face numerous challenges due to intense competition between organisations and supply chains (Abdulameer & Yaacob, 2020). Consequently, enhancing the supply chain's performance is familiar to the organisation. Any upstream or downstream factor could significantly enhance supply chain efficiency (Cai et al., 2009). Furthermore, improving supply chain performance is critical for all companies, whether they sell goods or services (Basu et al., 2017). This situation underscores the need for businesses to focus more on their supply chain performance.

However, measuring the performance of a supply chain is challenging (Saleheen et al., 2018; Anand & Grover, 2015). According to Banomyong and Supatn (2011), supply chain performance is a system that considers numerous performance measures related to supply chain members and how their performances are coordinated and integrated.

Developing and selecting appropriate criteria for measuring supply chain performance has always been complex (Anand & Grover, 2015). Often, this complexity arises from the challenge of coordinating the multiple organisations within the supply chain and evaluating their performance (Subburaj et al., 2015; Dweekat et al., 2017; Alam et al., 2014). Ahi and Searcy (2015) also highlighted the intricacies of measuring supply chain performance.

Harland et al. (1999) point out that traditional performance measures primarily focus on economic aspects. Past research has employed diverse criteria to evaluate supply chain performance. Some scholars propose performance measures such as cost, service level, inventory level, throughput efficiency, and supplier performance (Stevens, 1990).

From another perspective, Pittiglio, Rabin, Todd, and McGrath (1994) approached SCP measurement from four dimensions: cost, customer satisfaction/quality, assets, and time. Spekman et al. (1998) aimed to measure SCP based on cost reduction and client satisfaction. Beamon (1999) suggested a list of qualitative criteria for evaluating SCP, including information and material integration, flexibility, supplier performance, client satisfaction, and effective risk management.

This study focuses on performance measures relevant to real-world challenges faced by manufacturing organisations, such as quality (or reliability), time, cost, innovation, and flexibility, as Shepherd and Günter (2006) listed.

2.4 Humanitarian supply chain (HSC)

The humanitarian supply chain (HSC) is crucial for disaster relief operations as it facilitates the effective, efficient, and speedy provision of hygiene, nutrition, shelter, water, medicine and public health facilities to the affected populations (Thomas & Kopczak, 2005). The HSC manages and organises all sourcing, conversion, and logistical management operations. It also facilitates cooperation and partnership with channel participants such as vendors, intermediaries, logistics service providers, and beneficiaries (Beamon and Balcik, 2008; Kovacz and Spens, 2009).

Preparedness, planning, sourcing, logistics, warehousing, monitoring, and last-mile distribution are integral components of humanitarian assistance and disaster relief supply chain management. Following a disaster, consultants may be deployed to assess the nature of destruction and the number of individuals affected, estimating the types and quantities of relief items needed (Thomas & Kopczak, 2005; Thomas, 2007).

However, despite the importance of humanitarian SCM, only some NGOs have implemented well-ordered, high-performing supply chain processes, which are often considered inefficient (Thomas & Kopczak, 2005; Ahmed et al., 2019). This is due to the challenges in performance management in humanitarian-SC due to factors like the intangibility of services, immeasurability of tasks, unknown results and diversity, and different interests and stakeholders (Beamon & Balcik 2008).

Humanitarian operations, which include preparedness, planning, sourcing, shipping, warehousing, monitoring, tracking, and customs clearance, rely on effective supply chains and logistics (Thomas & Kopczak, 2005). Their critical role was underscored

following the Asian Tsunami of 2004, drawing the attention of academic scholars and practitioners to the importance of humanitarian logistics in successful disaster relief (Kunz & Gold, 2017).

However, despite intentions to collaborate, coordination problems among the various organisations involved in relief operations caused by geographical, cultural, and organisational differences can be significant (Altay et al., 2018). Furthermore, it's important to note that performance in the humanitarian supply chain is measured at pre-disaster and post-disaster levels. Mitigation and preparedness are pre-disaster phases that help minimise the risk of disasters and improve responsiveness (Kumar & Havey, 2013). The post-disaster process includes response, rehabilitation, and restoration.

In conclusion, while critical for effective disaster response and recovery, the humanitarian supply chain faces significant coordination, performance management, and logistics challenges. However, by focusing on the pre-disaster and post-disaster phases of operations and facilitating effective coordination among all stakeholders, it's possible to optimise the performance of humanitarian supply chains, ultimately improving disaster response and recovery efforts.

2.5 Challenge of Humanitarian Supply Chain

The humanitarian context has proven far more complex than previous studies have indicated. As Beamon (2004) points out, it deviates from the traditional supply chain management environment with a layer of uncertainty regarding time, location, type, magnitude, and demand. Humanitarian organisations grapple with the issue of demand or need in sudden-onset disasters such as earthquakes, floods, or terrorist attacks (Beamon

and Blacik, 2008). In the humanitarian context, demand is referred to as the needs of the beneficiaries (Kovacs et al., 2010). Beamon (2004), however, questioned the notion that uncertainty is always present in humanitarian operations, stating that uncertainty only arises in quick-onset disasters, while most disasters are slow-onset.

The humanitarian supply chain aims to be able to respond to different interventions as quickly and efficiently as possible. The level of uncertainty that humanitarian logistics must deal with is one of its distinguishing features, as McLachlin et al. (2009) pointed out. Humanitarian workers encounter different types of uncertainty daily in various parts of the world. The demand and supply are highly volatile, as the needs of beneficiaries change over time and are extremely difficult to predict. There are also many cause-effect relations impacting the operations. Due to damage to local infrastructure, the supply chain network might need constant redesigning, including rehabilitating roads, airports, and other critical network components (Gray, 2006).

Humanitarian aid organisations need help to ensure the proper functioning of their operations. Uncertainty about natural disasters' occurrence, location, and severity poses a challenge to those in charge of developing an efficient pre-positioning strategy. It becomes uncertain whether these events will happen (Rawls and Turnquist, 2010). Chains responding to natural disasters are unique and operate under extraordinary conditions, which can frustrate commercial supply chain managers (Whybark, A Melnyk, Day and Davis, 2010). For instance, the primary objective of the relief chain is to save the lives of those in need. At the same time, financial returns for shareholders and value delivery to customers are the strategic goals of a commercial supply chain. At any given point, hundreds of different humanitarian agencies can be present at a disaster site. These

include local and international humanitarian organisations, private sector firms, governmental organisations, and military forces (Besiou, Stapleton, and Van Wassenhove, 2011). Numerous actors in the relief chain, varied philosophies and religious beliefs, conflicting objectives and interests, and lack of coordination can pose significant challenges to setting goals and prioritising relief operations (Balcik and Beamon, 2008).

The humanitarian supply chain has grappled with many problems since its inception, and these issues continue to escalate. These have been widely discussed in various articles and research. The most significant of these are often unstable political conditions, bureaucracy and corruption in recipient countries, ambiguity in responsibilities, involvement of both commercial and non-profit organisations, a small number of logistics-trained staff in aid agencies versus a large number of untrained volunteers, and lack of logistics training facilities in developing countries. In addition, logistical problems such as high asset maintenance costs, high inventory costs, and lack of predictability add to the challenges.

Issues such as unpredictable demand, lack of inventory confidence, inability to forecast inventory levels, high transportation costs, difficulty in justifying funding, limited space, infrastructure, inventory collapse, reliance on logistics providers, poor quality goods, the poor performance of logistics providers, poor quality of local staff, natural disasters, and social instability also add to the complexity.

These risks make it harder for humanitarian supply chain operations to work. These problems can be put into two categories: external issues and internal problems.

There are, as mentioned, two types of challenges facing the work of humanitarian supply chains. The first type of these challenges is external challenges, and these challenges are as follows:

- logistical challenges
- Warehouse Challenges
- Funding Challenges

The other type of challenge is internal challenges (the internal environment of the humanitarian supply chain).

Among these challenges are the following:

- Qualified work team
- Collaboration Challenges
- Transparency Challenges

2.6 NGOs in Jordan.

Jordan's socioeconomic and political issues have primarily resulted from its advantageous geographic location and lack of natural resources since its inception. Until the late 1980s, the state had been the primary source of services and job opportunities, resulting in a relatively dependent populace expecting it to meet all its needs. However, an economic crisis prompted the government to advocate for a more significant private sector and civil society role, introducing demanding structural adjustment programs with austerity measures. This led to governmental and commercial liberalisation, forcing the populace to adapt to a new way of life while opening up new and challenging opportunities.

Non-governmental organisations (NGOs) were among the earliest segments of civil society to emerge in Jordan. Their primary concerns shifted from philanthropic endeavours to humanitarian efforts when Palestinian refugees arrived in Jordan in 1948. The corporate sector and NGOs played a limited role when the country started developing its plans in the late 1950s. Despite this, NGOs continued their philanthropic activities, with some expanding into institution-building to support vulnerable populations such as orphanages and nursing homes. During the long era of martial rule imposed on the country with limits on political activity, NGOs served as one of the few sanctioned avenues of engagement available to the public.

To ensure NGOs were not used as platforms for political discourse, strict regulations governing their formation and operation were established in 1966 and remain in effect today. However, given the political and economic developments of the past decade, NGOs are now expected to play a more significant role in the nation's growth and future direction. Yet, it is still determined whether NGOs are ready for this responsibility. There needs to be more data showcasing their strengths and weaknesses, influence on development, or cost-effectiveness, except for a few papers presented at conferences and annual reports from the Ministry of Social Development, which are mainly quantitative.

The massive influx of Syrian refugees into Jordan has significantly burdened the Jordanian government as a host country. As the crisis in Syria persists, the number of refugees and the demand for public services increase, resulting in unprecedented population growth. Between 2010 and 2015, Jordan's population grew at an annual rate of 11%, putting considerable financial strain on the country's government to meet the needs of refugees and locals (MOPIC, 2015). This refugee influx has stretched Jordan's

resources thin and jeopardised the well-being of host communities. Refugees in certain governorates have resulted in an unmanageable population surge, escalating the strain on public services and competition among residents for resources.

The Jordan Response Plan 2015 projected a budget of \$2,868,100,284 2015 to respond to and mitigate the effects of the Syrian crisis on Syrian refugees and host communities (MOPIC, 2014). However, as per UNHCR (2005), refugees can positively and negatively affect the host country. Adverse effects arise when the host country lacks resources, and the host community perceives refugees as illegal immigrants. This research aims to empirically measure the impact of Syrian refugees on Jordan's public expenditures to identify the burden refugees place on the receiving state and host communities. Furthermore, it will provide a comprehensive framework for measuring the effect of refugees on host governments.

It's worth noting that several terms for non-governmental organisations vary from country to country, including non-profit organisations, civil society organisations, and voluntary organisations. The World Bank defines NGOs as private organisations that provide aid to those in need, advocate for their interests, protect the environment, provide essential services, or assist in social development. NGOs are often categorised as social, cultural, human rights, or advocacy organisations with non-profit goals. They primarily rely on donations and volunteer work and might receive some funding from unofficial sources.

In the Hashemite Kingdom of Jordan, which achieved independence in 1946, volunteerism began in the 1930s, even before independence was gained. Responding to this, Jordan enacted its first law to extinguish Sharia law on voluntary associations in 1936. The growth of the non-governmental organisation sector in Jordan was severely

constrained due to martial law from 1957 to 1989. With the end of this period, the number of non-governmental organisations significantly increased. Over the past twenty years, the number of NGOs has surged dramatically. Jordan has over two thousand civil society organisations and over 800,000 individual participants.

According to the Jordanian Civil Society Directory (2006), NGOs constitute about half of these CSOs. The directory provides comprehensive reports on 254 of the most influential CSOs, including eight human rights and democracy reform groups, ten harem organisations and institutions, and twenty-two conservation organisations. Amy Hawthorn's research suggests that five sectors dominate civil society in Arab states: religious, ethnic, consumer support, political, and professional groups, along with pro-democracy organisations. Several NGOs in Jordan were founded based on these grounds, either religious, ethnic, or political, showcasing a diverse range of civil society institutions and their evolution over time.

2.7 NGOs and INGOs, Royal NGOs (RINGOs)

The classification of NGOs depends on the geographical location of their activities (Bayat 1996):

- a) Community-based organisations that cater to a single demographic in a limited geographic region.
- b) Citywide organisations are more significant than community organisations operating within the province or in the state of society.
- c) National organisations that run within various developing countries.
- d) International NGOs with headquarters and operations in developing countries.

Jordan is home to about 30 international non-governmental organisations (NGOs). Their partnership with the authorities is similar to the local NGOs, although their funding sources vary. Foreign NGOs, like local NGOs, must receive ministerial permission before registering and provide the ministry with an annual report describing their operations and financial position. (Global Development Forum, 2000). There are many royal non-governmental organisations in Jordan that Jordanian law deals with separately, and they are unrestricted by the law because these organisations were established by royal decree and running them. The president of Queen-Alia-Fund is Princess Basma, the president of Noor Al-Hussein Institution is Queen Noor, and Queen Rania Al-Abdullah is the president of the Jordan River Institution. They have an exceptional relationship with the authorities and don't belong to the Social Development Ministry (Women's NGOs in Jordan, 2004).

However, as Talal (2004) stated, the government needed to be more interested in integrating local and international organisations into the development plan. However, with increasing challenges and difficulties in Jordan's geographical area and growing numbers of refugees from neighbouring countries, most NGOs engage in multiple activities instead of specialising in one. As a result, events become sparsely distributed rather than clustered, and they will replicate. Furthermore, the effectiveness of NGOs on the ground could be improved by a lack of humanitarian and financial capital, and most NGOs face this. As a result of the issue, a shortage in cooperation among NGOs on one side and governments and NGOs on the other has emerged as a severe issue that impedes NGOs' function and reduces their effectiveness. (Global Development Forum, 2000).

Specific policies on social sustainability and associative social protection perceptions need a framework and cannot determine their work domain and workflow (Global Development Forum, 2000). The need for local and international organisations increased, and the volume of projects and services provided by the organisations in refugee relief increased. Palestine, Iraq, Syria, Yemen, etc.) This challenges the Jordanian government and relief organisations operating in Jordan as the refugees' geographical area widens and their places of existence. These figures show (1.1, 2. 1) the locations of the distributed Syrian refugees and Palestinians and the locations of those camps as of August 31, 2018, Syrian refugees in Jordan aged 18 to 59 years old (both urban and camp-based)

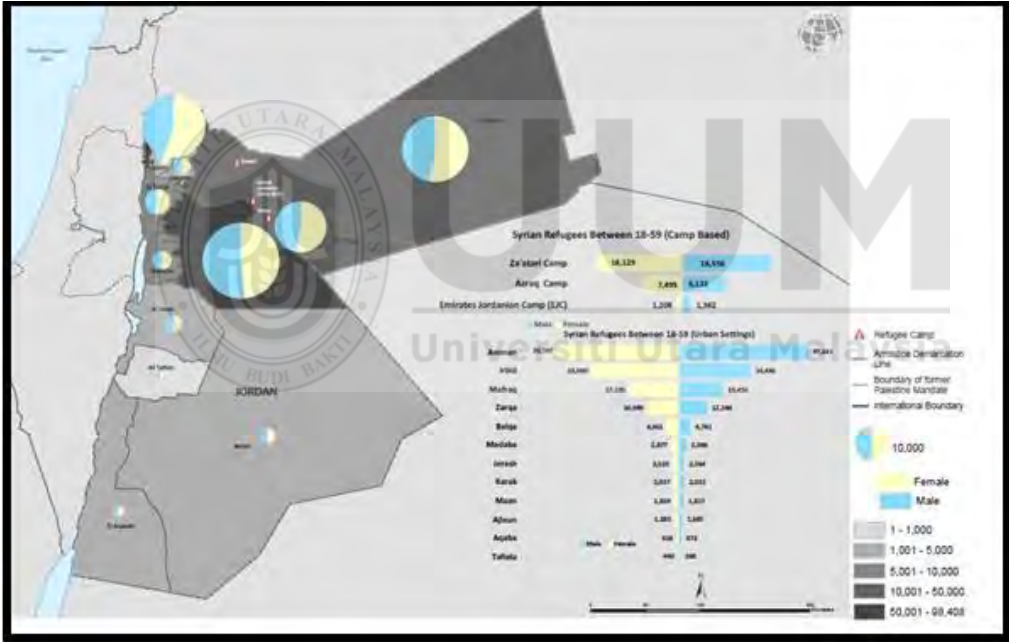


Figure 2.1 The locations of the distributed Syrian refugees

Source: UNHCR (2018)

Concerned Population Refugee Country of Origin 657,628 Syrians 66,262 Iraqis Yemen has a population of 9,838 people. Sudan has a population of 4,058 people. Somalia has a

population of 810 people. 1,564 740,160 (other) In Jordan, 81.1% of the refugees reside inside the cities. Jordan has 57 nationalities. ZAATARI contains (78.994) refugees, while AZRAQ contains (53.967) refugees, and Emirati-Jordanian is among the 14.002 refugees living in camps (7.041).

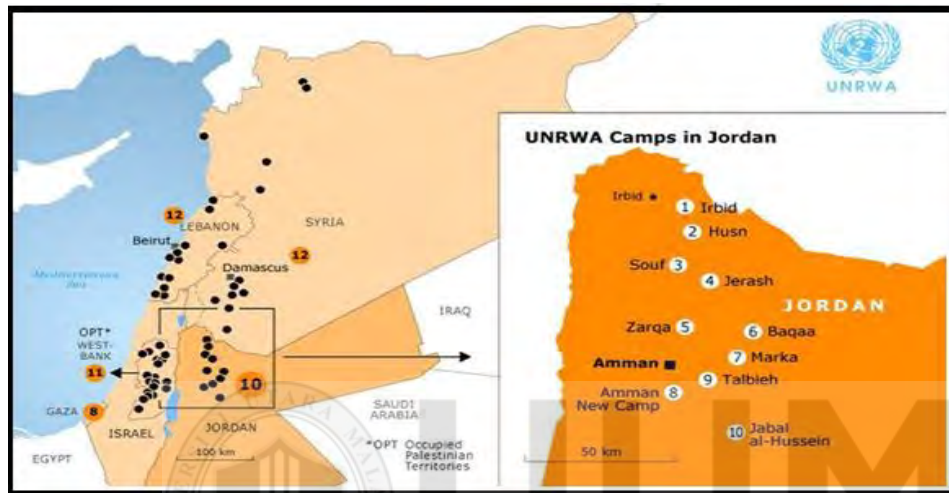


Figure 2.2 The number of Palestinian camps in Jordan and their places of residence from 1948 until now

Source: UNHCR (2018)

NGOs may also be divided into two categories: advocacy and operational NGOs. Active NGOs have mobilised resources through cash contributions, supplies, or volunteer labour to maintain their initiatives and programs. This calls for intricate planning. Planning, creating applications, budgeting, accounting, and reporting need time and experience. Grants and contracts from governments, foundations, or businesses may provide funding. However, advocacy NGOs have a distinct financial balance and do many of the same tasks. On a lesser scale, fundraising is still required and may serve the symbolic purpose of enhancing contributors' affiliation with the cause. It's essential to persuade people to

give their time, but it's also important to mobilise vast numbers of people quickly. This is in addition to a small number of individuals providing much time. Although external funders may not impose onerous administrative requirements, supporters must be effectively informed regularly. Instead of raising money, major events seek to get positive press. Due to this, operational and advocacy NGOs must participate in fundraising, mobilising the help of supporters, planning special events, courting the media, and managing a headquarters despite their differences. Only the distinguishing behaviours of carrying out projects or hosting demonstrations serve to set them apart. The differences are more clear-cut than the labels would have you believe. Operational NGOs often transition into advocacy when ongoing programs encounter recurring issues, and the projects' effects must be improved. All significant environmental and development NGOs now regularly undertake campaigns, at the very least through assisting campaigning networks. Similarly, advocacy NGOs often believe they must address the urgent practical issues individuals face in their policy area. Women's and human rights NGOs assist those who have been the victims of injustice and prejudice.

The organisations also served the local community and refugees, did development projects, and created job opportunities for the community and refugees. The most important sources of funding and donor for INGOs and LNGOs comes from two donors, which are the Western countries and the Gulf countries, and they are considered one of the essential sources of donors to organisations operating in Jordan the following Figure (2;3) shows the mechanism for distributing this donor and the final recipient.

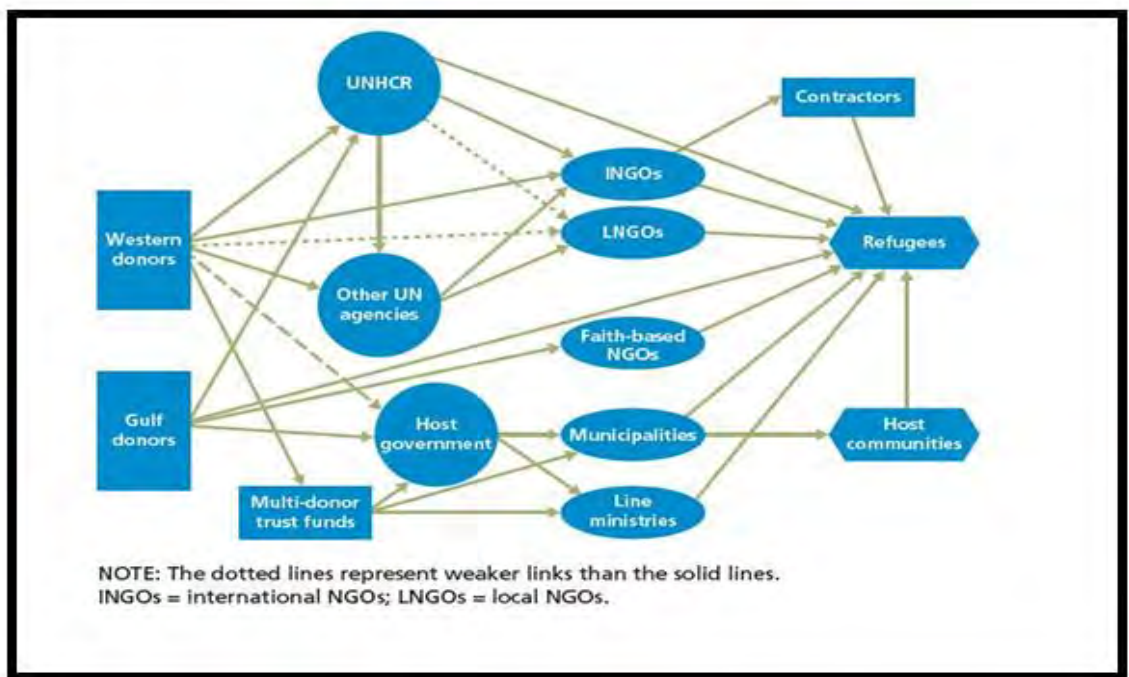


Figure 2.3 Fiscal and Aid Flows

Source: Culbertson, S., Olikar, O., Baruch, B., & Blum, I. (2016).

2.8 NGOs Performance

Indeed, the demands of refugees living in host communities differ considerably from those living in camps. The regions of operations also influence the needs NGOs attempt to solve and their respective strategies. For example, many groups prioritise the urgent needs of incoming refugees near the borders. Safety is a considerably more significant concern than in host towns. In border regions, NGOs must consider potential dangers, such as ISIS members in the community taking action against Syrian migrants. This threat stresses the employees and necessitates integrating safety measures into their programs to secure staff, volunteers, and refugees.

In metropolitan areas, organisations handle the housing problem with monetary support. However, this method must be more helpful in rural regions and refugee camps. Organisations customise their activities to the community's requirements to have a lasting effect. Each project's location is crucial to the organisation's performance and service delivery. Security issues near borders pose a significant obstacle to the sustainability of programs. As a result, the cyclical nature of funding sources may need to be clarified for the financial aspects of projects in many ways.

