



Department of Business and Management

Master's Degrees in Management and Supply Chain Management

Chair of Corporate Strategy

A supply chain collaboration perspective in humanitarian operations. Evidence from Ukraine

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Academic Year 2022/2023

Abstract

The purpose of this work is to understand how humanitarian organizations can improve the effectiveness and efficiency of humanitarian operations in the case of Ukraine through collaboration in supply chain. With this aim, the author investigated not only the nature of benefits on the affected population and the role of collaborating with other humanitarian and private actors, but also when such cooperation should strategically occur along the typical humanitarian operations framework. Finally, the main challenges and opportunities deriving from such two types of collaboration are reported as well from a supply chain perspective.

To do so the author applied a qualitative-inductive approach with a focus on the Ukrainian humanitarian crisis and conducted a multiple case study interviewing logistics and supply chain experts from five different humanitarian organizations involved in such context. The use of both primary (interviews) and secondary (official reports) data collection, combined with a coding data analysis, enabled to find patterns and draw conclusions in order to generalize beyond the case settings at hand. Finally, interesting theoretical and managerial implications were derived through this approach.

Key findings show that a collaborative approach in supply chain with both humanitarian and private actors leads to more effectiveness and efficiency in terms of necessities addressed, as well as a more comprehensive and holistic aid provision to meet the many different types of such needs deriving from a complex emergency such as the Ukrainian one. Interestingly, it also emerged that not only social, but also environmental and economic sustainability goals would be covered. Moreover, it turned out that both types of collaboration should occur in each of the humanitarian operations' stages considered, that is before and after the emergency's onset. Furthermore, several challenges and opportunities emerged from both collaborating with other humanitarians and business sector; here, some of these aspects might entail both challenges and opportunities. Finally, the author highlighted the crucial role played not only by local suppliers and service providers, but also those humanitarians that were present on the field before the emergency's onset. It came out that context's specific nature and characteristics are relevant factors that should always be kept into considerations by operations managers, as well as the size and nature of the humanitarian organization itself, which may affect the weight of potential challenges and opportunities coming from collaboration in supply chain.

This work empirically provides a contribution deriving from credible practitioners' experiences from five different international humanitarian organizations of different nature (NGOs, UN agencies and

Governmental), with regards to a very topical and large-scale crisis. These insights rely on a combination of humanitarian and supply chain skills, also including the business sector, in a very practical context where operations' effectiveness and efficiency are translated into human relief. The originality lies in such application of supply chain management best practices in a real-world setting, offering new opportunities for impactful research.

Preface

This thesis marks the end of my university studies. After a three-year bachelor's degree (Economics and Management) at LUISS University, and an Erasmus Programme at the Universidade Católica Portuguesa, I started my master's degree in Management at LUISS University which also gave me the opportunity to undertake a Double Degree Programme in Supply Chain Management at Tilburg University.

I would like to express my gratitude to these universities for all the enriching experiences offered to me, which strongly contributed to both my professional and personal growth.

I also want to thank my supervisors, from Tilburg University and LUISS University, for all the valuable and precious support during the past months. I am grateful for your supervision.

All the respondents from the various organizations, who not only demonstrated great kindness and professionalism, but also allowed to me to conduct this work which means so much to me and I do care about. I really hope it may contribute adding relevant insights to such fundamental field of research.

Lastly, my thoughts go to my family and a special thanks to Vincenza, the person who more than anyone has been able to stay by my side in any moment.

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1. Introduction

1.1 Background

The Russian-Ukrainian conflict is a political and military confrontation that began in February 2014 but, since February 2022 sees the troops of the two countries regularly facing each other. As many other conflicts, it brought to attention the importance of humanitarian logistics and operations to ensure not only an efficient flow of goods of any type but also to meet fundamental needs, which can be identified within the Sustainable Development Goals (SDGs), of many refugees affected by such humanitarian crisis. In this slow-onset disaster, many actors are involved and collaborate in an integrated system. Hence, it can be stated that supply chain and operations management assume even more relevance and has become critically important not only for private companies but also for humanitarians (Van Wassenhove,2006). As such, humanitarian non-governmental organizations (NGOs), international organizations (as United Nations agencies), but also specialized agencies from Member States are participating as humanitarian actors. On the other hand, private companies collaborating with such organizations are involved as well.

1.2 Problem indication

Humanitarian organizations provide aid in humanitarian crisis and their operations are considered successful if they mitigate an immediate need of a population in the shortest amount of time, with as few resources as possible, decreasing their vulnerability (Tomasini & Van Wassenhove,2004). This is further supported by Murray (2005) when stating that the ability to mobilize resources, exercise effective command and control, and plan the endeavor logically and on schedule are considered all crucial factors for disaster management to be successful. From this perspective the main goal of humanitarians, also depending on their mandate, is to reduce suffering and pain of who needs it. More specifically, they aim to lessen mortality rate among disaster victims and assist and protect affected populations (Coppola,2015). The study of how humanitarian organizations may provide aid more effectively is known as humanitarian logistics and operations, a branch of supply chain and operations management; in such context, collaboration in SCM is particularly relevant since only the performance of humanitarian groups, as a whole, should be taken into account (Fard & Papier,2023). Although many different actors might be involved in a humanitarian operation, this study will focus on the collaboration of humanitarian organizations with other humanitarians and with private companies. The role of each of these players might be fundamental and the success of humanitarian operation can be determined by the coordination between them (S. Negi & G. Negi,2021). Because

of the urgency that characterizes humanitarian crisis and difficulty as consequence of limited resources available, actors in humanitarian supply chains should cooperate and establish mutual confidence so to achieve shared objectives.

Specifically, due to more complex and unpredictable emergencies trends, humanitarian organizations are required to find more effective and efficient solutions in supply chain management (Tomasini & Van Wassenhove,2009). The relevance of investigating how collaboration in SCM of humanitarian organizations affects humanitarian operations is mainly because good performance and effectiveness of such interventions can be translated into an improvement of social sustainability. Humanitarianism, indeed, represents an ideology coming from different humanitarian organizations' activities strictly related to social issues that require humanitarian aid provision (Marcinkowski,2022). Also, the social aspect of the concept of sustainability is the least developed in previous literature, encouraging more research about such important topic (Miemczyk et al.,2012). Humanitarian supply chains play a key role in saving people's life during disasters and there does exist an important connection between humanitarian operations and Sustainable Development Goals (SDGs) (Besiou et al.,2021). SDGs have been developed by United Nations in 2015 and represent a call to action for all countries to promote solutions regarding social, environmental and economic sustainability. Within such 17 objectives to ensure that by 2030 all people enjoy peace and prosperity, specifically, some of them aim to address a wide range of social needs, such as: health, education and social protection (United Nations,2023). Moreover, the number of people affected by disasters largely increased over time, underlining the need of efficient humanitarian aids logistics (Besiou et al.,2020) that is complex to manage due to multifaceted issues and limited resources availability in volatile operational environments (Peters et al.,2022), which therefore makes collaboration crucial. In other words, the success of humanitarian operations requires a more central role of the private sector, but also strengthened collaboration between humanitarian organizations (Besiou & Van Wassenhove,2020). Specifically, in response to Russia's aggression, the European Commission is coordinating the largest ever operation under the EU Civil Protection Mechanism with about 200 humanitarian partners. More than 17.7 million people require not only humanitarian support having no access to basic needs such as food, water, schools and health facilities, but also protection being exposed to shelling and any kind of violence. It's considered the fastest-growing refugee crisis, highlighting how human rights are put to a hard test due to lack of social development, including poverty, inequality and an unsafety environment (DG ECHO, 2023). This further shows how disasters are becoming increasingly more complex and why more collaboration is required, with both other humanitarian and private actors (Van Wassenhove,2006).

Relevance for practitioners is based on the idea that researchers in this field of study should translate their results into practical recommendations addressing real issues faced by practitioners themselves (Besiou & Van Wassenhove, 2020). Therefore, the author aims to investigate how collaboration in SCM with other humanitarians and private companies affects humanitarian operations in a complex humanitarian crisis such as the Ukrainian scenario; to do so, one of the main goals is to understand how collaboration in SC enables to address the fundamental needs of the affected population; also, the researcher will investigate when such two types of collaborations should occur, that is whether before or after the emergency's onset. Finally, the aim is to find out which are the main challenges and opportunities in collaborating with other humanitarians and privates from a supply chain perspective. Such contribution aims to ease SC operations managers' decision-making process to address fundamental humanitarian needs.

Van Wassenhove (2006) suggests in his work that more collaboration with both other humanitarians and business is anything but easy to implement. Potential benefits are described but, still, a gap has been found in how practically collaboration would affect humanitarian operations from a supply chain's effectiveness and efficiency perspective. From this perspective, since the Ukrainian humanitarian emergency is very topical, such case study has not been covered yet by previous research. Besiou & Van Wassenhove (2020) identify three different phases in the evolution of humanitarian operations: Humanitarian Logistics (HUMLOG) 1.0 representing the past, HUMLOG 2.0 the present, while HUMLOG 3.0 the future. The former focuses on the response phase without recognizing the importance of SCM practices. The latter instead, relies on last changes that characterize new complex nature of disasters, especially the man-made ones such as the Ukrainian scenario. Therefore, since most of previous research focused on HUMLOG 1.0 and HUMLOG 2.0, the author aims to take the opportunity to conduct novel research on HUMLOG 3.0. The same study also highlights the need of research on the evolving stakeholders' role in humanitarian supply chains; In particular, it shows great opportunities for research on investigating the potential of partnerships between humanitarians and with business sector, developing realistic opportunities and challenges and considering the interconnectedness between disaster management phases: preparedness (pre-emergency) and response (post-emergency). Finally, existing literature still shows a gap in humanitarian operation research related to SDGs. Hence, new studies about beneficial partnerships are required as well. In conclusion, a further gap is identified when focusing on a more practical inclusion of social sustainability into humanitarian operations; therefore, the author aims to fill such gap by analyzing more in detail the logistical aspect of humanitarian cooperation networks to improve the efficiency and effectiveness of aid provision operations to persons in need, ensuring therefore social sustainability (Marcinkowski, 2022).

1.3 Problem statement

This work aims to investigate how humanitarian organizations, collaborating from a SC's perspective with other humanitarians and private actors, can improve the effectiveness and efficiency of humanitarian operations in the current Ukrainian humanitarian crisis. This results in the following problem statement:

How does humanitarian organizations' collaboration in supply chain management with other humanitarians and private sector affect humanitarian operations' effectiveness and efficiency in the current Ukrainian humanitarian crisis?

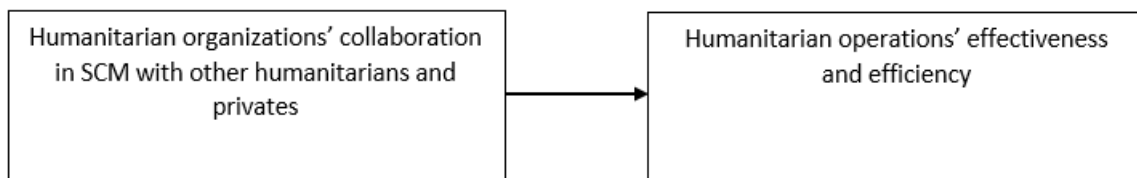


Figure 1-Conceptual model

1.4 Research questions

To research the main problem statement, the following theoretical and empirical research questions will be addressed:

THEORETICAL:

RQ1: What are the key dimensions of effective and efficient humanitarian operations in terms of benefits on the affected population?

RQ2: What are the key dimensions and considerations on collaboration in SCM with other humanitarians and private companies?

RQ3: What is the relationship between collaboration in SCM with other humanitarians and private companies and humanitarian operations' effectiveness and efficiency?

EMPIRICAL:

RQ4: What are the key dimensions of effective and efficient humanitarian operations in terms of benefits on the affected population in the case of Ukraine and what is the role of collaboration in SCM with other humanitarian and private actors?

RQ5: What are the key considerations on collaboration in SCM with other humanitarians and private companies when it comes to the two distinct phases of humanitarian operations - preparedness and response - to provide effective and efficient humanitarian operations in the case of Ukraine?

RQ6: Which are the main challenges and opportunities of collaboration in SCM with other humanitarians in the case of Ukraine to provide effective and efficient humanitarian operations?

RQ7: Which are the main challenges and opportunities of collaboration in SCM with private companies in the case of Ukraine to provide effective and efficient humanitarian operations?

1.5 Thesis structure

The Literature Review chapter will address the theoretical questions (1,2 and 3). Furthermore, once that the research method is discussed in a dedicated Methodology section, main results will be presented to address the empirical research questions (4,5,6 and 7) in the Findings chapter. Then, a Discussions section will provide differences and commonalities with existing literature to present theoretical and managerial implications of the research at hand. Finally, limitations and future research directions, as well as a comprehensive closure will be reported in the Conclusions chapter.

2. Literature Review

2.1 Collaboration in supply chain management

Collaboration is a very broad concept and, when considered from a supply chain management perspective, it might need even further clarifications (Barratt,2004). There exist two types of collaboration in the supply chain: intra-organizational collaboration and inter-organizational collaboration. The latter describes the relational process occurring between two or more organizations, such as supplier and buyer in a supply chain, engaging together to deal with their interdependences and aiming, for example, to joint product design, monitoring and performance evaluation (Schruijer,2020). Indeed, it's possible to describe a supply chain as "as a network of relationships/connections between partners such as suppliers and customers" (Themistocleous et al.,2004).

Even though it is proved that it might be difficult to implement supply chain collaboration due to several reasons, such as challenges in coordination (Sabath & Fontanella,2002), today's complex business environment requires organizations to be resilient. From this perspective, literature suggests that specific activities derived from collaboration - information-sharing, joint relationship efforts, collaborative communication- are fundamental to increase supply chain's resilience thanks to improved velocity and flexibility (Scholten & Schilder,2015). Finally, since sustainability is a core element for any organization nowadays, it's important to underline that such commitment requires higher level of inter-organizational collaboration capabilities which, indeed, enables organizations to reach higher level of sustainability performance (Luzzini et al.,2015).

2.2 Humanitarian organizations and operations

Although academics concluded that humanitarian operations represent a promising new field of study (Besiou & Van Wassenhove,2020), many previous works can help to analyze the role of humanitarian organizations and the relevance of SCM's practices in such filed.

Such organizations can be divided depending on two main attributes: mandate and type of organization. The former refers to the set of policies and procedures in light of the organization's own rules and norms, to specify and pursue its goal. Thus, the mandate shows the activities and context in which the organization operates, the standards used and the key stakeholders that benefits form its work. On the other hand, humanitarian organizations can be classified as "multi-lateral" that, unlike the "non-governmental", are governed by representatives of governments such as United Nations

agencies. From this perspective, to clearly understand the full context at hand, it is fundamental to categorize the different scenarios in which humanitarian organizations might operate. As such, a “disaster” indicates a physical disruption affecting a whole system, threatening its main goals and priorities (Van Wassenhove,2006). *Figure 2* shows the different types of disasters.

	Natural	Man-made
Sudden-onset	Earthquake Hurricane Tornadoes	Terrorist Attack Coup d'Etat Chemical leak
Slow-onset	Famine Drought Poverty	Political Crisis Refugee Crisis

Figure 2-Disasters classification. Van Wassenhove,2006

Moreover, according to the Directorate-General for European Civil Protection and Humanitarian Aid Operations, humanitarian organizations can be classified as humanitarian non-governmental organizations (NGOs), international organizations (including United Nations agencies), as well as specialized agencies from Member States (DG ECHO, 2023). For this research, supply chain experts from each of such categories will be interviewed.

Furthermore, the term “humanitarian space”, refers to a theoretical structure delineating the borders of humanitarian operations: humanity, neutrality, and impartiality (Tomasini & Van Wassenhove,2004).

Still, according to the same authors, a humanitarian operation is considered successful and therefore effective and efficient, if: “mitigates the urgent needs of a population with a sustainable reduction of their vulnerability in the shortest amount of time and with the least amount of resources”, indicating the key dimensions in terms of main benefits on the affected population.

2.2.1 Challenges in humanitarian operations

Since the work at hand aims to investigate how collaboration in SCM can help to improve humanitarian operations’ effectiveness and efficiency, the author will discuss the current state of literature about the most relevant challenges faced during a humanitarian operation. This will help to better identify the starting point of this investigation and, more in general, the main difficulties that characterize this specific type of operations. In the following review sections, the researcher will first

discuss the overall main challenges in humanitarian operations, and then pursuing with those affecting the supply chain and logistics side of such interventions.

2.2.1.1 Challenges in humanitarian operations

Once again, Van Wassenhove's (2006) work will be extremely useful for the first task. Indeed, it's possible to summarize and discuss some of the most relevant challenges commonly faced during interventions:

- Safety issues: field of intervention might be threatened by a war, new natural disasters, criminality.
- Time pressure: according to Tomasini & Van Wassenhove's (2004) definition of operations' effectiveness: "operations are successful if mitigate an immediate need of a population in the shortest amount of time".
- Many actors involved: governments, media, military, other humanitarians, privates, donors.
- Limited resources: once again, Tomasini & Van Wassenhove's (2004) definition will help the reader to understand: "operations are successful if mitigate an immediate need of a population [...] with as few resources as possible".
- Ambiguous objectives: especially due to lack of accurate information.
- Incentive misalignment: between all stakeholders involved.
- Human factor: humanitarian operations aim for human beings' life relief.

2.2.1.2 Challenges in humanitarian operations from a supply chain management perspective

From a supply chain's perspective, literature will be highly worthwhile to discuss the main difficulties as well. Negi's (2022) deep literature review analysis indicates a wide range of challenges to humanitarian logistics in disaster relief operations. For the scope of the investigation at hand, some of them will be highlighted:

- Lack of preparedness: organizations cannot follow established norms and move efficiently to the succeeding steps of resource mobilization without proper initial preparation.
- Procurement: managing procurement practices developed in advance and delays in procurement.
- Transportation: unavailability and congestion of critical infrastructures such as roads and airports.
- Lead time: time restrictions for flows of goods, medicines, materials.

- Technology SC systems: software for tracking and tracing are often limited.
- Lack of supply chain logistics experts: shortage of skilled logisticians.
- Forecasting: forecasts are difficult to be accurately made since they mainly depend on field actual reports.
- High volumes of flows: relief operations often require a high amount and large size of commodities.
- Scarce assessments and planning: logistical constraints.
- Security issues: potential damages to commodities along the supply chain.
- Stock asset management: use of existing local logistical infrastructures and positioning of stock in advance can be difficult to manage.
- Human resources: level, quality and training of staff.
- Critical infrastructures degradation: in the “final mile” it often happens that communication and transportation critical infrastructures may deteriorate. Thus, coordination between stakeholders involved would be at risk.
- Limited collaboration and coordination: hard to manage *ad hoc* collaboration due to urgent needs.
- Donations: ensuring funding availability.
- Socio-cultural barriers: between organizations and donors on one hand, and between organizations and beneficiaries on the other hand.

Appendix 1 shows further challenges affecting SCM in humanitarian operations. In summary, lack of information sharing, poor planning for humanitarian logistics, lack of enough supplies for relief efforts can be considered as some of the most significant difficulties faced in disasters’ supply chains. Specifically, poor assessment and planning, limited coordination and collaboration both in the preparedness and response phase, financial resources, transportation, procurement, and inadequate communication are key common challenges. It’s crucial to note that in humanitarian operations’ SCM, a very critical factor remains the lack of coordination among stakeholders involved, both from governmental and non-governmental sector (Negi & Negi,2021).

At this point, it is quite evident why supply chain best practices might heavily help to mitigate such challenges, leading to more effective and efficient operations. From the researcher’s perspective, it assumes even more relevance when such performance is translated into effective and efficient human beings’ relief.

2.3 Humanitarian logistics and supply chain management

The SC network that will be taken into consideration relies not only on material flows, but also information and financial flows (Kleindorfer & Van Wassenhove,2004). Humanitarian operations' nature requires such organizations to respond to multiple interventions which, very often, are on a global scale. Therefore, supply chains need to be “multiple, global, dynamic and temporary” (Van Wassenhove,2006). Such operations are considered very complex since, unlike logistics in private sector, humanitarians always have to cope with the unknown due to the difficulties in determining the when, where, what, how much and how many times. Indeed, in humanitarian supply chains, numerous parties with various and different goals are usually involved, which engage with one another and share information and resources. Furthermore, complexity comes from limited time and money resources as well, representing another factor to cope with (Besiou & Van Wassenhove,2021). Below, a typical representation of humanitarian supply chain design.

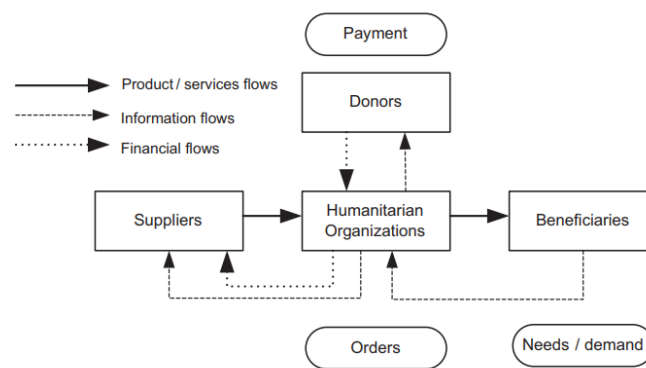


Figure 3-Humanitarian supply chain. Besiou & Van Wassenhove,2021

Here, humanitarians act as intermediaries, connecting donor funding, supply, and beneficiaries.

Finally, several studies insist on a specific framework that characterize humanitarian operations. Such structure refers to four clear phases within HO's disaster management: mitigation, preparedness, response, and reconstruction. In this thesis, the author will focus on preparedness and response phases, which rely on supply chain management.

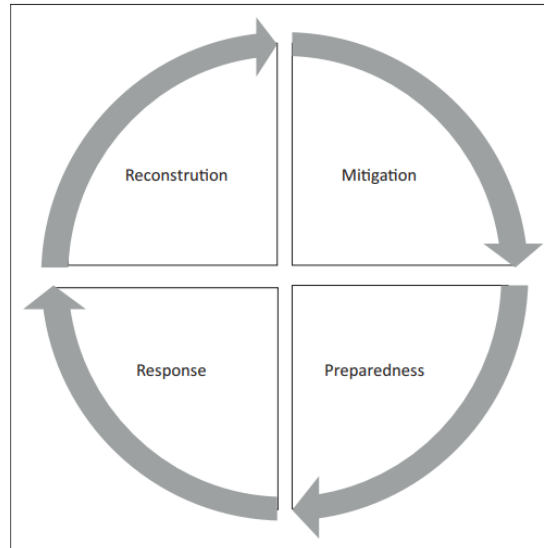


Figure 4-Stages in humanitarian logistics supply chain. VanWassenhove, L.,2006

Mitigation phase refers to minimizing the effects of disasters and occurs in anticipation of such events. It aims to eliminate or reduce the probability of disaster occurrence (ex: vulnerability analysis) and entails all the possible actions required to prevent a natural disaster and lessen the resulting losses and damages (Warfield,2008). However, even if it refers to the policies and procedures that lessen social vulnerability, such stage does not require logistician's involvement directly (Holguin-Veras et al.,2012).

Preparedness phase relies on planning how to respond and activities that occur before the onset of a disaster (Warfield 2008), such as ensuring that supplies are pre-positioned in warehouses as close as possible to disaster's areas (L N Van Wassenhove,2006). This stage is fundamental since it encompasses all the strategies to ensure a successful response. Also, preparedness is critical to success since it's here that organizations develop the collaboration base, information and communications technology (ICT) systems and network designs (Negi,2022). According to Kunz, Reiner & Gold (2014), HOs recognize their capacities and identify key partners such as strategic suppliers. Preparedness phase can further be divided in five key elements according to Van Wassenhove (2006):

- Human resources: selection and training of people, capable of planning, coordinating and acting when required.
- Knowledge management: need to learn from previous disasters management.

- Process management: understanding logistics as key driver for effective preparedness and particularly, from a supply chain management perspective, establishing alternate sources of supply and means of transportation.
- Financial resources: effective funding and financial resources management to be prepared.
- Community: look for efficient ways to work with other important stakeholders like local governments, military, businesses, and other humanitarian organizations.

Response phase refers to those activities applied immediately after the disaster occurs, that is promptly executed post-disaster (S. Negi & G. Negi,2021). At this point, coordination between relief actors is considered essential as well (Ozen & Krishnamurthy,2018). Indeed, intervention activities include the mobilization and coordination of resources, services and responders in the area affected by the disaster, which require supply chain agility and resilience (Altay et al.,2018).

Reconstruction phase refers to activities that occur aftermath of the calamity due to the damages registered, such as impairments of infrastructures and communities (L N Van Wassenhove,2006). It involves rehabilitation, focusing on long-term solutions (Negi,2022).

Therefore, for emergency SCM and disasters logistics, preparedness, and response phases are essential (Ben-Tal et al., 2011). Collaboration in SCM assume even more importance in preparedness and response stages. Indeed, preparedness concerns coordination and partnerships, stocks and logistics information systems; while response phase is considered the most crucial since it relies on on-time deliveries of requirements from people in need (Anjomshoae et al.,2022). From this perspective, the author will focus on such two phases.

None of these organizations would be able to overcome the difficulties of each of these two phases on its own. Humanitarian agencies, for instance, should benefit not only from cooperating with local and foreign NGOs but also with business sector, since the latter would make available pool of logistics professional and resources on needed and urgent basis (Negi,2022). Still to be investigated and better analyzed is when such collaboration should occur along these stages of humanitarian operations and with what kind of actor. Here, Gustavsson (2002) suggests that both before and after the disaster onset, business sector logistics professionals could work with locally based NGOs.

2.3.1 Collaboration in humanitarian aid logistics

Humanitarian logistics' actors contribute to humanitarian logistics processes, which aim to avoid people suffering. As such, *Figure 5* derived from Kovacs & Spens' work (2007) offers a clear

visualization. The research at hand will focus on collaboration of humanitarian organizations with other humanitarians and business sector.

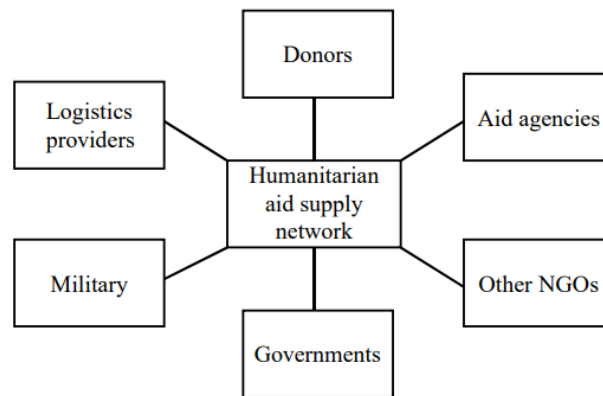


Figure 5-Actors in the supply network of humanitarian aid. Kovacs & Spens,2007

The role of each of these players might be fundamental and the success of humanitarian operation can be determined by the coordination between them (S. Negi & G. Negi,2021). Due to the urgency that characterizes humanitarian crisis and complexity as consequence of limited resources available, actors in humanitarian supply chains should cooperate and establish mutual confidence so to achieve shared objectives. Hence trust, commitment and goal alignment turn out to be fundamental (Dubey et al.,2019).

Therefore, interorganizational collaboration plays a key role in humanitarian aid logistics, adapting the overall disaster management activities to improve the mobilizations of resources such as relief goods, knowledge and information sharing. In this way, HOs would especially be able to avoid resource redundancy (Prakash et al.,2022).

While collaboration between humanitarian organizations might seem easier to implement due to similar nature and goal alignment, partnerships with private sector can lead to several challenges, but also opportunities. Below, the author briefly discusses the main factors characterizing collaboration between humanitarians first, then those regarding partnerships with privates. To do so, it's crucial to also understand the main differences between them.

Regarding coordination among HOs, although aligned by similar goals, each of them might have its specific agendas and/or different mandate, which can lead to even more complexity as well; hence, coordination might be challenging. United Nations, for instance, began installing digital clusters in 2005 to facilitate coordination between humanitarian activities in terms of information and resources sharing. However, coordination failures are still present due to, for example, ambiguity in clearly

defining the role of participants (Ruesch et al.,2022). Finally, since collaboration needs to be *ad hoc* for the operations at hand and requires immediate needs, HOs struggle to find an equilibrium between their internal needs in terms of requirements and the willingness to collaborate with others (S. Negi & G. Negi,2021).

On the other hand, differently from private sector, just a decade ago humanitarian organizations started to become more aware of the fact that logistics and SCM represent a key for successful operations. Also, even if privates might be considered very expensive to partner with, they can lead to effective source of shared data (Van Wassenhove,2006). HOs often have to manage several stakeholders involved, among which also media. Also, HOs' environment is likely to be politically volatile which might lead over time to different relationships with local suppliers (Richardson,1994), very uncertain, and strongly affected by time pressure. Moreover, while private companies have incentives from the bottom line such as customers, the nonprofit sector functions independently of market influences, therefore they don't seek to make profits; instead, they aim to improve the beneficiaries' living conditions and general welfare (Fard & Papier,2023). Their extremely different natures appear to be a major obstacle for collaboration between them. However, it should be noted that sustainable practices can have a positive effect on business performance (Vishkaei et al.,2023).

Nevertheless, HOs-private relationship might also lead to relevant cross learning opportunities and benefits. On the one hand, even if there is still general consensus that aid sector is "old-fashioned", lacking investments in technology and operational knowledge (Kovacs & Spens,2007), privates can make use of many insights from humanitarians to improve their performance, such as: agility, adaptability (alliance and partnerships), alignment (dynamic roles and resources sharing), vulnerability assessment, preparedness and response practices (Van Wassenhove,2006). On the other hand, HOs can make use of many tools and concepts used by commercial companies and exploit private sector's supply chain capabilities of responsiveness and resources. However, such tools are not always suitable for humanitarians' supply chains; also, a wider use of private principle is nowadays still far from reality, due to general lack of collaboration between such two different types of organizations.

To recap, existing literature indicates that although collaboration in SCM with both other humanitarians and business is anything but easy to implement mainly due to coordination difficulties and different mandate or nature, a collaborative approach can be crucial to provide and effective and efficient aid relief especially when it comes to complex emergencies.

3. Methodology

3.1 Research setting

The research is conducted at five different humanitarian organizations: World Food Programme, specialized in food assistance and world's biggest humanitarian organization (international UN agency-Italy); International Organization for Migration, service and advice provider for migrants and refugees (international UN agency-Switzerland); Italian Civil Protection, Italian Government's Department for the coordination of emergencies' management activities (specialized agency from Member States-Italy); Médecins Sans Frontières, focused on health relief and assistance (NGO-Italy); Save The Children, founded to improve lives of children worldwide (NGO-Italy). The focus will be on the current Ukrainian scenario, that is all the activities supporting the regions affected by the humanitarian crisis caused by the Russian-Ukrainian man-made conflict started on February 2022. Each of these organization is currently operating in Ukraine -or bordering areas- and holds a supply chain and operations office/division, that is the object of the investigation. The Ukrainian scenario shows serious humanitarian challenges and, ensuring the access of HOs in such conflict zone, is vital. Each of the selected organization aims to alleviate people suffering not only of the population inside the country but also refugees out of the borders, by supplying different kinds of goods, items, and relief services, depending on their own mandate.

3.2 Research design

A theory-supported inductive research is conducted to address the research questions. Such approach allows the researcher to end up, after a data collection, exploration of phenomena of interest and patterns identification, with a theory generation (Saunders et al.,2016) (Ketokivi & Choi,2014). It leads to generalization, from specific to general, that is for the case at hand from selected organizations and a defined scenario to a wider extension of the researched topic. This design is also supported by the fact that supply chain research often involves phenomena with complex behavioral dimensions, which requires an inductive approach (Randall & Mello,2012). The exploratory nature of the research will provide insights into the "how" collaboration in SCM can improve humanitarian operations' effectiveness and efficiency (Saunders, Lewis, & Thornhill,2016). The choice of a qualitative/inductive research is also supported by the strong need in humanitarian operations research to engage in somehow tedious but impactful research that closely matches practitioner needs (Besiou & Van Wassenhove,2020). The unit of analysis is at firm/organization's level, being the single instance of the phenomenon that is researched represented by the inter-organizational

collaboration in humanitarian operations. The time horizon will be cross-sectional, a combination of both real-time and retrospective data collection.

This research will require a multiple-case study method to facilitate generalization. Qualitative case studies can be defined as empirical research that, to investigate a focused phenomenon, uses contextually data from bounded real-world settings; also, case studies aiming for theory-generation are largely more used than theory-testing case studies (Barratt et al.,2011). In detail, multiple case studies method allows the researcher to find patterns, commonalities, and differences both within and between cases, which are fundamental to address the RQs (Baxter & Jack,2015). Since the main expected objective is to replicate findings across cases considered, it's also important to carefully chose such cases so that it's possible to predict similar results; Therefore, generalizability will benefit from such method.

3.3 Data collection

3.3.1 Primary data collection - Interviews

Primary data were collected for the specific problem at hand (Hox & Boeije,2004). Interviews are suitable with this research; indeed, they are often used to collect facts and gain insights into experiences, opinions, behaviors, and predictions (Rowley,2012). Interviews were conducted semi-structured, so to be able to deepen insights about propositions and opportunities; such data collection method is both versatile and flexible, since it allows the researcher to improvise follow-up questions based on respondents' answers (Kallio et al.,2016). This resulted particularly useful for the author to gather also quantitative data; as a matter of fact, although semi-structured interviews represent a mean to collect qualitative data, it is also possible to gather quantitative data. When discussing about main challenges and opportunities, the interviewer had the opportunity to ask for a score on a scale from 1 to 5 in terms of importance based on interviewee's experience and opinion, which can improve the rigor of qualitative research helping the author to better contextualize qualitative findings (Frels & Onwuegbuzie,2013). Interviews allowed to gather in-depth information and insights about the role of collaboration in SCM for more effective and efficient operations.

For this research, a total of 10 interviews have been conducted among five different humanitarian organizations. The decision regarding the number of interviews for each organization was based on the level of saturation reached after each interview. Respondents have been selected as humanitarian supply chain and/or operations assigned, with experience in the Ukrainian scenario. Each interview

has been conducted online on Microsoft Teams platform, recorded upon permission of respondents to ensure proper data documentation, and lasted about 45 minutes; anonymity was ensured. Also, after the transcription in the language of the interview, the author translated them from Italian into English when needed. *Appendix 2* and *Figure 6* show an overview of respondents, selected with purposive sampling to get the highest possible level of contribution regarding the investigated topic.

Respondent	Organization	Position
A	Save the Children (Italy)	International Humanitarian Manager
B	Save the Children (Italy)	Operations and Safety and Security Lead
C	World Food Programme (WFP)	Deputy Chief Aviation Services, Supply Chain
D	World Food Programme (WFP)	Emergency Response Unit Aviation Service, Supply Chain
E	World Food Programme (WFP)	Chief, Logistics Service
F	International Organization for Migration (IOM)	Senior Procurement Officer – Supply Chain team
G	International Organization for Migration (IOM)	Senior Shelter and Settlements Officer at Department of Operations and Emergencies
H	Italian Civil Protection	Coordinator of the International Relations and Activities Service
I	Italian Civil Protection	Emergency Resource Management Service
L	Médecins sans frontières (MSF)	Supply & Logistics Country Support

Figure 6-Overview of respondents

Follow-up and clarifications questions made by the researcher helped to reduce bias with respect to respondents. Finally, the list of questions shown in *Appendix 3*, was decided with the support of literature; both theoretical and empirical insights were asked to be able to answer research questions which serve as the necessary foundation for the development of knowledge in academic study (Thuan et al.,2019). The list was sent to each respondent weeks in advance so that they could be prepared and had the opportunity to ask for eventual clarifications needed before the official interview day. To further avoid bias, the researcher scheduled a discussion with respondents about the selected topic and questions list beforehand and provided standard answer examples derived from existing literature.

3.3.2 Secondary data collection – Reports

Secondary data were collected by someone that is not the researcher and are not necessarily designed or gathered to answer specific research questions (Johnston,2017). Offering an alternative perspective, such data contribute giving reliability to the systemic analysis. Reports represent already

“processed data” and the author made use of those from selected organization to compare and enrich data collected by interviews.

3.4 Data analysis

To transform data into information and then interpret them to draw a conclusion in qualitative data analysis, this research will follow three steps: data condensation (coding), data display, and drawing and verifying conclusions (Miles et al.,2014). This approach is widely used in multiple case study research.

The first step involves a thematic analysis method which allowed the researcher to develop, analyze and interpret patterns with the data collected. Such method required a systematic process of data coding to label with a code the identified segments of meaning in data based on the questions list (Linneberg & Korsgaard,2019). The author used a combined approach for coding, that is both deductive (theory-driven) and inductive (data-driven); this allowed respectively to first use the theoretical framework supported by theory and the structure of interviews to find main themes, and then to look at data if important codes were missing (Fereday & Muir-Cochrane,2006). For this research, the author defined 6 main themes based of theoretical framework: effects and benefits of efficient humanitarian operations on affected population through collaboration in SC, phase identification referring to the theory-based stages of humanitarian operations framework (preparedness and response phases), main challenges and opportunities in collaborating with other humanitarians, main challenges and opportunities in collaborating with private sector. Moreover, a total of 13 codes were finally identified, among which also data-drive ones, to cover those important aspects that were missed by only using the theory-driven approach. *Appendix 4* shows such main themes and codes, and an example of coded transcription.

The second step regarding data display (*Appendix 5*) helped to analytically reflect on organized and condensed data displayed in a compact visual manner (Miles et al.,2014). Finally, the last step allowed to triangulate results not only within the same organization but especially between them, to find patterns, commonalities and draw conclusion (Miles et al.,2014).