Moving on, organizational performance is a concept that requires constant attention. According to Ramadan and Borgonovi (2015), an organisation's performance must constantly consider the inputs, analyse the behaviours, and provide the desired results. When an organisation achieves the goals of its organisational strategy and covers the competence levels and accomplishments, it is said to be performing. However, the elements influencing performance, the methods for managing performance, and the methods for measuring performance will differ based on the author and the company (Aboramadan, 2018). The capacity of an NGO to acquire and use its limited resources and assets as quickly as possible in pursuit of its operational objectives is referred to as the organisation's performance (Neal and Griffin, 2006).

Performance measurement is the process of quantifying the effectiveness and efficiency of an organisation using a set of performance metrics (Neely, Gregory, and Platts, 1995). Performance evaluation systematically examines a program's outputs, inputs, and effects (Carman, 2007). In NGOs, performance assessment should be based on inputs, sources, outputs, and effects (Benjamin and Misra, 2006). Other NGO performance metrics

include effectiveness, efficiency, fundraising, beneficiary satisfaction, expenses, and audits (Carman, 2007).

Performance monitoring is especially crucial in the humanitarian sector, where limited resources must be utilised as effectively and successfully as possible (Abidi and Scholten, 2015). This is particularly relevant due to the increasing frequency and severity of natural and manufactured catastrophes, the expenses associated with humanitarian supply chain activities, and the rising competition for finite resources and donor financing. Unfortunately, performance assessment tools have not been adopted consistently in the humanitarian supply chain (Beamon and Balcik, 2008).

Nevertheless, despite various techniques, much work must be done in humanitarian supply chain performance monitoring. Few frameworks for evaluating performance have been experimentally examined, and only a few humanitarian organisations have contributed to research initiatives. Despite the particular characteristics of the humanitarian setting, charitable and humanitarian organisations might gain something from the performance evaluation frameworks used in the private sector (Moxham, 2009).

To summarise, the influence of location on NGOs working with refugees, the importance of performance in NGOs, the measures and metrics for evaluating performance, and the importance of performance monitoring in humanitarian supply chains have been discussed. There is no doubt that these considerations are significant and require consistent attention and research to ensure the effectiveness and efficiency of NGOs and other humanitarian organisations.

2.9 Supply Chain Flexibility

Flexibility is a multi-dimensional concept and has several aspects. From the researcher's viewpoint, flexibility in humanitarian SC is the provision and transfer of qualified resources and services to disaster areas and preparedness pre- and post-disaster.

The ability of an organisation to continue operating normally in the face of increasing levels of disorder is referred to as flexibility (Braunscheidel and Suresh, 2009; Srinivasan and Swink, 2018). According to Volberda (1996), flexibility is "the degree to which an organisation has a variety of managerial abilities and the speed with which they may be activated to raise the management's control capacity and improve the organisation's controllability." Consequently, organisational flexibility can be seen as both a design feature and a management responsibility. The problem of corporate design is related to the organisation's ability to adjust quickly to sudden changes in the external environment. This focuses on the degree to which the organisation may be controlled or changed, which often relies on the supply of appropriate conditions that promote organisational flexibility. For example, manufacturing flexibility requires adaptable machinery, universal equipment, and a wide range of operational output repertoires.

Similarly, flexibility in creative endeavours calls for multifunctional teams, low hierarchical levels, and few rules governing the process. After that, the management job refers to the managerial abilities that enable businesses to adapt to a stormy environment. Those traits include Supply chain organisational flexibility, defined by Srinivasan and Swink (2018) as the ability of supply chain managers to rearrange their internal supply networks quickly and efficiently to adapt to shifting demand and supply market situations.

The unpredictability of natural disasters has led many people to believe that organisational flexibility is one of the most essential qualities. Stakeholders act swiftly to alleviate the suffering of those affected by a tragedy by forming supply chain networks. This enables them to react more quickly to the potentially chaotic situation that may develop in the aftermath of the disaster. "the speed of humanitarian support after a calamity rests on the capacity of logisticians to buy, transport, and receive items at the location of a humanitarian relief operation," as stated by Thomas (2003, p 4). A needs assessment and response phase are carried out concurrently based on the little information supplied. After that, if there is a shift in the circumstances, the structure of SC has to be modified to accommodate both the volume and the kind of information streaming from the scene of the catastrophe.

Because there are so many different variables at play, it is essential to have the ability to adapt flexibly to ever-evolving demands. Regarding the supply chain of a company, flexibility is the key to ensuring that materials flow without interruptions (Karunasena and Amaratunga, 2016). In contrast, the term "flexibility" in the context of HSC refers to the ability of those engaged to swiftly adapt to unanticipated demands and requirements expressed by those impacted. Such as the rate at which water, food, clothing, medication, blankets, and other goods are transported promptly to those whom the catastrophe has impacted. In the context of a single organisation, supply chain agility refers to the robustness of the connection between the market and the business (Hafeez et al., 2018). According to the findings of this investigation, "agility" refers to an organisation's capacity to swiftly adapt in the face of shifting circumstances brought on by natural catastrophes located in various regions of the globe. Even when things aren't in order, such as after a natural disaster, it is still possible for a company to identify short-term

changes, such as shifts in demand and supply, thanks to a crucial organisational element known as just-in-time analysis. In addition to that, it enables the company to react rapidly and flexibly to these developments.

That's not even half of it. As the disaster-prone region's events continue to develop and people's requirements shift, a challenging scenario arises for the actors involved in humanitarian aid as they attempt to design the supply chain architecture with the flexibility necessary to cope with the situation. According to the research of Swafford et al. (2008), agility and flexibility indicate response time and reaction capacity, respectively. Hence, we conclude the first research question:

RQ1: what is the relationship between (Flexibility) and NGO performance in Jordan?

2.10 Supply Chain Agility

The researcher sees that supply chain agility is that humanitarian supply chain networks must be able to transport aid supplies to disaster-affected countries quickly and reliably.

Agility was defined as resilience and adaptation to respond to fast changes in supply and demand (Jin et al., 2005; Hult et al., 2007). There is a difference between agile and lean. Agile is characterised by flexibility, low predictive ability, sensitivity to the market, and the ability to work in a rapidly changing demand with various products. In contrast, capable experts work in large production, a few products, and a predictable environment. (Christopher, 2000). In the early 1990s, agile manufacturing was proposed and executed to deal with the rapidly changing needs of customers through flexibility and reconfiguration (Gligor & Holcomb, 2012a). In a supply chain context, an organisation's agility signifies the strength of contact between the organisation and the market

(Katayama & Bennett, 1999). In this research, agility refers to a company's capacity to react swiftly to changes caused by catastrophes in diverse areas. This is predicated on Kovacs and Spens's (2009) concept that the "real obstacles encountered in humanitarian supply chain vary on the extent, kind, and geography of the catastrophe where it happens." Floods and earthquakes, for example, wreak havoc on the country's physical infrastructure, causing several routing issues for relief supplies. Similarly, inventory management of relief materials is hampered after a natural catastrophe owing to security concerns (Beamon & Kotleba, 2006a, 2006b).

In contrast to the supply chain, the humanitarian supply chain has two sorts of customers: those impacted by the tragedy and those who have contributed money to help the first customer (disaster-affected people). The evaluation of the needs and desires of disaster-affected individuals is often the starting point for Agility, which was defined as resilience and adaptation to respond to the fast supply and demand changes (Jin et al., 2005; Hult et al., 2007). There is a difference between agile and lean. Agile is characterised by flexibility, low predictive ability, sensitivity to the market, and the ability to work in a rapidly changing demand with various products. In contrast, capable experts work in large production, a few products, and a predictable environment (Christopher, 2000). In the early 1990s, agile manufacturing was proposed and executed to deal with the rapidly changing needs of customers through flexibility and reconfiguration (Gligor & Holcomb, 2012a). In a supply chain context, an organisation's agility signifies the strength of contact between the organisation and the market (Katayama & Bennett, 1999). In this research, agility refers to a company's capacity to react swiftly to changes caused by catastrophes in diverse areas. This is predicated on Kovacs and Spens's (2009) concept that the "real obstacles encountered in humanitarian supply chain vary on the extent, kind, and

geography of the catastrophe where it happens." Floods and earthquakes, for example, wreak havoc on the country's physical infrastructure, causing several routing issues for relief supplies.

Similarly, inventory management of relief materials is hampered after a natural catastrophe owing to security concerns (Beamon & Kotleba, 2006a, 2006b). Most people agree that supply agility is a source of competitive advantage (Gligor and Holcomb, 2012; Blome et al., 2013). This is true for places with unpredictable supply and demand and a lot of change and complexity (Blome et al., 2014). Gligor and Holcomb (2012) say supply chain agility can positively affect operational performance. They can also help the supply chain network recover quickly from outside forces, improving delivery and service levels (Lee, 2004). Scholars have said that firms need efficient supply chains and agility to do well (Hult and Ketchen, 2007).

Where there is a risk of inconsistent supply, humanitarian supply chain agility is required. Here, it emphasises the need for evident enthusiasm and participation. Azadegan and Dooley (2010) stated that SC-Agility can gradually impact rescue operations. It helps a supply chain network quickly recover from disruption inflicted by external factors and resume attempts to meet necessary distribution and service standards (Basheer et al., 2019). According to research, supply agility is needed for efficient supply chain operations. Most humanity logistics and SC scholars agree that HSC agility depends on dynamic sensing, dynamic tempo, and dynamic versatility, so it copes with the threats encountered in the non-deterministic environment. As a result, it is susceptible to natural disasters. Hence, we conclude with the fifth research question:

RQ2: what is the relationship between (Agility) and NGO performance in Jordan?

2.11 Supply Chain Alignment

The researcher believed that alignment in humanitarian SC is harmony level between members of the humanitarian SC and the goals set for SC.

Alignment is rarely found in research; the basic principle originated long ago when researchers defined the value of the long-term, mutual advantages of the partnership between the buyer and the supplier (Daugherty, 2011). These beginnings also evolved into modern principles such as SC-Convergence, partnering as well as teamwork (Fugate, Sahin & Mentzer, 2006; Kaliani Sundram, Chandran & Awais Bhatti, 2016; Wong, Skipworth, Godsell & Achimugu, 2012).

Supply chain alignment is a design feature of supply chain networks that allows them to dynamically modify their structure to match the goals of all participants (for example, transparency among supply chain members, collaboration, profit sharing, risk sharing). Supply chain network adaptability is another term for alignment (Matthyssens and Vandenbempt, 2008). According to Tang and Tomlin (2008), the alignment of the actors in the supply chain network is a significant factor. Because members of the supply chain may have a less-than-optimal belief that the end consumer benefits from their interests (Narayanan and Raman, 2004), Lee (2004, p 6) defines alignment as providing "incentives for supply chain partners to enhance performance." Therefore, alignment is centred on the collaborative production of value for the customer (Knemeyer and Fawcett, 2015).

With this focus, supply chain alignment necessitates the continuity of goals, policies, and processes across various supply chain stakeholders (Skipworth, Godsell, Wong, Saghiri

& Julien, 2015). Van Hoek and his colleagues (2001) emphasise that aligning S.C. participants to render their activities effective becomes a competitive element in ensuring supply chain alignment. Improving supply chain alignment necessitates an ability to compromise the short-term interests in addition to the overall interference cooperation (Kim et al., 2013).

Just a few articles have used one-dimensional (ex. Dubey, Singh & Gupta, 2015; Dubey & Gunasekaran, 2016) and multi-dimensional scales to build the supply chain alignment construct (ex. Simatupang & Sridharan, 2005). According to Dubey, Singh and Gupta (2015), the alignment of the supply chain is considered a significant determining factor for both human performance and logistics. In both the alignment of SC and human functioning, there is a substantial performance for SC-Alignment on fulfilment and the inventory performance, but not reactions. Also, alignment domains (Data exchange, decision coordination, reward consistency) positively influence numerous facets of supply chain performance, including inventory, delivery, and responsiveness. Hence, we conclude the second research question:

RQ3: what is the relationship between (Alignment) and NGO performance in Jordan?

2.12 Supply Chain Adaptability

The researcher sees that SC-Adaptability indicates the ability of the supply chain to detect and react to the long term in addition to the structural changes in SC and work climate through changing the flexible structure of SC. Hence, they respond to the modifications in the settings surrounding SC and harmonise together to serve the supply chain.

Lee (2004) defined adaptability as the capacity to “adjust the supply chain’s architecture to meet structural shifts in markets and alter the supply network (to reflect changes) in strategies, technology and products.” Past studies have proved the relevance of adaptability in enhancing supply chain performance (Whitten, Green, & Zelbst, 2012). Richey et al. (2006) indicated that SC members should concentrate on adaptability in today's dynamic world to operate more effectively (Stevenson & Spring, 2007). (Stevenson & Spring, 2007). Continuously changing needs resulting from disasters necessitate supply chains and supply networks that are adaptable enough to handle those issues as they emerge. The relief groups may come from around the globe, but the local organisations tend to go from nationwide. One of the most critical factors in the success of relief efforts is the connection between organisations and the effectiveness of collaborative planning. (Lee, 2004: 6). Consequently, Adaptability is critical. Adaptability is a vital path to embracing dynamic, complex business conditions arising from global change, population changes, technical advances, and political and social swings, and it relies on the longer-term perspective rather than agility (Lee, 2004; Christopher & Holweg, 2011). Critical aspects of adaptability are emphasised by Lee (2004), like monitoring industry alterations, the elasticity of by-product modularisation, and balancing the architecture of SC to consumer modes for various production lines. Researchers stress adaptability's value in contemporary economies much as they do agility (Jain & Khurana, 2016).

Scholars agree that HSC adaptability is essential in cost-cutting and saving; structural flexibility may help increase reaction time. Outsourcing may be one way to do this (Ahi & Searcy, 2013). Adaptability may improve the whole performance. Despite the numerous HSC supply-chain-performance statements and HSC's adjustment, it is

difficult to rule out the likelihood of the unanticipated impact of SC-adaptability while SC agility is present. Adaptable capabilities such as teamwork and the flexible capacities of SC networks and other SC associates are used to achieve a shorter lead period.

Furthermore, these partners focus on optimising the distribution mechanism for goods and services. This probability of HSC adaptability has yet to be discussed in the HSC literature; despite recognising the literature on the value of SC adaptability in HSC, particularly in a humanitarian sense, little research has been done on this variable. Several reports show that supply chain adaptability will contribute to substantial cost reductions and a strong consumer claim-filling rate (Dubey, Singh & Gupta, 2015; Chan & Chan, 2010). Schoenherr and Swink (2015) highlighted the value of this variable. According to Eckstein, Goellner, Blome and Henke (2015), the performance adaptability of SCs is considered suitable for cost and organisational performance. While Kabra and Ramesh (2015) concluded that supply chain adaptability is negatively linked to performance, supply chain adaptability is related in a positive way to the performance of the humanitarian supply chain. Hence, we conclude with the third research question:

RQ4: what is the relationship between (Adaptability) and NGO performance in Jordan?

2.13 Supply Chain Resilience

Researchers indicate that Supply Chain Resilience refers to an SC system's capacity to minimise a disturbance, the effects of such disturbances if they arise, and the period it takes to get back to regular performance.

The idea of supply chain resilience arises as a potential solution to the shortcomings of conventional risk management methods. It is said that the resilience concept describes

methods for dealing with interruptions in complicated supply networks (Rice & Caniato, 2003; Sheffi, 2015). Indeed, Christopher and Peck (2004) think supply chains must be resilient to deal with disturbances. Since an organisation's capacity to deal with unforeseen occurrences determines whether it succeeds or fails, resilience has historically been one of managers' top concerns. Managers have become increasingly interested in this topic as the number of occurrences or risk factors has increased. Risk management is no longer the only aspect of supply chain resilience. Being in the best position relative to your rivals is necessary to manage risk and profit from disruptions. "Disruption is inevitable in our complex environment, and resilience is essential. Managers may take a holistic approach to prepare for unpredictability by reading Yossi Sheffi's seminal work (Sheffi, 2005). Christopher separates resilience from robustness. He points out that "robustness" refers to physical or structural strength. He points out that a resilient system is only sometimes going to be a robust one. The word resilience refers to the capacity of a system to shift to a new, more desirable state after being perturbed (Christopher, 2003). Timmerman (1981) defined resilience as a system's ability to absorb and recover from catastrophic occurrences. More broadly, the United Nations defines resilience as the ability of a system or society to adapt to disasters by resisting or adjusting to achieve an optimal level of functioning and structure (Birkmann, 2006). How well civilisations can organise and learn from previous catastrophes influences this. The combination of all the resources, skills, and capacities available within the company, community, or whole supply chain that may assist in minimising the impacts of a catastrophe is referred to as system capacity (Ponomarov & Holcomb, 2009). Firms (retailers, wholesalers, and suppliers) should use risk control techniques to boost catastrophe resilience, according to Abe and Ye (2013). They must strike a delicate balance between the productivity of SC

and catastrophe risk mitigation. Although outsourcing from one supplier will boost profits, it often puts retailers at risk of catastrophe. Multisourcing would significantly raise transaction costs. So, businesses can perform a detailed cost-benefit review to enhance resilience. They can also choose vendors based on risk mitigation rather than pure cost savings requirements. Monitoring processes and shortening the supply chain will boost SC visibility (Disintermediation). A detailed evaluation of an institution's susceptibility to disturbances and the effect of a catastrophe on SC will enable risk transfer and reduction strategies to be developed (Abe & Ye, 2013).

Resilience is one challenge raised in previous studies, and Resilience has varied in most models oriented toward inventory, purchase, and post-disaster relief (Brooks et al., 2015). A massive trend in resilience is intriguing in literary studies. Besides, Dubey et al. (2014) discussed the relationship between the resilience supply chain, supply chain agility and the performance of the humanitarian supply chain. They explained the most critical differences between agility and resilience and the relationship of resilience to SC performance after disasters. Day (2014) evaluated resilience using an adaptable and complex supply chain to merge relief efforts.

Singh et al. (2017) suggested a related pattern of utilising resilience to measure disaster management's effects. Gabler, Richey and Stewart (2017) addressed the significance of promoting flexibility and the impact of flexibility on the economy's reintroduction of normalcy through a relationship between the public and private sectors. At the same time, Sharma and Srivastava (2016) explored the function and participation of social welfare SC in delivering flexibility. In Greece, Drakaki and Tzionas., (2017), in addition to Ager, Fiddian-Qasmiyeh and Ager., (2015), stressed the need for the contribution to group

engagement from a financial resilience perspective, one of the handful types of research on resilience linked to the problems of humanitarian and finance. Self-organisation resulted in forming confidence and concerted actions by partners, in addition to their sympathetic coordination, resulting in a faster rate of resilience.

However, the pace at which the humanitarian relief supply chain returns to normalcy would be dictated by coordination among the supply chain's numerous actors (Boin, Kelle & Whybark, 2010; Ivanov, Sokolov & Kaschel, 2013; WEF, 2013). According to Matyas and Pelling (2015), resilience is a separate type. It is both a mechanism and a result, with the latter being more important than the former. Day (2014) has sought to clarify the resilience property of a disaster-relief SC using complexity theory and a systems resilience method. Day (2014) defined three additional essential components related to resilient SC: (i) topology (the length of the path, repetitions, compilation, and so on); (ii) entity (non-public organisations, army, 3rd-party logistics suppliers, public departments, sponsors, mass-media, so on); and (iii) environmental (extreme climatic, natural calamities). A socio-ecological strategy was used by Sage, Sircar, Dainty, Fussey and Goodier., (2015) to understand infrastructure resilience. However, catastrophe flexibility has been debated in the past few years, and in the humanitarian context, SCRES is considered a comparatively new concept.

Chopra and Sodhi (2014) discussed solutions to reduce risks and their impacts on the humanitarian supply chain's performance through resilience. According to Mochizuki, Toyasakib and Sigalac (2015) and Kim and his colleagues (2015), graph theory could develop perceptions of the human supply network and distinguish between disturbances.

The study summarised the importance of resilience in supporting and increasing the efficiency of the performance of the humanitarian supply chain if disturbances occur.

Clarifying the nature of the supply chain is necessary before developing the notion of resilience in the humanitarian supply chain. The possibility of natural catastrophes in the researchers' own country and the rising number of globally connected crises have led them to focus their study on the supply chain for humanitarian supplies. The stark contrasts in the effects of natural catastrophes in rich and underdeveloped nations need more study so that the authors may emphasise the causes of this variation. Due to a lack of coordination techniques and less integrated and collaborative supply chain strategies between operation management and the human actors acting on the scene, the performance of the supply chain for humanitarian supplies during relief operations in catastrophes is uncomfortable. It is necessary to coordinate, cooperate, and effectively manage the humanitarian roles in the event of natural disasters due to the vast number of involved governmental agencies, nongovernmental organisations, UN faculties, international institutes, manufacturers, and third-party logistics providers. "only a collaborative approach will be able to enhance the performance of humanitarian supply chains, while its absence creates catastrophic implications for affected communities" (Chang & Pache, 2009). We focus our study on this area and provide more information for the readers since the humanitarian logistics and relief supply chain is an intriguing subfield of supply chain management and because the frequency of natural and artificial catastrophes has grown in recent years.

Having a solid humanitarian supply chain is essential since the nature of these occurrences has adverse repercussions for people.

Scholten et al. (2014) studied the interdependence between practitioner-led catastrophe recovery processes and strategic literature on supply chain resilience to develop an integrative context for HSC resilience. DuHadway. (2017) suggested a theory-based approach to analysing HSC disturbances, concentrating on the purpose of disruptions and their source to make strategic decisions. Hence, we conclude the fourth research question:

RQ4: what is the relationship between (Resilience) and NGO performance in Jordan?

2.14 Organization Culture (OC)

The researcher believes that the organisational culture in humanitarian supply chains Is a complex group of elements that start with the individual's behaviour and end with those needing relief. Those elements are linked in harmony to reflect the organisation's behaviour, which constitutes the organisation's culture.

Organisational culture, according to Schein (2010, 18), is "a tradition of shared universal assumptions learned by a society when it tackled problems of external adaptation and internal integration, which has worked well enough to be deemed true and, therefore, to be taught to new participants as the right way to interpret, believe, and feel about those problems". Institutions' corporate culture impacts how they react to external developments and make business decisions (Liu et al., 2010). Prasanna and Haavisto (2018) stated that the organisational culture is divided into several values: (What is preferred and valuable to our sentiment) (Cameron & Quinn, 2011), the other related to the stories that are known as written or spoken novels (Vaara & Tienari, 2011), the filters and whatever it is known as frameworks (Smets, Morris, and Greenwood, 2012), As this model, it includes all the previously mentioned models known as tools: (that is, a set of

values, stories, and frameworks that are practised within the organisation) and the last model in the categories: (It is a set of concepts that define the difference between organisational goals, people and practices Within the organisation (Wry, Lounsbury, and Jennings 2014). In their research, Roos (2016) made the case that corporate culture impacts employees' behaviour and how they feel and perceive the company. According to James and Glission (2020), organisational culture offers a roadmap for workers' experiences. It explains why businesses must try to influence how well people fit into the company, their behaviour, and their attitudes. According to La Grange and Geldenhuys' (2008) research, institutions must adjust their organisational cultures to their strategies and the changing environment. Manetje and Martins (2009) assert that changes in the business environment are ongoing, have a significant impact on how businesses may operate, and have an effect on organisational commitment and culture. In a similar vein, it contends that the culture of the company dramatically influences organisational transformation. According to La Grange and Geldenhuys (2008), businesses' plans are likely to fail if they struggle to realign ongoing management reactions, and reengineering attempts will also be clear and compelling. According to La Grange and Geldenhuys (2008), as culture is a critical component of organisational distinctiveness, failing to clearly define and manage it will make for additional issues when forging coalitions. According to Munck (2001), altering an organisation's organizational culture is one of its most essential obstacles, even when the most excellent solutions are available. This is because people are prone to sticking with what they are familiar with in organisational culture, as described by Schein. (1992) is a pattern that has been established or found by a group to be able to deal with issues relating to internal integration as well as external adaptation. The pattern must have worked to the creators' satisfaction and be accepted as

legitimate. The ideal method to perceive, think about, and feel about issues experienced is then taught to new people. Key organisational leaders often have an impact on organizational culture. This has evolved through time to become one of the most crucial tasks in figuring out how well change is implemented in a company, according to Peters and Waterman. (1982), culture is one of the essential characteristics of successful businesses and includes both organisational ideals and mental states. These enduring shared beliefs significantly impact and may continue to exist long after the group's composition has altered. Organizational culture is the most challenging and crucial aspect of change management because it encompasses formal and formal structural components. Organizational cultures are neither static nor homogeneous, and while they develop through time, all cultural systems show continual changes that are sometimes interrupted by more overt, extreme alterations (Weick & Quinn, 1999).