3.5 Reliability

To guarantee rigor, reliability is considered a fundamental element of qualitative research and therefore below is discussed how the author ensured reproducibility and consistency (Lacey & Luff,2007). Both the use of triangulation and avoiding bias can help to improve reliability (Saunders

et al.,2016). The author aimed to reduce participants bias by using not only multiple respondents for each organization with the same role, but also multiple humanitarian organizations involved in the Ukrainian scenario. The selection of organizations with different nature has been made to enrich the discussion. Moreover, to reduce observer bias, the author engaged in reflected to build self-awareness regarding its own potential influence while collecting and analyzing data (Lietz & Zayas,2010). To further enhance reliability, the researcher tried to avoid errors due to potential deviation from the written predefined instructions and order of questions, interrogation error coming from formulating differently the questions to respondents, interpretation and recording error (Mathers et al.,1998); the latter was circumvented by recording interviews on two devices, taking notes of main insights and verifying the personal interpretation during the interviews. To assure lack of bias, the list of questions was discussed with the respondents weeks before the official interviews. The use of existing theory was critical to further increase reliability by comparing results and patterns coming from data analysis process (DeCuir-Gunby et al.,2011). Consistency was finally guaranteed using multiple data sources, that is primary and secondary data collection, where the latter came from official reports.

3.6 Validity

Construct validity relies on operationalization of the relevant topic, that is the extend to which the researcher will actually investigate the claimed concept at hand with observations that accurately reflect reality (Crozier et al.,1994). To do so, the author aimed to build a clear chain of evidence making use of triangulation.

Internal validity is ensured by plausible causal argumentation. Hence, after formulating a research framework, pattern matching was conducted with respect to not only author's expected findings, but especially to prior theory and reports. Also, triangularization was supported by the choice of a multiple case study (Gibbert et al.,2008). Moreover, credible and suitable key respondents were identified as assigned to supply chain logistics and operations office with personal experience in the Ukrainian scenario.

External validity is reached thanks to the multiple case study design that allowed to replicate the results among five different organizations involved in the same case setting (Gibbert et al.,2008). So, the author aimed to make findings valid also beyond the selected sample. Therefore, patterns and commonalities among different HOs help to generalize also for setting different from those that have been considered. Eisenhardt (1989), indeed, suggested a cross-case analysis with four to ten case studies to reach a good generalization. Rationality used for both the choice of Ukrainian scenario and selection of HOs should be finally highlighted; Ukrainian humanitarian crisis can be categorized as

man-made slow-onset disaster. Due to its current events and large impact worldwide, it represents a good base for generalization not only for other disasters characterized by the same nature but, potentially, for other types as well. Also, all selected organizations carry out large-scale and global humanitarian operations, although of different nature and mandate which enriched discussion, and are involved in the Ukrainian operations. For instance, since one of the main goals was to investigate the different benefits on population of effective and efficient humanitarian operations, this approach offered a holistic perspective on the role of collaboration in SCM of humanitarian organizations.

4. Findings

In this chapter the author will report the main findings derived from an interpretation of patterns and contradictions identified. Specifically, it'll be explained which are the main needs of the affected populations during the humanitarian operations in Ukraine and how a collaboration approach allows to achieve them. Then, it will be discussed in which of the two humanitarian operations' considered phases – whether preparedness and response – collaboration with both other humanitarians and privates should occur. Finally, the last two questions will be addressed providing the main challenges and opportunities in SCM, respectively in collaborating with other humanitarians and private actors and highlighting the influence of Ukraine's context specific nature when needed.

4.1 Answer to empirical RQ4

At this point it should be clear that an effective humanitarian response can be translated into being able to address population's needs. As such, Respondent A stated that every postponed agreement with partners: “result in a delay in the initiation of response. What does this entail in our case? People dying and people suffering. Our mandate is “save lives and reduce suffering”” (International Humanitarian Manager, Respondent A). Similarly, Respondent B underlined that working with both humanitarian and private actors, especially in terms of supply chain, allows them to achieve their goals, further confirmed by Responded E when stating:“the main ultimate goal is helping the population in crisis and struggle [...] response will be incomplete if it's just one sector or aspect covered” (Chief-Logistics Service, Respondent E).

In the following subsections, the main benefits in terms of specific addressed needs in the Ukrainian scenario, divided by their own nature, are shown.

4.1.1 Social sustainability

- Good health and well-being (SDG n.3): data display clearly shows a pattern among almost all the respondents. Particularly, Save the Children, IOM, Italian Civil Protection and MSF are working on ensuring healthy lives and promoting well-being. According to Respondent A, this can be addressed by not only ensuring access to health and nutrition, but also supporting communities, with a focus on children, through the provisions of in-kind goods, such as hygiene-kits and resources to cope with temperatures which dropped below freezing (Save

the Children,2023). Similarly, Respondents F and G from IOM highlighted the provision of tents, blankets, hygienic-kits, shelters, and other commodities, reaching more the one million of individuals with non-food items and 1,960,246 with shelters (IOM,2023). MSF focused especially on medical provisions.

- Quality education (SDG n.4): Save the Children’s respondents explained how they contributed to ensure children’s safe access to quality learning opportunities despite the conflict. Through the education cluster, specifically, they could cooperate with other actors to provide access to digital learning platforms across Ukraine, Poland, and Romania (Save the Children,2023). Hence: “it’s easy to think about the SC consequences in collaboration” (International Humanitarian Manager, Respondent A).
- Zero hunger (SDG n.2): Save the Children and in particular WFP showed a focus on ending hunger and improving nutrition. Respondent C and D specified how, through the provision of in-kind and food packages, it’s possible to meet such need. In Ukraine, WFP supports 3 million individuals every month with a flexible mix of food and cash assistance (WFP,2023). Such interventions are supported by both privates and other humanitarian agencies (Bryant,WFP,2023).
- Clean water and sanitation (SDG n.6): IOM highlighted their commitment to ensure the availability of clean water and sanitation for all by providing “camp management for dealing with the displaced population with wash water and sanitation team” (Senior Shelter and Settlements Officer, Respondent G) (IOM,2023).
- Peace, justice and strong institutions (SDG n.16): Respondent H and I from Italian Civil Protection offered insights regarding their role in promoting peaceful and inclusive societies for sustainable development, through protection for human societies.
- Gender equality (SDG n.5), Decent work (SDG n.8) and Reduced inequalities (SDG n.10): MSF’s respondent explained that also efforts to achieve equality of gender as well as an inclusive employment are part of their operations (Supply&Logistics Country Support, Respondent L). Furthermore, IOM launched the “Consciously Made in Ukraine” project to promote, through public-private partnerships in Ukraine, respect for human rights, abolition of exploitation of workers, and supply chain transparency (IOM,2020).
- No poverty (SDG n.1): Save the Children’s respondent underlined such child-focus aspect, which: “can foster their development and dignity” (Operations and Safety and Security Lead, Respondent B).

Interestingly, two indirect positive impacts on social sustainability were found through collaboration with other actors. Firstly, Respondent A stated that working with other humanitarians allows to “be heard with one single voice”; Although Ukraine scenario didn’t show such need, certain countries still show limitations and restrictions for human-rights. Therefore, such alliance can be potentially critical to communicate as a whole with local entities or authorities to reverse course. Secondly, when it comes to privates, Respondent F indicated the positive role of humanitarian actors through supplier development on factors such as human-right, fair labor and payments.

4.1.2 Environmental sustainability

- Responsible consumption and production (SDG n.12): Both respondents from IOM showed a clear contribution to ensuring sustainable products standards and sustainable production patterns, such as packaging’ materials specifications (F). Since in response phase it might not be the priority, it’s important to exploit such humanitarian-supplier relationship in the preparedness phase. The project “Consciously Made in Ukraine” launched by IOM for Ukraine, particularly aims to reach environmental safety and protection on responsible production and consumption, contributing to reinforcement of public-private partnerships (IOM,2020). Finally, Respondent L underlined not only the efforts to build a “medical train” (MSF,2022) and a “level three lab” on the field to reduce huge shipments’ footprint, but also the importance of an efficient cooperation among humanitarian organizations, especially with those already present in Ukraine. Such factor is critical to avoid overflowing and duplications of unneeded materials that would have a negative environmental impact.
- Affordable and clean energy (SDG n.7): Interviewees from MSF and IOM showed commitments to make use of affordable and sustainable energy. For instance, Respondents F and G underlined joint tenders with other humanitarians to buy and distribute solar lamps.

4.1.3 Economic sustainability

- Economic growth (SDG n.8): Each organization showed commitment to foster local economy during humanitarian operations in Ukraine. Particularly, Respondent C,D and E clearly indicated a mix of food and cash assistance as primary tool to support local companies, working with financial service providers to channel cash distribution (C); this also entails working with local partners for food distribution and cash transfers to access local markets. The last report indicates that a total of 74,212 mt of food and USD 171,738,429 of cash has

been delivered (WFP,2023). Interestingly, Respondent A further explained that, sometimes, cash-donations from private partners might be preferred so to buy goods from local suppliers and fostering economy. Similarly, Respondent I highlighted the importance of purchasing from local companies:”to get the local economy going again, I need to find a local distributor that I can rely on” (Emergency Resource Management, Respondent I).

4.1.4 The role supply chain collaboration to achieve goals

Data collected indicate a clear pattern about the critical role played by collaboration to make humanitarian operations more efficient and effective and, therefore, to address main goals. From this perspective, WFP’s insights show that: “due to limited presence, different risk appetites of different stakeholders, through the collaboration, you achieve the effective implementation of your program” (Emergency Response Unit Aviation Service-Supply Chain, Respondent D). Also, Respondent H stated: “collaboration is critical in all phases of supply chain [...] working together it is possible to better respond to needs and in a more efficient way” (Coordinator of the International Relations, Respondent H). Furthermore, the SDG n.17 - Partnerships for the goals - was mentioned by Respondent C,E,H and L as the main approach to strengthen the means of implementation for sustainable development in humanitarian operations. Hence, clusters’ utilization was highlighted by all organizations as main tool for coordination among humanitarian organizations, especially from a SC perspective, to improve humanitarian aid effect. Strengthening system-wide readiness and technical capability to respond to humanitarian situations is the goal of the cluster approach (OCHA,2020). Interestingly, different clusters for each main sector of humanitarian operations do exist: logistics cluster (Respondent C,D,E,F,G,H), education cluster (A,B), Telecommunications cluster (C), water, sanitation and hygiene cluster (B,F), shelter cluster (B,F,G). Particularly, clusters provide a centralized platform for agreement regarding the approaches and elimination of duplication; this is done through planning, information-sharing, coordination of needs assessment and resource sharing. Respondent C confirmed that each goal is picked up by different organizations having an own sector of intervention as criteria of their planning of work. Such tool can even be more fundamental when collaborating with humanitarian actors already present on the field; indeed, it’s critical for the SC because not only leads to a more efficient response thanks to information-sharing and a greater knowledge of the local territory and network (Respondent I), but also allows to avoid overflowing of materials and duplications, which would also have a negative impact on the environment. Hence, Respondent L stated: “the biggest mistake in Ukraine was that no one consulted other organizations [...] MSF was present in Ukraine since a long time and we already knew the

difficulties, territory [...] there was a huge rush [...] caused overflowing of too many unnecessary materials” (Supply&Logistics Country Support, Respondent L).

For what concerns collaboration with private actors, it emerged that same results can be derived as well. Although such benefits will be discussed more in-depth in the following sections, data collected show a clear pattern on the key role of such type of collaboration on ensuring: fundings availability through donations upstream, agility and flexibility guaranteed by privates’ supply chain capabilities, resources quality and availability, assets rentals such as warehouses, expertise and technologies sharing. Tim Hunter, WFP Director of Private Sector Partnerships, stated: “our partners are helping WFP build resilience and end hunger”. Once again, it came out that agreements with local privates can play a vital role; one of the main deriving benefits, according to Respondent A, is the possibility to even access certain restricted and limited areas that would be unreachable otherwise, being a conflict zone or due to military presence.

4.1.5 Final considerations

It can be stated that collaborating with both humanitarians and privates allows to better achieve each organization’s own goals. Also, from data collected, it’s clear how each humanitarian agency might have different goals and priorities with respects to the others. From this perspective, Respondent E spotlighted that providing multisectoral items it’s possible to: “not only provide a more comprehensive package and support to the population, but also allow a more efficient and effective response of the whole humanitarian community” (Chief-Logistics Service, Respondent E). Similarly, Respondent B explains that the multi-agency clusters approach improves humanitarian aid effects, since: “each organization tries to cover the shortcomings of the others in terms of resources and then hopes that the others will cover theirs” (Operations and Safety, Respondent B). Therefore, it can be stated that, through such collaborative approach, a wider spectrum of different population’s needs can be covered and in a more efficient way. In other words, collaboration allows each organization to better achieve its own goals but also those of others, which might be different, easing more exhaustively population’s needs.

Finally, and even more interestingly looking at the different sustainable development goals addressed, an efficient SC collaboration approach in humanitarian operations offers the potential to cover, not only social sustainability’s aspects, but also environmental and economic ones. It should be noted, however, that social sustainability remains the main priority of humanitarian operations. Hence, Respondent A stated: “this allows also [...] to contribute in a more holistic way because of the

different technical skills of the different actors” (International Humanitarian Manager, Respondent A).

4.2 Answer to empirical RQ5

Data collected did not show a clear pattern or “gold rules” that can be suitable for every humanitarian crisis. This is also clearly confirmed especially by respondents A,B,C and D. For instance, it was indicated that: “there is no clear line [...] it’s very cross-cutting” (Emergency Response Unit Aviation Service-Supply Chain, Respondent D). From this perspective, and further showing the potentiality of collaborating with partners, it has been further stated: “there is no limit to the excellence” (Deputy Chief Aviation Services-Supply Chain, Respondent C). The author will provide the main insights of collaborating with other humanitarian and private actors in both preparedness and response phase, highlighting the main considerations related to the specific Ukrainian emergency nature. Indeed, Respondent B specified that, in humanitarian sector, it’s important to contextualize since context makes the difference. In other words, decisions on whether to collaborate pre or post disaster, might assume more or less relevance when referring to Ukrainian scenario. Despite that, it can be stated that collaborating not only with other humanitarians but also with commercial companies, can and should be done both before the emergency onset and during the response. Further confirming that, Respondent B: “an NGO has to have the flexibility to put private and non-private in each of the phases” (Operations and Safety, Respondent B).

Hence, an important consideration suggests that such agreements in preparedness are considered strategical – such as stock prepositioning for availability of resources - while in response they assume a more operational nature and, here, a huge role is especially played by local actors: agencies already present on the field for what concerns humanitarian organizations and local suppliers and service providers regarding private actors.

4.2.1 Collaboration with other humanitarian organizations in preparedness phase

Humanitarians can make use of “early warning systems” which make use of risk assessments and evidence-based analyses to predict potential conflicts (WFP,2023). Moreover, as underlined by most of respondents, it’s important to highlight again the critical role of Inter-Agency support and coordination through different clusters to cover more sectors (C,D). Such coordination already occurred in preparedness, leads to several key strategic benefits: reduce duplications of efforts, fill potential gaps, clarify responsibilities, roles and procedures (confirmed by Respondent H), guarantee

complementarity, pre-positioning of stocks to be used in emergency response (F), and finally support collaboration and information sharing. Particularly, Respondent F clearly highlighted the crucial role of clusters: “there is a lot done with other humanitarians in preparedness through clusters [...] we prepositioned stocks [...] there is this regular communication, coordination, annual meetings, and doing training for staff” (Senior Procurement Officer–Supply Chain team, F). Respondent G further indicated that it is also important to keep updated such tools even before the crisis. Generally, everyone agreed on the importance of collaboration, especially upstream when you still prepare in case of the emergency (A,C,H). Particularly interesting insights came out from Respondents F and E; the former developed the concept of “piggybacking” which refers to long-term agreements with other agencies to avoid too long procurement or tenders’ procedures in response (IOM,2023). Then, Respondent E from WFP indicated that, in reality, collaboration with other humanitarian organizations occur more in response than preparedness phase, therefore highlighting a large room for improvements. Finally, both respondents from Save the Children explained that such practice assumes even more relevance in cases such as the Ukrainian one; Respondent A underlined that the first lesson learned from Ukraine is that such collaboration should already occur in preparedness phase, especially from a SC perspective, because such conflict was unexpected. Interestingly, Respondent I and L specified that it would particularly be important to communicate with those agencies already on the field before the crisis starts, to gather relevant information and balance resources; Respondent L specifically underlined that the biggest mistake in Ukraine was the lack of coordination, already in pre-phase, with those already present on the territory to know what was actually needed.

4.2.2 Collaboration with other humanitarian organizations in response phase

Preparedness aside, it’s in response that operations occur to address population’s needs. Hence, SCM is put into practice. It’s especially for this reason that, even in such phase, collaboration among peers plays a key role. A general pattern of agreements showed that this does count also for Ukrainian scenario. Also in this case, it came out that those organizations already present on the territory before the emergency can be fundamental for an effective coordination, especially considering the complex nature of Ukrainian emergency’s requirements. This was particularly confirmed by Respondents B,I and L; the latter specifically explained that such actors are crucial to be able to slow down those initial large shipments to be more accurate in terms of what is actually needed by the population, also from a cost-efficiency perspective. To do so the role of clusters, specifically the country-level ones which are activated once the crisis occurs, has been spotlighted one again (G) especially for updated on-field needs assessment (F). This would allow, not only to redefine roles and responsibilities of each

organization (F,E), but also to avoid materials and resources duplications (H). In particular, logistics cluster supports humanitarians providing logistics coordination, information management, and by facilitating access to common logistics services such as inter-agency transportation cargos in response phase (WFP,2023). Other benefits were identified by Respondent D when stating: “we use their capacity [...] their staff to ensure that food has reached the beneficiary in specific areas” (Emergency Response Unit Aviation Service-Supply Chain, Respondent D). Following on this last aspect, also respondents A,B and F underlined that coordination among peers can be beneficial to divide tasks by different areas; in particular, Respondent B developed the concept of “risk-taking” by each organization. Interestingly, due to safety issues - being Ukraine a conflict zone - and limited capacity from a SC perspective, each humanitarian might not be able to distribute in certain areas; thus, to cope with such bottleneck, coordination among peers enables them to divide work into different distribution zones. In conclusion, it is evident how different aspects of the SCM, such as distribution, resource, staff and information sharing, can assume a crucial role also considering the specific Ukrainian scenario’s nature.

4.2.3 Collaboration with private actors in preparedness phase

Although it might be complex, since not always is possible to predict an emergency (L) and costly especially taking into considerations opportunity costs (I), agreements with private companies before an emergency onset might be fundamental for an efficient, effective and especially responsive response. A clear chain of evidence within respondents confirms such aspect. According to Respondent H, interaction with potential suppliers or service providers should be prepared upstream of the emergency; indeed, identifying a list of suppliers potentially available in case of emergency, might be crucial since defining procedures, standards and a common “language” with the private partner might take time. Furthermore, Respondent F offered other interesting insights; first, it can be strategically useful for stocks prepositioning into partners’ warehouses which might be geographically closer to the country at hand facilitating distribution for a quick response (IOM,2022), indeed, IOM is scaling up its global prepositioning to be responsive. Secondly, since they might be ready to invest also without an emergency, the manufacturing process could be easier for them not being under pressure; Thirdly, supplier development to cope with social and environmental standards can be more easily conducted, while during emergency it would not be a priority. Also, another aspect benefiting from such pre-agreements, is a greater availability of resources through long shelf-life products’ suppliers (C). Similarly, Respondent D suggested that “standby agreements” can potentially ensure partners’ capacity for service provision, depending on their presence in the response area.