Organizational culture is attracting the attention of public sector administrators and academic scholars (Jreisat, 1997; Zamanou & Glaser, 1994) mainly because it is critical to the efficiency and success of governmental bodies (Cameron and Ettington, 1988; Kotter and Heskett, 1992; Sorensen, 2002; Denison, 1990). Despite its importance, an extensive debate exists concerning the concept's scope and meaning (Ogbonna and Harris, 1998). However, there are three significant issues to remember. Some scholars conclude that considering culture as a single concept diminishes its utility as a study instrument (Ogbonna and Harris, 1998a; Pettigrew, 1979; Martin, 1992). Culture, influence, politics, and environment cannot be equated (Denison, 1996; Riley, 1983; Schein, 1986). Third, opinions vary about whether corporate culture may be quickly modified (Legge, 1994; Ogbonna, 1993).

Another explanation for organisational culture's widespread adoption is the belief (or assumption) that some cultures equal organizational performance. Many scholars and professionals contend that the performance of an institution is determined by how widely shared and strong the culture's ideals are (Pascale and Athos, 1992; Peters and Waterman, 1982). It is believed that the importance of corporate culture to performance focuses on the significant part of the culture in creating the benefit of sustainability and competitiveness (Scholz, 1987). By specifying the organisation's limits to promote human engagement and restricting the reach of information processing to acceptable amounts, Krefting and Frost (1985) explained how organizational culture can establish a competitive edge. Further, it is asserted that extensive elaboration and deeply detained politics allow the administration to anticipate workers' responses to particular strategist selections, thus reducing the potential unfavourable results (Ogbonna, 1993).

In the 1990s, researchers were more cautious in assessing the connection between performance and culture. For instance, Gordon and DiTomaso (1992) and Denison (1990) suggested the connection between specific characteristics of organizational culture and performance. However, each added different settings. They think the culture may maintain contact only with outstanding performance if it adapts to environmental circumstances. Besides, the culture must be strong (shared far and wide) and have single characteristics that cannot be replicated. Nonetheless, some individuals believe a weak relationship exists between performance and culture (Willmott, 1993; Ogbonna, 1993). Indeed, people are increasingly accepting the resource-based competitive advantage view, which indicates that the possibility of theorising a culture to develop sustained advantages relies on the value, imitability, and the relevant culture's sustainability (Legge, 1994).

It is well-known among organisations that their culture is closely linked to performance because it creates a competitive edge (Scholz, 1987). Nevertheless, in the 1990s, much literature revealed a positive relationship between culture and performance (Gordon & DiTomaso, 1992). Due to the existence of a connection between culture and performance, enabling the organisation to adapt to changes within the environment, the organisation is in line with the organisation's values as well as the contribution of workers (Dension, 1990). This concept is consistent with RBV's idea, which depends on the level of the existing culture and its impact on competitive sustainability based on valuable, imitation and non-reproducible resources (Sami, Jusoh, Mahfar, Qureshi & Khan, 2016; Zaman, Qureshi & Bhatti, 2011). Despite arguments and ambiguous claims, inevitably, some researchers have countless literature reports on the culture in the organisation. This richness is caused by researchers' belief that a strong culture affects excellent organisational performance. Although some theorists question the general concept of the link between culture and performance, there is enough proof from experience to prove that organizational culture and performance are connected. This confirms that organizational culture seems to be an essential intangible resource for achieving excellent performance, as embodied by RBV.

The value of establishing and constructing a supply chain network's integration has been argued by Mitra and Singhal (2008). Braunscheidel, Suresh, and Boismier (2010a) highlighted the importance of corporate culture in supply-chain integration. Cadden Marshall and Cao (2013) discussed culture's effect on the design of the supply chain network further. Nevertheless, there needs to be more research concerning the corporate culture's impact on the layout of supply-chain-network and other aspects of OP (McDermott & Stock, 1999). As Ravasi and Schultz (2006) stated, organisational culture

is considered a collection of everyday intellectual presumptions that govern people's behaviour in the workplace. We're attempting to apply Ravasi and Schultz's (2006) concept to the supply chain. We tried to expand on Needle's (1994) concept, which states that organizational culture is a collection of ideas, opinions, and concepts shared by humanitarian supply chain actors and are influenced by tradition, operation, employee groups, national community and management actors. Childs (2013) used cultural theory to describe defence techniques for humanitarian relief staff. Douglas (1999) suggested a four-culture hypothesis to understand participants' behaviour in the disaster relief supply chain.

So, culture, shared respect, confidence among the supply chain stakeholders, and environmental requirements should all be prioritised (Dubey & Gunasekaran, 2016). From here, we conclude the sixth research question:

RQ6: To what extent does organisational culture influence the relationship between the HSC (Agility, Resilience) and NGO performance in Jordan?

2.15 Underpinning Theories

Based on the review of previous literature on sources and the causes of NGOs' performance, many theories have arisen in the literature related to NGOs. What is commensurate with this theory's objectives and framework was chosen for this study. These theories are the "Dynamic Capability View-DCV" (Teece, Pisano & Shuen, 1997). These sections discuss these theories and the reasons for choosing them.

2.16 Dynamic Capability View (DCV)

From a Dynamic Capabilities View (DCV) perspective, organisations must adjust their supply chain (SC) resources to deal with uncertain environments. DCV proposes that organisations can employ their internal and external capabilities and develop new ones to cope with a perpetually evolving environment (Teece, Pisano & Shuen, 1997). Market volatility is the primary driver behind environmental developments in the SC setting, such as volatile industry, consumer needs, and competitor tactics.

According to Teece's (2007) paradigm, dynamic capabilities allow opportunities to be perceived, shaped, and seized. These capabilities also aid in maintaining competitiveness by reconfiguring organisational properties, thereby extending them to supply chain management (SCM) (Wei & Wang, 2010). Supply chain agility, alignment, and adaptation are essential considerations.

Variables encompass complex, hard-to-replicate capabilities that generate a supply chain and assist businesses in improving their efficiency (Asanuma, 1989; Dyer, 1996). According to Carvalho et al. (2012), every organisation pursues a singular strategy: “agility or resilience.” In situations where supply and demand risks are high, the supply chain agility (SCAG) strategy is often utilised (Lee, 2002). SCAG is designed to adapt swiftly and cost-effectively to unpredictable market changes and to increase resilience to ecological disruptions of both size and variety (Christopher & Towill, 2002; Christopher, 2000; Eckstein, Goellner, Blome & Henke, 2015; Wang et al., 2017).

However, various factors, such as globalisation, lead to an extension of the supply chain length. Another factor is the recent increase in natural disasters and violent conflicts in

the Middle East (Christopher and Peck, 2004). In adversity, most supply chains adopt a narrower approach, rendering them vulnerable (Chowdhury & Quaddus, 2016; Carvalho et al., 2012). Although supply chain resilience may not be optimal, it is essential for dealing with a dynamic and complex environment.

Some researchers argue that developing skilled capabilities within the supply chain can facilitate the balance between agility and resilience (Lee and Rha, 2016). As Gibson and Birkinshaw (2004) defined, Ambidextrous organisations match their business strategies to meet existing customer demand while remaining sufficiently adaptable to environmental changes to ensure their continued existence. Companies gradually develop ambidextrous capabilities to achieve a strategic advantage by exploring potential markets and leveraging established assets (Aslam, Blome, Roscoe & Azhar, 2018).

Despite this, ambidexterity in the supply chain still needs to be fully utilised in developing humanitarian supply chains. Dynamic capabilities, which allow identifying opportunities and threats, seizing opportunities, and sustaining competitiveness through resource and capability reconfiguration, differ from ordinary capabilities (Teece, 2007).

Zollo and Winter (2002) describe dynamic capabilities as addressing the functions of knowledge codification, knowledge articulation, and experience accumulation. These authors define a dynamic capability as "a learnt and established pattern of collective activity through which the organisation systematically generates and modifies its operational routines in pursuit of greater effectiveness" (Zollo & Winter, 2002, p. 340).

Dynamic capabilities relate to the integration, adaptation, and reconfiguration of external and internal resources to respond to environmental changes and promote learning. This

learning influences a single entity or a chain (Teece & Pisano, 1994). Robust dynamic capabilities enable organisations to be nimble, adaptable, and resilient while facilitating an intelligent strategy (Lessard et al., 2016).

Although many contradictions and ambiguities exist in the literature concerning dynamic capabilities (Barreto 2010, Zahra et al. 2006), two main features of dynamic capabilities are recognised: search and selection and deployment (Helfat et al., 2007). Barreto (2010) proposes a consolidated definition: Dynamic capabilities are "the firm's capacity to systematically solve problems, evidenced by its ability to recognise opportunities and threats, make timely and market-oriented decisions, and modify its resource base."

Several sectors of SCM literature have examined dynamic capabilities, albeit only some studies specifically address DCV (Beske et al., 2014; Defee & Fugate, 2010). DCV has been explored in the context of SCM's sustainability stream (Beske, 2012; Beske et al., 2014), SCM skills (Defee & Fugate, 2010), SCM connections (Fawcett et al., 2011; 2012), and agility (Blome et al., 2013; L'Hermitte et al., 2015; 2016).

In humanitarian aid supply chains, agility facilitates rapid resource mobilisation (Kovács & Tatham, 2009). Agility is a precursor to flexibility and a dynamic capability (Dubey & Gunasekaran, 2016). It has been highlighted as a dynamic capability in both commercial (Blome et al., 2013) and humanitarian supply chains (L'Hermitte et al., 2015; 2016). Lee and Rha (2016) suggest enhancing visibility (supply chain sensing), agility (supply chain seizing), and flexibility to establish dynamic capabilities in a supply chain. The companies may share and utilise these capabilities in a supply chain to improve its functionality, making it more flexible and adaptable (Defee & Fugate, 2010).

Humanitarian supply chain organisations should strive for supply chain agility (SCAG), which will enable humanitarian organisations (H.O.s) to provide the proper aid to victims of natural disasters at the right time (Charles, Luras & Van Wassenhove, 2010; Brooks, Bowles & Tatham, 2017), and supply chain resilience, which will help to maintain the humanitarian supply chain (Day et al., 2012).

Dynamic Capabilities View (DCV) is seen by some scholars as offering a strategic advantage in evolving conditions, contrasting with the more static Resource-Based View (RBV) (Eisenhardt & Martin, 2000; Teece, Pisano & Shuen, 1997; Sirmon, Hitt, Arregle & Campbell, 2010; Eisenhardt & Martin, 2000; Bititci Ackermann, Ates, Davies, Gibb, MacBryde & Shafti, 2011; McAdam Humphreys, Galbraith & Miller, 2017; Dubey et al. 2018b).

In a humanitarian context, dynamic capabilities are considered fundamental, experienced, and precarious operations. These capabilities depend on rapidly generating new insights that enable the transformation, combination, or updating of resources and capabilities to those essential for uncertain environments. Based on this reasoning, SCAG and supply chain resilience are considered dynamic capabilities of H.O.s (Eckstein, Goellner, Blome & Henke, 2015; Aslam, Blome, Roscoe & Azhar, 2018; Tabalkar, 2017).

Flexibility and agility in the supply chain have been shown to determine response capacity and response time, respectively (Prajogo & Olhager, 2012). Consequently, flexibility is seen as a prerequisite for agility, and as such, it is a dynamic capability that an organisation can develop.

Supply chain adaptability can thus be defined as dynamic capabilities arising from a company's willingness to reorganise resources at both the company and supply chain levels. The Dynamic Capabilities View allows a deeper understanding of how supply chain adaptability impacts performance (Priem & Butler, 2001).

Based on the review of the literature, numerous conclusions can be drawn. First, numerous studies have examined humanitarian supply chains, the external environment and NGOs' performance. Despite these empirical studies, only some studies have empirically examined humanitarian supply chains within NGOs' context in Jordan. Even though studies on humanitarian supply chains and performance are widespread, most studies examined humanitarian supply chains in a one-dimensional approach. Hence, this study has helped fill this gap by reviewing humanitarian supply chains in a multidimensional way better to understand the personal effect of various NGO practices. Where the current study is considered one of the rare studies in relation to humanitarian supply chains and their impact on the performance of relief organizations in Jordan, where this type of studies is of interest to both researchers and practitioners in the field of humanitarian because of its importance to NGOs and their performance, and as we mentioned previously that this research It is considered relatively rare in the field of scientific research in Jordan, where the other importance and the literary gap stem from the lack of sources and references that the researcher searched through websites, where it was noted that there is a somewhat scarcity with regard to supply chains and their relationship to performance, especially in the environment of Jordan, which is fair to third world countries More specifically, in relation to the performance of organizations, where most of the research focused in general on a specific part of the supply chains, and the current study seeks to develop a comprehensive and complete concept of human supply

chains with their variables and their relationship to the performance of non-governmental organizations operating in Jordan.

Second, a comprehensive review of past studies indicated inconsistent findings regarding the relationship between humanitarian supply chains and NGO performance. To better understand, this study incorporated organizational culture as a moderator of humanitarian supply chains and NGO performance relationships, as it needed to get research attention. This study has extended the body of research by including organizational culture. This is a noble contribution to this study.

Finally, the context this study examined is NGOs in Jordan, which past studies on humanitarian supply chains have yet to explore.

Supply chain adaptability, a form of dynamic capability, enables an organisation to modify and transform its supply chain configurations in response to internal and external environmental changes. This adaptability is crucial for maintaining efficiency and effectiveness in the face of diverse and evolving market demands, technological advances, competitive pressures, and potential disruptions such as natural disasters or global pandemics.

An organisation's dynamic capability view (DCV) posits that adapting, integrating, and reconfiguring internal and external competencies is crucial for long-term survival and competitive advantage, especially in volatile business environments. This involves orchestrating a company's resources, capabilities, and competencies to address and adapt to environmental changes and challenges (Priem & Butler, 2001).

At the level of the supply chain, adaptability can be considered a high-level dynamic capability, comprising various lower-level dynamic and operational capabilities such as supply chain agility and resilience, logistics performance, procurement competence, and coordination efficiency, among others.

Supply chain agility refers to the speed and flexibility with which a supply chain can respond to changes in demand or supply conditions, driven by real-time visibility, quick decision-making, flexible manufacturing or sourcing strategies, and rapid logistics operations. On the other hand, supply chain resilience refers to the capacity of a supply chain to absorb, recover from, or even thrive upon shocks or disruptions, driven by capabilities such as risk management, contingency planning, diversified sourcing, robust design, and collaborative relationships (Day et al., 2012).

Organisations can employ various strategies and mechanisms to enhance supply chain adaptability. For instance, they can invest in advanced information technologies and systems to improve real-time visibility and decision-making support across the supply chain. They can develop flexible and diversified sourcing or production strategies to hedge against demand or supply uncertainties. They can foster collaborative relationships with suppliers, customers, and other stakeholders to facilitate information sharing, joint problem-solving, and coordinated actions. They can also cultivate a culture and structure that encourages learning, innovation, and change.

Furthermore, organisations must balance efficiency and redundancy in their supply chain design and operations. While efficiency is essential for cost control and performance optimisation, redundancy (e.g., safety stocks and backup suppliers) can buffer against

unexpected disruptions or fluctuations. The optimal balance may vary depending on the organisation's specific context risk profile and supply chain.

Lastly, organisations must continually learn and innovate in their supply chain management. This includes learning from past successes and failures, benchmarking against best practices, experimenting with new ideas and approaches, and nurturing a mindset of continuous improvement and change readiness.

In conclusion, supply chain adaptability as a dynamic capability is crucial for organisations to navigate and thrive in today's complex and volatile business environment. It requires a comprehensive, strategic, and proactive approach to supply chain management, leveraging a blend of resources, capabilities, strategies, technologies, and relationships.

2.17 Theoretical Framework

As indicated before, despite the growing relevance and body of knowledge in the field of HSC, research on HSC practices in NGOs has remained restricted, particularly in the Jordanian setting. According to the literature, past research on HSC practices needs to provide more evidence for substantial correlations between HSC procedures and the performance of Jordan's non-governmental organisations. This study aims to fill a research need in supply chain management and NGO performance. The research seeks to expand understanding in this field by empirically examining the relationship between HSC practices and the performance of non-governmental organisations. Based on the correlations identified for these variables in the literature and past studies, it was hypothesised that HSC practices are associated with the performance of NGOs in Jordan.

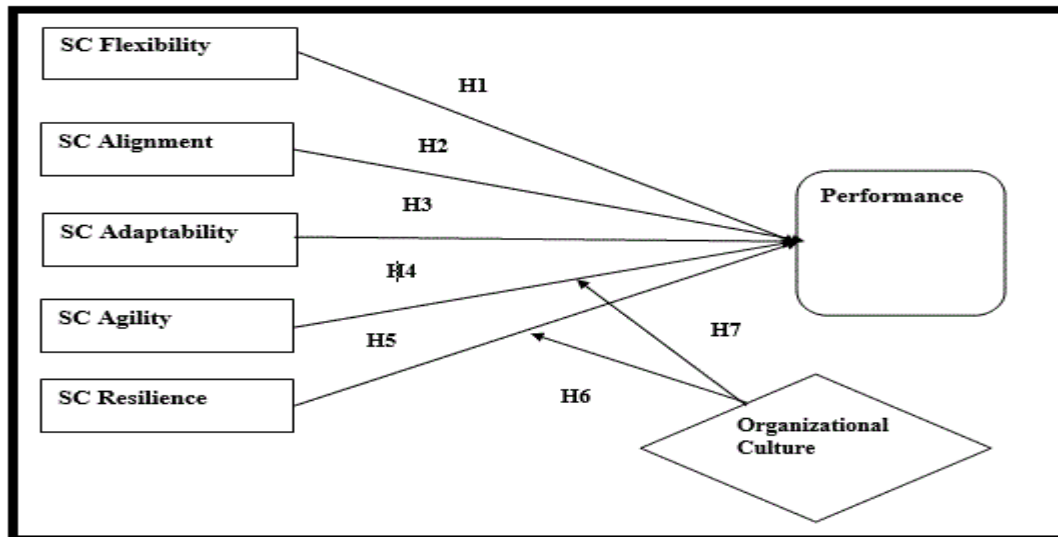


Figure 2.4 Research Framework

2.18 Hypotheses Development

2.18.1 Supply Chain Flexibility and NOG Performance

The first research issue concerns the relationship between supply chain Flexibility and NGO performance. Flexibility in adapting to change is critical to the organisation's long-term survival (Upton, 1994). Flexibility affects the entire workflow of the organisation, which affects the performance of the organisation. As a result of disaster unpredictability, flexibility is an essential feature of the organisation. To respond quickly to the chaos that may occur during the disaster, stakeholders immediately established a supply chain network to alleviate individuals' suffering when they get affected by a tragedy. Thomas (2003: 4) affirmed that "the speed of humanitarian assistance after a disaster depends on the ability of logistics personnel to purchase, transport and receive supplies at the humanitarian relief work site." supply chain flexibility enables prompt detection of potential threats (Wieland and Wallenburg, 2012) which can be acted upon resulting in

increased accuracy in forecasting and reducing the delivery lead time. Flexibility can also improve performance by addressing upstream and downstream risks (Jüttner and Maklan, 2011; Wieland and Wallenburg, 2012). Humanitarian aid heavily depends on the logisticians' capacity to transport, receive, and acquire goods at the location of humanitarian assistance (Taqi, Ajmal & Ansari 2018). Meanwhile, the reaction and evaluation stages are positioned based on the limited availability of information (Eckstein et al., 2015). In addition, the supply chain needs structure must be adjusted in line with the content and amount of data originating from the disaster region as soon as the situation changes (Abidi et al., 2014). The proliferation of difficulties and disaster-prone concerns presents humanitarian assistance players with a complex scenario, necessitating the establishment of a flexible supply chain architecture to deal with such conditions. As estimators of response capacities and reaction time, respectively, flexibility and agility are illustrated (Prajogo and Olhager, 2012).

According to the limited information available, the need for the phase of assessment and response is carried out. In this case, many sources of uncertainty must be dealt with (Giannoccaro et al., 2003). Flexibility allows production to be switched between different plants and suppliers so that management can deal with external and internal variance (Chen et al., 1994). Focusing on the various dimensions of supply chain resilience may be directly related to an organisation's overall performance. Therefore, flexibility is considered a prerequisite for agility. Flexibility as an essential prerequisite has a positive impact on agility. Besides agility and flexibility, both positively affect relief NGOs' performance. Therefore, we propose the following hypotheses:

Hypothesis-1: A positive correlation exists between Supply chain Flexibility and NGOs' performance.

2.18.2 Supply Chain Agility and NOG Performance

Agility is an organisation's ability to respond swiftly to catastrophes in numerous domains. It represents the market's and organisation's readiness to work together and their association's strength. According to Scholten et al. (2010), the disaster's type, location, and scale affect humanitarian aid supply chain management. The organisation's agility shows the strength of the relationship between the market and the organisation. This study defines agility as the firms' capacity to respond rapidly to disasters in multiple areas. This is consistent with the remark by Scholten et al. (2010), which suggests that the supply chain management issues for humanitarian aid are highly dependent on the nature, geography, and magnitude of the crisis. For instance, earthquakes and floods may devastate a nation's physical infrastructure, resulting in various routing challenges for conveying relief supplies. Similarly, natural disasters impair the inventory management of humanitarian aid supplies due to particular security issues. A humanitarian supply chain has two types of customers: disaster-affected individuals and donors who aid disaster-affected communities (Green et al., 2012).

In recent years, scholars and researchers have extended the concept of DCV beyond corporate boundaries to understand the capabilities of an Agility supply chain (Aslam et al., 2018; Eckstein et al., 2015; Swafford, Ghosh, and Murthy, 2006). Eckstein et al. (2015) argue that Agility is one of the desirable characteristics of a supply chain, and many of these studies have found Positive relationships between Agility and organisational performance (Brandon-Jones et al., 2014; Chowdhury and Quaddus,

2016). Most of these studies examined the effect of Agility on performance. Based on Carvalho, Azevedo, and Cruz-Machado (2012), the ability of Agility to Deal with and work in turbulent environments will determine the performance of NGOs, especially in non-profit organisations. Based on this conclusion, we assume that Agility has a positive effect on performance, as follows:

Hypothesis 2: A positive correlation exists between Supply chain Agility and NGO performance.

2.18.3 Supply Chain Adaptability and NOG Performance

Scholars believe that HSC adaptability is critical for cost-cutting and savings. Adaptability may increase response time. Outsourcing may be one way to do this (Ahi and Searcy, 2013). HSC adaptability may also help to improve a supply chain's overall performance. Even though many NGO performance statements besides HSC adaptability and adaptable capabilities, supply chain adaptability has a significant role in performance, especially within the framework of the humanitarian The adaptability of members of the supply chain to learn to modify their reactions to a shifting environment, and to go on growing in light of the new circumstances is what is meant by adaptability (Walker, Holling, Carpenter, & Kinzig, 2004). It is a fundamental element contributing to resilience; more adaptability may be required for less significant disruptions. On the other hand, when there is a significant interruption, a supply chain member may adopt a whole new method of doing business (Smit &Wandel, 2006). The adaptability of a system is directly proportional to its resources, knowledge and skills, infrastructure, and institutions. Even though these are very significant aspects to take into account, there

needs to be more actual evidence that demonstrates how these factors contribute to adaptability (Smit & Pilifosova, 2003). The following hypothesis can be presented:

Hypothesis-3: A positive correlation exists between supply chain adaptability and the performance of NGOs.

2.18.4 Supply Chain Alignment and NOG Performance

Supply chain alignment is critical to optimising performance. These fundamentally essential ingredients are necessary for all the technology and process solutions, and the donor funds spent in humanitarian crises amount to essentially nought (Wal-Mart report, 2014). Supply chains are about going horizontal and velocity and the real-time flow of products and information from one end of the supply chain to the other. Supply chain velocity and, indeed, acceleration are dependent upon supply chain alignment of process improvements. Wong et al. (2012) say that SC alignment is a new and significant issue; this idea comes from how organisations are put together (Skipworth et al., 2015).

Based on the study (Dubey, Singh, & Gupta, 2015). the results of the hypotheses for supply chain alignment showed a substantial impact on the performance of organisations, as the results showed that approximately 23.4 per cent of the total performance variance, the beta coefficient of the path that links the supply chain alignment and performance 0.483, which offers that Alignment of the supply chain has a positive and lasting effect statistically and these results agree with both of the study (Sobel, 1982; Lee, 2004).between these variables is necessary to draw the logical conclusion to improve NGOs performance because disasters have increased. The following hypothesis can be presented:

Hypothesis-4: A positive correlation between Supply chain alignment and NGO performance exists.

2.18.5 Supply Chain Resilience and NOG Performance

Recently, researchers have paid attention to the stability of disaster recovery supply chains, for example (Day, 2014; Scholten, Sharkey, Scott & Fynes, 2014; Zobel, Khansa, 2014). According to Bruneau et al. (2003), resilience consists of four domains: Durability, continuity, rapidity and resourcefulness. Also, they discussed utilising the sustainability triangle, which states that infrastructure resilience can be increased by enhancing robustness and rapidity. When a catastrophe occurs, the humanitarian supply chain network's robustness reduces the impact of the crisis and its rapidity aids in the return to normalcy process. Besides, Zobel (2011b) suggests that resilience, which is challenging to measure, has a significant role in the disaster process. As a result, disaster resilience is considered a requirement for disaster relief. SC network resilience in logistics and supply chain expanded the DCV outside enterprise limits in a way that thinks complex supply chain capacities such as supply chain resilience (Swafford, Ghosh & Murthy, 2006; Eckstein, Goellner, Blome & Henke, 2015; Aslam, Blome, Roscoe & Azhar, 2018) and SC durability (Jüttner & Maklan, 2011; Chowdhury & Quaddus, 2016). According to Eckstein, Goellner, Blome, and Henke (2015), resilience is attractive.

These experiments have discovered beneficial associations between the performance of the organisation and agility (Eckstein, Goellner, Blome & Henke, 2015; Gligor, Esmark & Holcomb, 2015; Dubey et al., 2018a) and resilience and performance (Eckstein, Goellner, Blome & Henke, 2015; Gligor, Esmark & Holcomb, 2015; Dubey et al., colleagues, 2018a; Brandon-Jones et al., 2014; Chowdhury & Quaddus, 2016).

According to Carvalho et al. (2012), the supply chain's resilience to specific unexpected disruptions would often evaluate its performance. Argue that in such a case, the ability to cope with such unforeseen disturbances will also determine the performance of NGOs. Based on this reasoning, we hypothesise that supply chain resilience positively affects NGO performance. Based on this line of logic, the following hypothesis will be tested:

Hypothesis-5: A positive correlation between supply chain resilience and NGOs' performance exists.

2.18. 6 Moderating Effects of Organizational Culture

Dowty and Wallace (2010) state that most organisations have operating rules, viewpoints, and legislation. Wentz (2006) says an organisation's culture is always shaped by its tradition, purpose, framework, and leadership. According to Schwartz and Davis (1981), good organisations recognise that implementing management strategies compatible with their community increases their performance. Previous research has widely agreed that corporate culture is a tool for strategic planning (e.g., Khazanchi, Lewis & Boyer, 2007; Liu et al., 2010; Braunscheidel, Suresh & Boisnier, 2010). OC, for example, has been shown to have a significant role in driving supply chain policies according to previous research (e.g., Khazanchi et al., 2007; Liu et al., 2010). The organizational culture of refugee relief organisations is often characterised by an underlying ethos of humanitarianism, emphasising respect for human dignity and rights. This ethos is often embodied in norms and practices emphasising empathy, cultural sensitivity, resilience, and adaptability. The diverse and dynamic environment in which these organisations operate necessitates an inclusive and respectful approach to varying cultures, backgrounds, and experiences. This is especially critical in refugee work, where

understanding and respecting refugee culture is paramount to delivering effective aid and support.

Working directly with refugee communities, relief organisations must navigate the nuances of the refugee cultures they serve. This includes understanding their social structures, values, traditions, languages, and experiences. This cultural competence allows relief organisations to establish trust, improve communication, and ensure their services meet the specific needs of the refugees.

Relief organisations must also foster a supportive internal culture for their staff and volunteers. This often involves promoting collaboration, integrity, accountability, and respect. It also supports the well-being of staff, who often work under highly challenging and stressful conditions. In sum, the organizational culture of refugee relief organisations is multifaceted, shaped by the imperative to respect and understand refugee cultures, uphold humanitarian principles, and maintain a supportive environment for staff.

On the other hand, the impact of Organizational Culture on the humanitarian supply chain still needs to be investigated (Richey, 2009). Denison and Spreitzer (1991) used the competing value model to study corporate culture.

Therefore, Braunscheidel, Suresh, and Boisnier (2010) discovered a relationship between organizational culture and supply chain integration activities. There could be cultural differences between office and field personnel inside a humanitarian organisation. As a result, Organizational Culture may directly impact NGO performance. However, the impact can vary in disasters. As a result, the course of Organizational Culture is believed to have various effects on how (SCAG) and (SCRES) affect humanitarian supply chain

operations disasters. Efficiency and organisational hierarchy are at the heart of control orientation. A disaster prevention and preparedness division in a humanitarian agency is typically responsible for forecasting, storing, and finding material (Liu et al., 2010). Hence, we can hypothesise:

Hypothesis-6: Organizational Culture has a positive moderating effect on the relationship between Supply Chain Agility and performance NGOs exists.

Hypothesis-7: Organizational Culture has a positive moderating effect on the relationship between Supply Chain Resilience and performance NGOs exists.

2.19 Summary

The current chapter has investigated the extant literature about non-governmental organisations (NGOs) in Jordan, specifically focusing on their Health and Safety Culture (HSC) and performance. Furthermore, the chapter's structure incorporates an alternative viewpoint of the relationship between HSC and performance. Nevertheless, the study results need to substantiate the given assertion substantially. Therefore, it becomes imperative to include a mediating factor in the interactions. To explore this matter, a comprehensive analysis has been undertaken to investigate the possible moderating impact of corporate culture. This investigation aims to ascertain if this particular component can modify or strengthen the existing linkages.

The theoretical foundation of the chapter is established by the assimilation of previous research, which serves as the fundamental basis for the study's theoretical framework. The link between the performance of non-governmental organisations (NGOs) and the Humanitarian Supply Chain (HSC) is constantly justified in the study via the use of the

DCV theoretical method. The preceding chapter comprehensively elucidates the fundamental principle for the readers' contemplation.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research methodology is crucial to understanding the complex relationship between supply chain components and NGOs' operational efficacy, especially in Jordan's unique socio-economic and cultural context. At the centre of the research, this chapter provides the groundwork for the whole investigation. This chapter reveals the methodological framework carefully selected for exploring these complex interrelationships, providing insights into the systematic approach taken to extract knowledge that enriches this domain's scholarly discourse.

The methodology chapter combines theoretical foundations, pragmatic methods, and empirical research. The reader learns the research project's strategy via careful explanation. This theoretical-empirical blueprint shows the exact navigation from idea to completion.

This chapter reveals how knowledge is woven. The chosen methodological framework illuminates data capture, analysis, and interpretation. Data gathering methods that combine qualitative and quantitative methods provide panoramic views of the study scene. These perspectives reveal the complexity of supply chain dynamics and NGO performance.

This chapter's methodological reasoning is crucial. Data gathering procedures and analytical tools are meticulously explained, confirming a commitment to research integrity. Clearly defining study aims and methodological choices boosts academic reputation.

The research methodology chapter guides the complex research process and is a tribute to academic rigour. This detailed chapter illustrates the pathway taken to disentangle the complex relationships between supply chain components and NGO performance in Jordan. The seamless integration of technique, analytical discourse, and logical reasoning enhances academic conversation and provides a comprehensive understanding of the research's theoretical and practical implications.

3.2 Design

As an investigative method, survey research is commonly used to gather information from a specific group, known as respondents (Sarstedt & Mooi, 2014). This study will help collect insights into the factors that influence the humanitarian supply chain in Jordan and how organizational culture can serve as a moderating variable.

This study's quantitative descriptive research design is grounded in providing a comprehensive summary of a situation or phenomenon through numerical data (Gosling & Mason, 2015). This numerical data will then be analysed using statistical methods. Quantitative approaches allow researchers to measure variables and identify relationships among them (Sarstedt & Mooi, 2014), which aligns with the study's objectives of understanding the factors affecting the humanitarian supply chain and the moderating role of organizational culture.

The unit of analysis for this study will be non-governmental organisations (NGOs) in Jordan, specifically those that operate within the humanitarian sector. These organisations are central to the humanitarian supply chain in Jordan, a country hosting many refugees

(Schroeder & Taylor, 2015).

Data will be collected through a survey questionnaire, a frequently used tool for data gathering in quantitative research. Once the data is gathered, it will be subjected to multiple regression analysis. This statistical method is beneficial for predicting the value of one variable based on the values of other variables (Gosling & Mason, 2015). In this context, the dependent variable is the effectiveness of the humanitarian supply chain, and the independent variables are the influencing factors and organizational culture. The results will provide valuable data for strategies to improve the humanitarian supply chain in Jordan.

Surveys provide a valuable research method to systematically collect data from a specified group of people (Sarstedt & Mooi, 2014). By employing a study, we aim to gather information about respondents' perspectives, experiences, and practices in non-governmental organizations (NGOs) involved in the humanitarian supply chain in Jordan. The responses will illuminate how these organisations operate and what factors significantly influence their functioning.

The choice of a quantitative descriptive research design for this study is strategic. Quantitative research uses statistical methods to explain a particular phenomenon in social sciences. In this case, the phenomenon under examination is the humanitarian supply chain in Jordan and the moderating role of organizational culture. Quantitative research enables the researcher to describe existing phenomena and to examine relationships among variables (Gosling & Mason, 2015). Hence, this research design fits perfectly into our objective to identify and measure the impact of certain variables on the humanitarian supply chain.

Non-governmental organizations (NGOs) operating in Jordan are selected as the units of analysis in this study. NGOs are often the frontline responders in humanitarian situations and are an integral part of the humanitarian supply chain. By focusing on NGOs, we aim to better understand the mechanisms and challenges of the humanitarian supply chain in a context where these organisations play a central role.

Survey data collected will be subjected to multiple regression analysis, a powerful statistical tool that explores relationships between one dependent variable and multiple independent variables. In this case, the dependent variable is the effectiveness of the humanitarian supply chain, and the independent variables are various influencing factors and organizational culture. The analysis will provide insights into the magnitude and direction of influence that each independent variable has on the dependent variable, giving us a nuanced understanding of how to improve the humanitarian supply chain in Jordan (Gosling & Mason, 2015).

3.3 Nature of the Study

Quantitative research design can be categorised into predictive and explanatory research. As the name suggests, predictive research predicts specific outcomes by identifying and measuring relevant variables. It often identifies trends or patterns within a particular population or context. This type of research doesn't necessarily provide the 'why' behind the results, but it provides valuable insights into what might happen in the future based on current data (Mohamad et al., 2015).

On the other hand, explanatory research seeks to discover why certain things happen. It aims to find cause-and-effect relationships between variables to explain patterns and

behaviours. This research involves more in-depth investigation and often comes after predictive research once trends and patterns have been established (Johnson & Goodwin, 2016).

While the questions are predictive in this research, the study leans more towards the explanatory side. The aim is to explain how various factors impact the effectiveness of the humanitarian supply chain rather than just predicting the outcomes. The study will use descriptive analysis to summarise and understand the data, followed by regression analysis to establish a relationship between variables.

Descriptive analysis simplifies complex data sets by providing numerical indices such as means, percentages, and measures of dispersion. It helps in understanding the critical characteristics of the collected data. However, regression analysis will be used to understand the impact of certain variables on the effectiveness of the humanitarian supply chain. This analysis will help examine the relationship between multiple independent variables (factors impacting the supply chain) and the dependent variable (supply chain effectiveness). It will provide a more robust understanding of the dynamics in the humanitarian supply chain context, thereby allowing NGOs to make more informed decisions and improve their operations.

3.4 Population of the Study

In the research study focusing on non-governmental organizations (NGOs) in Jordan, a simple random sampling technique was employed to represent the managerial roles within this field accurately. The study sample was composed explicitly of managers of relief organisations and logistics managers. Simple random sampling is a fundamental

statistical method where every potential participant is equally likely to be selected for the study. This ensures high fairness and eliminates sampling bias, enabling more valid and generalisable results.

Applying this methodology in the context of NGOs in Jordan allows the researchers to make inferences about the larger population of managers within these organisations. Notably, by focusing on the roles of relief and logistics managers, the study can assess critical aspects such as decision-making processes, resource allocation strategies, and operational challenges in an unbiased manner. Moreover, simple random sampling mitigates the risk of skewness in the findings that could emerge from the over-representation of specific organisations or geographical areas. This method also increases the likelihood of obtaining a diverse set of responses, thereby enhancing the richness and validity of the data. Nevertheless, potential limitations such as non-response and selection errors should be considered and controlled for in the research design to preserve the integrity of the study.

Expanding upon the analysis, it's crucial to acknowledge the potential challenges and opportunities of using simple random sampling in this study. One potential issue is the risk of under-sampling specific organisations or regions due to the random nature of the process. Moreover, even though the sample represents the population statistically, it might only reflect some of the nuances and complexities of the situation. Thus, the findings should be interpreted with this potential limitation in mind.

On a more positive note, simple random sampling allows one to examine the commonalities and differences among managers across various organisations. By including relief and logistics managers, the study can compare and contrast these two

crucial managerial roles, exploring how they navigate the unique challenges associated with their NGO responsibilities in Jordan. This can contribute to a richer understanding of organisational practices and processes in these organisations.

Furthermore, simple random sampling can also facilitate the replication of the study in other contexts or countries, thus contributing to the broader body of knowledge about NGOs. Other researchers can follow the same sampling procedure and assess whether the findings hold in different environments, further strengthening the study's impact and relevance in non-governmental organization studies.

To sum up, while simple random sampling presents some potential limitations, its benefits for validity, generalizability, and replicability make it a valuable tool in empirical research studies, as demonstrated in this research on NGOs in Jordan.

In the context of Jordan, non-governmental organisations (NGOs) play an essential role in assisting the sizable refugee population, composed mainly of individuals fleeing conflict zones in neighbouring countries such as Syria and Iraq. Many of these NGOs specialise in relief operations, offering services ranging from direct aid delivery to facilitating access to essential services such as healthcare, education, and livelihood programs. Notably, the operations of these NGOs involve complex supply chains designed to ensure the efficient and timely distribution of aid. These supply chains encompass various stages, from sourcing and procuring relief materials to warehousing, transportation, and final distribution to the refugee communities. These NGOs often collaborate with international partners, local governments, and other stakeholders to optimise these processes. Given the scale and complexity of refugee relief operations in Jordan, the efficiency, robustness, and resilience of these supply chains are critical for

meeting the needs of the refugee population promptly and effectively. Consequently, these NGOs continuously seek to improve their supply chain management practices, which underpins their ability to deliver aid and make a meaningful impact on the lives of refugees in Jordan.

In research, the 'population' refers to the total set of individuals, events, or objects that interest the researcher and to which the research findings might be generalised. The entire group is under study, from which a sample will be drawn (Choy, L. T., 2014).

Sampling techniques, which are various strategies used to collect data from people within the population who are likely to provide valuable insights for the research, are utilised to select a subset of individuals from this population. This subset, known as the sample, is studied, and the results are then generalised to the population as a whole. The 'target population' or 'universe' is the complete set of cases or observations that meet a study's specifications and about which data are gathered and analysed.

In Jordan, various types of relief organisations operate to provide humanitarian aid and assistance to vulnerable populations, including a substantial refugee community. These organisations are typically categorised based on their operational scope, affiliation, and the type of aid they provide.

International NGOs: These organisations operate globally and have established operations in Jordan to address the country's specific needs. Examples include Save the Children, Médecins Sans Frontières (Doctors Without Borders), and the International Rescue Committee. They provide various services, from medical care to education and child protection.

National NGOs: These are local organisations based in Jordan that work to provide relief services to their communities. The Jordanian Hashemite Charity Organization is an example of a national NGO involved in various relief activities.

United Nations Agencies: While not NGOs in the traditional sense, UN agencies play a significant role in relief operations in Jordan. The United Nations Refugee Agency (UNHCR) and United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) are two prominent UN agencies providing relief services in the country.

Faith-Based Organizations: These organisations operate based on religious principles, often serving specific religious communities and offering services to all those in need. Examples in Jordan include Islamic Relief and Caritas Jordan.

Community-Based Organizations: These are local grassroots organisations that understand the unique needs of their communities. They are usually smaller and more focused in their operations, working to fill gaps that larger organisations might overlook.

These diverse organisations work in various relief areas, providing food aid, healthcare, education, shelter, psychological support, and livelihood training. Each organisation plays a unique role in the humanitarian ecosystem, working together to meet the needs of vulnerable populations in Jordan.

For this study, the target population is the NGO sector in Jordan. Specifically those organisations specialising in relief and refugee assistance activities. The decision to focus on this particular group within the NGO sector is based on their relevance to the study's research questions and objectives. According to the Jordanian Ministry of Social

Development, one thousand six hundred forty non-profit organisations are operating in Jordan, and these organisations are listed in the Jordanian Associations Register. The study will select a sample from these organizations for further investigation.

Relief organisations operating in Jordan that specifically cater to refugee affairs often integrate the concept of supply chains into their work to streamline aid distribution. These organisations span from international entities to national and local organizations, and they employ supply chain management to deliver necessary goods and services to the refugee populations efficiently.

The United Nations Refugee Agency (UNHCR): As a key international organization dealing with refugee affairs in Jordan, UNHCR applies the supply chain model in its operations. The agency has a structured procurement and distribution system for food, water, shelter materials, and medical supplies. By collaborating with various stakeholders, UNHCR ensures that these resources reach refugees in different locations throughout the country on time.

Save the Children: This international NGO supports refugee children and families, focusing on education, health, and protection. They employ supply chain management to distribute educational materials, hygiene kits, and other necessary resources to the communities they serve effectively.

Jordanian Hashemite Charity Organization (JHCO): As a national organisation, JHCO is essential in coordinating relief efforts within Jordan. It utilises supply chain management to acquire, store, and distribute donations, including food, clothing, medical supplies, and other essential items.

Islamic Relief Jordan: This faith-based organisation has been actively supporting refugees in Jordan with various programs, including emergency food and non-food items, water and sanitation, health and nutrition, orphan sponsorship, and livelihood support. Their effective supply chain management ensures the proper flow of these resources to those in need.

Médecins Sans Frontières (Doctors without Borders): This international organisation provides crucial medical care to refugees. Its supply chain includes the procurement and distribution of medical supplies and the coordination of medical personnel.

These organisations represent the range of entities operating in Jordan that apply the concept of supply chains to their relief efforts. Their work in procuring, storing, and distributing resources illustrates the crucial role of supply chain management in humanitarian operations, enabling these organisations to alleviate the burdens refugees face in Jordan more effectively.

Defining the target population ensures that the research findings will be relevant and applicable to the organisations the study aims to inform. Focusing on non-profit organisations in Jordan involved in relief and refugee assistance can provide insights directly relevant to these organisations and their operations, thereby increasing the utility and impact of the study's findings (Sekaran & Bougie, 2010).

3.5 Sample Size

As the study is quantitative, the target respondents are the organisation's head or director of logistics or procurement (organisational level). The NGOs primarily purchase, store, and ship relief supplies from a warehouse to disaster-affected regions. (Altay et al., 2018)

using random sampling. A primary purpose of survey polling is to gather data indicative of a population, so determining sample size and coping with non-response bias is critical. The hypothesised interactions will be investigated using a quantitative method. The NGOs in Jordan will have a sample for this analysis. (Krejcie, R. V. 2014 & dan Morgan, DW 1970). A sampling table was used to determine the size of the sample. Based on the Krejcie, R. V. 2014. dan Morgan, DW 1970) table, the target sample size is 700. The questionnaires will be distributed to the intended parties, and Temblet Google Chrome will write them down and send them to the relevant departments and authorities for verification and approval. Random sampling will distribute the questionnaire. According to some writers, 200 to 400 questionnaires are an acceptable sample size for validating a model (Henseler, Ringle & Sarstedt, 2015).

A sample is essential in the survey design process, and using a random sample is commendable. The method ensures that every individual within the population has an equitable opportunity to be included, therefore mitigating the potential influence of selection bias.

The concept of the sampling frame refers to the specific population or group of persons from whom a sample will be chosen. For this scenario, the sample will comprise individuals in the logistics or procurement director position within non-governmental organizations (NGOs) actively functioning in Jordan. The sample size of 700 directors in this category is deemed enough for the research, as supported by the reference to Krejcie and Morgan's table.

Non-response bias is an essential concern in survey research. It occurs when the individuals who choose not to respond to the survey differ in crucial ways from those who

do respond. Several strategies to deal with this include sending reminders, making the study easy to complete, or offering incentives for participation.

When contemplating the dissemination of surveys using a platform such as Google Forms (specifically "Temblet Google Chrome"), the possibility of automating reminder messages and tracking responder engagement becomes evident. After collecting the obtained replies, the proposed approach entails the model validation process. This sometimes involves statistical methods such as structural equation modelling or confirmatory factor analysis, which are employed to ascertain the correspondence between survey questions and their intended constructs. The proposal made by Henseler, Ringle, and Sarstedt is particularly noteworthy since it provides a general guideline for model validation, recommending a sample size between 200 and 400.

Nevertheless, it is crucial to recognise that selecting the necessary sample size depends on several aspects. The complexity of the model, the number of variables and indicators, the anticipated impact sizes, and the level of measurement error are all included in these elements. Therefore, the required number of participants, initially set at 700, may need to be modified due to the interaction of these variables. The prioritisation of maintaining clarity, comprehensibility, and a suitable time commitment for responders while designing the questionnaire is of equal importance.

When considering future actions, it is crucial to emphasise the need for thorough preparation for data analysis. This often entails using a quantitative analytic methodology that includes various techniques such as descriptive statistics, correlation analysis, regression modelling, or perhaps more complex statistical procedures, depending on the

research questions and hypotheses being investigated. Statistical software programs such as SPSS are often used as the preferred instrument for these analytical tasks.

3.6 Questionnaire Design

Initial data would be obtained by reallocating the incident, the study's primary data source. The information will come from the organisation's head or chief of logistics or distribution, who is responsible for collecting, receiving, and shipping humanitarian supplies from an organisation to disaster-stricken regions of Jordan. This detail was contained in a sequence of standardised questionnaires. In addition to using the study, Sekaran (2003) proposes multiple parallel approaches for supplying questionnaires.