However, once again, according to respondent E such agreements occur much more in response than in preparedness, showing the need for improvement. Accordingly, Respondent A underlined the logistics advantages guaranteed by flexible and agile partners' supply chain networks, therefore suggesting the importance of not be caught unprepared (Save the Children,2023). Then, Respondent B highlighted that since context makes the difference, an NGO has to have the flexibility to put private in each of the phases, stating: “even before the outbreak of war, I still do my "humanitarian strategy" with "contingency plan" in case there is a humanitarian emergency [...] in my "preparedness plan" I also have to include the possibility of using private individuals [...] I see possibilities that need to be understood accordingly” (Operations and Safety, Respondent B). It should be finally noted that for those organizations present in Ukraine already before the emergency, such as MSF and Save The Children, these agreements can be facilitated; while for actors like Italian Civil Protection, who intervene when called to action by the requesting country or an international institution, it might be more complex.

4.2.4 Collaboration with private actors in response phase

Main aspects of collaborating with privates in response rely on, not only guaranteed expertise, effectiveness and agility coming from privates' supply chain logistics (Respondent A,C,D,E,F,I and L), but also on procurement once specific needs are identified (I and G) and, considering the Ukrainian specific context, the reliability of local suppliers and service providers. Indeed, according to Respondents' C and F experience, Ukraine is a well-developed country with strong manufacturers which foster collaboration. Furthermore, Respondent D added: “in all localized responses we need local service providers [...] they know what they're doing. They operate in their area of knowledge, expertise, comfort [...] when it comes to the supply chain, local food producers who fully comply with the local governmental requirements [...] local warehousing companies who also provide security. [...] These are the key elements for the response stage” (Emergency Response Unit-Supply Chain, Respondent D). They would also allow to reach certain restricted areas due to the conflict (A,B). However, in response, time pressure would not allow to do proper check on the selected partner (H). Furthermore, also international firms can be considered; here, IOM and Airbnb partnership to support and connect people fleeing from Ukraine to free and short-term housing represents a proper example of such collaboration (IOM,2022). Finally, IOM set up logistics hubs at the Ukrainian boarder (Poland and Slovakia) to store nearest suppliers' goods and facilitate access to Ukraine (Respondent F) (IOM,2022).

4.3 Answer to empirical RQ6

In this section, main challenges and opportunities in SC collaboration with other humanitarian organizations involved will be discussed. Interestingly, some aspects that were considered by respondents as both a challenge and an opportunity will be presented as well. Also, key references to, not only specific Ukrainian emergency's nature, but also each considered organization's nature are provided when needed.

4.3.1 Opportunities

- Holistic approach: According to Respondent A,C,E and F collaborating with other humanitarians allow to exploit different expertise and technical skills which are brought into common factor. Particularly, Respondent A stated: “contribute in a more holistic way because of the different technical skills of the different actors” (International Humanitarian Manager, Respondent A). Respondent C and E highlighted the role of different thematic clusters to address different needs, providing a comprehensive and holistic support to population (WFP,2023). This assumes even more importance in Ukraine's complex emergency requiring many different needs to be covered.
- Extensive distribution: Respondent B and F evidenced potential benefits on deliveries within the country exploiting varied partners' distribution channels to provide resources more effectively, rather than: “having a unidirectional approach” (Operations and Safety, Respondent B). This especially refers to those having a pre-defined logistics network due to their presence even before the war. Small organizations particularly benefit from such advantage.
- Capacity and resource sharing: mainly through clusters, organizations can make use of partners' capacities such as warehouses (F), resources (B) and staff (D) to reach more beneficiaries. Specifically, it emerged: “each organization tries to cover the shortcomings of the others in terms of resources and then hopes that the others will cover theirs” (Operations and Safety, Respondent B).

4.3.2 Challenges

- Differences in mandate and nature: Respondent A,E and I explicated the difficulties coming from different mandate and nature among peers. For instance, although Ukraine was not the case, different steadiness on humanitarian principles, which might be threatened by local social restrictions, can affect the stability of alliances among organizations (A). Also, due to

different nature, misaligned communication in terms of different “technical terms” (I) and dissimilar operationality skills (E), collaborating might be complex.

- Non-standardized capacities: Respondent D and E underlined that when many stakeholders are involved and, due to non-standardized capacities, resources and capabilities, collaboration is even more complicated.

4.3.3 Challenges/Opportunities

- Risk-taking: Different “risk-taking” among humanitarians refers to the individual willingness to intervene based on the safety issues due to the conflict in the country but also risks associated to SC capabilities, especially for smaller organizations (B). Hence, this might lead to uncovered areas because considered too risky. It should be noted that it mainly depends on each organization’s size. However, at the same time it can be considered an opportunity to divide tasks by territorial networks to be more efficient (A,B).
- Coordination: coordinating among peers might be very complex especially when many actors are involved. Mistakes in such collaboration may lead to duplications of resources, cost inefficiencies and uncovered needs (E). Here, a key role is played by those organizations already present on the field before the emergency, who can share relevant and accurate information about actual needs; lack of that, was considered the “biggest mistake in Ukraine” by Respondent L. Respondent H further reported the intrinsic humanitarian sector’s issue related to a “supply-drive assistance” explaining that: “too often I send you what I have in stock rather than waiting for a mix assessment done correctly” causing duplications (Coordinator of the International Relations, Respondent H). On the other hand, efficient coordination, especially with those on the field, leads to duplications avoidance, cost efficiencies, and overlaps (Respondent A,E,H and L).
- Information sharing: lack of efficient information sharing among peers, non-homogeneous SC systems, IT systems, reporting and monitoring systems was considered as a big challenge by Respondent B. Also, gathering only relevant information and data management might be complex (Respondent F,G and I). Specifically, mistakes can occur in monitoring data about: “receiving, storing and dispatching partners’ cargos that need [...] monitoring and good systems for logistics and warehousing” (Deputy Chief Aviation Services-Supply Chain, Respondent C). The other side of the coin shows that effective information sharing, through clusters and centralized data collection system (I), leads to gather only relevant information about certain territories since resources are limited (B,G), accurate identification of needs and planning (B) and better communication among peers (F). Once again, it emerged that a crucial

role is played by organizations with local presence, since they also: “do meritorious work to rediscover those needs that perhaps are not always taken into account by public authorities” (Coordinator of the International Relations, Respondent H).

- Staff turnover: depending on each organization’s size:” humanitarians tend to be in the field for a limited amount of time” (Operations and Safety, Respondent B). Interestingly, larger organizations see higher turnover. On one hand, this may lead to difficulties in passage of information but, on the other hand, collaborating with peers ensures a continuity of information and presence on the ground.
- Role definition: it emerged that a sort of “competition” among peers might occur, especially in finding local suppliers and service providers since resources are limited (A,E,F,G). Specifically, it was stated: “It shouldn't happen [...] we don't do enough to help each other” (Chief-Logistics Service, Respondent E). Here, the opportunity is identified in defining roles, procedures and responsibilities among peers, especially in preparedness phase through clusters to achieve a comprehensive aid provision (E,F,H) and avoid chaos (G). The “piggybacking” approach, which refers to a collaboration model of procurement where a UN organization might use existing long-term agreements of other UN organizations, was proposed as further opportunity to share suppliers and reduce administrative time and costs (WFP,UNHCR,UNICEF,2023) (F).

4.4 Answer to empirical RQ7

Similarly to the previous answer, considerations and discussion will be provided regarding challenges and opportunities in collaborating with private actors. Once again, aspects that were considered as both a challenge and an opportunity will be presented.

4.4.1 Opportunities

- Greater supply chain’s flexibility, agility and effectiveness: according to almost all respondents and particularly Respondent A,B,E and I, one of the main opportunities is the possibility to exploit privates’ supply chain and logistics’ capabilities. In particular, they would: “mobilize some assets for an immediate first response and respond faster than us in some cases” (Chief-Logistics Service, Respondent E) leading to: “greater speed, effectiveness [...] and also efficiency” (Operations and Safety, Respondent B). Interestingly, the latter respondent highlighted a growing trend in humanitarian sector of integrating private partners

in every stage of the supply chain - such as warehousing, transportation and distribution – that is from only “supplier” to “partner” (Save the Children,2023).

- Local networks and knowledge: according to Respondent A,B,D and L, collaboration with local service providers and entrepreneurs, allows to exploit their networks and knowledge inside the country. Indeed, a more rapid and effective distribution would come through “sparring local partners” (A). Such benefit come from their knowledge of the territory and compliance with local standards and bureaucracy (L). Furthermore, although Ukraine was not always the case thanks to local willingness to collaborate, especially because of security issues and restricted areas due to Ukrainian conflict, they might facilitate the access to such zones through temporary relief corridors allowing to reach people in need (A) (OCHA,2023). Finally, since Ukraine is a well-developed country with strong and reliable manufacturers and suppliers, such collaborations are further incentivized (C,F).
- Technologies and expertise sharing: privates can be considered as a source of innovative technologies, expertise and knowledge as well (A,C,D,G). Specifically: “we can absorb the new technologies used in supply chain” (Deputy Chief Aviation Services-Supply Chain, Respondent C). Interesting, here, the concept of “transformational partnership” emerged, referring to: “capabilities, technologies, expertise, in the home of the private sector that, combined with our reading of needs and analysis of the context, result in transformational projects” (International Humanitarian Manager, Respondent A) (Save the Children,2016).
- Greater capacities: humanitarians can also exploit privates’ capacities, not only in terms of greater transportation means like trucks and cargos, but also through infrastructures rentals such as warehouses with strategical location to store stocks (C,E,F). Furthermore, regarding earlier resources capacity availability, it emerged that: “private sector sometimes has capacities that we as a humanitarian might not have at the moment [...] agility and capability of the private sector to get those capacities early on, it's really a good opportunity” (Chief-Logistics Service, Respondent E).
- Price, quality and other benefits: according to Respondent B,D and F, agreements with privates lead to a more reliable procurement and greater control over products’ quality. Respondent L also indicated that, not only it might be cheaper thanks to privates’ agreements with large manufacturers, but they might also provide refund warranties and maintenance, especially for medical items; it emerged that such latter benefit was crucial in Ukraine since, due to the war, finding local maintenance providers might be problematic.

4.4.2 Challenges

- Different culture and corporate language: a different culture and mindset lead, according to Respondent B and H, to different corporate procedures and languages which, in turns, might lead to difficulties in communication and coordination. Here, larger and international organizations might suffer less from such differences.
- Risk of misalignment: in addition to the risk of being substituted by private actors which would not be feasible because of their lack of knowledge of humanitarian sector's principles, commercial companies might also undertake autonomous and non-coordinated activities. The potential reputational damages deriving from that, might have a huge impact on "local acceptance" of humanitarians collaborating with such privates (B).
- Collaboration ending due to security issues: Respondent D and E indicated that, because of sudden unwillingness to take risks deriving from safety and security uncertainties deriving from the conflict: "commercial sector might decide not to provide the service" (Emergency Response Unit Aviation Service-Supply Chain, Respondent D).
- Accountability: from Respondent L's experience: "accountability with private companies sometimes can be a nightmare" (Supply&Logistics Country Support, Respondent L). This problematic comes from potential sudden changes in agreements between humanitarian and private companies. Interestingly, humanitarian organization's size doesn't influence such issue; furthermore, it happens more often with smaller suppliers due to their perception of owing bargaining power.

4.4.3 Challenges/Opportunities

- Fundings and donations: private companies can be a fundamental source of both cash and in-kind donations enabling humanitarian organizations to address population's needs (A,C,F,G,I). They might also provide donations in terms of services provision such as free transportations (G). Particularly, financial service providers are fundamental in executing and channeling cash-based distributions (C) (WFP,2017). However, according to Respondent A, dialogue with privates may be strenuous leading to a "cultural clash"; indeed, it emerged: "humanitarian work is necessarily "needs-based" while work with private individuals often requires us to be "offer-based"" (International Humanitarian Manager, Respondent A). Humanitarians might need cash, instead of "gift-in-kind" (GIK) donations, to buy from local suppliers fostering local economy. Also, shipments to target country might be costly and logistically complex.

- Sustainability standards: as discussed in *section 4.1*, collaboration in humanitarian operations can have an impact, not only on social sustainability, but also on environment and local economies. Hence, humanitarian organizations can have a positive influence on and training private partners to achieve sustainable standards through a supplier development approach, instead of just auditing: “making them capable of what I need them to be capable of [...] and how to behave in emergency settings” (Operations and Safety, Respondent B). At the same time, it’s indeed fundamental to completely know the counterparts and train them due to the risk of being negatively affected or involved by potential unethical activities and non-compliance with sustainability standards (A,B,C,E,F,G,H,L). It emerged that such risk also comes from privates’ lucrative nature, being CSRs not always profitable (C,E,G).
- Long-term agreements: having a base of suppliers and agreements, such for long shelf-life goods, made in preparedness phase leads to resources availability, which in turns: “helps to provide rapid response” (Deputy Chief Aviation Services-Supply Chain, Respondent C) (H). It further represents a huge opportunity since privates: “are ready to invest to be able to make the goods available later on when needed [...] and for quality assurance” (Senior Procurement Officer-Supply Chain, Respondent F). However, such agreements made when actual needs are not known yet might be costly also considering privates’ opportunity costs (I) and: “limited by very stringent administrative rules” (Coordinator of the International Relations, Respondent H).

4.5 Challenges/Opportunities and overarching visualization

A total of 16 challenges and opportunities were found regarding collaboration in SCM with other humanitarian and private actors individually; here, an intersection of 8 challenges and opportunities emerged as well, as presented in *Figure 7*.

Partner	Opportunities	Challenges
Humanitarian Organization	Holistic approach	Differences in mandate and nature
	Extensive distribution	Non-standardized capacities
	Capacity and resource sharing	
		Risk-taking
		Coordination
		Information sharing
		Staff turnover
		Role definition
Private Sector	Greater supply chain's flexibility, agility and effectiveness	Different culture and corporate language
	Local networks and knowledge	Risk of misalignment
	Technologies and expertise sharing	Collaboration ending due to security issues
	Greater capacities	Accountability
	Price, quality and other benefits	
		Fundings and donations
		Sustainability standards
		Long-term agreements

Figure 7–Challenges/Opportunities and overarching

5. Discussions

5.1 Theoretical contributions

Three main categories of findings emerged after data analysis and triangulation among organizations.

Starting with the first RQ, existing literature suggested that higher commitment to sustainability requires higher level of inter-organizational collaboration (Luzzini et al.,2015) but, in humanitarian operations' SCM, a crucial factor remains the lack of coordination among stakeholders involved, both from governmental and non-governmental sector (Negi & Negi,2021). Finally, according to Tomasini & Van Wassenhove (2004), humanitarian operations are considered successful if: “mitigates the urgent needs of a population with a sustainable reduction of their vulnerability” and humanitarian actors aim to avoid people's suffering (Kovacs & Spens,2007). Therefore, existing literature highlights the key role of collaboration among different stakeholders in humanitarian operations to address intrinsic social aspects of humanitarian crisis. Here, findings emerging from the research at hand, strongly confirms the vital role of collaboration in SC, not only with other humanitarians but also privates, for efficient and effective humanitarian operations' performance. Surprisingly, results further suggest that such collaborative approach also help partners in achieving their own goal which might be different. Specifically, collaboration enables to better achieve humanitarians' objectives in a more holistic and comprehensive way. Interestingly, it came out that collaborating with other stakeholders, especially from private sector, allows to consider environmental and economic aspects as well. Therefore, the following proposition can be made:

Proposition 1: *a collaborative approach in SCM with other humanitarian and private actors allows to better address population's needs in a more holistic and comprehensive way, including not only social, but also environmental and economic aspects.*

Such further contribution might come from two main factors: the emergency's nature and partners' nature. Indeed, the need of a more holistic approach may be due to the complex nature of Ukrainian humanitarian crisis (Charles et al.,2022), which requires more social aspects to be covered. Here, collaborating with private sector, is crucial to be able to cover also environmental and economic sustainability aspects, specifically through supplier development approach in sustainable supply management (Bratt et al.,2021) and financial service providers. However, supplier development on social standards can be considered a main theoretical contribution as well, since social aspects in sustainable supply management studies are by far the less prevalent (Wilding et al.,2012).

Regarding the humanitarian operations' framework, preparedness and response phases were developed in terms of whether to collaborate with humanitarian or private actors in SCM. Here, key findings mainly coincide with relevant existing research. Starting with other humanitarians, preparedness is critical to success since organizations start developing the collaboration base, information and communications technology (ICT) systems and network designs (Negi,2022). Here, further supported by literature, is the relevance of digital technologies which allow to exploit information visibility and accuracy, especially to cope with disruptions (Vishkaei et al.,2022). In response, coordination between relief actors is considered essential as well (Ozen & Krishnamurthy,2018) including activities such as mobilization and coordination of resources, services and responders in the area affected by the disaster, which require supply chain agility and resilience (Altay et al.,2018). On the other hand, private sector also might be crucial in both phases. In preparedness, Kunz, Reiner & Gold (2014) recognize the key role of identifying key partners such as strategic suppliers, which is also confirmed by Van Wassenhove (2006) indicating "process management", "financial resources" and "community" as crucial factor for an efficient preparedness exploiting privates' capacities and capabilities in SCM. Finally, Gustavsson (2002) emphasizes that collaboration with business sector should occur in response as well, since humanitarian agencies can be assisted by exploiting their systems, know-how and resources to achieve more efficient and cost-effective logistics operations, ultimately benefiting people affected by conflicts. However, an interesting theoretical contribution comes from the importance of considering the context's specific contingency and emergency nature. The research at hand indicated how Ukraine's crisis specific factors such as: unpredictability, war conflict and security issues, well-developed country and reliable suppliers, and local willingness to collaborate represent key factors to consider when strategically deciding to collaborate in preparedness and response phase, whether with other humanitarian or business actors. Such detailed insights may differ from existing literature due to the newness and topicality of Ukrainian case study. In conclusion, the following propositions can be made:

Proposition 2a: *collaboration with other humanitarians but also commercial companies, can and should occur both before the emergency onset and during the response.*

Proposition 2b: *context's specific characteristics influence the choice of partners' nature in preparedness and response phase.*

The final contribution addresses the intersection of 8 challenges and opportunities with an exploratory approach, contributing to theory building through multiple case study (Eisenhardt & Graebner,2007). The study also contributed presenting 16 challenges and opportunities considering collaboration in SCM with humanitarians and privates individually. As all of these are rather broad topics, a more in-

depth discussion will be provided for those that got highest grades by respondents in terms of importance and emerged more often, considering triangularization shown in the data display. Hence, although main challenges identified are not surprising, such as difficulties in clearly defining roles of humanitarian participants (Ruesch et al.,2022) causing a sort of competition among peers (grade:4), but also considering Negi's (2022) extensive literature review analysis, it must be noted that those emerged from the study at hand refer to collaboration with other humanitarians and privates individually, therefore offering a further contribution. Moreover, the weight of the effects deriving from "different culture and corporate language" challenge with respect to privates (grade:2-4 based on organization's size), emerged to be particularly influenced by the organization's size and nature, differently from the "accountability" challenge (grade:5).