The questionnaire of this study will be divided into four sections. The first one gathered the demographic data of the study sample. The following section collected data related to the factors of HSC, and the third part asked the respondents about the moderating variable, organisational culture. In contrast, the last part of the questionnaire will ask questions about the dependent variable of this study, which is the NGO's performance. Before distributing the questionnaire, respondents will translate it into Arabic for better understanding. The analysis will be reviewed by (6) experts and academic staff members who work at the Islamic University in Jordan, two academic staff from AMMAN ARAB University in Jordan, and two of the organisation's head or chief of logistics or distribution.

3.7 Measurement and Instrumentation

The key aim of this questionnaire, in conjunction with the study's goal, is to examine the factors that strengthen NGOs' humanitarian supply chains based on two constructs of the

proposed model and validate the model using the data obtained via this questionnaire. Since the respondents are Arab and Arabic is the mother tongue of Jordanians, the survey will be performed in that language.

The survey will mainly consist of two parts. The beginning of the study contains an introduction to the research to ensure that the respondents understand what they have filled in. The first part of the survey will determine demographic factors, including gender, age, education level and experience using computer systems. The second part is flexibility, adapted from Liu et al. (2010) and agility from Blome et al. (2013), in addition to Gligor and Holcomb (2012). Alignment Adapted from Whitten et al. (2012). Adaptability is adopted from (Whitten et al., 2012; Dubey et al., 2018), SC Resilience from (Brandon-Jones et al., 2014), organisation culture from Liu et al. (2010), performance from Abidi, de Leeuw & Klumpp (2014) and Kunz, Reiner and Gold (2014).

Variables were measured through the 7 Point Likert Scale: One: Agree, Two: I Agree, Three: somewhat agree, Four: Neither agree nor disagree and Five: Somewhat disagree. Sixthly, Disagree; seventh, the mean is considered vital when it is from 3.5 or more, 2.5 to less than 3.5 is considered moderate, and less than 2.5 is considered poor, according to social science studies. Since it will have straightforward, easy-to-understand questions, this survey will satisfy the needs of this study. The questionnaire will be two pages long, and respondents will take 5-10 minutes to finish.

Questionnaire questions were adapted from Liu et al. (2010) for the variable flexibility, and the questions of the questionnaire to change flexibility consisted of five questions in the form of the following:

1. Our organizations use a less formal structure (flat structure).

2. Our organization focuses less on traditional ways of working.
3. Our organization believes in equality and merit.
4. Our organization's commitment to innovation and development brings organizations together.
5. Our organization has fewer safety concerns.

Regarding the Alignment, it was adapted from Whitten et al. (2012) and included three questions, which are as follows:

1. Our organization: Openly exchanges information and experiences with suppliers and beneficiaries.
2. Our organization clearly defines the roles, tasks and responsibilities of suppliers and beneficiaries.
3. My organization: equal division of job duties, incentives, and associated risks.

In addition to that, the third variable, Adaptability, was adapted from (Whitten et al., 2012; Dubey et al., 2018). The questions for this variable consisted of the following:

1. My organization: It monitors economies worldwide to discover new supply rules.
2. My organization uses intermediaries to develop new suppliers and logistics infrastructure.
3. My organization assesses the needs of people who need help rather than just providing help.
4. Our design aids can be modified easily.
5. Our organization uses technology cycles and product life cycles to assess the quality of in-kind aid.

The fourth variant, Resilience, adopted by Brandon-Jones et al. (2014), consisted of the following:

1. Our organization can quickly restore material flow.
2. Our organization does not take long to restore its operational performance.
3. Our supply chains are back to their original state.
4. Our organization can quickly deal with disruptions.

The fifth and last variable with independent variables is flexibility. Questions from Blome, Schoenherr, and Rexhausen (2013) and Gligor and Holcomb (2012) were adopted. It consisted of the following:

1. Our organization can detect changes in the work environment quickly.
2. Our organization has the ability to quickly identify opportunities in its environment.
3. Our organization: can quickly sense threats in its environment.
4. Our organization: constantly collects information from suppliers.
5. Our organization makes quick decisions to deal with changes in the environment
6. Our organization: Able to increase its capacity in the short term as needed.
7. Our organization can modify the specifications of the orders as requested by our partners.
8. Our organization can modify our supply chain operations to the extent necessary to carry out our decisions

And the dependent variable, which the study referred to as (performance), was adopted by Abidi, de Leeuw, and Klumpp) 2014(.: Kunz, Reiner, and Gold, (2014) It consisted of the following:

1. Our organization: responds quickly to disturbances.

2. My organization gets a recovery in a short time.
3. Our organization: can reduce the impact of loss through its ability to deal with crises.
4. Our organization: has the ability to absorb heavy losses.
5. Organizers can recover from the crisis at a minimal cost.
6. Our organization Provides preparedness training to overcome crises.
7. Our organization has a response team to mitigate the severity of the crisis.
8. Our organization enjoys strong security.
9. Our organization has a sudden forecast to meet the turmoil.

The moderating variable of organizational culture Adapted from Liu et al. (2010) consisted of the following:

1. Our organization: Highly organized, hierarchical and oriented towards chains of command.
2. Loyalty, belonging, and tradition are closely linked to my organization.
3. My organization respects age, experience and seniority of work.
4. Our organization: is focused on achieving mission objectives (explicit and implicit).
5. Our organization: trained to be quick in operational safety

3.8 Analysis of Data

SmartPLS 3.3.2 version of (PLS) modelling and SPSS were employed to analyse data collected via the instrument. In the beginning, frequencies and percentages were used to define the distribution of the study sample and the attributes of the data and sample obtained. The demographic part of the questionnaire is mainly for each respondent to get

a perfect photo. Besides, the descriptive survey of demographic variables also provides enlightenment for cases of different types. Also, it is substantial to calculate the average Sta. Dev., kurtosis in addition to the skewness of all actual conditions. This specific calculation is fundamental to setting up information to check inferentiality and using statistical analysis as a structural equation model.

1. The initial analysis phase involves using SPSS to compute descriptive statistics on the collected data. This encompasses the calculation of frequencies and percentages to describe fundamental data characteristics. Frequencies offer an overview of unique value counts within the sample, while percentages facilitate comprehension of group proportions relative to the whole. This aids in establishing an overarching understanding of dataset distribution.
2. Demographic analysis is conducted on the questionnaire data, encompassing demographic particulars that yield more profound insights into respondent attributes. Examination of these demographic details contributes to respondent profiling and unveils patterns and disparities among various subgroups within the sample.
3. Distribution statistics are employed to glean insights into the distribution shape within the sample data. This involves the determination of skewness and kurtosis measures. Skewness gauges the asymmetry of score distribution around the sample mean, while kurtosis gauges the 'tailedness' of the distribution. These metrics assess data conformity to a normal distribution, a prerequisite for numerous statistical tests.

4. Central tendency and variability measures are calculated. The mean, serving as a measure of central tendency, indicates the sample's average score. Conversely, the standard deviation gauges the degree of score variation or dispersion around the mean. These calculations show the data's dispersion across the sample values.
5. Structural Equation Modelling (SEM): Lastly, the Partial Least Squares (PLS) approach to Structural Equation Modeling (SEM) using SmartPLS 3.3.2 is employed. SEM is a multivariate analysis technique that examines complex relationships among observed and latent variables. It enables the simultaneous examination of multiple dependent relationships and handling measurement errors. PLS-SEM, in particular, is used when the aim is prediction and variance explanation.
6. By employing this methodology, the results can inform the hypothesised relationships between the variables in the study. These steps allow the researcher to test the proposed model and offer essential insights to enlighten the survey and its implications further and provide a foundation for future research directions.

3.9 Interpretation

A language specialist from the Legal translation office will translate the questionnaires from English to Arabic. Respondents who could have spoken English better were asked to answer the questionnaire in Arabic. Brislin's (1970) recommendations were used to direct the translation. According to a literature study, the most commonly employed localisation process uses a range of methods to guarantee the efficiency and validity of the interpreted survey instrument (Brislin, 1970). Before starting the translation, the

researcher will inform the translators about the study's goal and the demographic characteristics of the study sample.

Retranslating the questionnaire in its Arabic version to English will be placed by another translator from the Islamic University. After the translation back to English, the researcher will observe that the meaning of the demographic and study variables was the same as in the original version of English. Therefore, after translating the survey questionnaire into Arabic, a pilot test will be held to test the variables' reliability. The result obtained from the pilot test of the study is expected to meet the minimum cut-off value. Therefore, it can be concluded that the respondents will understand the meaning of the translated version of the questionnaire well.

3.10 Content Validity

Hair et al. (2010) indicated that content authenticity refers to how many means can be used to measure the essential part of the research ideas researchers recommend. This is usually defined by dedication to things, careful study of the measures that have been formally tried, suggestions of written work and information obtained from pre-testing the instrument.

Antwi, SK and Hamza K. (2015) said a measure might be considered highly reliable but not legal. However, it will only be substantial if it has sufficient internal consistency. If a one-dimensional state appears between variables, it is not enough to assess reliability. One-dimensionality is a basic assumption that assumes internal consistency. When the constructed pointer has a satisfactory fit to an isolated variable (one measurement) and the frame is explained, one-dimensionality will be displayed (Hair Black, Babin, Anderson & Tatham, 2010).

3.11 Pilot-Test

Sekaran. (2003) defined pre-testing as a connection between the data collection tool and the sample selected from the study population. The main emphasis of the pre-test review is to obtain ideas related to the responses to enable the analyst to assess if the questionnaire is well-balanced, if the interviewee truly understands the statement and method, and whether the statement asks the problem to be solved.

A pilot test is essential for determining and testing the instruments before deciding which are appropriate for the study. Several benefits of a pilot study are improving a questionnaire by correcting the problems in understanding or answering the questions, identifying questions that might be changed, and testing the appropriateness of the questions.

The following paragraphs explain the processes and the results of the pilot test done in the current study.

The pilot test for the current study was conducted in April and May 2019. The main target of this test in the present study was to ensure the reliability and validity of the measurement. Also, other targets of the pilot test in the present study were:

1. To ensure that respondents understood the questions and the information required.
2. To reduce misunderstandings arising from unfamiliar terminology or words.
3. To ensure that respondents complete the questionnaire within a minimal duration to avoid exhaustion and gradual lack of interest of respondents.
4. To filter the study questions to ensure respondents answer them with minimal

problems.

5. To ensure that the study methodology fits the study framework.

After setting the targets for the pilot test, the respondents were identified. The primary respondent for this test was 50 managers of unlisted organisations in Jordan. The 50 questionnaires were then emailed to respondents, emphasising that 25 to 100 questionnaires were suitable and appropriate for the pilot test. Of the 50 questionnaires sent, 29 were returned, representing a 58% response rate. With this response rate, the researcher conducted a trial analysis of the reliability of the research instruments.

Table 3.1

PILOT-TESTS

VARIABLES	ITEMS	ALPHA COEFFICIENT
FLEXIBILITY	5	0.819
ALIGNMENT	3	0.829
ADAPTABILITY	5	0.762
AGILITY	8	0.882
RESILIENCE	4	0.935
ORGANIZATIONAL CULTURE	5	0.928
PERFORMANCE	9	0.926

3.12 Stability of Measures

Retest reliability can measure stability over time and be used to develop questionnaires.

As clarified by Rattray and Jones (2007), this is particularly important as the measurement method is used to assess the changes over a duration and acceptance.

The stability of measures, also often referred to as test-retest reliability, is a property of measurement indicating that it produces consistent results when the same entities are measured under the same conditions at different points in time. It is one of the critical aspects of reliability, which is a crucial concept in the field of psychometrics and research methods.

Stability of Measures: Stability is a type of reliability that assesses the consistent performance of a test over time. A stable measure produces similar results for the same individuals at different points in time, assuming that the measured characteristics have not changed. Stability is usually evaluated using test-retest reliability.

Test-Retest Reliability: Test-retest reliability is used to assess the consistency of a measure from one time to another. It involves administering the same test to the same group of individuals at two different points and then correlating the two sets of scores. The correlation coefficient, often denoted as 'r', measures the degree of relationship between the two sets of scores. A high correlation (close to +1.0) indicates high test-retest reliability, suggesting that the measure is stable over time.

It is important to note that an ideal time gap between the two tests should be chosen so that the measured construct will likely stay the same, yet the respondents are not expected to remember their previous responses.

Stability, however, is only one aspect of reliability. Other elements include internal consistency (the extent to which items on a test measure the same concept) and

equivalence (the consistency of scores across different forms of a test or other raters). It is also crucial to remember that reliability does not imply validity - a measure can be reliable (i.e., stable or consistent) yet not valid (i.e., not measuring what it is intended to measure). Therefore, measures should also be assessed for their validity.

In summary, the stability of measures is a critical consideration in research design, particularly in longitudinal studies where the same measure is used to assess changes over time. It provides confidence that the observed changes (or lack thereof) are due to fundamental changes in the measured construct rather than inconsistencies or errors in the measure itself.

3.13 The Process of Data Collection

After the pre-test and pilot test, the pretest revealed that the minimum requirement of the instrument's reliability and validity were met. Usually, before collecting data, approval is generally essential because the interviewee should know they are participating voluntarily. A confidentiality letter of the collected data will be attached to each questionnaire.

Questionnaires will be sent to the respondents to collect data through research assistants appointed by the researcher in Jordan. The research assistants will manage the questionnaire. The researcher will remind respondents after a week of the distributed questionnaire.

3.14 Data Analysis Process

For data analysis, we use partial least squares (PLS) techniques (Akter et al., 2017; Dwaikat et al., 2018; Pavlov et al., 2017; Pengand, 2012). Instead of a factor-based

method, the traditional PLS-SEM method uses a compound method (Kock, 2017).

Embedded variables are defined as a weighted summary of indices, while the measurement errors are not included in the traditional PLS-SEM method (Henseler, Ringle & Sarstedt, 2014; Kock, 2017). Actual indicators and ‘measurement errors’ are common factors; measurement error is usually used as an additional indicator to supplement accurate indicators. It is well known that using composites instead of factors causes bias when measurement errors are not considered. As a result, coefficients are inclined to weakness compared to their absolute values. The new development of systematics advancements based on traditional PLS techniques has aided in bridging "the gap between factor-based and composite-based SEM techniques" (Kock, 2015a; Sarstedt et al., 2016). For our research, Warp PLS 6.0 was used, that have been created in reply to the traditional PLS's limitations.

3.15 Summary

The methods utilised to attain the goals are outlined in the third chapter. The philosophical position of Positivism will be utilised. The quantitative research design will be used to complete the study and evaluate the hypotheses—furthermore, a complete description of the techniques used in sampling, data collection, and analytic methodologies.

CHAPTER FOUR

RESULTS OF STUDY

4.1 Introduction

Chapter Four unveils the empirical findings arising from an all-encompassing investigation into the interactions of supply chain dynamics and the operational efficacy of non-governmental organisations (NGOs) within Jordan's distinct socio-economic and cultural milieu. This chapter systematically presents the study outcomes, reflecting the meticulous and structured nature of the research process.

Representing the pinnacle of empirical inquiry, Chapter Four is the platform for disclosing the outcomes derived from rigorous data collection, systematic analysis, and insightful interpretation. The empirical data showcased within this chapter attests to the study's unwavering commitment to integrity and precision by the methodological framework expounded upon in the preceding chapter.

This chapter diligently unfolds quantitative and qualitative data, ensuring an objective and impartial depiction of data analysis outcomes, trends, patterns, and correlations. Notably, qualitative insights garnered from methodologies such as in-depth interviews, surveys, or other pertinent techniques are presented with the utmost consideration for preserving the richness and contextual significance of participants' perspectives.

The results exposition is accompanied by an insightful discussion within the theoretical scaffold established in earlier chapters. By merging empirical observations with theoretical underpinnings, this chapter facilitates a holistic comprehension of the implications of the research, their alignment with established frameworks, and their potential deviations.

Chapter Four epitomises the culmination of the research endeavour, meticulously delineating the transpired empirical findings. Through a dedication to rigour and impartiality, this chapter provides empirical substantiation to supply chain dynamics and NGO performance, ensuring the alignment of research objectives with methodological precision. Chapter Four serves as an illuminating conduit, shedding light on the intricate interrelationships of this domain through the presentation, analysis, and theoretical integration of empirical data.

4.2 Data Screening

To obtain the desired response, 700 questionnaires were distributed during a three-month data collection period. Three hundred twenty-four questionnaires were completed, giving a response rate of 46 per cent. Out of 324 questionnaires received, 16 were excluded because the respondent needed to fulfil the requirement.

The remaining 308 cases were analysed with SPSS 21.0 and subjected to several standard procedures, such as examining missing values, outliers, and data distribution. For missing values, the author decided to deal with the issue by using the mean value replacement procedure of SPSS 21.0. The reason for choosing this procedure was that the problem of missing values in the data set was minimal. Therefore, mean values procedures were done only for the missing data for items associated with the constructs.

Before the data analysis, the data were screened to check for normality distribution. This allows for examining the essential variable used in testing the study's hypotheses.

The research methodology in this study involved a broad distribution of questionnaires, with 700 disseminated over a three-month data collection period. A response rate of 46% was

achieved, with 324 completed questionnaires received. However, 16 questionnaires were excluded after a preliminary evaluation due to respondents failing to meet the necessary criteria, leaving 308 valid questionnaires for analysis.

The data analysis was conducted using SPSS (Statistical Package for the Social Sciences) version 21.0, a comprehensive software tool for managing and analysing statistical data. Several standard data-cleaning procedures were implemented to ensure the quality and accuracy of the dataset. This included:

1. **Missing Values:** The data were examined for missing values, which are the absence of data or information in expected data fields. To address this, the study employed mean value replacement, a method in which the missing value is replaced with the available data's mean (average) value. This approach was deemed appropriate as the dataset had minimal missing values.
2. **Outliers:** These values significantly differ from the majority of data collected. They were identified and evaluated to ensure they didn't skew the results or misrepresent the findings.
3. **Data Distribution:** The dataset was examined for its distribution properties. This step is essential as the type of data distribution can impact the selection of statistical analysis methods.

The data were also checked for normality distribution, a vital step in ensuring the validity of many statistical tests. A normal distribution, often called a 'bell curve', is a common assumption for many statistical procedures (parametric tests) and hypothesis testing. This process checks whether the data is evenly distributed or whether there's skewness or kurtosis that could affect the results.

This rigorous data cleaning and validation procedure prepared the dataset for subsequent statistical analyses, ensuring the findings would be as accurate and reliable as possible.

4.2.1 Normality Test

The form of the data distribution for an individual metric variable and how well it corresponds to the normal distribution is what is meant when we talk about normalcy. In light of this, the validity of the following statistical analysis is questioned if there is a sufficiently substantial deviation of the data from the normal distribution (Hair et al. 2010).

After that, tests for skewness and kurtosis were carried out to investigate the degree to which the data were normally distributed. According to the findings, the range of values for skewness was from 637 to -1.119, while the range of values for kurtosis was from 571 to -.806. According to Kline (2005), the usual criteria for determining normalcy for skewness varied from -3 to 3, whereas the criteria for deciding normality for kurtosis ranged from -10 to 10. As a result, it was discovered that the scores for all the variables in this research were distributed reasonably.

4.3 Demographic Analysis

This section focuses on providing general information on the respondents. Using SPSS Frequencies and Descriptive Analysis, the investigation concentrates on two main components. The first part is mainly on the demographics of the firms, followed by a review of the respondents' backgrounds.

In this section, the focus is on providing a comprehensive understanding of the respondents in the research. The analysis relies on the SPSS (Statistical Package for the Social Sciences)

software to conduct the frequency and descriptive analysis. The goal is to explore the respondent data across two primary dimensions.

The first dimension concentrates on the demographics of the firms. This aspect delves into the characteristics of the organizations from which the respondents originate. Information could include the firm size, organisational structure, industry sector, geographic region where it's located, and its operational focus, among others. For instance, in the context of non-governmental organisations, this might involve analysing the type of relief work the organisation does, the scale of its operations, the regions it serves, or the number of employees.

The following section provides an overview of the demographic characteristics of the participants. This incorporates several human traits, including age, gender, educational achievement, professional history, and responsibilities within their respective companies. Within the confines of the study framework, the analysis may incorporate several factors, such as the length of management experience, educational attainment, specific professional qualifications, and the duration of their present stay within the firm.

In both components, frequencies are used to count the number of cases that fall into each category (like the number of managers from small-scale vs large-scale NGOs). In contrast, descriptive analysis is used to summarise and describe the basic features of the data (such as the average years of experience of the respondents). Together, these methods provide a detailed overview of the respondents, offering context that aids in interpreting the subsequent findings of the research.

4.3.1 Respondents' Profile

The questionnaires were addressed to either the Chief Executive Manager (CEO) or Supply Chain Manager (SCM) based on the organisations that adopt supply chains. Despite that, the analysis of the respondents indicated that there were responses from lower-level management. Table 4.1 reveals (5.3%) of the sample comprised low-level management, but the majority (94.7%) was from top and middle-level management.

Table 4.1

Respondents' profile		
	FREQUENCY	PER CENT
AGE		
25 YEARS OR LESS	67	22%
MORE THAN 25 TO 30 YEARS	124	41%
MORE THAN 30 TO 35 YEARS	43	14%
MORE THAN 35 TO 40 YEARS	31	10%
MORE THAN 40 TO 45 YEARS	23	7%
MORE THAN 45 TO 50 YEARS	12	3%
ABOVE 50 YEARS	8	2%
TOTAL	308	100%

Table 4.2 provides a detailed breakdown of the ages of respondents who participated in the study. The largest age group, accounting for 41% of the total respondents, were those aged

between 25 to 30 years. This suggests that most respondents fall within the early-career stage, which often represents a critical period of growth and development in professional roles.

The second-largest group comprised 22% of respondents aged 25 years or less. This group broadly encompasses young professionals beginning their careers in their respective organisations.

The third age bracket, between 30 and 35 years, comprises 14% of the respondents, followed by the 35 to 40 age group, representing 10% of the total respondents. These groups likely include more seasoned professionals with substantial experience in their roles.

Finally, 12% of respondents were aged 40 and above. This group includes individuals considered veterans and likely to hold more senior roles within their organisations.

Overall, the majority of respondents, approximately 77%, were 35 years old or younger. This signifies that the study captured the views and experiences of individuals in the early and middle stages of their careers. This demographic distribution could impact the research findings, mainly if attitudes and experiences vary significantly with age or career stage.

Table 4.2

Respondents' profile		
GENDER		
MALE	107	35%
FEMALE	201	65%
TOTAL	308	100%

Table 4.3, referring to the Gender distribution among the study respondents, 107 respondents were male with 35%, while female respondents were higher than male respondents, almost double with 201 female respondents with 65%.

Table 4.3

<i>Respondents' profile</i>		
WORK EXPERIENCE		
BELOW FIVE YEARS	43	14%
6 TO 10 YEARS	145	48%
11 TO 20 YEARS	102	34%
ABOVE 20 YEARS	7	4%
TOTAL	308	100%

In terms of experience, Table 4.4 illustrates the length of time the respondents have held their positions. Responses were grouped into four categories, in which most of them had kept their positions between five to 20 years. The remaining respondents were equally divided between the other three categories.

Table 4.4

<i>Respondents' profile</i>		
ACADEMIC LEVEL QUALIFICATION		
BACHELOR DEGREE	178	58%
MASTER / PHD	15	5%
CERTIFICATE / DIPLOMA	105	34%
PROFESSIONAL QUALIFICATION	10	3%
OTHERS	0	0%
TOTAL	308	100%

The majority of the respondents in terms of academic level qualification presented in Table 5.4, about 58% of total respondents had a bachelor's level of education, followed by 34% of respondents with a diploma degree. The rest have Master's/PhD and professional qualifications.