Interesting, from this perspective, identified opportunities are potentially suitable to address several of the existing challenges in humanitarian operations' SCM. Specifically, "extensive distribution"(5) and "capacity and resource sharing"(5) through collaboration with humanitarians can potentially address problematics related to transportation and stock asset management. Literature further confirms that, to manage similar complex systems and implicit trade-offs between social, environmental and economic implications, digital technologies – such as clusters in this case – can support decision-makers (Vishkaei & De Giovanni,2023). Here, humanitarians present on the field already before the emergency onset are particularly important. Also, a "holistic approach"(4/5) can offer a powerful opportunity to cope with very complex emergencies in terms of multisectoral needs such as the Ukrainian one (Charles et al.,2022). Once again opportunities offered by private partners, such "local networks and knowledge" (4/5) are even more relevant in well-developed countries and conflict zones like Ukraine's case, respectively thanks to higher reliability of local suppliers and humanitarian corridors provided by local service providers. Finally, "greater supply chain's flexibility, agility and effectiveness"(5), "expertise sharing"(4), "grater capacities"(4) and "fundings and donations"(4/5) opportunities represent crucial solutions to address SCM challenges related to: procurement, transportation and lead time restrictions, lack of technology supply chain systems and logistics experts, high volume of flows, security and funding availability (Negi,2022) (John & Ramesh,2012).

In conclusion, those aspects representing both a challenge and opportunity, except for "coordination" and "information-sharing" which were already identified by existing literature as solutions but difficult to implement and largely triangulated among respondents, might have been emerged once again due to the highlighted Ukrainian context's specific nature and personal experience of selected respondents. Particularly surprising was the often-emerged potential double-effect deriving from a

supplier development approach which, as challenge, didn't get a very high grade because potentially "avoidable". It emerged that privates might see sustainable practices as not always profitable; however, literature indicates that such practices have a positive effect on business performance (Vishkaei et al.,2023). Finally, the following propositions can be made:

Proposition 3a: *certain challenges deriving from collaboration in SCM with other humanitarian and private actors can potentially be exploited as opportunities*

Proposition 3b: *context's specific characteristics and humanitarian organization's size and nature influence the effects' weight of challenges and opportunities in collaborating with other humanitarian and private actors*

5.2 Managerial implications

The author hopes to contribute by easing the decision-making process of operations and SC managers of humanitarian organizations. To do so, concrete recommendations are reported below.

Surprisingly, it emerged that collaboration in SCM with other humanitarians allows not only to achieve more effective and efficient operations, but also to provide holistic and comprehensive aid, for two main reasons: each organization may have different mandate from others, aiming to address different needs; also, complex emergencies require many different needs to be met. Interestingly, collaboration in SCM with privates allows to cover not only social aspects, but also environmental and economic. Therefore, the following recommendations can be made:

Recommendation 1a: managers should consider multi-sectorial humanitarian partners to provide a comprehensive and holistic aid.

Recommendation 1b: managers should consider private partners to cover also environmental and economic sustainability aspects.

Moreover, context's specific nature and characteristics of Ukrainian case, turned out to be relevant factors to consider when strategically deciding whether to collaborate in preparedness or response phase with humanitarian and private actors. Although collaboration in both phases is still strongly suggested, emergency's specific contingencies may lead to more or less benefits coming from such decision. Thus:

Recommendation 2a: managers can and should consider humanitarian and private partners for collaborations in SCM, both in preparedness and response phase.

Recommendation 2b: managers should consider context's specific nature and characteristics when taking such decisions.

Challenges and opportunities of collaboration in SCM would respectively help managers to: be prepared and cope with potential difficulties, and efficiently select partners. Once again, it emerged that context's specific nature and characteristics may lead to different effects' weight of both challenges and opportunities. For example, the opportunities coming from collaborating with local suppliers is even more effective when considered a well-developed country such as Ukraine. Hence, it must be underlined that collaboration with local actors – local suppliers and service providers for what concerns privates, and organizations present in the country before the emergency regarding humanitarians – is strongly recommended looking at findings emerged. Finally, humanitarian organization's size and nature came out to be relevant as well; for instance, the challenge regarding differences in nature between humanitarians and privates would be less detrimental for larger and international organizations. Therefore:

Recommendation 3a: managers should consider the emerged potential opportunities to efficiently select the right partners and potential challenges to be aware and prepared to cope with difficulties; managers should also be aware of the indicated challenges to be exploited as opportunities.

Recommendation 3b: managers should consider not only context's specific nature and characteristics, but also the own organization's size and nature when looking at potential challenges and opportunities.

Recommendation 3c: manger should strongly consider already present and local partners for collaboration in SCM.

6. Conclusions

This work aimed to investigate how humanitarian organizations through collaboration in SCM with other humanitarian and private actors can improve the effectiveness and efficiency of operations to address fundamental humanitarian needs. This was done by interviewing humanitarians from five organizations of different nature involved in the current Ukrainian scenario, aiming to generalize findings and contribute both academically and practically.

It has been shown that collaboration in SCM can heavily improve humanitarian operations' performance of every organization involved and entail a comprehensive aid provision in terms of different needs addressed, enabling to cover environmental and economic aspects as well. A focus was provided on preparedness and response phases, where collaboration with both other humanitarians and privates should occur to provide an effective and efficient aid, especially keeping into consideration context's specific nature and characteristics. Then, key challenges and opportunities in SC collaboration with such stakeholders were shown, highlighting that not only humanitarian organization' size and nature, but also context's specific characteristics should be considered as well to best manage humanitarian operations.

Additional research on the humanitarian operations' field is encouraged, hoping to further develop knowledge on how to address fundamental humanitarian needs.

6.1 Limitations and future directions

One limitation of the research at hand is related to the use of a multiple case study which doesn't allow to provide an in-depth focus on each organization considered for data collection; Also, a limited number of two interviews for each organization might not enable to present an exhaustive intra-firm analysis. This goes especially for the organization "MSF", where only one interview was conducted. Thus, a larger number of organizations and respondents from each of them, may allow to better generalize.

Also, although Ukrainian scenario represents a very topical and large-scale case, some findings that emerged assume more or less importance when related to such context's specific nature and characteristics, as specified when needed. Therefore, while it might be easier to generalize for other conflict emergencies with similar setting, it must be paid attention when considering different nature humanitarian crisis.

Moreover, this study focuses on humanitarian organizations' point of view. As such, for the future, it would be interesting to analyze business sector's perspective so to fully understand the relationship between humanitarians and privates in humanitarian operations and gather relevant insights, such as their challenges and opportunities in SC collaboration.

Furthermore, regarding the HOs framework, this work focused only on preparedness and response phases and considered collaboration with other humanitarian and private actors; Thus, the author encourages future research to also take into consideration other stakeholders involved, such as governments, media, and military. Also, examining "reconstruction" and "mitigation" would offer a wider vision on humanitarian operations.

Future directions should also comprehend, more in detail, how the opportunities coming from collaboration in SCM that emerged from the study at hand might specifically address the existing SCM challenges in humanitarian operations. Here, quantitative research investigating "to what extent" collaboration in SCM affects operations' effectiveness and efficiency would be strongly suitable and useful to extend knowledge in the humanitarian operations field of study.

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APPENDIX 1 – comprehensive literature review on challenges affecting SCM in humanitarian operations (not considered in the Discussions Chapter)

Many other authors discussed issues related to the supply chain, examining them in terms of effectiveness and efficiency (Dubey et al., 2019). Therefore, being able to overcome such challenge, would lead in turn to achieve better performance results in terms of humanitarian relief. Pathirage et al. (2012) discovered several factors, including managerial, operational, legal, technological and socio-economic, which showed a direct impact on disaster management. In particular, the general lack of training, funding restrictions, updating of disaster ongoing information on a regular basis, poor planning, lack of adequate communication were discussed as key challenges. Interestingly, adequate storage facilities such as warehouses, supply chain management software and communication equipment are considered of vital importance by Joshi (2010). Moreover, long distances to be covered in humanitarian operations, collaboration and absence of trustworthy communication/information flows were identified to be the main challenges in a case study conducted with Medecins Sans Frontieres (SAF) in India by Gandini (2010). Lack of support and reorganization of logisticians represent another main concern in humanitarian logistics (Singh, 2010). Warehousing techniques and mobility of resources were found as common concerns as well, particularly during the disaster management in Uttarakhand, India (Ganguly & Rai, 2016).

Moreover, collaboration with not only governments but also other humanitarian agencies, foreign and local NGOs was identified as a key driver of technology spreading. However, at the same time, Kovacs & Spens (2009) developed a conceptual model to investigate the main challenges regarding the different types of humanitarian organizations and their collaboration. Hence, logistics coordination among such stakeholders was found as the key difficulty.

Similarly, Oloruntoba (2005) identified logistics activities of coordination and information management as relevant challenges in management and response of natural disasters such as tsunamis.

Issues and bottlenecks at operational level can be considered one of the main challenges faced by humanitarian organizations, directly affecting the humanitarian operations (Sandwell, 2011). Finally, other challenges in humanitarian supply chain management can be found in difficulties of effectively identifying supply source, scarcity of resources, need of financial flows along the supply chain and, even more importantly for the research at hand, coordination among players involved in the same humanitarian crisis preparedness and response (John & Ramesh, 2012).

APPENDIX 2 – Overview of respondents

Respondent	Organization	Position
A	Save the Children (Italy)	International Humanitarian Manager
B	Save the Children (Italy)	Operations and Safety and Security Lead
C	World Food Programme (WFP)	Deputy Chief Aviation Services, Supply Chain
D	World Food Programme (WFP)	Emergency Response Unit Aviation Service, Supply Chain
E	World Food Programme (WFP)	Chief, Logistics Service
F	International Organization for Migration (IOM)	Senior Procurement Officer – Supply Chain team
G	International Organization for Migration (IOM)	Senior Shelter and Settlements Officer at Department of Operations and Emergencies
H	Italian Civil Protection	Coordinator of the International Relations and Activities Service
I	Italian Civil Protection	Emergency Resource Management Service
L	Médecins sans frontières (MSF)	Supply & Logistics Country Support

APPENDIX 3 – List of questions

For the following questions, please answer from a supply chain perspective referring to the current Ukrainian humanitarian crisis

- 1) Which specific needs your organization aims to meet during the humanitarian operations? (Think, for example, at the concept of social sustainability in the 17 Sustainable Development Goals (SDGs)).
- 2) From a supply chain perspective, which are the main elements of collaboration with other actors involved, such as other humanitarians and private companies, affecting humanitarian operations' effectiveness and efficiency to address such needs?
- 3) Is it possible to divide the humanitarian operations into two theoretical different phases?
 - Preparedness
 - Response
- 4) Would you suggest, as best (common) practice, to collaborate with other humanitarian organizations during the Preparedness phase? Why?
- 5) Would you suggest, as best (common) practice, to collaborate with private companies during the Response phase? Why?
- 6) Which are the main challenges of collaboration in SC with other humanitarian organizations? (EX: difficulties in coordination, resource allocation, etc)
- 7) Which are the main opportunities of collaboration in SC with other humanitarian organizations? (EX: more effective and responsive identification of needs and planning, sharing of IT systems, goal alignment, experience, ect)
- 8) Which are the main challenges of collaboration in SC with private companies? (EX: different culture, different language, goal misalignment, different use of technology systems, difficulties in information sharing, logistics coordination, etc)
- 9) Which are the main opportunities of collaboration in SC with private companies? (EX: resource sharing and allocation, technology systems and skills sharing, vehicles and distribution channels, warehousing, donations and funding, etc)

APPENDIX 4 – Codes and Example of coded transcription

Respondent: B

Date: April 28th, 2023

Location: Microsoft Teams, Online

Duration: 1 hour

Note: parts of the conversation, unrelated to the research, are excluded from the transcript for privacy purposes.

Researcher: So, which are among those 17 SDGs the ones that you think are most affected by the humanitarian operations carried out by Save the Children? Which needs your organization aims to meet during the humanitarian operations?

Respondent: With "Organization X" we actually have very specific agreements, so that we even have the "co-lead" of the education cluster. So, much of our approach is common and that, consequently, it also has a feedback on what we are talking about. So, Save the Children, in terms of the effects and for example the SDGs, certainly there is "no poverty" especially with the child-focus aspect, so referring to child poverty, which translates into various aspects ranging from "no educational poverty" but also "no material poverty", obviously children in conditions that are emergency, but also not necessarily emergency, in various contexts. We work in many countries around the world and these conditions erode their development and their dignity.

Somehow also "zero hunger" because we work a lot from the perspective of nutrition and food distribution.

"Quality education" is definitely one of our main goals. We, together with "Organization X", leads the Education Cluster that is activated in all emergency situations. Then we go a little bit to the focus of how that note links with what you were telling me about the social and supply chain aspect.

Then "Water and Sanitation" also we have a role as far as "Wash" in precisely emergency situations in particular, although when we coordinate humanitarian emergency responses other organizations have the leadership.

Then "Clean Energy" less.

"Reduced inequality" is another important goal. Obviously, reducing inequality increases the potential for a decent life for children.

Let's say the main ones that Save the Children has a focus on are, recapitulating: the 1 "No Poverty", 2 "Zero Hunger," 4 "Quality education, 5 "Gender Equality," and then 10 "Reduce inequality." Those are the main ones.

Now, how then do we go about achieving these goals from a supply chain perspective, how do we interact with individuals as well? And let's take the case of Ukraine.

GL **giulio luccitti**
Effects and benefits of humanitarian operation:
Role of collaboration in SCM

GL **giulio luccitti**
Effects and benefits of humanitarian operation:
Social sustainability

GL **giulio luccitti**
Effects and benefits of humanitarian operation:
Social sustainability

GL **giulio luccitti**
Effects and benefits of humanitarian operation:
Social sustainability

GL **giulio luccitti**
Effects and benefits of humanitarian operation:
Social sustainability

Researcher: *With this regard, how does collaboration along the supply chain with other actors allow you to achieve these goals, in terms of the effectiveness and efficiency of humanitarian operations?*

Respondent: Keeping in mind precisely the goals that I enunciated earlier that for us are the priorities, obviously at the time when we work especially in responses to humanitarian emergencies, having the possibility to count, not only on actors that like us move in the NGO sphere, but also on private actors in terms of supply chain guarantees us: first of all having varied channels and as always it is important to be able to count on more channels rather than having an unidirectional approach; certainly the support of private actors, from the supply chain point of view, allows us greater speed, effectiveness as a result, and also efficiency. And it allows us to have more control over the quality of what we distribute. Perfect. Now what does that mean? However when we talk about supply chain and we talk for example about procurement and so the specific procurement part, however we refer to private, because we don't manufacture what we distribute. However, beyond that has always happened, there has been a shift that Save the Children has also conformed too. A shift, a change of trend, whereby whereas in the past we would make the purchases obviously from private individuals and then distribute by coming back into what was the usual internal distribution chain within the NGO where we distribute, we would make sure that we connect all the parts of the chain (so after doing the project management, storage, warehousing, transportation, distribution). So, in fact, the private party was only intervening as a supplier. Instead, gradually as a trend, we have moved toward more integration of the private, even in the other parts of the supply chain. So no longer only as a supply of the goods required, but the private party is also integrated precisely in the parts of transportation in a more direct form, of collaboration in the distribution itself (which before was let's say almost unthinkable). And I repeat, all of this guarantees a greater speed in terms of time (because to make a distribution, for example, I have to think about which staff to select to do the distribution that is a phase of the supply chain. Is this staff trained? Do I need to train them and do I need to increase their capacity? What kind of security measures do they provide for them?). If, on the other hand, all this is absorbed by a private individual who is already an expert in distributions (although I still have to make them capable of what I need them to be capable of, which is to understand how to behave in emergency settings, especially where we work with children; so training for example, safeguarding that we do to private individuals) once the private individual has been selected as a retrained provider, and therefore becomes our constant provider, at that point the training they already have, by the way, and therefore a relationship is established where they already know how to behave and everything is expedited.

- GL **giulio lucitti**
Effects and benefits of humanitarian operation:
Role of collaboration in SCM

- GL **giulio lucitti**
Opportunities of collaboration with other humanitarians

- GL **giulio lucitti**
Opportunities of collaboration with privates

- GL **giulio lucitti**
Opportunities of collaboration with privates

- GL **giulio lucitti**
Opportunities of collaboration with privates

- GL **giulio lucitti**
Opportunities of collaboration with privates:
Indirect effect of development on sustainability

- GL **giulio lucitti**
Challenges of collaboration with privates

Researcher: So, it is fair to say that even though we are talking about humanitarian operations, in the meantime there is also a double effect because NGOs have this role of also development, coaching the private from the social point of view (in this case social but it can also be environmental) so there is a double benefit.

The next question is about the framework found in the literature of the four phases of humanitarian operations. I, for this analysis, am going to focus on preparedness and response because those are the ones that are mainly based more on supply chain. Would you suggest, again in terms of collaboration, to precisely collaborate with other humanitarian in the preparation phase, while in the response phase would you suggest instead a collaboration with the private sector?

Respondent: Look, I think among other things it's important to contextualize. In the sense that anyway, when we work on the response to humanitarian emergencies, context makes a difference. What I can do in the response to a humanitarian emergency X, is not the same thing that I can do in the Ukraine humanitarian response to the outbreak of war. So, the capacity of the NGO has to be the flexibility of its procedures; have such flexibility that it adapts to the context. Let me explain further. Where you can't get in on your own, for example, but maybe a private party is already there because they were working there, obviously the private party makes a huge play for me to achieve the goals and ends of supporting the children. So, in the preparedness phase and the response phase, at that point for me the private is critical. Because the private reaches even where I maybe can't reach yet. And that was the case for example in Ukraine, where in fact we used some situations where there were already private individuals there.

So, the context definitely makes a difference, and then an NGO has to have the flexibility to put private and non-private in each of the phases. Then also foresee them; if I am the country director in Ukraine, even before the outbreak of war, I still do my "humanitarian strategy" with "contingency plan" in case there is a humanitarian emergency, I still do it. In my "preparedness plan" I also have to include the possibility of using private individuals. The same thing in the response.

So here I don't see them as rigid things, rather, I see possibilities that need to be understood accordingly. Preparedness is fundamental and must include so many aspects. The private party has to be considered more and more, and not just as a service provider, but almost as a partner.

GL **giulio luccitti**
Ukraine emergency nature

GL **giulio luccitti**
Opportunities of collaboration with privates

GL **giulio luccitti**
Phase identification:
Preparedness and Response with privates

GL **giulio luccitti**
Phase identification

GL **giulio luccitti**
Phase identification:
Preparedness and Response with humanitarians

GL **giulio luccitti**
Phase identification:
Preparedness and Response with privates

Researcher: Very clear. I ask you now what are the biggest challenges and opportunities in collaborating with other humanitarians, again from a supply chain management perspective in the Ukrainian scenario.

Respondent: What I'm going to say is something that I didn't see with my own eyes, but obviously I followed my colleagues who were there. So, what, first of all, are the challenges in working with other humanitarian organizations? Some are very similar to other humanitarian responses that are not exclusive to Ukraine. In the sense that, as you mentioned, despite the fact that we have been collaborating for many years and we are then in the various humanitarian responses together, still the systems are not necessarily homogeneous and harmonized. When I talk about systems I'm talking about both, for example, the same supply chain, IT, but also ways of say managing reporting, etc. I also talk about different approaches, such as "risk taking", meaning that some organizations obviously have a higher or lower threshold of "risk taking" than others. This implies that in the moment everyone sees you as a unique community of international organizations (because we know each other), others do not necessarily distinguish between us; they see the community of humanitarians, unique. Some take more risk, some take less. But even those who take less can be impacted by the risks that others take. And this also relates to the supply chain, that is, how far I go in a distribution, delivery of goods, etc. Or how far I don't go, so maybe the population may think that we don't intervene. So, a lack of harmonization of approaches, which is normal for us (in fact it is almost an advantage for us because "I get this far, you get later") can be seen by others in a strange way. So, this is a challenge that is encountered and then in coordination is exactly where we should resolve the issue and get to speak one language. In the sense that if I'm in a situation where I'm not coming, I say, "I'm not coming because we've divided the tasks, the one in the blue shirt who is part of another organization is coming." This is a problem because this coordination, which should be fluid, does not always happen in the smoothest way because then we change so much; that is, for turnover, humanitarians tend to be in the field for a limited amount of time and as a result, the passage of information, no matter how much we try to make backups, is not necessarily that fast.

Researcher: Clear. Is "risk-taking" in safety terms?

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Respondent: It is primarily in terms of staff safety for us as large organizations. So maybe for us it is not understood in terms of risk in resource allocation.

But for smaller organizations, though, risk in resource allocation could also be an issue, and so they have to consider that kind of risk as well. "Do I take the risk of putting this stock in pre-position for this situation? Then if it doesn't go forward, how do I do it?" Because even moving things around, changing arrangements, involves costs that are not necessarily economic, but also human resources, time, etc.

Researcher: I ask you on a scale of 1 to 5 in terms of importance what rating do you give to each of these challenges.

Respondent: So, on "risk-taking" I would put 2.5 if an organization is large, and if an organization is small 4.

On turnover, on the other hand, it is almost the opposite. It's almost opposite in the sense that large organizations see incredible turnover, more than small organizations. In Save the Children you see people coming and going. So, let's say the turnover problem on the large organization is 3.5, while on the small organization it is 2.

I'll also tell you another challenge, which is actually an opportunity the moment the following thing happens; when you don't have a previous presence in the country, which happens to us very little; at that point, even at the supply chain level, you have to do a lot because you were not present on the ground. This is where collaboration with other humanitarians already on the ground can be an opportunity. So this risk, for a large organization can be absorbed because of the larger capacity, so it can be 2.5; while for a small organization it can be even 5.

Researcher: What are the opportunities instead?

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Respondent: Look, opportunities are kind of the consequence of challenges. Whether you're big, whether you're small, you were there before in the country or not, you take more or less risk; Obviously the ability and the astuteness of organizations is to get together and collaborate well with smooth communication.

Is just what you also do during the "Coordination meetings" that you always have during humanitarian responses. As you know, there are various clusters: "cluster education," "cluster Wash," "cluster shelter," etc. It starts from the shortcomings that an organization has. Each organization tries to cover the shortcomings of the others in terms of resources and then hopes that the others will cover theirs.

So going back to the "risk-taking" challenge from earlier, you can divide up territories and zones. This is based on collaboration and integration. This often happens with small organizations that are already in the territory; for example, Save the Children has limits in "risk-taking," so they provide resources to a small organization that is already there, and that organization does the distribution in areas where Save the Children doesn't want to go. And so they can get where no one can get.

The same goes for the turnover challenge; knowing that my staff changes often, an agreement with another local humanitarian organization ensures a continuity of information and presence on the ground.

Then collaboration with other humanitarians, similarly, allows for more efficient identification of needs and planning. Absolutely.

"Sharing of IT systems" also can be ensured by clusters, thanks to centralized data collection systems.

Researcher: We then turn to the private sector. Same question, challenges and opportunities.

Respondent: Look, this is interesting. A "different culture," i.e., a different organizational culture, a different mindset that then becomes a "different language." This is true but again it has to be declined depending on the nature of the organization. As a result, the language and culture between Save the Children and the private sector are not that far apart; we talk to each other using the same tools. Corporate language is very important. It depends a lot on the organizations: if an organization is international, it has less difficulty relating to the private sector.

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- GL giulio lucitti Opportunities of collaboration with other humanitarians
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Researcher: This is very helpful regarding the differences between humanitarian organizations, like size, nature, mandate, etc.

Respondent: That's right. The size definitely. The "location" also makes so much difference. That is, the culture of the country of departure (nationality) might affect in an incredible way. Also, how others see us.

Researcher: Is it possible that perhaps you find (by nature of your organization (NGO)) in dealing with the private more this kind of difficulty, rather than an international UN organization?

Respondent: Save the Children is also international. Sometimes even writing an email, one thing is if you write it with the UK cultural approach which is very similar to private, it's another thing if you start with a mechanic approach. These are simply problems of language and different culture.

Researcher: Can you give a vote for "culture and language," and a vote for "location" instead?

Respondent: "Culture and language" let's say if it is already close enough to private, let's say the challenge is 2; however, it can go up to 4 without previous relationships with private companies.

The "location," if we relate a local private, can have an influence and let's say 2.5/3 but even 4; this is my perception. Yes, because at the end, admitting that there are unconscious biases and stereotypes in everyone's mind can be important. It is important to be aware of how the other person sees you.

One last thing, though, that I want to say as a challenge, is obviously that private individuals have to learn the NGOs language regarding some basic elements that allow us the humanitarian access; if the private individual does not use language that is appropriate for being in a territory perhaps of conflict, it can create a big problem for NGOs. For example: we are very neutral, impartial, we don't talk politics, we don't expose ourselves on certain concepts, respect for the population absolutely, no arrangement, no bullying.

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Some may already have these principles, but maybe other private individuals do not. So, it's up to us to work well in the preparedness phase or the private approach, just in that transformation from "service provider" to "partner"; that is, the language from the human rights point of view has to be this. The grade for this challenge could go up to 5, but even that is avoidable through the procedures of NGOs to do "capacity building" to the private party (so it becomes a 1).

Researcher: Sure. Clear, very clear. Can you talk about the opportunities with the privates?

Respondent: So we had kind of mentioned them earlier, when we were talking about it in general. Certainly, the timing (the fact that you speed up the timing of all the stages of the supply chain: from purchasing to distribution, to transportation, to distribution, to post monitoring on quality, so speed) this certainly is a big opportunity. Then it depends on what private party you have, because not all private parties always guarantee this. In Ukraine, for example, we cooperated so much with "Company X" for this, for logistics. In a complex situation like Ukraine, it's the first thing that comes to you because among the humanitarian principles is reaching the population as soon as possible. So, the grade here is 5. Then the fact that, a big private, it guarantees you all the elements of the supply chain. Also the quality if it is a good private. Quality, monitoring, etc. Now the private is used for every stage of the supply chain. You can take advantage of the efficiency and effectiveness of the private's flexible logistics.

The important thing is not to get to substitution; in the sense that the private sector cannot replace NGOs (total substitution). As a trend I am okay with that, and in my opinion, it is very useful. But those who come only from the private sector might not have that overall holistic vision that a person working in an NGO must have; that is, I call the private sector because on that they are specialized, they guarantee me quality, you are focused on that, however, you do not have a holistic vision. In fact, as I told you before, I have to explain the language. That is, working in an NGO means always thinking about all the 360-degree aspects of what you do. And an extremely specialized one doesn't do that.

Researcher: Do you have any experience where a private individual maybe started to do autonomous humanitarian operations?

Respondent: More than performing actions independently, they might not coordinate well with us. So yes, they eventually do autonomous things within a coordinated service, then it might become uncoordinated because of autonomous things that were not agreed upon in advance. This creates a whole series of impacts on "local acceptance", which to me is a key thing. It is fundamental the local acceptance. Because some countries are complex.

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APPENDIX 5 – Data display

Note that those interviews conducted in Italian have been translated to English by the researcher and reported in the data display.

THEMES:

Red = Effects and benefits of humanitarian operation

Blue = Phase identification

Green = Opportunities of collaboration with other humanitarians

Purple = Challenges of collaboration with other humanitarians

Turquoise = Opportunities of collaboration with privates

Yellow = Challenges of collaboration with privates

MAIN CODES:

1. Social sustainability (DEDUCTIVE THEORY-DRIVEN)
2. Environmental sustainability (INDUCTIVE DATA-DRIVEN)
3. Economic sustainability (INDUCTIVE DATA-DRIVEN)
4. Role of collaboration to address needs (DEDUCTIVE THEORY-DRIVEN)

5. Preparedness with humanitarians (DEDUCTIVE THEORY-DRIVEN)
6. Response with humanitarians (DEDUCTIVE THEORY-DRIVEN)
7. Preparedness with privates (DEDUCTIVE THEORY-DRIVEN)
8. Response with privates (DEDUCTIVE THEORY-DRIVEN)

9. Opportunities of collaboration with other humanitarians (DEDUCTIVE THEORY-DRIVEN)
10. Challenges of collaboration with other humanitarians (DEDUCTIVE THEORY-DRIVEN)
11. Opportunities of collaboration with privates (DEDUCTIVE THEORY-DRIVEN)
12. Challenges of collaboration with privates (DEDUCTIVE THEORY-DRIVEN)

13. Ukraine Emergency nature (INDUCTIVE DATA-DRIVEN)

Organization	Respondent	Code 1
Save the Children	A	<ul style="list-style-type: none"> • Good health and well-being: access to health and nutrition • Quality education: education cluster tool, provision of libraries and education centers • Indirect impact on potential local social restriction thanks to one single voice of humanitarian agencies working together
	B	<ul style="list-style-type: none"> • No poverty: especially with a child-focus • Zero hunger: nutrition and food distribution • Quality education: education cluster • Reduced inequalities: decent life for children
WFP	C	<ul style="list-style-type: none"> • Zero hunger: in-kind assistance and food packages provision to ease suffering
	D	<ul style="list-style-type: none"> • Zero hunger: access to food with in-kind assistance, voucher and food packages provision to ease suffering
	E	<ul style="list-style-type: none"> • Zero hunger: reduction of suffering and prevention of loss of lives
IOM	F	<ul style="list-style-type: none"> • Good health and well-being: provision of tents, blankets, tarpaulins, hygienic kits, wash, shelters, in-kind donations, tools, wood for houses reconstruction, and other humanitarian commodities • Indirect impact on private suppliers' impact on social sustainability through supplier development: human rights, fair payment, product quality
	G	<ul style="list-style-type: none"> • Good health and well-being: camps coordination for displaced population, bedsheets, shelters and non-food items provision, screening of people who need a house; last-mile access provision to health and education • Clean water and sanitation
Italian Civil Protection	H	<ul style="list-style-type: none"> • Good health and well-being: transfer of medicines and provision of support • Peace, justice and strong institutions
	I	<ul style="list-style-type: none"> • Good health and well-being: assistance to the population through provision of blankets, pillows, sheets, tents, sleeping bags. • Peace, justice and strong institutions: protection of human society and dissemination of culture, information to the population
MSF	L	<ul style="list-style-type: none"> • Good health and well-being: medical provisions • Gender equality: due to potential local gender discrimination • Decent work and economic growth: promote a sustained, inclusive and decent work for all through impartiality and salaries higher than current Ukrainian national salaries

Organization	Respondent	Code 2
Save the Children	A	ND
	B	ND
WFP	C	ND
	D	ND
	E	ND
IOM	F	<ul style="list-style-type: none"> Green procurement and sustainable products and packaging: must be done with agreements in the Preparedness phase, since in Response phase it is not a priority Joint tenders with other humanitarian for purchasing of solar lamps
	G	<ul style="list-style-type: none"> Products specifications Distribution of solar lamps
Italian Civil Protection	H	ND
	I	ND
MSF	L	<ul style="list-style-type: none"> Affordable and clean energy: travel by train bought in collaboration with the Ministry of Health, become more green; but this is not a priority in the Response phase Building a health-care laboratory in Ukraine in collaboration with the Ministry of Health to decrease the shipments' impact on environment Reducing the impact on environment coming from overflowing and in excess stocks of materials thanks to better coordination with other humanitarians and information sharing

Organization	Respondent	Code 3
Save the Children	A	<ul style="list-style-type: none"> Agreement with privates on money donations instead of "gift-in-king" donations to foster the local economy by purchasing from local companies
	B	ND
WFP	C	<ul style="list-style-type: none"> Cash assistance to foster local economy
	D	<ul style="list-style-type: none"> Cash assistance to foster local economy
	E	<ul style="list-style-type: none"> Cash assistance to foster local economy
IOM	F	ND
	G	ND
Italian Civil Protection	H	ND
	I	<ul style="list-style-type: none"> Procurement from local suppliers to foster local economy
MSF	L	<ul style="list-style-type: none"> Decent work and economic growth: providing higher salaries than current national salaries in Ukraine and promoting inclusive and sustainable economic growth

Organization	Respondent	Code 4
Save the Children	A	<ul style="list-style-type: none"> • Humanitarian development Nexus: collaborative approach based on the comparative advantage of a diverse range of actors to reduce needs, risks and vulnerability; Specifically for Ukraine’s scenario nature, the aim is to work together in building society, peace, social cohesion (rehabilitation) • Clusters approach to coordinate multi-agency response to improve humanitarian aid effect • Agreements with other stakeholders involved are key to reduce people dying and suffering • Coordination among peers within humanitarian sector to move with one voice in order to impact local social restrictions • Coordination and communication among humanitarians allow to contribute in a more holistic way because of the different technical skills of the different actors. • Agreements with local privates might allow humanitarian actors to access and therefore address the needs, when access is limited due to military presence or conflict zones.
	B	<ul style="list-style-type: none"> • Clusters approach to coordinate multi-agency response to improve humanitarian aid effect; each organization tries to cover the shortcomings of the others in terms of resources and then hopes that the others will cover theirs • Possibility to count on, not only other humanitarian actors, but also privates in terms of supply chain to achieve the goals which are the priority
WFP	C	<ul style="list-style-type: none"> • Each of the goals are picked up by different organizations as the main criteria for their planning of work and interventions, therefore each organization has its own sector of intervention • Work with the financial service providers to be able to channel the funds through cash distributions that could be vouchers, direct, debits on the on the credit cards of the registered population and so on (Economic) • Clusters approach to coordinate multi-agency response to improve humanitarian aid effect • Partnerships for the goals: strengthen global partnerships to achieve goals
	D	<ul style="list-style-type: none"> • Due to limited presence and different risk appetite of different stakeholders, through the collaboration, it is possible to better achieve the effective implementation of your program. This is one of the examples of how with the collaboration with partners we are able to deliver and to achieve our goals • Clusters approach to coordinate multi-agency response to improve humanitarian aid effect

	E	<ul style="list-style-type: none"> Partnerships for the goals: strengthen global partnerships to achieve goals. Such collaboration can enable other partners to achieve their goals The main benefit of collaboration is to better achieve the ultimate goal of the operations, that is helping and support the population struggling and in crisis; Indeed, a humanitarian response might be incomplete if just one sector or aspect is covered Collaboration allows to achieve more efficiency and effectiveness of the response of the whole humanitarian community; this through the coordination of convoys with the multisectoral items loaded Thanks to collaboration with other humanitarians, you can achieve a more comprehensive package and support Clusters approach to coordinate multi-agency response to improve humanitarian aid effect
IOM	F	<ul style="list-style-type: none"> Clusters approach to coordinate multi-agency response to improve humanitarian aid effect Experts and donors work together to achieve also product specifications for environment; also joint tenders with “NGO X” to purchase solar lamps Supplier development for social sustainable standards
	G	<ul style="list-style-type: none"> Clusters approach to coordinate multi-agency response to improve humanitarian aid effect Collaboration with “private service provider X” to be able to support people who lost their houses
Italian Civil Protection	H	<ul style="list-style-type: none"> Partnerships for the goals: strengthen global partnerships to achieve goals Collaboration is critical in all phases of supply chain, since working together it is possible to better respond to needs and in a more efficient way
	I	<ul style="list-style-type: none"> Collaboration with other stakeholders, especially those already present on the field and have been operating for years, is critical for the supply chain because of the network of contacts and coordination among them; this leads to a more efficient response thanks to information sharing and balancing of resources Donations from privates leads to resource availability to meet the needs
MSF	L	<ul style="list-style-type: none"> Partnerships for the goals: strengthen global partnerships to achieve goals Collaboration with humanitarian actors already present on the field and coordination among others allows to avoid overflowing of materials and duplications, which would also have a negative impact on the environment

Organization	Respondent	Code 5
Save the Children	A	<ul style="list-style-type: none"> • The topic of collaboration is critical and it is central at all levels, especially upstream when you still prepare in case the emergency may come where you preposition • The first lesson learned from Ukrainian scenario is to make alliances and collaborate with other humanitarians in the Preparedness phase; this especially from a supply chain perspective since such conflict was unexpected. Agreements in the preparedness phase are the key
	B	<ul style="list-style-type: none"> • NGOs have to have the flexibility to put private and non-private in each of the two phases • Before the outbreak of the war, you should still make a "humanitarian strategy" with "contingency plan" in case there is a humanitarian emergency
WFP	C	<ul style="list-style-type: none"> • Collaboration in the preparedness phase can be considered a best practice • Make use of clusters even before the emergency to be better prepared and organized, such as: emergency telecommunications cluster, logistics cluster, health and wash cluster
	D	<ul style="list-style-type: none"> • Make use of clusters even before the emergency to be better prepared and organized, such as: emergency telecommunications cluster, logistics cluster, health and wash cluster. It helps to clarify role, share relevant information and make joint planning to be efficient and effective when the crisis occurs
	E	<ul style="list-style-type: none"> • Collaboration occurs more in response phase than preparedness phase, therefore there is room for improvements since a good coordination pre-disaster leads to a better response; before a crisis, nothing would stop humanitarian actors from collaborating
IOM	F	<ul style="list-style-type: none"> • Prepositioning of stock items to be used in emergency response • Working on clusters among other humanitarian actors is crucial in the preparedness phase; this allows to have regular communication, coordination, annual meetings about collaboration and especially staff training • "Piggybacking" concept based on long-term agreements with other agencies to avoid too long procurement or tenders procedures in response
	G	<ul style="list-style-type: none"> • Global clusters for continuous discussions and updates in the preparedness phase among humanitarian actors; it is important to keep updated such tools
Italian Civil Protection	H	<ul style="list-style-type: none"> • Collaboration is critical in all phases from a supply chain perspective, such as the identification of needs phase in preparedness • Collaboration in preparedness is important to avoid duplication • Coordination in preparedness is critical to: define procedures and standards

	I	<ul style="list-style-type: none"> • Coordination and continuous communication with those humanitarian actors that are already on the field is critical to receive important information, news and to finally balance the resources
MSF	L	<ul style="list-style-type: none"> • The biggest mistake in Ukraine was the lack of coordination with other organizations already present on the field; therefore, it is critical to have contacts with them in the pre-phase since, when the crisis occurs, there will be a “big rush” of many actors and it would be more difficult to be aligned