4.4 Result of the primary analysis

In this part, the findings of the primary analyses performed using PLS structural equation modelling and the application of SmartPLS 3.0 are described in further depth. This part provides the conclusions of the measurements, the models, the structural models, the testing of the hypotheses and the moderating influence.

4.4.1 Descriptive Statistics Results

The measurements of study variables where thirty-nine questions were selected 7-point Likert scale ranging. Based on Table 4.5, the mean of each variable is higher than the median of the scale (4). The descriptive statistics include the display of central tendency and dispersion measures. These measures include the mean, median and standard deviation. Descriptive statistics for each item of the variables have been shown in Appendix B.

Table 4.5

Descriptive statistics

VARIABLES	MEAN	MEDIAN	S.D.
AGILITY	4.8555	4.5750	0.7769
ALIGNMENT	4.7522	4.6667	1.0046
ADAPTABILITY	4.8143	4.8000	.80926
ORGANIZATION	4.8143	4.8030	0.9047
CULTURE			
RESILIENCE	4.7330	4.7500	.82898
FLEXIBILITY	4.8065	5.0000	.96558
PERFORMANCE	4.7923	4.5556	1.0004

The correlation between variables was examined by calculating Pearson's product correlation coefficient. The scanning of the correlation matrix indicates that there are high correlations (greater than 0.60) among the predictive and independent variables. The result of the correlations points out that the multicollinearity assumption is unlikely to be a problem in the

subsequent related analyses (Tabacknick et al. 2001). Table 4.6 displays the correlation matrix for all variables. All of the variables reveal a positive and significant correlation with each other.

Table 4.6

Correlation Matrix

	Agility	Alignment	Adaptability	Culture	Performance	Resilience	Flexibility
Agility	1	.585**	.604**	.575*	.592**	.486**	.644**
Alignment	.585*	1	.524**	.515*	.614**	.383**	.453**
Adaptability	.604*	.524**	1	.490*	.772**	.478**	.660**
Organizational Culture	.575*	.515**	.490**	1	.492**	.452**	.459**
Performance	.592*	.614**	.772**	.492*	1	.459**	.685**
Resilience	.486*	.383**	.478**	.452*	.459**	1	.359**
Flexibility	.644*	.453**	.660**	.459*	.685**	.359**	1

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

4.4.2 Analysis and Result of Measurement Model

To evaluate the measurement model, it is necessary to investigate the connection between the construct and its constituent parts. Examining the indicator loadings, indicator reliability, internal consistency reliability, convergent validity, and discriminant validity are all part of the evaluation process for the reflective measurement model.

The general rule of thumb for item loading is 0.708 or higher, and this guideline applies to indicator loading as well (Chin 2010; Fornell & Larcker 1981). However, according to Hair et al. (2013), it is expected to observe weaker item loading in social science studies. Removing items with low loading must be done with care, as it may affect the content validity of the constructs. Besides, the consideration for firing items with outer loading between 0.40 to 0.70 and above is allowed if removing the item may increase the composite reliability value and the average variance extracted (AVE) (Hair et al. 2014). Appendix C shows the initial item loading before item removal. The result of the PLS algorithm revealed that most of the item loading (thirteen items) exceeded 0.70 and below 0.85, with one item loading between 0.60 to 0.70, four items' loadings between 0.50 to 0.60, six items loading below 0.50 and two items had loading above 0.85.

Considering the low and overloading and the description of items, one item from the agility construct, Agil with (0.575), was deleted due to low outer loading. This item needed to be more firmly explained agility.

The concept's Fornell-Larcker criteria, cross-loading, and HTMT criteria were then investigated to determine the construct's discriminant validity. More investigation was conducted into the cross-loading of individual item dependability to accomplish this goal. We examined the loadings of all things to ensure that each load was more significant than the loadings of the other objects in their respective build. According to the recommendations, the loading of each item should be greater than the cross-loading by at least 0.10 (Gefen & Straub 2005; Gorla et al. 2010). A table of final item loading and cross-leading relationships is provided in Appendix D.

After removing the elements that had loading and cross-loading problems, the composite dependability of the build and its AVE were calculated and analysed. The outcome indicates the maximum amount of convergent validity, with alignment showing the highest AVE (0.755) and agility offering the lowest AVE value (0.509), higher than the necessary AVE minimum level of 0.5. (Table 4.7).

Table 4.7

Constructs items, indicator's reliability, and AVE

		Original Sample			Composite	Average
		Loading	Indicator Reliability	Cronbach's Alpha	Reliability	Variance Extracted (AVE)
Adaptability	Adapt 1	0.84	0.84	0.911	0.933	0.737
	Adapt 2	0.853	0.853			
	Adapt 3	0.861	0.861			
	Adapt 4	0.882	0.882			
	Adapt 5	0.857	0.857			
Agility	Agi1	0.575	Deleted	0.842	0.878	0.509
	Agi2	0.789	0.79			
	Agi3	0.65	0.636			
	Agi4	0.731	0.732			
	Agi5	0.649	0.645			
	Agi6	0.707	0.715			
	Agi7	0.777	0.791			
	Agi8	0.654	0.668			
Alignment	Ali1	0.86	0.86	0.838	0.902	0.755
	Ali2	0.877	0.877			
	Ali3	0.87	0.87			
Flexibility	Flx1	0.841	0.841	0.899	0.925	0.712

	Flx2	0.833	0.833			
	Flx3	0.868	0.868			
	Flx4	0.834	0.834			
	Flx5	0.843	0.843			
Organizational culture	OC1	0.712	0.712	0.819	0.873	0.579
	OC2	0.817	0.817			
	OC3	0.809	0.809			
	OC4	0.761	0.761			
	OC5	0.7	0.7			
Performance	Perf1	0.812	0.812	0.915	0.93	0.597
	Perf2	0.796	0.796			
	Perf3	0.82	0.82			
	Perf4	0.852	0.852			
	Perf5	0.787	0.787			
	Perf6	0.75	0.75			
	Perf7	0.647	0.647			
	Perf8	0.717	0.717			
	Perf9	0.752	0.752			
Resilience	Res1	0.83	0.83	0.747	0.832	0.558
	Res2	0.84	0.84			
	Res3	0.692	0.692			
	Res4	0.598	0.598			

After item-level discriminant validity was assessed by checking for cross-loading, construct discriminant validity was assessed by checking the Fornell-Larcker criterion. Fornell-Larcker criterion postulates that the square root of each construct's AVE should be greater than the latent variables' correlation with any other constructs in the model (Fornell & Larcker 1981).

Table 4.8 illustrates that the square root of AVE for eight reflective constructs is higher than the correlation with other constructs. Another alternative approach to assessing the discriminant validity is through the HTMT criterion. The HTMT approach is proposed

through the low sensitivity issue of cross-loading and the Fronell-Larcker criterion, which only works well in situations with heterogeneous loading patterns and high sample sizes (Henseler et al., 2015). The HTMT result of this study revealed that the findings satisfy the threshold criteria of HTMT 0.90. Regarding Hair et al. (2016), the confidence interval of the HTMT statistic should not include the value 1 for all combinations of constructs. The finding suggests the adequate discriminant validity of the constructs and items tested for this study.

Table 4.8

Discriminant validity – Fornell-Larcker criterion

	Organization						
	Adaptability	Agility	Alignment	Flexibility	culture	Performance	Resilience
Adaptability	0.858						
Agility	0.64	0.695					
Alignment	0.525	0.596	0.869				
Flexibility	0.663	0.692	0.455	0.844			
Organization							
culture	0.499	0.576	0.513	0.462	0.761		
Performance	0.777	0.634	0.626	0.693	0.509	0.773	
Resilience	0.509	0.495	0.44	0.371	0.526	0.517	0.747

Table 4.9

Discriminant validity-Heterotrait-Monotrait (HTMT)

	Adaptability	Agility	Alignment	Flexibility	Organization culture	Performance
Adaptability						
Agility	0.685					
Alignment	0.599	0.692				
Flexibility	0.729	0.732	0.519			
Organization culture	0.565	0.687	0.622	0.533		
Performance	0.843	0.673	0.704	0.755	0.569	
Resilience	0.589	0.614	0.502	0.44	0.606	0.575

4.4.3 Assessing and Testing the Structural Model (Hypothesis)

After developing the measurement model about its reliability and validity, the following phase evaluates and tests the structural model. The evaluation of a structural model requires assessing the extent to which empirical data support the theory and, as a result, deciding whether or not the theory or ideas are supported by empirical evidence for the expected hypothesis. The examination included determining whether or not the structural model had any collinearity problems, determining the degree of R², determining the influence of sizes (f²), estimating the path coefficient, and determining the predictive relevance (Q²) (Hair et al. 2013).

4.5 Collinearity Assessment

The structural model for collinearity issues can be assessed by referring to collinearity statistics and variance inflation factor (VIF) under the PLS algorithm procedure in SmartPLS

3.0. In the context of PLS-SEM, a tolerance value of 0.20 or lower and a VIF value of 5 or higher indicate a potential collinearity problem (Hair et al., 2011).

Table 4.10 shows that the VIF output for each construct was much less than the standard cut-off threshold of 5. Hence, collinearity among the predictor constructs was not an issue in the structural model proposed in this study.

Table 4.10

VIF values among model predictors

Predictors	Dependent (Performance)
Adaptability	2.294
Agility	2.796
Alignment	1.769
Flexibility	2.324
Organization culture	1.809
Resilience	1.612

4.5.1 Coefficient of Determination

Considering that PLS structural equation modelling is centred on the prediction and its main objective is to maximise the variance of the dependent variables, the critical criterion in evaluating a PLS structural equation modelling is the assessment of the coefficient of determination (R^2) of the endogenous constructs (Chin, 2010).

Achieving a high R^2 is preferable as it indicates a higher level of predictive accuracy. In accounting literature, R^2 values of 0.75 for latent variables are considered substantial, 0.50 as moderate, and 0.25 as weak (Hair et al. 2014). Based on the results of the R^2 , the conceptual

model displays a large portion of the variance in the endogenous construct Because the R² value for company performance is 0.738. Therefore, the explanatory power of the model proposed for this study was satisfactory.

Table 4.11

Results of R²

	R square	R Square Adjusted
Performance	0.745	0.738

4.4.2 Blindfolding and Predictive Relevance Q²

Another important aspect of structural model evaluation is the predictive relevance model. For this purpose, Stone-Geisser's Q² was examined using blindfolding procedures. As shown in Table 4.12, blind procedures (with an omission distance of 10) yielded positive Q² values for all endogenous constructs, suggesting the predictive relevance of the model (Chin. 2010; Hair et al., 2011).

Table 4 .12

Results of Q²

	SSO	SSE	Q ² (=1-SSE/SSO)
Performance	2772.00	1582.998	0.429

4.5.2 Effect Size

The effect size f^2 is a measure used to evaluate the relevance of each predictor (exogenous) construct on an endogenous construct (Hair et al., 2013). It determines the extent of the contribution of the exogenous construct to the R^2 value of a target construct in the structural model.

The f^2 values of 0.02, 0.15, and 0.35 signify having a small, medium, and significant degree of predictive relevance, respectively. Table 4.13 displays the result, which revealed that the model's largest effect size is adaptability's effect on company performance (0.293), followed by the medium effect size of Alignment (0.164). The effect size for this model ranged from large to small effect size.

Table 4.13
Result of f^2

Predictors	Dependent (Performance)
Adaptability	0.293
Agi*OC	0.001
Agility	0.006
Alignment	0.119
Flexibility	0.144
Organization culture	0.001
Res*OC	0.053
Resilience	0.021

4.5.3 Hypothesis Testing

The path coefficient in the structural model was inspected by running the PLS Algorithm function; estimates were obtained for the structural relationship, representing the hypothesised relationships. The path coefficient of a SmartPLS 3.0 model has the same interpretation as the standardised beta weight in a regression analysis. The estimated path coefficient ranges from -1 to +1, with a path coefficient close to +1 indicating a strong positive relationship and -1 signifying a robust negative relationship. In contrast, a path coefficient close to 0 suggests a weak relationship. The significance of the model's structural path was further inspected by running the bootstrapping procedure in SmartPLS 3.0 with 5000 samples and 308 cases. Table 4.14 shows the significance testing result encompassing the path coefficient, the standard error, the t-statistic, and the significance level of the analysis, excluding the moderating effect. Meanwhile, the results will present the significance testing excluding the moderating impact of agility and resilience on company performance in the following section.

Table 4.14

Significance testing results of the structural model path coefficients

Path	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Adaptability -> Performance	0.425	0.053	8.116	0.000
Agility -> Performance	-0.028	0.056	0.534	0.593
Alignment -> Performance	0.242	0.048	5.142	0.000
Flexibility -> Performance	0.280	0.055	5.026	0.000
Resilience -> Performance	0.101	0.042	2.363	0.018

Excluding the moderating effect, the hypothesis testing dealt with eight main paths. The resulting hypothesis testing presents that five paths were statistically significant at the 0.05, 0.01, and 0.001 levels. According to Hair et al. (2013), a significance level of 5 per cent is commonly accepted in the business and management literature. The path coefficient was statistically significant for the effect of adaptability, alignment, flexibility, and resilience on company performance with path coefficients of β equal to 0.425 ($p < 0.000$), 0.242 ($p < 0.000$), 0.280 ($p < 0.000$), and 0.101 ($p < 0.018$) respectively. Thus, each of H1, H2, H3 and H5 were supported. Meanwhile, the path coefficient wasn't statistically significant for the effect of agility, as shown in Table 6.15, which means that H4 wasn't supported.

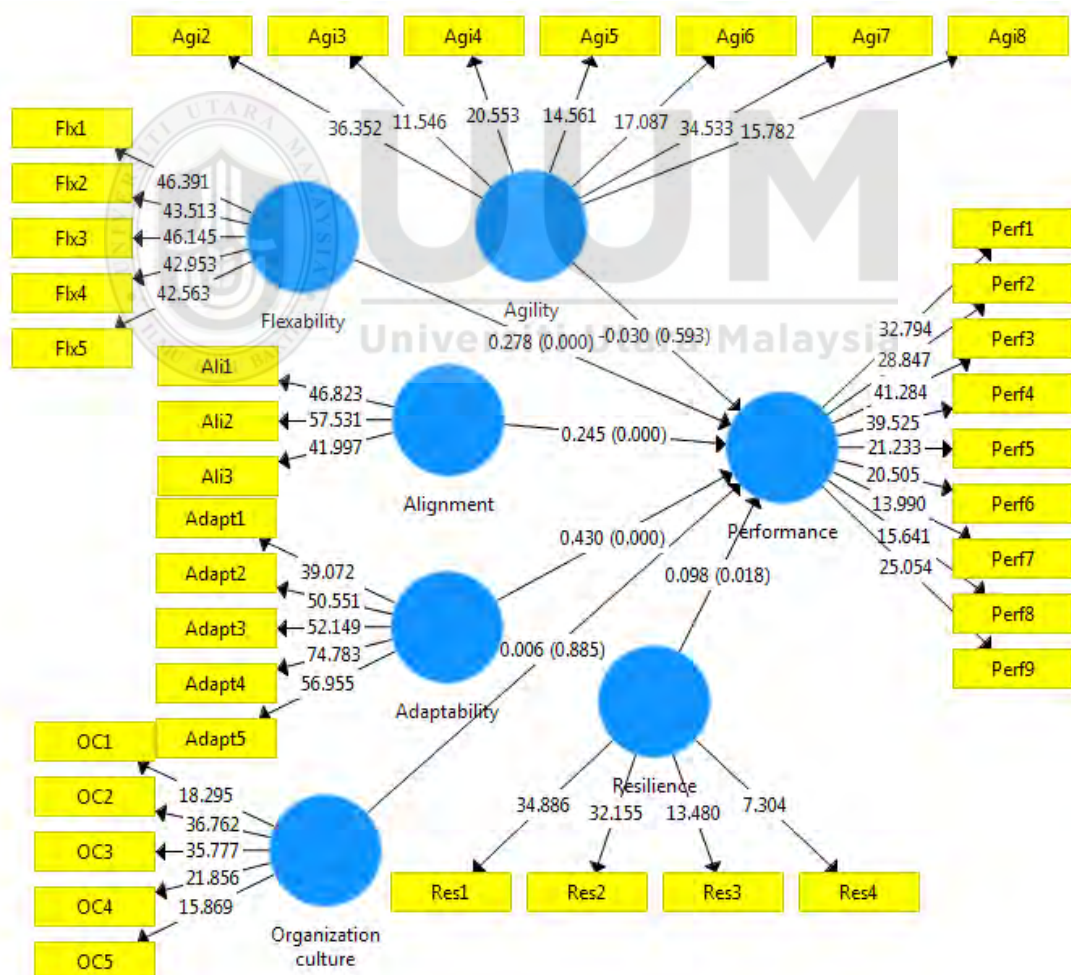


Figure 4.1 Results of the first structural model

Figure 4.1 The model explains the paths coefficient for second-order variables and approves that adaptability, alignment, flexibility, and resilience between them significantly influence organizational performance. Meanwhile, agility did not considerably influence organisational performance.

4.5.4 Moderating effect

In addition to assessing the direct effects of the structural model, an analysis of potential moderate effects was performed. The moderating effects were achieved and analysed using organisational culture as a moderator between agility and resilience towards organisational performance. However, Table 4.15 shows that corporate culture significantly moderates the relationship between resilience and organisational performance with a path coefficient β equal to 0.153 ($p < 0.000$), which approves H7 to be supported. On the other hand, corporate culture does not significantly moderate the relationship between agility and organisational performance, where H6 couldn't be helped.

Table 4.15

Direct Effects after Moderating

Path	Beta	Standard Deviation (STDEV)	T Statistics	P Values
Adaptability -> Performance	0.411	0.05	8.356	0.000
Agi*OC -> Performance	0.017	0.042	0.402	0.688
Agility -> Performance	-0.064	0.056	1.133	0.257
Alignment -> Performance	0.228	0.046	4.997	0.000
Flexibility -> Performance	0.299	0.052	5.708	0.000
Res*OC -> Performance	0.153	0.038	4.020	0.000

Resilience -> Performance	0.097	0.039	2.39	0.017
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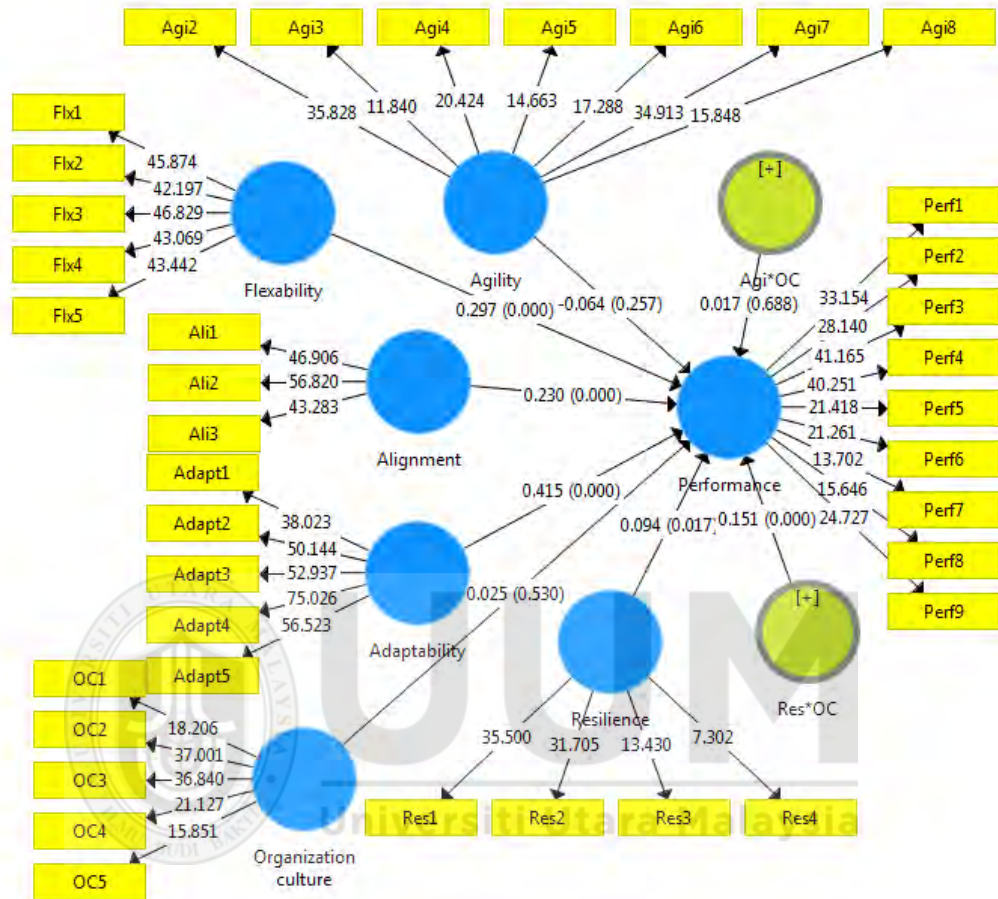


Figure 4.2 Results of the first structural model (after moderating)

4.6 Summary

This chapter discusses the empirical analysis conducted and the results presented. This empirical analysis was to test the research hypothesis in this study represented by the casual structural model. The model was tested with two-step SEM, including the measurement and structural model. Before conducting this analysis, the data were screened for normality. Additionally, hypothesis testing and moderating effects were presented, revealing that five

out of seven were supported, and two were not supported (Table 4.16). A detailed discussion and findings from the analysis are further discussed in the next chapter.

Table 4.16

Summary of Hypotheses results

Code	Hypotheses	Predict Sign	Findings
H1	Flex -> P	+	supported
H2	Alig -> P	+	supported
H3	Adap -> P	+	supported
H4	Res -> P	+	supported
H5	Ag -> P	+	Not Supported
H6	Agi*OC -> P	+	Not supported
H7	Res*OC -> P	+	supported

CHAPTER FIVE

DISCUSSION OF FINDINGS AND CONCLUSIONS

5.1 Introduction

This chapter summarises the research findings related to the study objectives. It deals with each goal and result; the study's main objective is to know the impact of the humanitarian supply chain on the performance of non-profit organisations in Jordan. To achieve these goals, the study began with the assumption of contingent relationships and then separated these relationships experimentally.

Experimental and exploratory studies were necessary for the research, as the exploratory studies were mandatory to know the problem of the analysis. Accordingly, the second and third chapters of the study were built. This review provided a basis for developing the research model based on related theories, as discussed in the fourth chapter.

The research model suggested the tested research hypotheses in an empirical study. The third chapter presented the research method to clarify the research design and statistical methods adopted. The cross-loading, complex reliability, convergent validity, discriminatory validity of the measurement model and the relationship between the constructs presented in the structural model using SEM were also tested. It is mentioned in Chapter Four.

This chapter summarises the findings and implications of the study. The chapter begins by discussing quantitative findings related to the research objectives. This is followed by the conclusions and importance of the analysis, which later addresses its limitations. Finally, the chapter concludes by suggesting directions for future research.

5.2 Discussion of Findings

As humanitarian supply chain research is still in its infancy, many academics have focused on the features and problems of humanitarian logistics and supply chain management. Kovacs and Spens. (2009) describes the issues of humanitarian logisticians in terms of crisis kinds, disaster relief stages, and humanitarian organisation types. In this sense, humanitarian supply chains and NGO performance are essential topics since it has been recognised that there is a lack of understanding of the NGO performance scale Abidi et al. (2013). Seven hypotheses were proposed, tested and tested in the fifth chapter. The hypotheses that clarify the research objectives are defined in Table (5.1)

Focusing on the human supply chain elements, the study explores the links between the humanitarian supply chain and performance. Based on the know-how objectives, the results are summarised in Table (5.1) and discussed thoroughly in the subsections.