Organization	Respondent	Code 6
Save the Children	A	<ul style="list-style-type: none"> • Communication and coordination for the distribution of specific assets in specific areas; such information sharing lead to more efficiency and avoidance of duplications
	B	<ul style="list-style-type: none"> • “Humanitarian strategy” and “contingency plan” also in response phase to support collaboration with other humanitarian actors in such phase • Agreement with other humanitarian actors already present on the field • Due to different “risk-taking” among humanitarians, organizations should coordinate each other to divide tasks; this goes especially from a supply chain perspective, that is for task division regarding, for example, distribution in specific areas
WFP	C	<ul style="list-style-type: none"> • Use of clusters among humanitarians to provide a rapid response
	D	<ul style="list-style-type: none"> • Through the collaboration, it is possible to achieve the effective implementation of your program; this allows for instance to use other organizations’ capacity, resources and staff to reach beneficiaries in specific areas
	E	<ul style="list-style-type: none"> • Collaboration with other humanitarian in the response phase is critical, especially to avoid a sort of competition between humanitarian themselves since each of them might be focused on its own goals
IOM	F	<ul style="list-style-type: none"> • Collaborating with other humanitarians can facilitate the distribution of items from different locations outside the country to the target areas • Use of logistics cluster to share information among humanitarian actors, which is fundamental due to the many non-aligned information coming during an emergency, that might be useful or not. Hence it would be important to receive an on-field assessment to gather relevant information • Collaboration is also fundamental to avoid competition between humanitarian actors themselves
	G	<ul style="list-style-type: none"> • Make use of the country-level clusters for coordination among humanitarians that are activated only after the crisis occurs
Italian Civil Protection	H	<ul style="list-style-type: none"> • Collaboration is critical also in the response phase for any kind of decision-making on the field; this is useful also to avoid duplications
	I	<ul style="list-style-type: none"> • It is critical for the supply chain management to keep coordinating with other humanitarians, especially those already on the field
MSF	L	<ul style="list-style-type: none"> • During the response it is important to slow down the shipments and be more accurate in terms of what actually is needed to be more efficient, also in terms of cost-efficiency; this comes especially thanks to coordination with other humanitarians already present

Organization	Respondent	Code 7
Save the Children	A	<ul style="list-style-type: none"> The topic of collaboration is central at all levels, also upstream when you still prepare in case the emergency may come where you preposition; this is a key to achieve your goal, that is reduce people suffering Ukrainian scenario showed that agreements with privates should be done in preparedness, especially from a supply chain perspective; a private company can make available an efficient logistics network for the eventuality
	B	<ul style="list-style-type: none"> Agreements with privates, especially local ones, can be fundamental to be able to promptly reach specific areas that couldn't be reached by a humanitarian organization by its own NGOs should have the flexibility to consider private partners also in the preparedness phase; in the "humanitarian strategy" and "contingency plan" you should consider the possibility to use privates
WFP	C	<ul style="list-style-type: none"> Preparedness phase offers endless opportunities; therefore, having a base of suppliers, for example for long shelf-life product, helps to provide a rapid response
	D	<ul style="list-style-type: none"> Standby agreements of partners who may be deployed and activated on response phase; then their capacity for service provision is subject to their presence in the area of response
	E	<ul style="list-style-type: none"> In reality, agreements occur much more in response phase; therefore, there is large room for improvement. Agreements with private sectors should be done also before a crisis occurs
IOM	F	<ul style="list-style-type: none"> Long-term agreements with privates to enable a quick response Regarding the environmental and social sustainability standards, since during the response phase it is not the priority, agreements on product specifications should be done in the preparedness phase with suppliers Strategic prepositioning of stocks into private partners' warehouses; there should be a lot happening in preparedness in order to be responsive Strategic suppliers are ready to invest also in preparedness; for them it's easier and better since in such phase, they are not under pressure. When the items are urgently needed instead, they need to manufacture them quickly.
	G	<ul style="list-style-type: none"> It is important to be careful on suppliers' selection and on sharing of relevant information with them in advance
Italian Civil Protection	H	<ul style="list-style-type: none"> The interaction with privates, if in an emergency, must mandatorily (which is not always done) be prepared upstream of the emergency; making a tender is a nice expression of interest to determine for the provision of certain services goods or services, regardless whether there is emergency or not. It is important to identify a list of suppliers that can be available during an emergency

		<p>response. Although it is not always done in reality, it would really be useful to be more responsive.</p> <ul style="list-style-type: none"> • It is finally important to define procedure, standards and a common “language” with the private partner in preparedness
	I	<ul style="list-style-type: none"> • Agreements with service providers such as transportation to have it available in case of emergency. This might be costly
MSF	L	<ul style="list-style-type: none"> • It can be complex since you don’t know when and where a crisis will happen

Organization	Respondent	Code 8
Save the Children	A	<ul style="list-style-type: none"> Although Ukraine might not be the case, agreements with local privates can enable the humanitarian organization to access specific restricted areas, for example by the local military or authorities. Business passes, while NGOs don't Still, such privates lead to supply chain agility and effectiveness
	B	<ul style="list-style-type: none"> Local privates play a key role for humanitarians to achieve goals; privates enable humanitarians to reach certain areas unattainable otherwise Privates should be considered in the response phase as well
WFP	C	<ul style="list-style-type: none"> Inclusion of the new partners from the private sector will always be a benefit, just depending on whether it's a donation or it's a paid service Important benefits from collaborating with commercial local market (such as warehousing and transportations)
	D	<ul style="list-style-type: none"> Key elements of agreements with local privates in localized response are: knowledge of the area, expertise. Such partners can be local food producers who fully comply with the local government requirements, local transporters, local warehouses providers which also can provide security to stocks
	E	<ul style="list-style-type: none"> In response phase, private sector can offer agility, useful capabilities, and available resources to be responsive
IOM	F	<ul style="list-style-type: none"> After setting up logistics hubs close to Ukraine's border, nearest suppliers can provide goods and materials to be stored in those logistics hubs Collaboration for implementing operations
	G	<ul style="list-style-type: none"> Agreements with suppliers or service providers in response phase, when specific needs are identified; an example is the partnership with "Company X" for provision of houses for those who needs
Italian Civil Protection	H	<ul style="list-style-type: none"> Agreements with private companies can be more complex in response phase since there is no time to make proper checks and public tenders. It should be done in preparedness phase
	I	<ul style="list-style-type: none"> Only from a cost-efficiency point of view, it is something that should be done when specific requirements and needs are identified, therefore in response phase. However, this doesn't count when there is need of a quick intervention. Useful for fundings or transportation of resources
MSF	L	<ul style="list-style-type: none"> Useful for specific expertise coming from private sector

Organization	Respondent	Code 9
Save the Children	A	<ul style="list-style-type: none"> • Coordination leads to efficiency in terms of ability to divide by territorial networks • Coordination leads to efficiency in terms of different expertise and skills that are brought into common factor; it allows to contribute in a more holistic way because of the different technical skills of the different actors (4) • Coordination leads to being able to move with one “voice” only; this also allows to positively impact on potential local social sustainability restrictions • Coordination leads to efficiency in terms of avoidance of duplications (5)
	B	<ul style="list-style-type: none"> • It allows to have varied channels and as always it is important to be able to count on more channels rather than having an unidirectional approach • It allows to collaborate with humanitarian actors already present on the field in order to gather relevant information and knowledge about the territory (2.5-5 depending on organization’s size) • Each organization tries to cover the shortcomings of the others in terms of resources and then hopes that the others will cover theirs • Due to different “risk-taking” among humanitarian actors, it can allow to divide by territorial (2.5-4 depending on organization’s size) • Due to generally high turnover of humanitarian staff, collaboration with others ensures a continuity of information and presence on the ground (2-3.5 depending on organization’s size) • Collaboration leads to a more efficient identification of needs and planning. Sharing of relevant data and information thanks to a centralized data collection system
WFP	C	<ul style="list-style-type: none"> • Coordination of different thematic activities to address different needs through UN OCHA (Office for Coordination of Humanitarian Affairs) that's coordinating mainly UN entities and clusters regarding different thematic (telecoms, logistics, health and wash) (5)
	D	<ul style="list-style-type: none"> • Make use of other organizations’ capacity and staff in order to reach beneficiaries in specific areas. This thanks to coordination through clusters (5)
	E	<ul style="list-style-type: none"> • Comprehensive and holistic support to the population (5) • Cost efficiency in terms of avoidance of duplications (4) • Mapping all players involved and define responsibilities in preparedness phase
IOM	F	<ul style="list-style-type: none"> • Coordination for effective distribution of resources inside the country • Use of clusters leads to better communication among peers to summarize only relevant information • Coordination through logistics cluster allows a more efficient facilities (warehouses) management

		<ul style="list-style-type: none"> • Different clusters to improve coordination among different subjects (logistics, health and wash, etc) • Clusters allows to train staff in preparedness • “Piggybacking” concept based on long-term agreements with other agencies
	G	<ul style="list-style-type: none"> • Coordination and definition of procedure through clusters; this allows to avoid chaos when many actors are involved (5) • Information and resource sharing to divide territories and be more efficient since resources are always limited (5)
Italian Civil Protection	H	<ul style="list-style-type: none"> • Due to Civil Protection’s government-to-government nature, collaboration with NGOs allows to cooperate within the mandate of each of them; NGOs also do meritorious work to rediscover those needs that perhaps are not always taken into account by public authorities (5) • Coordination with humanitarian actors to avoid overlaps and duplications (5) • Definition of standards and procedures in preparedness phase (5)
	I	<ul style="list-style-type: none"> • Collaboration with those already present on the field to gather relevant information and to balance resources • Due to Civil Protection’s government-to-government nature, collaboration with local NGOs allows to cooperate within the mandate of each of them; it is definitely necessary to have the cooperation with those NGOs for certain areas where is also requested by the staff that is there. This helps also for translations on the field (5) • Data and information sharing through centralized systems such as the “Cesis” (5)
MSF	L	<ul style="list-style-type: none"> • Continuous coordination with other humanitarian actors, especially those already present of the field, to avoid duplications and especially too large shipments of not necessary resources during the very onset of the emergency (5)

Organization	Respondent	Code 10
Save the Children	A	<ul style="list-style-type: none"> • Competition among peers in finding local suppliers or service providers; resources and services are limited (4) • Misalignment on humanitarian principles: it can become a challenge when, due to local social restrictions and backwardness, some organizations decide to leave the country not being able to respect their own humanitarian principles. This might represent a dilemma (3)
	B	<ul style="list-style-type: none"> • Non-homogeneous and harmonized supply chain systems, IT systems, reporting and monitoring systems • Different risk-taking between peers; this might lead to uncovered areas because too risky, but also due to too high risk in terms of costs (2.5-4 depending on organization's size) • High turnover of staff (2-3.5 depending on organization's size)
WFP	C	<ul style="list-style-type: none"> • Complex monitoring of receiving, storing, warehouses logistics, and dispatching of partners' cargo and resources; sometimes data and specifications might be incorrect (4)
	D	<ul style="list-style-type: none"> • Complex coordination among multiple stakeholders with multiple non-standardized warehousing, capacity, different volumes, or different capacity for distribution (3)
	E	<ul style="list-style-type: none"> • Mistakes in coordination among peers, due to its complexity when many actors are involved, can lead to duplications, cost inefficiencies and needs uncovered (5) • Competition between agencies (4) • Differences in terms mandates, nature, and operationality between different organizations (4)
IOM	F	<ul style="list-style-type: none"> • Complexities in gathering only relevant information (5) • Competition between peers to find local suppliers and service providers (4)
	G	<ul style="list-style-type: none"> • Complexities in coordination when many actors are involved (5) • Competition between peers to find local suppliers and service providers (4)
Italian Civil Protection	H	<ul style="list-style-type: none"> • Complexities in coordination due to a "supply-driven assistance"; that is, too often organizations send what they have in stock rather than waiting for a mix assessment done correctly and accurate for actual needs; this leads to duplications (5)
	I	<ul style="list-style-type: none"> • Data management to gather only relevant information (4) • Lack of communication or different and unclear "technical language" between peers (5)
MSF	L	<ul style="list-style-type: none"> • Lack of coordination between new intervening organizations and those already present on the field can lead to chaos and confusion for local authorities but also duplications (5)

Organization	Respondent	Code 11
Save the Children	A	<ul style="list-style-type: none"> • Exploit private's logistics network and capabilities (5) • Be able to access certain restricted areas thanks to collaboration with local privates (3-4) • "Transformational partnership": transformational projects through joint collaborations; privates' capabilities, technologies and expertise join to humanitarian actors' capability to read actual needs and analysis of the context (2) • "Sparring local partners" for a rapid and effective distribution inside the country • Fundings from private partners (4)
	B	<ul style="list-style-type: none"> • Greater speed, efficiency and effectiveness from a supply chain perspective thanks to private's flexible logistics (5) • Greater control over the quality of what we distribute • Instead of just as supplier, privates are increasingly integrated in every stage of the supply chain: storage, warehousing, transportation, distribution; trend to transform the private from only supplier to a "partner" • Through partner's development, indirect impact of development on sustainability (social and environmental) • Information coming from local privates
WFP	C	<ul style="list-style-type: none"> • Infrastructures rentals: warehouses and distribution/transportation means such as trucks or cargo aircrafts (5) • Work with the financial service providers to be able to channel the funds through cash distributions that could be vouchers, direct, debits on the on the credit cards of the registered population and so on • Agreements with a base of international suppliers of long shelf-life goods to be responsive • Absorb and learn from innovative technologies used by privates in the supply chain (4)
	D	<ul style="list-style-type: none"> • More reliable procurement (both from abroad and local) and delivery of goods (5) • Distribution of goods in the country through local service providers, especially due to security issues (4) • Source of expertise and knowledge from local service providers (5)
	E	<ul style="list-style-type: none"> • Greater capacities in supply chain coming from privates to be more efficient (4) • Greater rapidity and agility in supply chain in terms of mobilization of assets and resource availability to be more responsive (5) (depending on the emergency nature)
IOM	F	<ul style="list-style-type: none"> • Fundings and donations (also in-kind) • Storing goods into strategic suppliers' facilities (agreements to keep stocks) • Privates might be ready to invest in preparedness to make resources available when needed • Quality assurance

	G	<ul style="list-style-type: none"> • Since privates might have Corporate Social Responsibilities (CSRs) as well, they make donations, offer free transportation services, and other types of services (EX: "Company X) (4) • Gathering of expertise from privates
Italian Civil Protection	H	<ul style="list-style-type: none"> • Agreements made in preparedness allows to be more ready and responsive in interventions; procurement and good provisions (5)
	I	<ul style="list-style-type: none"> • Reliable service providers such as transportation for a rapid response (5) • Donations of any kind of good needed (5)
MSF	L	<ul style="list-style-type: none"> • Rapidity guaranteed by local service providers such as transporters for a quick response, thanks their knowledge of the territory and bureaucracy (5) • They can be cheaper since they have agreements with big manufacturers (economies of scale) • More refund warranty and maintenance, especially to medical items (especially in Ukraine where, due to the conflict, it's difficult to find maintenance providers) (5)

Organization	Respondent	Code 12
Save the Children	A	<ul style="list-style-type: none"> Humanitarians' work is necessarily "needs-based" while work with private individuals often requires to be "offer-based"; instead of in-kind donations (called "gift-in-kind" (GIK)), humanitarians might need more cash donations in order to buy those goods from local suppliers so to foster local economy. This can create a "cultural clash" since dialogue with private might be strenuous. Also, the shipments of these goods from the donor company to the target country might be costly and complex in terms of logistics (4) Ethical issues: need for knowledge of the counterpart, about which sometimes there are ethical elements to watch out for (3 because it is potentially avoidable)
	B	<ul style="list-style-type: none"> Need to train and develop private partners to cope with humanitarian principles and emergency contingencies; transformation from "service provider" to "partner" (5 but avoidable) Different organizational culture, a different mindset that then becomes a "different language" (2 depending on organization's size and nature) Risk of being substituted by the privates or that the private does autonomous and non-coordinated activities with humanitarians; their mistakes might cause negative impacts on "local acceptance" of NGO collaborating with that private actor (4)
WFP	C	<ul style="list-style-type: none"> Risk to be negatively affected by unethical activities of private partners (different vision) (4) Delays in payments to suppliers of service providers that can cause a late response (3)
	D	<ul style="list-style-type: none"> The commercial sector might decide not to provide the service because of security issues (4) Potential issues on products quality (3)
	E	<ul style="list-style-type: none"> Privates look for profits; sometimes for them CSRs might not be profitable (5) The commercial sector might decide not to provide the service because of security issues (4)
IOM	F	<ul style="list-style-type: none"> Need to do suppliers' development in order to check whether they comply with ethical standards (5)
	G	<ul style="list-style-type: none"> Need to be careful on giving relevant information to privates in advance since some of them could get more advantage of the tender. Misalignment with privates since they mainly look for profits; need to be careful on sharing relevant information (5)
Italian Civil Protection	H	<ul style="list-style-type: none"> Need to check ethical standards Strong partnerships with privates can be limited by very stringent administrative rules (5) For Civil Protection in response phase, that is when responsiveness would be needed, it is possible to purchase goods from the market only having the authorization of the declaration of the state of emergency; therefore, it is important to make agreements in preparedness

		<ul style="list-style-type: none"> • Different “language” and procedures; therefore, they need to be defined in preparedness
	I	<ul style="list-style-type: none"> • Agreements with privates in preparedness to have distribution means available can be costly; privates also consider the opportunity cost (3)
MSF	L	<ul style="list-style-type: none"> • Ethical risk if private partners do unethical activities (5) • Accountability and contracting since they can change agreements, prices, etc. (Here, humanitarian organization’s size doesn’t affect such issue) (5 depending on how many partners you work with)

Organization	Respondent	Code 13
Save the Children	A	<ul style="list-style-type: none"> • Ukraine is the peak of the emergency, but Save the Children was already present on the field, working in the context of the Donbass, in a low-intensity conflict situation • Differently from Ukrainian emergency, climate changes can be useful for emergency prediction • The situation right now is that of a continuity between a focus on emergencies, a response to emergencies, that merges with building through development and reconstruction actions • Ukraine’s scenario is different since it was not expected, especially on such large scale. Alliances with both privates and humanitarians should have been done in preparedness (EX: “Company X” logistics network and capabilities were useful) • In Ukraine there is full cooperation and willingness to cooperate from local entities and authorities with humanitarian organizations; such a European context already oriented to a culture of rights for all, helped in enabling education, services to be offered to citizens, the ability to network on local resources, local structures and institutions. In Ukraine, for example, the very interesting and positive thing was how local entrepreneurs who have a role in the area put their logistics network in place and creating volunteer movements
	B	<ul style="list-style-type: none"> • NGOs’ capacity has to be flexible since very scenario differs from another; Ukraine is a war conflict. Hence, agreements with privates, especially local one, plays a huge role both in preparedness and response. A big private can guarantees in all parts of supply chain; this assumes even more relevance in complex scenario such as Ukraine
WFP	C	<ul style="list-style-type: none"> • Ukraine, being a developed country, allows to meet also environmental requirements. For example, it's forbidden to use anything but electric forklifts by law in the warehouse in Ukraine that keeps food • Ukraine, being a developed country, fosters collaborations with local companies since they are very reliable
	D	<ul style="list-style-type: none"> • Due to the security situation in Ukraine any kind of operation was questionable, therefore WFP had to really focus on deliveries of food by using local service providers
	E	<ul style="list-style-type: none"> • Many actors involved; therefore, more need of coordination among humanitarians
IOM	F	<ul style="list-style-type: none"> • War conflict and unexpected by almost everyone • In a complex scenario like Ukraine, preparedness might not be enough to fully respond • Ukraine is a well-developed country with strong manufacturing, which facilitate collaboration with local suppliers and service providers. You can more easily find what you need on the local market. Instead, in a small country, you may need to purchase from abroad which will require time, giving therefore more importance to preparedness phase • Good transportation systems and infrastructures which facilitated distributions inside the country

	G	<ul style="list-style-type: none"> • Many actors involved: need of coordination to avoid chaos
Italian Civil Protection	H	ND
	I	<ul style="list-style-type: none"> • War conflict requires to assist population; it is different from natural disasters
MSF	L	<ul style="list-style-type: none"> • Full cooperation by local entities and authorities • Due to the war, some local companies might not exist anymore or not have the capacity. Therefore, agreements with privates assumes even more importance since they are reliable and often offer refund warranty and maintenance. For this reason, most of the work was done by companies

Summary

1. Introduction

The Russian-Ukrainian conflict is a political and military confrontation that began in February 2014 but, since February 2022 sees the troops of the two countries regularly facing each other. As many other conflicts, it brought to attention the importance of humanitarian logistics and operations to ensure not only an efficient flow of goods of any type but also to meet fundamental needs, which can be identified within the Sustainable Development Goals (SDGs), of many refugees affected by such humanitarian crisis. In this slow-onset disaster, many actors are involved and collaborate in an integrated system. Hence, it can be stated that supply chain and operations management assume even more relevance and has become critically important not only for private companies but also for humanitarians. As such, humanitarian non-governmental organizations (NGOs), international organizations (as United Nations agencies), but also specialized agencies from Member States are participating as humanitarian actors. On the other hand, private companies collaborating with such organizations play a key role for effective and efficient humanitarian operations as well. Indeed, in response to Russia's aggression, the European Commission is coordinating the largest ever operation under the EU Civil Protection Mechanism with about 200 humanitarian partners and therefore private ones. More than 17.7 million people require not only humanitarian support having no access to basic needs such as food, water, schools and health facilities, but also protection being exposed to shelling and any kind of violence. It's considered the fastest-growing refugee crisis, highlighting how human rights are put to a hard test due to lack of social development, including poverty, inequality and an unsafety environment.

Humanitarian organizations provide aid in humanitarian crisis and their operations are considered successful if they mitigate an immediate need of a population in the shortest amount of time, with as few resources as possible, decreasing their vulnerability. More specifically, they aim to lessen mortality rate among disaster victims and assist and protect affected populations. In such context, collaboration in SCM is particularly relevant since only the performance of humanitarian groups, as a whole, should be taken into account. Although many different actors might be involved in a humanitarian operation, this study will focus on the collaboration of humanitarian organizations with other humanitarians and with private companies. The role of each of these players might be fundamental and the success of humanitarian operation can be determined by the coordination between them.

Specifically, due to more complex and unpredictable emergencies trends, humanitarian organizations are required to find more effective and efficient solutions in supply chain management. The relevance of investigating how collaboration in SCM of humanitarian organizations affects humanitarian operations is mainly because good performance and effectiveness of such interventions can be translated into an improvement of social sustainability. Moreover, the number of people affected by disasters largely increased over time, underling the need of efficient humanitarian aids logistics that is complex to manage due to multifaceted issues and limited resources availability in volatile operational environments, which therefore makes collaboration crucial.

Relevance for practitioners is based on the idea that researchers in this field of study should translate their results into practical recommendations addressing real issues faced by practitioners themselves. Such contribution aims to ease SC operations managers' decision-making process to address fundamental humanitarian needs.

Existing literature suggests that more collaboration with both other humanitarians and business is anything but easy to implement. Potential benefits are described but, still, a gap has been found in how practically collaboration would affect humanitarian operations from a supply chain's effectiveness and efficiency perspective. From this perspective, since the Ukrainian humanitarian emergency is very topical, such case study has not been covered yet by previous research. This work aims to take the opportunity to conduct novel research, highlighting the need of further knowledge about the evolving stakeholders' role in humanitarian supply chains; in particular, it shows great opportunities for research on investigating the potential of partnerships between humanitarians and with business sector, developing realistic opportunities and challenges and considering the interconnectedness between disaster management phases: preparedness (pre-emergency) and response (post-emergency). Finally, existing literature still shows a gap in humanitarian operation research related to SDGs. Hence, new studies about beneficial partnerships are required as well. In conclusion, a further gap is identified when focusing on a more practical inclusion of social sustainability into humanitarian operations; therefore, the author aims to fill such gap by analyzing more in detail the logistical aspect of humanitarian cooperation networks to improve the efficiency and effectiveness of aid provision operations to persons in need, ensuring therefore social sustainability.

This work aims to investigate how humanitarian organizations, collaborating from a SC's perspective with other humanitarians and private actors, can improve the effectiveness and efficiency of humanitarian operations in the current Ukrainian humanitarian crisis. This results in the following problem statement: *"How does humanitarian organizations' collaboration in supply chain*

management with other humanitarians and private sector affect humanitarian operations' effectiveness and efficiency in the current Ukrainian humanitarian crisis?". To do so, this work addresses the following theoretical and empirical research questions:

THEORETICAL:

RQ1: What are the key dimensions of effective and efficient humanitarian operations in terms of benefits on the affected population?

RQ2: What are the key dimensions and considerations on collaboration in SCM with other humanitarians and private companies?

RQ3: What is the relationship between collaboration in SCM with other humanitarians and private companies and humanitarian operations' effectiveness and efficiency?

EMPIRICAL:

RQ4: What are the key dimensions of effective and efficient humanitarian operations in terms of benefits on the affected population in the case of Ukraine and what is the role of collaboration in SCM with other humanitarian and private actors?

RQ5: What are the key considerations on collaboration in SCM with other humanitarians and private companies when it comes to the two distinct phases of humanitarian operations - preparedness and response - to provide effective and efficient humanitarian operations in the case of Ukraine?

RQ6: Which are the main challenges and opportunities of collaboration in SCM with other humanitarians in the case of Ukraine to provide effective and efficient humanitarian operations?

RQ7: Which are the main challenges and opportunities of collaboration in SCM with private companies in the case of Ukraine to provide effective and efficient humanitarian operations?

2. Literature review

Inter-organizational collaboration describes the relational process occurring between two or more organizations, such as supplier and buyer in a supply chain, engaging together to deal with their interdependences. This study focuses on collaboration in SCM of humanitarian organizations with other humanitarian and private actors. Humanitarian organizations can be divided depending on two main attributes: mandate and type of organization. The former refers to the set of policies and procedures in light of the organization's own rules and norms, to specify and pursue its goal. Humanitarian operation is considered successful and therefore effective and efficient, if: “mitigates the urgent needs of a population with a sustainable reduction of their vulnerability in the shortest amount of time and with the least amount of resources”. Here, lack of information sharing, poor planning for humanitarian logistics, lack of enough supplies for relief efforts can be considered as some of the most significant difficulties faced in disasters’ supply chains. Specifically, poor assessment and planning, limited coordination and collaboration both in the preparedness and response phase, financial resources, transportation, procurement, and inadequate communication are key common challenges. Several studies insist on a specific framework that characterize humanitarian operations. Such structure refers to four clear phases within HOs disaster management: mitigation, preparedness, response, and reconstruction. In this thesis, the author focuses on preparedness and response phases, which rely on supply chain management. In particular, preparedness phase relies on planning how to respond and activities that occur before the onset of a disaster; this stage is fundamental since it encompasses all the strategies to ensure a successful response. Response phase refers to those activities applied immediately after the disaster occurs, that is promptly executed post-disaster. Preparedness concerns coordination and partnerships, stocks and logistics information systems; while response phase is considered the most crucial since it relies on on-time deliveries of requirements from people in need.

Humanitarian logistics’ actors are those contributing to humanitarian logistics processes, therefore including business sector partners. The role of each of these players might be fundamental and the success of humanitarian operation can be determined by the coordination between them. When it comes to coordination among HOs, although aligned by similar goals, each of them might have its specific agendas and/or different mandate, which can lead to even more complexity as well; hence, coordination might be challenging. On the other hand, differently from private sector, just a decade ago humanitarian organizations started to become more aware of the fact that logistics and SCM represent a key for successful operations, and solutions offered by business sectors might not always be suitable to humanitarian field. Nevertheless, HOs-private relationship might also lead to relevant

cross learning opportunities and benefits, such as exploiting tools and concepts used by commercial companies and exploit private sector's supply chain capabilities of responsiveness and resources.

3. Methodology

The research is conducted at five different humanitarian organizations: World Food Programme, International Organization for Migration, Italian Civil Protection, Médecins Sans Frontières, Save The Children. The focus will be on the current Ukrainian scenario, that is all the activities supporting the regions affected by the humanitarian crisis caused by the Russian-Ukrainian man-made conflict started on February 2022. A theory-supported inductive research is conducted by the author to answer research questions. The exploratory nature provides insights into the “how” collaboration in SCM can improve humanitarian operations' effectiveness and efficiency. The author used a multiple-case study method to facilitate generalization. For this research, a total of 10 semi-structured interviews have been conducted among the five different humanitarian organizations. Also, the researcher made use of secondary data such as reports to ensure reliability. Specifically, the author aimed to reduce participants bias by using not only multiple respondents for each organization with the same role, but also multiple humanitarian organizations involved in the Ukrainian scenario. Furthermore, external validity is reached thanks to the multiple case study design that allowed to replicate the results among five different organizations involved in the same case setting. For data analysis, the author used a combined approach for coding, that is both deductive (theory-driven) and inductive (data-driven); this allowed respectively to first use the theoretical framework supported by theory and the structure of interviews to find main themes, and then to look at data if important codes were missing. For this research, the author defined 6 main themes based of theoretical framework: effects and benefits of efficient humanitarian operations on affected population through collaboration in SC, phase identification referring to the theory-based stages of humanitarian operations framework (preparedness and response phases), main challenges and opportunities in collaborating with other humanitarians, main challenges and opportunities in collaborating with private sector. Moreover, a total of 13 codes were finally identified, among which also data-drive ones, to cover those important aspects that were missed by only using the theory-driven approach. Finally, data display allowed to draw conclusions.

4. Findings

The author first explained which are the main needs of the affected populations during the humanitarian operations in Ukraine and how a collaboration approach allows to achieve them. Secondly, it is discussed in which of the two humanitarian operations' considered phases – whether preparedness and response – collaboration with both other humanitarians and privates should occur. Finally, the last two questions are addressed providing the main challenges and opportunities in supply chain management, respectively in collaborating with other humanitarians and private actors.

Regarding the first empirical RQ, data collected indicates a clear pattern about the critical role played by collaboration to make humanitarian operations more efficient and effective and, therefore, to address main goals. Here, clusters' utilization was highlighted by all organizations as main tool for coordination among humanitarian organizations, especially from a SC perspective, to improve humanitarian aid effect. For what concerns collaboration with private actors, it emerged that the same results, in terms of a critical influence on humanitarian operations' effectiveness and efficiency to address fundamental needs, can be derived as well. Data showed a clear pattern on the key role of such type of collaboration on ensuring: fundings availability through donations upstream, agility and flexibility guaranteed by privates' supply chain capabilities, resources quality and availability, assets rentals such as warehouses, expertise and technologies sharing. At this point it can be stated that collaborating with both humanitarians and privates allows to better achieve each organization's own goals. Also, from data collected, it was clear how each humanitarian agency might have different goals and priorities with respects to the others. Therefore, it can be stated that, through such collaborative approach, a wider spectrum of different population's needs can be covered and in a more efficient way. In other words, collaboration allows each organization to better achieve its own goals but also those of others, which might be different, easing more exhaustively population's needs. Finally, and even more interestingly looking at data collected regarding the different sustainable development goals addressed, an efficient supply chain collaboration approach in humanitarian operations offers the potential to cover, not only social sustainability's aspects, but also environmental and economic ones. It should be noted, however, that social sustainability remains the main priority of humanitarian operations.

Moreover, when it comes to the second empirical RQ, data collected did not show a clear pattern or “gold rules” that can be suitable for every humanitarian crisis. Therefore, the author provided the main insights of collaborating with other humanitarian and private actors in both preparedness and response phase, highlighting the main considerations related to the specific Ukrainian emergency nature. It's important to contextualize since context makes the difference. In other words, decisions

on whether to collaborate pre or post disaster, might assume more or less relevance when referring to Ukrainian scenario. Despite that, it can be stated that collaborating not only with other humanitarians but also with commercial companies, can and should be done both before the emergency onset and during the response. Hence, an important consideration suggests that such agreements in preparedness are considered strategic – such as stock prepositioning for availability of resources - while in response they assume a more operational nature and, here, a huge role is especially played by local actors: agencies already present on the field for what concerns humanitarian organizations and local suppliers and service providers regarding private actors.

Regarding last two empirical RQs, main challenges and opportunities in SC collaboration with other humanitarian organizations (RQ6) and business sector (RQ7) involved are discussed. Interestingly, some aspects that were considered by respondents as both a challenge and an opportunity are presented as well. Also, key references to, not only specific Ukrainian emergency’s nature, but also each considered organization’s nature are provided when needed. Hence, a total of 16 challenges and opportunities were found regarding collaboration in SCM with other humanitarian and private actors individually; here, an intersection of 8 challenges and opportunities emerged as well, as presented in the Figure below that summarizes such findings.

Partner	Opportunities	Challenges
Humanitarian Organization	Holistic approach	Differences in mandate and nature
	Extensive distribution	Non-standardized capacities
	Capacity and resource sharing	
		Risk-taking
		Coordination
		Information sharing
		Staff turnover
		Role definition
Private Sector	Greater supply chain’s flexibility, agility and effectiveness	Different culture and corporate language
	Local networks and knowledge	Risk of misalignment
	Technologies and expertise sharing	Collaboration ending due to security issues
	Greater capacities	Accountability
	Price, quality and other benefits	
		Fundings and donations
		Sustainability standards
		Long-term agreements

It should be noted that the main Ukrainian context's specific nature and characteristics that the author referred to, can be listed as: unpredictability, war conflict and security issues, well-developed country and reliable suppliers, and local willingness to collaborate. These factors represent key aspects to take into consideration, not only when considering to collaborate in SCM whether in preparedness or response phase, but also when evaluating potential challenges and opportunities deriving from such collaborative approach, both with other humanitarian and private actors.

5. Discussions

Then, several propositions emerged from the discussions section highlighting the theoretical contribution deriving from the work at hand. In particular, regarding the findings from the first empirical RQ:

Proposition 1: a collaborative approach in SCM with other humanitarian and private actors allows to better address population's needs in a more holistic and comprehensive way, including not only social, but also environmental and economic aspects.

Such further contribution might come from two main factors: the emergency's nature and partners' nature. Indeed, the need of a more holistic approach may be due to the complex nature of Ukrainian humanitarian crisis, which requires more social aspects to be covered. Here, collaborating with private sector, is crucial to be able to cover also environmental and economic sustainability aspects, specifically through supplier development approach in sustainable supply management and financial service providers.

Regarding the humanitarian operations' framework, preparedness and response phases were developed in terms of whether to collaborate with humanitarian or private actors in SCM. The research at hand indicated how Ukraine's crisis specific factors such as: unpredictability, war conflict and security issues, well-developed country and reliable suppliers, and local willingness to collaborate represent key factors to consider when strategically deciding to collaborate in preparedness and response phase, whether with other humanitarian or business actors. Such detailed insights may differ from existing literature due to the newness and topicality of Ukrainian case study. In conclusion, the following propositions were made:

Proposition 2a: collaboration with other humanitarians but also commercial companies, can and should occur both before the emergency onset and during the response.

Proposition 2b: context's specific characteristics influence the choice of partners' nature in preparedness and response phase.

The final contribution addresses the intersection of 8 challenges and opportunities with an exploratory approach, contributing to theory building through multiple case study. The study also contributed presenting 16 challenges and opportunities considering collaboration in SCM with humanitarians and privates individually. Those aspects representing both a challenge and opportunity, except for "coordination" and "information sharing" which were already identified by existing literature as solutions but difficult to implement and largely triangulated among respondents, might have been emerged once again due to the highlighted Ukrainian context's specific nature and personal experience of selected respondents. Particularly surprising was the often-emerged potential double-effect deriving from a supplier development approach which, as challenge, didn't get a very high grade because potentially "avoidable". Finally, the following propositions were made:

Proposition 3a: certain challenges deriving from collaboration in SCM with other humanitarian and private actors can potentially be exploited as opportunities

Proposition 3b: context's specific characteristics and humanitarian organization's size and nature influence the effects' weight of challenges and opportunities in collaborating with other humanitarian and private actors

From this perspective, the author aimed to practically contribute by easing the decision-making process of operations and SC managers of humanitarian organizations. To do so, main and concrete recommendations were reported as shown below, following the same theoretical structure:

Recommendation 1a: managers should consider multi-sectorial humanitarian partners to provide a comprehensive and holistic aid.

Recommendation 1b: managers should consider private partners to cover also environmental and economic sustainability aspects.

Recommendation 2a: managers can and should consider humanitarian and private partners for collaborations in SCM, both in preparedness and response phase.

Recommendation 2b: managers should consider context's specific nature and characteristics when taking such decisions.

Recommendation 3a: managers should consider the emerged potential opportunities to efficiently select the right partners and potential challenges to be aware and prepared to cope with difficulties; managers should also be aware of the indicated challenges to be exploited as opportunities.

Recommendation 3b: managers should consider not only context's specific nature and characteristics, but also the own organization's size and nature when looking at potential challenges and opportunities.

Recommendation 3c: manager should strongly consider already present and local partners for collaboration in SCM.

6. Conclusions

In conclusion, this work aimed to investigate how humanitarian organizations through collaboration in SCM with other humanitarian and private actors can improve the effectiveness and efficiency of operations to address fundamental humanitarian needs. This was done by interviewing humanitarians from five organizations of different nature involved in the current Ukrainian scenario, aiming to generalize findings and contribute both academically and practically.

It has been shown that collaboration in SCM can heavily improve humanitarian operations' performance of every organization involved and entail a comprehensive aid provision in terms of different needs addressed, enabling to cover environmental and economic aspects as well. A focus was provided on preparedness and response phases, where collaboration with both other humanitarians and privates should occur to provide an effective and efficient aid, especially keeping into consideration context's specific nature and characteristics. Then, key challenges and opportunities in SC collaboration with such stakeholders were shown, highlighting that not only humanitarian organization' size and nature, but also context's specific characteristics should be considered as well to best manage humanitarian operations.

One limitation of the research at hand is related to the use of a multiple case study which doesn't allow to provide an in-depth focus on each organization considered for data collection; Also, a limited number of two interviews for each organization might not enable to present an exhaustive intra-firm analysis. Also, although Ukrainian scenario represents a very topical and large-scale case, some findings that emerged assume more or less importance when related to such context's specific nature and characteristics, as specified when needed. Therefore, while it might be easier to generalize for

other conflict emergencies with similar setting, it must be paid attention when considering different nature humanitarian crisis.

Moreover, this study focuses on humanitarian organizations' point of view. As such, for the future, it would be interesting to analyze business sector's perspective so to fully understand the relationship between humanitarians and privates in humanitarian operations. Regarding the HOs framework, this work focused only on preparedness and response phases and considered collaboration with other humanitarian and private actors; Thus, the author encourages future research to also take into consideration other stakeholders involved, such as governments, media, and military. Also, examining "reconstruction" and "mitigation" would offer a wider vision on humanitarian operations. Future directions should also comprehend, more in detail, how the opportunities coming from collaboration in SCM that emerged from the study at hand might specifically address the existing SCM challenges in humanitarian operations.