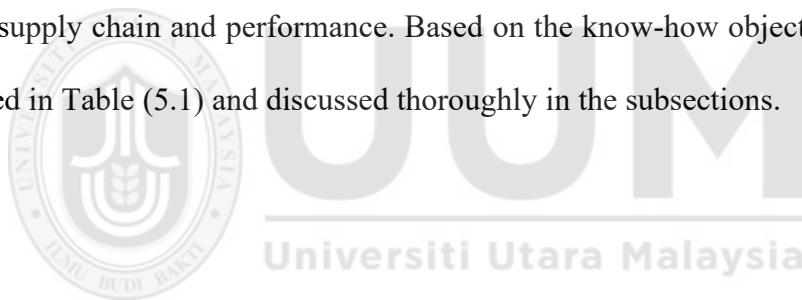


Table 5.1

Results of Hypotheses and Research Objective

Research Objective	Hypotheses	Result
To investigate the relationship between (Flexibility) and NGO performance in Jordan.	H1: A positive correlation between Supply chain Flexibility and the performance of NGOs exists.	supported
To analyse the relationship between (Alignment) and NGO performance in Jordan.	H2: A positive correlation between Supply chain Alignment and the performance of NGOs exists.	supported
To interpret the relationship between (Adaptability) and NGO performance in Jordan.	H3: A positive correlation between Supply chain Adaptability and the performance of NGOs exists.	supported
To discuss the relationship between (Resilience) and NGO performance in Jordan.	H4: A positive correlation between Supply chain Resilience and the performance of NGOs exists.	supported
To evaluate the relationship between (Agility) and NGO performance in Jordan.	H5: A positive correlation between supply chain Agility and NGOs' performance exists.	Not supported
To examine the moderating role of organisational culture between Agility and resilience towards NGO performance in Jordan.	H6: Organizational Culture has a positive moderating effect on the relationship between Supply Chain Agility and performance NGOs exists.	Not supported
	H7: Organizational Culture has a positive moderating effect on the relationship between Supply Chain Resilience and performance NGOs exists.	supported

5.2.1 Supply chain flexibility and NGO performance

First, the study's result showed a positive, statistically significant relationship between supply chain flexibility and the performance of NGOs (H1). Previous studies (Altay et al., 2018; Kabra & Ramesh, 2016) indicated the importance of flexibility in helping organisations focus

on their reactive capabilities, such as rapidity and recovery. The relationship between supply chain flexibility and non-governmental organizations (NGOs) performance can be critical to their operational success, mainly when serving in volatile environments such as disaster relief or refugee support.

Supply chain flexibility refers to the ability of a supply chain to adapt to changes and disruptions effectively. This could mean modifying the number of goods supplied, altering delivery schedules, switching suppliers, or even changing the goods or services provided to better meet the needs of the community served. Factors contributing to supply chain flexibility may include strong supplier relationships, sound information systems, efficient logistics capabilities, and a well-trained workforce. Flexibility is an essential feature in the humanitarian supply chain. Relief organizations aspire to achieve the highest level of response, as the use of flexibility in the humanitarian supply chain leads to improving the speed of recovery in the event of disasters and achieving the highest levels of response, thus enhancing the performance of the organisation (Behl & Dutta, 2019). The results of this study are consistent with the study's results (Kwateng et al., 2022). The study results indicate that the strongest and closest relationship ensures the appropriate use of flexibility between relief organisations. This will improve organisations' performance and ability to deal with uncertainty in the supply chain. As a result, those who work in humanitarian settings prioritise factors that can increase the flexibility of their supply chain and implement coordination strategies to achieve a humanitarian supply chain system (HSC) that is quick to respond. This is done to reduce the impact of natural disasters on society (Jermsittiparsert & Pithuk, 2019). In addition, The result of this study is in line with (Behl & Dutta, 2019) that the implementation of supply chain flexibility can be of helpful assistance to policymakers and practitioners in understanding issues related to supply chain risk, supply chain integration,

and performance leading to the disclosure of an essential positive relationship between the humanitarian supply chain and one of its features which It is the provision and performance of NGOs where understanding those elements that facilitate the improvement of organizational performance during relief operations is a critical area of research (Garcia-Alcaraz et al., 2017; Kabra & Ramesh, 2016). In conclusion, supply chain flexibility can significantly enhance the performance of NGOs by allowing them to adapt effectively to changes and disruptions, optimise their resources, improve their service delivery, and strengthen their resilience. It's an essential quality for NGOs operating in volatile and unpredictable environments.

5.2.2 Supply Chain Alignment and NGO Performance

According to H2, regarding the relationship between supply chain alignment and NOGs performance, this study confirms a significant positive relationship between S C alignment and NGOs performance with a path coefficient of β equal to 0.425 ($p < 0.000$). (Dubey, Singh, & Gupta, 2015) Supply chain alignment, sometimes referred to as supply chain integration, ensures that all supply chain components work together cohesively towards the same goals. This involves not only the internal aspects of an organization but also extends to external partners, such as suppliers, logistics providers, and even the end beneficiaries. For non-governmental organizations (NGOs), supply chain alignment can significantly influence their performance and effectiveness in providing aid and services. The relationship between supply chain Alignment and organizational performance is a critical topic. Supply chain alignment plays a role in enhancing the humanitarian supply chain network's capacity, allowing it to adjust its composition flexibly to align its members' goals with those of organisations, according to the results of previously discussed studies on supply chain alignment and NGO

performance. The empirical evidence of this study confirmed that the use of alignment as a feature of the humanitarian supply chain impacts the organizational performance of NGOs.

According to (Dubey et al., 2015), Supply chain alignment has a powerful impact on performance. The term "alignment" refers to ensuring that all SC participants' interests are consistent (Lee, 2004). SC alignment is related to how SC operations and activities should be managed to meet the demands of product/market speed and complexity through the synchronisation and coordination of operations. Furthermore, SC alignment implies strategic coordination and collaboration between SC members to manage intra- and inter-firm relationships (Kehoe et al., 2007). Therefore, incentives need to be designed in such a way that the interests of all parties are brought into alignment. Considering the preceding research, we may describe SC alignment as the capacity to exchange information, responsibilities, roles, and incentives with other SC members to synchronize and coordinate processes and activities (Arana-Solares et al., 2011). However, this paper's findings contrast with several prior studies (Umar, Wilson, & Heyl, 2017; Agarwal, Kant, & Shankar, 2019; Eckstein, Goellner, Blome, & Henke, 2015). In summary, supply chain alignment is crucial for NGOs as it promotes collaboration, efficiency, responsiveness, quality of service, and trust. These factors, in turn, can significantly enhance an NGO's ability to achieve its mission and improve its performance in delivering aid and services.

5.2.3 Supply Chain Adaptability and NGO Performance

Supply chain adaptability is the ability of a supply chain to modify its operations in response to changes in the external environment. For non-governmental organizations (NGOs), this might involve changes in the geopolitical situation, funding levels, availability of supplies, transportation routes, or needs of the population being served. The adaptability of an NGO's

supply chain can significantly influence the organization's performance and its ability to fulfil its mission effectively. Based on the statistical analysis results, the results showed a positive, statistically significant relationship between Adaptability and NGO performance in Jordan. At the same time, supply chains are expected to improve the company's ability to sense the changes in the external environment of organizations and respond to these changes quickly (Eckstein, Goellner, Blome, & Henke, 2015b). Structural sensing is crucial for supply chain adaptability, as effective structural change requires mapping and understanding relevant processes in the entire value chain (Aitken, Christopher, and Towill 2002). NGOs should be able to translate the benefits of Adaptability in response to environmental variables by their work in turbulent environments, and this understanding will help NGOs increase flexibility in their work, as the supply chain Adaptability can lead to significant cost savings for example) e.g., outsourcing (Dubey et al., 2015).

The results of this study are consistent with those of (Lee, 2004; Whitten et al., 2012; Christopher & Holweg, 2011). The results of these studies indicate that the application of adaptation leads to an improvement in response, which leads to an improvement in the performance of those organizations, where the supply chains Adaptability to reduce response time, which leads to lowering cost and improving the delivery of products/services, which has a direct impact on the performance of organizations that cannot be ignored. Organizations can ignore the Adaptability and knowledge of supply chains in humanitarian supply chains (Jeble et al., 2020). In sum, supply chain adaptability can significantly enhance an NGO's performance by enabling it to respond effectively to changes, use resources efficiently, maintain operations in the face of disruptions, meet changing beneficiary needs, and achieve strategic goals. It's a crucial capability for NGOs operating in complex and unpredictable environments.

5.2.4 Supply Chain Resilience and NGO Performance

Fourth hypothesis (H4) The results of the fourth hypothesis showed a statistically significant relationship between supply chain resilience and the performance of organizations. Where the results of the hypothesis showed that there is a relationship with the path coefficient of β equal to 0.425 Sample Mean 0.101 ($p < 0.018$), which means that H4 was supported, the results of the study (Altay, Gunasekaran, Dubey, & Childe, 2018) indicated the relationship and importance of Resilience in non-governmental organizations, due to the supply chain resilience refers to the capability of a supply chain to prepare for, respond to, and recover from disruptions or risks, thereby maintaining its operations or quickly returning to its average performance level. It essentially combines elements of flexibility, alignment, and adaptability with an added emphasis on proactive preparation for potential disruptions (Abeysekara, Wang, & Kuruppuarachchi, 2019).

In the context of non-governmental organizations (NGOs), supply chain resilience can significantly impact their performance, especially given the often uncertain and volatile environments in which they operate. Suppose there is a positive, statistically significant relationship between supply chain resilience and NGO performance. In that case, this implies that higher levels of resilience in the supply chain correlate with better organizational performance.

In addition, (Rice and Caniato 2003; Christopher and Peck 2004) stated that Resilience can have a strong advantage in achieving a competitive advantage when the pivotal company can respond more quickly and effectively, which differs with the study results. The study's results also differed from those of the study (Altay et al., 2018), which indicated a relationship between Resilience and performance. It must be taken into account that some several factors

and determinants must be taken into account to judge Resilience and its importance in organizations, and one of those determinants is the lack of sufficient studies on the main factors of organizational Resilience in NGOs (Gečienė, Raišienė, & Rapuano, 2020).

On the contrary, both the results of the study (Gečienė, Raišienė, & Rapuano, 2020) indicated the lack of relationship and importance of Resilience in non-governmental organizations due to the absence of understanding of the leaders of these organizations to the issue of organizational flexibility. They indicated the assumption that non-governmental organizations are somewhat unwilling to develop their Resilience and cannot ensure the success of organizations in crises, resilience can be a powerful source of advantage in organizations by dealing with unexpected but not always desirable (Al-Mashari et al. 2001). In essence, by bolstering supply chain resilience, NGOs can enhance their capacity to handle uncertainties and disruptions, maintain operational continuity, recover rapidly from adversities, and improve their overall performance. This is especially important in humanitarian contexts where NGOs are often the front line of response to crises, and their ability to perform effectively can have life-saving implications.

5.2.5 Supply Chain Agility and NGOs Performance

The study's result showed no statistically significant relationship between supply chain Agility and the performance of NGOs (H5). The results of the survey (Altay et al., 2018) showed that the Agility of the supply chain pIt does not affect the performance of relief organizations in the long term due to the characteristics of agility the concept of supply chain agility, which refers to the swift and efficient response to changes in demand or supply, is often highlighted as critical for operational success, it does not always correlate with improved performance in non-governmental organizations (NGOs). Studies reveal that there

might not be a statistically significant relationship between supply chain agility and NGO performance (Khan & Wisner, 2019). This is based on the premise of Kovacs and Spens (2009) that the “actual challenges faced in HSCM depend on the scale, type and region of the disaster where it occurs.” Where it requires NGOs that work in environments experiencing a high state of instability to provide a quick response to ensure efficiency, effectiveness and time savings, studies (Aitken et al., 2002; Christopher and Towill, 2002) indicate that Agility plays a significant role in solving those obstacles facing organizations. According to (Dubey, 2015), several factors could explain this discrepancy. Unlike commercial entities, NGOs might experience relatively stable demand for their services, especially if they provide ongoing support to a fixed demographic, such as a settled refugee population. Therefore, the need for agility in their supply chains might be less critical. Furthermore, NGOs typically focus on achieving long-term objectives, such as poverty alleviation or community development. These missions may not benefit as substantially from agility as they would from consistency and reliability.

Resource constraints also play a crucial role. Despite the capacity for rapid adjustment to changes, NGOs often operate with limited resources, potentially restricting the full realisation of agility benefits. Additionally, other external factors, such as political circumstances, funding availability, or local socio-economic conditions, can substantially influence NGO performance, possibly overshadowing the impact of supply chain agility.

Lastly, the effectiveness of an agile supply chain may be contingent upon other internal competencies within the NGO, such as leadership quality, financial management proficiency, or the skill level of the staff. These complementary capacities are necessary for supply chain agility to significantly improve performance.

In conclusion, while supply chain agility could prove beneficial under certain circumstances, its impact on NGO performance may only sometimes be significant. Each organization must evaluate its unique context and needs, balancing agility with other critical supply chains and organisational capabilities to optimise performance.

5.2.6 Organizational Culture Moderating and NGO Performance

Organisational culture can significantly moderate the relationship between supply chain resilience and non-governmental organizations (NGOs) performance. In this context, moderation means the strength or direction of the correlation between supply chain resilience and NGO performance can be influenced by the prevailing organizational culture. This study found a relationship between Supply Chain Resilience and performance NGOs. This finding agreed with (Arokodare, Asikhia, Makinde, 2019), which found that effective Agility leads organizations to outstanding results and ensures continuity for organizations in unstable environments that enjoy the existence of an organizational culture that acts as a strategic asset in the organization, where the effectiveness of the organization is affected by corporate culture by shaping the behaviour of people towards organizations, which affects the performance of organizations.

If an organization fosters a culture of flexibility and adaptability, it can amplify the positive impact of supply chain resilience on performance. Such a culture nurtures innovative problem-solving and swift adaptation to changing circumstances, empowering the NGO to optimally leverage a resilient supply chain. By doing so, the NGO can respond efficiently to disruptions and restore regular operations as quickly as possible. (Altay et al., 2018) argue that Resilience is a high-level dynamic capability capable of affecting the performance of organizations. Based on Augier and Teece (2009, 412), Resilience can “sense opportunities

and achieve goals". The importance of Resilience in the presence of organizational culture in response to changes in external environmental conditions appears when humanitarian organizations involve their staff in the humanitarian field in understanding the requirements of people with low incomes and those who are anticipating disasters and translating these requirements so that they are effectively communicated with them (Tabaklar, 2017).

Similarly, a culture that values collaboration and transparency can strengthen the relationship between supply chain resilience and performance. Collaboration encourages information sharing and joint problem-solving across different supply chain segments, enhancing resilience. On the other hand, transparency fosters trust among partners and aids in promptly addressing issues that could affect the supply chain's stability.

Furthermore, a risk-aware culture, where potential threats and vulnerabilities are consistently identified, evaluated, and managed, can harness supply chain resilience to enhance performance. Such a proactive approach to risk can significantly minimise the impact of disruptions and contribute to a quicker recovery.

However, in an organization where the culture is resistant to change, the benefits of supply chain resilience may still need to be fully realised, potentially weakening the correlation between resilience and performance. Therefore, NGOs must cultivate an organizational culture that supports and enhances supply chain resilience to optimise their performance.

In conclusion, organisational culture can significantly influence how supply chain resilience translates into NGO performance. Cultures that promote flexibility, adaptability, collaboration, transparency, and risk awareness can strengthen the positive impact of supply chain resilience on performance, while resistance to change can hinder it.

The findings of this study do not support Organizational Culture as having a positive moderating effect on the relationship between Supply Chain Agility and performance NGOs. Furthermore, the results of the hypothesis test showed that there is no relationship between Agility and organizational culture, which completely differed from the results of the study (Altay et al., 2018), which indicated that there is a relationship between Agility and evidence of the existence of a mediator of organizational culture.

While organizational culture has the potential to moderate many relationships within an organisation, it may only sometimes significantly influence the relationship between supply chain agility and non-governmental organizations (NGOs) performance. The lack of a moderating effect could be due to several reasons.

First, NGOs often have missions that involve delivering consistent, long-term assistance to beneficiaries, which may require little agility in their supply chains. In such cases, the prevailing organizational culture, whether it fosters adaptability, collaboration, or any other positive attribute, may not substantially impact the effectiveness of supply chain agility.

Second, agility requires a responsive supply chain and a rapidly shifting demand or supply situation. If NGOs work in stable environments or do not involve significant changes in demand or supply, a culture of agility may not significantly enhance their performance.

Moreover, the resource constraints often faced by NGOs could limit the potential benefits of agility. Even with an organizational culture that encourages adaptability and quick responses, NGOs may need more resources to implement agile responses.

Lastly, other factors can significantly impact NGO performance more than supply chain agility. For instance, the effectiveness of leadership, the level of community engagement, or

the quality of partnerships may play a more significant role in the overall performance of an NGO.

In conclusion, while organizational culture can play a crucial role in moderating many relationships within NGOs, its impact on the relationship between supply chain agility and NGO performance may only sometimes be significant. Factors such as the stability of demand, resource constraints, and the importance of other organizational aspects can diminish the influence of organizational culture on this specific relationship.

5.3 Implications for the Study and Practice of HSC and Performance.

The current study shows a clear relationship between humanitarian supply chains and the performance of NGOs in the presence of a mediator of organizational culture. This has a consequential impact on the theoretical and applied parts, which are discussed in the following subsections.

5.3.1 Theoretical Implications

The above empirical findings from our study provide a fascinating picture of connections and complementarities between organizational culture in Jordan and the humanitarian supply chain. In the context of humanitarian aid, a better knowledge of crucial dynamic capacities of the supply chain is contributed to by the findings we have uncovered. Previous research has recognised the significance of agility and resilience's synergistic impact on the operational efficiency of non-governmental organizations (NGOs) (Carvalho, Azevedo, and Cruz-Machado 2012).

However, in the humanitarian context, most existing studies have examined the effect of Flexibility (García-Alcaraz, Maldonado-Macías, Alor-Hernández, & Sánchez-Ramírez,

2017; Bhattacharya, Hasija, & Van Wassenhove, 2014; Stirk, 2014; Nartey, Aboagye-Otchere, & Yaw Simpson, 2020) or Alignment and Adaptability (Agarwal et al., 2019; Dubey, 2015; Dubey et al., 2015; (Jermisittiparsert & Kampoomprasert, 2019) on the performance of NGOs.

Despite the available research providing various definitions and methods for performance measurement and management in non-governmental organizations (NGOs), there still needs to be more consensus regarding the primary elements and metrics that ought to be utilised to evaluate an NGO's effectiveness. We saw this because of the ambiguity surrounding the terminology used to refer to NGO performance. The research also shows that organizational and internal indicators have been partly addressed in the performance measurement and management frameworks. This is shown by the fact that this has been demonstrated in the published research. The vast majority of the frameworks focused primarily on executing the programs and projects while, to some degree, ignoring the organizational processes and activities. As a result, there is an urgent need to depend on a structure encompassing all NGOs' facets (Ramadan & Borgonovi, 2015). The relationship between humanitarian supply chain management and the performance of non-governmental organizations (NGOs) offers noteworthy theoretical implications. Extending principles of operational efficiency to the humanitarian sector, effective management of supply chains can enhance NGOs' performance by minimising waste, optimising resource allocation, and expediting aid delivery.

Supply chain adaptability and flexibility theories are especially relevant to humanitarian logistics. Given humanitarian operations' dynamic and unpredictable nature, the ability to adapt and maintain flexibility in supply chain management is crucial. The correlation between

this capacity and performance could lay a theoretical groundwork for refining disaster response strategies.

Moreover, risk management theories are essential in humanitarian supply chains, which often have high uncertainty and potential disruptions. Understanding the role of risk management practices in the performance of humanitarian NGOs can contribute to theoretical frameworks around effective disaster response and resilience building.

This relationship also has implications for performance metrics in the humanitarian sector. Traditional measures like cost, speed, and reliability may need improvement or completion. Therefore, they may need to be complemented with metrics that evaluate equity, reach, or the impact on beneficiaries' lives.

Additionally, the interaction between coordination and collaboration in supply chains holds particular importance in the humanitarian sector. Multiple organisations often collaborate to address crises, and the effects of such cooperation on supply chain performance can provide a theoretical foundation for enhancing inter-agency coordination during disaster response.

Lastly, ethical and socially responsible considerations in supply chain management bear significant weight due to the vulnerable populations that humanitarian NGOs serve. Maintaining ethical and socially responsible supply chain practices is critical for performance and upholding reputation and trust.

In terms of the scope, we discovered that each model is distinct. According to Sharif and Irani (2012), the attribute that is considered to be the source of sustainable competitive advantage is an organisation's supply chain agility (e.g., Blome, Schoenherr & Rexhausen, 2013; Gligor & Holcomb, 2012; Li et al., 2008, 2009). The supply chain's adaptability allows the supply

chain's network to deal with the uncertainties of either demand or supply, lowering operational risks. The flexibility of the supply chain may have a beneficial effect on operational performance (Gligor & Holcomb, 2012). There is ample evidence to support the idea that the flexibility of supply chains directly influences their performance. However, one must consider the indirect impact of supply chain resilience, which is a moderator by organisational culture, since this influence must be addressed. The flexibility capabilities of the supply chain are also due to adaptable capabilities. The alignment of supply chains has the potential to influence performance directly.

In conclusion, exploring the relationship between the humanitarian supply chain and performance can illuminate various theoretical insights. These include operational efficiency, adaptability, risk management, performance measurement, inter-agency cooperation, and social responsibility. This understanding can aid in improving the efficacy of humanitarian operations.

5.3.2 Practical Implications

Our research has beneficial implications for practitioners, and the study results indicate potential gains for humanitarian supply chains on the performance of NGOs in Jordan. Previous studies (e.g., Stirk, 2014; Dubey et al., 2015; Kraft, Rennhak, & Sauer, 2016) suggest that many organisations are unsatisfied with the benefits explicitly obtained from their humanitarian supply chain investments. This is due to the lack of understanding of these investments and the return on the performance of these organisations.

The connection between humanitarian supply chain management and non-governmental organisations (NGOs) performance offers crucial practical implications. These implications

can guide organisations to improve their operations, augment effectiveness, and ultimately enhance the level of support provided to beneficiaries.

Optimising operational efficiency is a critical practical implication. NGOs can enhance productivity by borrowing best practices from commercial supply chain management. This could mean implementing cutting-edge logistics technologies, simplifying procurement processes, or applying lean management principles to decrease waste and redundancy.

Given the unpredictable environment of many humanitarian crises, greater adaptability and flexibility in supply chains are particularly vital. This could entail developing robust contingency plans, creating redundant supply routes, or diversifying suppliers to prevent reliance on a single source.

Moreover, NGOs should prioritise risk management to mitigate potential supply chain disruptions. Practical steps may include maintaining strategic reserves of essential supplies, regularly conducting risk assessments, or employing predictive analytics to forecast potential disruptions and implement preventative measures.

In addition, the nature of humanitarian work requires unique performance metrics. As such, NGOs should consider developing or adopting comprehensive measurement tools that capture cost, speed, or reliability and the quality, reach, and impact of their aid delivery. This would provide a more nuanced understanding of performance and better guide strategic decisions.

Collaboration and coordination across NGOs and other stakeholders are essential in managing humanitarian supply chains. Sharing information, pooling resources, and coordinating efforts could result in better utilization of resources, faster response times, and a more significant impact on affected communities.

Lastly, NGOs must ensure ethical considerations permeate their supply chain practices due to the nature of their work and the vulnerable populations they serve. This includes fair treatment of suppliers, environmentally responsible procurement and disposal practices, and maintaining transparency in operations.

Having clarified one of the most important factors that play a significant role in humanitarian supply chains, the study identifies how NGOs should deal while adopting the performance measure for these organizations as the most important prerequisite for success.

Given that many NGOs operate in work environments that witness a state of constant instability due to the assortment and abundance of disasters, the humanitarian supply chains in these organizations must be optimized to achieve the highest expected benefit. The humanitarian supply chain's readiness phase is critical to organisations' performance (Altay et al., 2018).

Our findings provide an accurate understanding of humanitarian supply chains and their importance to the performance of NGOs in Jordan. There are sufficient arguments to support that humanitarian supply chains directly affect the performance of organizations. The study's results reinforce the early call (Dubey, 2015) to know the impact of humanitarian supply chains on performance. (Ramadan & Borgonovi, 2015) They suggested that the performance measure in organizations is not defined and that most studies, and without a specific measure to measure performance in organizations, a comprehensive measure of the organization should be taken. Most frameworks mainly highlighted program/project performance and, in some ways, ignored organizational processes and functions. Thus, there is a solid need to rely on a framework covering all NGO areas. In practice, an effective framework should be applied in NGOs on the financial aspect, operations, organizational functions and program/project

performance. This framework can only be implemented by setting goals, defining performance indicators, collecting data, analysing and ultimately evaluating indicators, and taking action. An effective NGO framework should be applied to the financial aspect, operations, organizational functions and program/project performance. This framework can only be implemented by setting goals, defining performance indicators, collecting data, analysing indicators, evaluating them, and taking corrective actions if necessary. It clarifies the overall performance measurement and management framework, including clear steps to measure performance in NGOs with the identification of key performance indicators that should be used to evaluate the performance of NGOs (Bürger, 2015).

In conclusion, understanding the relationship between humanitarian supply chain management and NGO performance can yield valuable insights and practical strategies for organizations seeking to maximize their impact and deliver aid effectively and efficiently.

5.4 Study Limitation

Despite careful attention to the details of the research design, the results are subject to several limitations. Therefore, the current exploratory findings should be interpreted in light of these limitations.

First of all, the fact that the data were collected in a cross-sectional fashion is the root cause of the first constraint. A snapshot of the practices may be obtained by collecting data at a particular moment in time and then paying a brief visit to businesses operating in an ever-changing business environment, such as NGOs. Inevitably, the answers are highly impacted by the circumstances that were present when the data was obtained, which may have been different had the data been gathered at a different time. The methodology hinders the capacity

to test for causation, which is not surprising when considering the limitations of cross-sectional studies. However, considerable research has indicated that proper statistical analysis and extensive theoretical search can provide valuable data on causal relationships (De Vaus 2001).

The second limitation of the present study pertains to the low response, Where the duration of statistical data collection was more than eight months, and this is due to the difficulty of reaching the concerned persons in these organizations and the difference in culture between those organizations and the knowledge of those organizations whether they implement supply chains in their work or not. Governmental, non-governmental, local, international and royal in the second chapter of the thesis, and this is something that makes it difficult for the researcher to send and receive questionnaires, and it is considered one of the restrictions.

Third, another key weakness of the research is that there was a low overall response rate. Even if the non-response bias test shows that the sample might be utilized with enough confidence, the small sample size makes it impossible to employ effective statistical methods. Good statistical approaches demand a big sample size. Unquestionably, a bigger sample size will result in more authoritative and applicable conclusions across contexts.

Moreover, the main data collection method involving Google Forms imposed certain restrictions for any follow-up questions. However, the desire to preserve the respondents' anonymity in providing sensitive information to meet the need to achieve greater coverage of NGOs was deemed sufficient to outweigh the inherent weaknesses. Another practical implication that can be drawn from our study is that governments should be encouraged to develop a better understanding of the processes carried out by relief organizations and, in particular, identify how particular regulations can hinder performance. For instance,

governments should consider creative ways to simplify relief organizations to import supplies without jeopardizing the population's safety.

5.5 Future Research Direction

Much like other forms of exploratory research, this study carries a wealth of possible implications for further investigation. This applies to the approach used for both the collection of data and the analysis of that data.

There is an urgent need to conduct more research in the humanitarian sector, specifically in the non-governmental organization's sector, because of its importance, as this sector focuses on the main pillar of alleviating the burdens of displacement and asylum on refugees. It is interesting to look at humanitarian supply chains and determine the performance measures in Jordan, the Middle East, and East Asian countries. It is possible to reconsider the concept of supply chain and research in that field in areas other than the field of the humanitarian sector. It is possible to look at the supply chain factors and apply them in the commercial field or what is known as companies that seek to achieve profitability.

The role of organizational culture in influencing the performance of non-governmental organizations (NGOs) is an important area of study, especially in Jordan, where NGOs play a critical role in addressing humanitarian crises and providing aid to vulnerable populations. Future research could focus on understanding how different aspects of organizational cultures, such as flexibility and resilience, contribute to the performance of NGOs in this region.

Organizational culture has the potential to significantly impact how NGOs respond to challenges, make decisions, and allocate resources, all of which can ultimately influence performance outcomes. In a context where NGOs often have to operate in volatile, uncertain,

complex, and ambiguous situations, having a culture of flexibility can be crucial. Flexibility allows NGOs to adapt to changing circumstances, pivot their strategies when required, and respond quickly to emerging needs.

Resilience, another vital component of organizational culture, is about the ability to recover quickly from setbacks, adapt to change, and keep going in the face of adversity. For NGOs operating in Jordan, resilience could involve managing and recovering from supply chain disruptions, navigating political complexities, or sustaining operations amidst funding challenges.

Future research could investigate the precise mechanisms through which a culture of flexibility and resilience impacts NGO performance. For instance, does a flexible culture lead to more innovative problem-solving? Does a resilient culture contribute to better resource allocation decisions during crises? Understanding these relationships can provide practical insights for NGOs in Jordan and other similar contexts, enabling them to cultivate an organizational culture that enhances performance.

Moreover, considering the importance of cultural context, future research could also explore how Jordan's broader cultural norms and values influence the organizational culture of NGOs and their performance. For instance, how do societal attitudes towards humanitarian aid and voluntary work impact the functioning of NGOs? How do local norms of leadership and decision-making manifest within NGOs and affect their operations?

By unpacking these questions, future research can contribute to a richer understanding of the role of organizational culture in the NGO sector in Jordan, offering valuable insights for

practitioners and policymakers seeking to enhance the effectiveness and efficiency of humanitarian operations.

It is believed that the results of this study would have a high degree of confidence if applied with a larger sample size. A larger sample size results in a more reliable discovery. It allows for the use of powerful statistical tools that can better estimate investment in human supply chains and forms of control and the mediating effect of organizational culture. This can be done by repeating the study in a larger sector to increase the number of responses. Moreover, adding a qualitative interview may provide fruitful results since the sample strictly depends on NGOs. The same study can be conducted to include companies in the private sector, and it is worth mentioning the use of leadership as a mediating variable in future studies.

5.6 Conclusion

This chapter summarizes, discusses and concludes all survey results. Limited attention has been paid to the study of humanitarian supply chains concerning the performance of NGOs in Jordan, which has become one of the most pressing topics because of its importance in one of the sectors considered the most sensitive in Jordan.

The first discussion, the results of this research, has different implications for theory and practice. In the theoretical dimension, the current research is a first attempt to understand and develop human supply chains. More specifically, our framework lays the first basis for analysing the humanitarian supply chain against the performance of NGOs in Jordan, as it is one of the few types of research that deals with the humanitarian supply chain and the implementation of NGOs because of the complexities and difficulties facing the researcher, and among those challenges is the difficulty of communication and communication With the

managers of the supply chain in those organizations or managers of organizations, due to the sensitivity of the nature of their work.

The framework we have developed based on the literature on humanitarian supply chains needs to be further validated through a case study or interview-based approach. It can then be used by researchers interested in this field. The current research, for example, may provide a rationale for studying the success or failure of various relief supply chain designs in relief boilers.

The framework that we have developed provides a tool for NGO managers to achieve better organizational performance. For example, by facilitating the long-term development of managers' abilities to make decisions that help improve the performance of organizations and achieve the organization's goals of assisting, mitigating asylum and saving lives. It also gives managers an understanding of how chain factors influence Humanitarian supply and how to deal with it best.

Examples from the current studies encourage the findings of our research, which recommend that NGOs be more flexible and proactive in adapting their supply chain to a volatile environment. To achieve the best performance, the current study recommends that NGOs invest in their humanitarian supply chain and engage with government officials to find win-win solutions proactively.

Overall, the results indicate that the objectives of this study have been achieved. However, the proposed recommendations and results should be interpreted in light of the limitations discussed. Future research is suggested to encourage further refinement of the current study.

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Appendix

Appendix A Questionnaire

THE IMPACT OF HUMANITARIAN SUPPLY CHAIN FOR DISASTER MANAGEMENT: MODERATOR EFFECT OF ORGANIZATIONAL CULTURE.

Questionnaire

Date: 8/4/2022



I hope you are in good health.

My name is **AHMAD ALI ATIEH ALI** and I am a PhD student at Utara Malaysia University.

I am currently undertaking PhD research under the supervision of **Dr. Zulkifli B. Mohamed Udin and Dr. Hussein Mohammed Esmail Abualrejal** in the area of accounting information systems. For my research study, I am examining **The Impact of the Humanitarian Supply Chain for Disaster Management: The Moderator Effect of Organizational Culture**. I am inviting you to participate in this research study by completing the attached surveys.

The success of this study highly depends on your kind cooperation. This study is only for academic purpose and not for other use. The goal of the Questionnaire Expert Review is to ensure that the instruments and questions are up to best practices and to verify that the facts are right and that the questionnaires meet the research objectives.

Your participation and contribution are highly appreciated

Sincerely,

Ahmad Ali Atieh Ali.

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The Impact of the Humanitarian Supply Chain for Disaster Management: the Moderator Effect of Organizational Culture

This study aims to determine the impact of humanitarian supply chains on disaster management in NGOs. The researcher designed this study to collect information about the performance of NGOs and to identify the factors that affect their performance such as flexibility, alignment, organizational culture and adaptability in NGOs operating in Jordan. Therefore, I would like you to spend some time answering the questions of the questionnaire. Your answer is very important for the study. We appreciate your time and effort to answer the survey questions, the information will be kept strictly confidential.

Sincerely

1.0 Demographic Profile

Please tick (✓) the appropriate box to answer the questions

Does your organization rely on supply chains to operate?

☐ Yes

☐ No

If your answer yes, please proceed with the questionnaire.

Personal Information:

1. Please tick your age range:

☐ 25 years or less

☐ More than 25 to 30 years

☐ More than 30 to 35 years

☐ More than 35 to 40 years

☐ More than 40 to 45 years

☐ More than 45 to 50 years



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☐ Above 50 years

2. What is your gender?

☐ Male

☐ Female

3. Please tick your work experience in total?

☐ 5 years or less

☐ More than 5 to 10 years

☐ More than 10 to 15 years

☐ More than 15 to 20 years

4. What is the employees 'working experience in current organization?

☐ 5 years or less



☐ More than 5 to 10 years

☐ More than 10 to 15 years

☐ More than 15 to 20 years

5. The highest educational degree?

☐ High School

☐ Diploma

☐ Bachelor Degree

☐ Master Degree

☐ Doctoral Degree

Other (please specify) _____ ☐



Flexibility

Definition: flexibility is considered an important feature of the organization. To respond quickly to the chaos that may occur after the disaster.

This section describes data about Flexibility within your organization. Please read these phrases carefully and circle the number.

NO.	Statements	Totally Agree	I Agree	some what agree	Neither agree or disagree	Somewhat disagree	Disagree	Strongly disagree
1	Our organization has the use of a less formal structure (flat structure)							
2	Our organization focuses less on traditional ways of working							
3	Our organization believes in equality and merit.							
4	Our organization's commitment to innovation and development brings organizations together.							
5	Our organization has fewer safety concerns.							

Alignment

Definition: focus supply chain alignment necessitates continuity of goals, policies, and processes across various supply chain stakeholders.

This section describes data about alignment within your organization. Please read these phrases carefully and circle the number.

NO.	Statements	Totally Agree	I Agree	somewhat agree	Neither agree or disagree	Somewhat disagree	Disagree	Strongly disagree
1	Our Organization: Openly exchanges information and experiences with suppliers and beneficiaries.							
2	Our organization: clearly defines the roles, tasks and responsibilities of suppliers and beneficiaries.							
3	My organization: equal division							

	of job duties, incentives, and associated risks.							
--	--	--	--	--	--	--	--	--

Adaptability

Definition: adaptability may also help to improve a supply chain's overall performance by cost-cutting and savings.

This section describes data about Adaptability within your organization. Please read these phrases carefully and circle the number.

NO.	Statements	Totally Agree	I Agree	somewhat agree	Neither agree or disagree	Somewhat disagree	Disagree	Strongly disagree
1	My organization: It monitors economies around the world to discover new supply rules.							
2	My organization uses intermediaries to develop new suppliers							

	and logistics infrastructure							
3	My organization assesses the needs of people who need help rather than just providing help.							
4	Our design aids can be modified easily.							
5	Our organization uses technology cycles and product life cycles to assess the quality of in-kind aid.							

Agility

Definition: agility is described as an organizational capacity to react quickly to disasters in various fields.

This section describes data about agility within your organization. Please read these phrases carefully and circle the number.

NO.	Statements	Totally Agree	I Agree	somewhat agree	Neither agree or disagree	Somewhat disagree	Disagree	Strongly disagree
1	Our organization has the ability to detect changes in the work environment quickly.							
2	Our organization: has the ability to quickly identify opportunities in its environment.							
3	Our organization: has the ability to							

	quickly sense threats in its environment.							
4	Our organization: constantly collects information from suppliers.							
5	Our organization makes quick decisions to deal with changes in the environment.							
6	Our organization: Able to increase its capacity in the short term as needed.							
7	Our organization can modify the							

	specifications of the orders as requested by our partners.							
8	Our organization can modify our supply chain operations to the extent necessary to carry out our decisions.							



Resilience

Definition: are higher-order complex competencies that may affect the humanitarian supply chain's success.

This section describes data about resilience within your organization. Please read these phrases carefully and circle the number.

NO.	Statements	Totally Agree	I Agree	somewhat agree	Neither agree or disagree	Somewhat disagree	Disagree	Strongly disagree
1	Our organization can easily restore material flow.							
2	Our organization does not take long to restore its operational performance.							
3	Our supply chains are back to							

	their original state.							
4	Our organization can quickly deal with disruptions							

Organizational Culture

Definition: a tradition of shared universal assumptions learned by a society when it tackled problems of external adaptation and internal integration, which has worked well enough to be deemed true and, therefore, to be taught to new participants as the right way to interpret, believe, and feel about those problems.

This section describes data about organizational culture within your organization. Please read these phrases carefully and circle the number.

NO.	Statements	Totally Agree	I Agree	somewhat agree	Neither agree or disagree	Somewhat disagree	Disagree	Strongly disagree
1	Our Organization: Highly organized, hierarchical and oriented towards							

	chains of command.							
2	My organization respects age, experience and seniority of work.							
3	Our organization: focused on achieving mission objectives (explicit and implicit).							
4	Our organization: trained to be quick in operational safety							
5	Loyalty, belonging and tradition are closely linked to my organization .							

PERFORMANCE

Definition: effectiveness, efficiency and speed of response in the event of disasters and speed of providing hygiene, nutrition, refuge, aqua, medicine and public health facilities to the beneficiaries are crucial.

This section describes data about Performance within your organization. Please read these phrases carefully and circle the number.

NO.	Statements	Totally Agree	I Agree	somewhat agree	Neither agree or disagree	Somewhat disagree	Disagree	Strongly disagree
1	Our organization: responds quickly to disturbances.							
2	My organization gets a recovery in a short time.							
3	Our organization: can reduce the impact of loss through its ability to							

	deal with crises.							
4	Our organization: has the ability to absorb heavy losses.							
5	Organizers can recover from crisis at minimal cost.							
6	Our organization: Provides training in preparedness to overcome crises.							
7	Our organization has a response team to mitigate the severity of the crisis.							
8	Our organization							

	enjoys strong security.							
9	Our organization has a sudden forecast to meet the turmoil.							

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE



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APPENDIX B
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Flx1	308	2	7	4.82	1.216	.156	.139	-.835-	.277
Flx2	308	2	7	4.79	1.086	-.134-	.139	-.326-	.277
Flx3	308	2	7	4.78	1.123	-.126-	.139	-.395-	.277
Flx4	308	2	7	4.82	1.172	-.216-	.139	.002	.277
Flx5	308	2	7	4.83	1.126	-.146-	.139	-.475-	.277
Agi1	308	1	7	4.89	1.123	-.384-	.139	.359	.277
Agi2	308	2	7	4.89	1.148	.048	.139	-.608-	.277
Agi3	308	2	7	4.85	1.099	.107	.139	-.452-	.277
Agi4	308	2	7	4.89	1.067	.183	.139	-.636-	.277

Agi5	308	3	7	4.77	1.024	.339	.139	-.089-	.277
Agi6	308	1	7	4.85	1.150	-.087-	.139	.156	.277
Agi7	308	2	7	4.77	1.095	.191	.139	-.417-	.277
Agi8	308	2	7	4.93	1.220	.014	.139	-.458-	.277
Ali1	308	2	7	4.70	1.144	.152	.139	-.501-	.277
Ali2	308	2	7	4.75	1.163	.092	.139	-.567-	.277
Ali3	308	3	7	4.80	1.161	.223	.139	-.740-	.277
OC1	308	2	7	4.70	1.009	.320	.139	.131	.277
OC2	308	1	7	4.84	1.109	-.107-	.139	.516	.277
OC3	308	2	7	4.89	1.156	-.101-	.139	-.189-	.277
OC4	308	2	7	4.85	1.074	-.026-	.139	.165	.277
OC5	308	3	7	4.80	.948	.073	.139	-.538-	.277
Res1	308	2	7	4.76	.983	.008	.139	-.404-	.277
Res2	308	2	7	4.83	1.043	-.049-	.139	-.481-	.277

Res3	308	2	7	4.66	1.128	.063	.139	-.275-	.277
Res4	308	1	7	4.69	1.246	.086	.139	.143	.277
Adapt1	308	2	7	4.62	1.236	-.333-	.139	-.254-	.277
Adapt2	308	2	7	4.67	1.195	-.310-	.139	-.069-	.277
Adapt3	308	1	7	4.73	1.233	-.325-	.139	-.097-	.277
Adapt4	308	2	7	4.72	1.279	-.236-	.139	-.464-	.277
Adapt5	308	2	7	4.79	1.262	-.151-	.139	-.563-	.277
Perf1	308	2	7	4.70	1.254	.238	.139	-.134-	.277
Perf2	308	2	7	4.84	1.276	.014	.139	-.215-	.277
Perf3	308	2	7	4.73	1.185	.341	.139	-.151-	.277
Perf4	308	2	7	4.67	1.219	.334	.139	-.407-	.277
Perf5	308	2	7	4.73	1.315	.384	.139	-.638-	.277
Perf6	308	2	7	5.07	1.411	-.056-	.139	-.902-	.277
Perf7	308	2	7	4.81	1.314	.393	.139	-.825-	.277

Perf8	308	2	7	4.84	1.390	.243	.139	-1.032-	.277
Perf9	306	1	7	4.72	1.314	.275	.139	-.410-	.278
Valid N (listwise)	306								



APPENDIX C

INITIAL OUTER BEFORE ITEMS REMOVAL

	Adaptability	Agility	Alignment	Flexibility	Organization culture	Performance	Resilience
Adapt1	0.84						
Adapt2	0.853						
Adapt3	0.861						
Adapt4	0.882						
Adapt5	0.857						
Agi1		0.575					
Agi2		0.789					
Agi3		0.65					
Agi4		0.731					
Agi5		0.649					
Agi6		0.707					

Agi7		0.777					
Agi8		0.654					
Ali1			0.86				
Ali2			0.877				
Ali3			0.87				
Flx1				0.841			
Flx2				0.833			
Flx3				0.868			
Flx4				0.834			
Flx5				0.843			
OC1					0.712		
OC2					0.817		
OC3					0.809		
OC4					0.761		
OC5					0.7		
Perf1						0.812	
Perf2						0.796	

Perf3						0.82	
Perf4						0.852	
Perf5						0.787	
Perf6						0.75	
Perf7						0.647	
Perf8						0.717	
Perf9						0.752	
Res1							0.83
Res2							0.84
Res3							0.692
Res4							0.598

Appendix D

FINAL ITEM'S LOADING AND CTOSS LOADING

	Adaptability	Agility	Alignment	Flexibility	Organization culture	Performance	Resilience
Adapt1	0.84	0.512	0.383	0.52	0.281	0.587	0.39
Adapt2	0.853	0.529	0.44	0.585	0.452	0.656	0.471
Adapt3	0.861	0.603	0.425	0.623	0.436	0.68	0.434
Adapt4	0.882	0.557	0.516	0.58	0.522	0.71	0.473
Adapt5	0.857	0.543	0.48	0.535	0.429	0.691	0.412
Agi1	0.311	0.575	0.366	0.265	0.364	0.295	0.319
Agi2	0.623	0.789	0.502	0.701	0.422	0.628	0.404
Agi3	0.295	0.65	0.341	0.317	0.356	0.271	0.336
Agi4	0.455	0.731	0.36	0.449	0.395	0.376	0.329
Agi5	0.277	0.649	0.369	0.319	0.285	0.356	0.325
Agi6	0.411	0.707	0.421	0.469	0.405	0.411	0.347
Agi7	0.604	0.777	0.498	0.672	0.486	0.57	0.354
Agi8	0.387	0.654	0.391	0.4	0.466	0.417	0.341

Ali1	0.484	0.535	0.86	0.403	0.455	0.519	0.404
Ali2	0.484	0.453	0.877	0.389	0.452	0.56	0.356
Ali3	0.403	0.568	0.87	0.396	0.43	0.552	0.39
Flx1	0.562	0.593	0.386	0.841	0.415	0.614	0.349
Flx2	0.516	0.457	0.268	0.833	0.353	0.529	0.275
Flx3	0.571	0.584	0.355	0.868	0.381	0.567	0.328
Flx4	0.598	0.66	0.497	0.834	0.46	0.64	0.344
Flx5	0.54	0.606	0.393	0.843	0.324	0.56	0.258
OC1	0.328	0.425	0.423	0.338	0.712	0.271	0.251
OC2	0.453	0.414	0.423	0.364	0.817	0.467	0.378
OC3	0.383	0.42	0.393	0.321	0.809	0.401	0.385
OC4	0.378	0.535	0.38	0.415	0.761	0.407	0.41
OC5	0.334	0.409	0.344	0.32	0.7	0.348	0.568
Perf1	0.612	0.513	0.48	0.576	0.461	0.812	0.416
Perf2	0.626	0.508	0.545	0.501	0.371	0.796	0.399
Perf3	0.616	0.594	0.547	0.548	0.482	0.82	0.466
Perf4	0.673	0.539	0.616	0.628	0.454	0.852	0.468

Perf5	0.619	0.536	0.495	0.579	0.36	0.787	0.376
Perf6	0.607	0.382	0.44	0.556	0.298	0.75	0.333
Perf7	0.417	0.375	0.276	0.379	0.268	0.647	0.279
Perf8	0.562	0.409	0.431	0.455	0.367	0.717	0.361
Perf9	0.625	0.515	0.453	0.552	0.441	0.752	0.459
Res1	0.41	0.409	0.394	0.262	0.492	0.454	0.83
Res2	0.471	0.416	0.443	0.351	0.503	0.49	0.84
Res3	0.337	0.323	0.239	0.265	0.295	0.3	0.692
Res4	0.25	0.33	0.118	0.218	0.147	0.203	0.598