

# Outsourcing of humanitarian logistics to commercial logistics service providers

## An empirical investigation

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Outsourcing of  
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### Abstract

**Purpose** – The purpose of this paper is to empirically explore the potential of outsourcing of humanitarian logistics activities to commercial logistics service providers (LSPs) throughout the different disaster phases. The authors identify incentives for initiating outsourcing of humanitarian logistics activities to commercial logistics providers, humanitarian logistics activities to be outsourced and selection criteria for partners.

**Design/methodology/approach** – This study is based on empirical data collected by interviewing 12 practitioners from commercial LSPs and 12 practitioners from humanitarian organizations (HOs). A review of related literature guided this research.

**Findings** – This research shows that incentives for initiating outsourcing engagements, partner selection criteria and activities to be outsourced are changing throughout the different disaster phases. A number of research propositions are presented.

**Research limitations/implications** – This research constitutes a first step towards the goal of a comprehensive analysis of humanitarian logistics outsourcing throughout the different disaster phases. The authors collected data from practitioners and large organizations based mainly in Europe and the USA. Hence, insights from national and local organizations of other parts of the world are missing.

**Practical implications** – This research provides a deeper understanding of outsourcing of humanitarian logistics activities. As the main implication for practice, the research suggests a strategic use of outsourcing during the three disaster phases. The authors acknowledge that business objectives, risks, stakeholder agendas and requirements, as well as costs play a vital and changing role for outsourcing decision-making during the three disaster stages. The managerial implications arising from the research can provide support to commercial LSPs and HOs that initiate or develop strategic outsourcing relationships.

**Originality/value** – This study covers the gap in the humanitarian literature related to context-specific factors of outsourcing in humanitarian logistics by empirically investigating the phenomenon. This is one of the first studies that empirically investigate the potential of outsourcing of humanitarian logistics activities throughout the disaster phases.

**Keywords** Humanitarian logistics, Logistics service providers, Humanitarian supply chain, Humanitarian-private partnerships, Outsourcing of humanitarian logistics, Cross-sector collaboration

**Paper type** Research paper

### 1. Introduction

Logistics services providers play an increasingly prominent role in humanitarian operations by entering into commercial and non-commercial relationships with humanitarian organizations (HOs) (Hoxtell *et al.*, 2015; Bealt *et al.*, 2016; Vega and Roussat, 2015). Current research on humanitarian operations acknowledges that HOs can draw valuable lessons from private enterprises and vice-versa (Cozzolino *et al.*, 2017;

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Baharmand *et al.*, 2017; Nurmala *et al.*, 2017; Bealt *et al.*, 2016; Scholten *et al.*, 2010; Schulz, 2009; Kovács and Spens, 2007; Van Wassenhove, 2006).

Many commercial companies have a great interest in participating in humanitarian operations since they see a multi-billion-dollar market (Binder and Witte, 2007, p. 19). LSPs provide services that HOs are either unable to provide or that they can provide in a better way (Bealt *et al.*, 2016; Hoxtell *et al.*, 2015). LSPs often have the capacity for shorter ramp-up times when no prior operational presence exists and the capacity to scale since they can sub-contract and manage numerous projects in large-scale programs (Stoddard, 2009). They could add significant value in meeting humanitarian needs due to their technical knowledge, access to data, ability to rapidly respond and financial resources (Scholten *et al.*, 2010; Schulz, 2009; Kovács and Spens, 2007; Van Wassenhove, 2006). However, LSPs may have a lack of experience in the local context and humanitarian relief programs. In addition, differences between the two sectors with respect to availability of resources, uncertainty, complexity and stakeholders exist and challenge their collaboration (Beamon, 2004).

Several researchers have explored private-humanitarian partnerships including partnerships with logistics service providers (LSPs) (e.g. Nurmala *et al.*, 2017, 2018; Kovács and Spens, 2011; Schulz, 2009; Van Wassenhove, 2006; Thomas and Kopczak, 2005) but little attention has been given to why, how and what organizations decide to outsource (Cuzzolino *et al.*, 2017; Baharmand *et al.*, 2017, Bealt *et al.*, 2016; Vega and Roussat, 2015). Recent research calls exist for further empirical research to shed more light on roles that LSPs can play in humanitarian response (Cuzzolino *et al.*, 2017; Baharmand *et al.*, 2017; Nurmala *et al.*, 2017; Bealt *et al.*, 2016; Vega and Roussat, 2015). Furthermore, context-specific factors of outsourcing require more in-depth research. Of special importance for outsourcing engagements are the phases of disaster relief (preparedness, response and recovery). The different phases include different supply chain activities and require different ways of planning, implementing and coordinating as well as different resources and skills (Kovács and Spens, 2007). Also, organizations' main motivation for outsourcing, their choice of partners and the activities to be outsourced may change during the different disaster phases. Hence, this study addresses the following research questions:

- RQ1. Why do HOs and LSPs enter into outsourcing relationships throughout the disaster phases?
- RQ2. How do HOs and LSPs choose partners throughout the disaster phases to mitigate risks?
- RQ3. What are the humanitarian logistics activities to be outsourced to LSPs throughout the disaster phases?

Since outsourcing is a new topic in the humanitarian context, we employ a qualitative exploratory approach to help uncover the phenomenon. Qualitative methods provide the flexibility for investigating new aspects of a phenomenon (Eisenhardt, 1989).

The contribution of our research is twofold. First, it contributes to covering the gap in the literature on why and how HOs and LSPs decide to engage in outsourcing partnerships during the three disaster phases. Second, it provides a comprehensive view on the topic by conducting interviews with HOs as well as LSPs and identifies areas for future research. The structure of the paper is as follows: in Section 2, we present our research design and methodology. In Section 3, we discuss our empirical findings. In Section 4, we present four propositions. In Section 5, we present conclusions, limitations of our research and future research opportunities.

## 2. Research design

In this section, we outline the research design and the methodology that we followed to answer our research questions. Since existing literature related to outsourcing of

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humanitarian logistics is limited, we chose a qualitative exploratory approach. The research process is composed of four main steps. First, an analysis of existing literature with respect to the topic was conducted to identify gaps and to guide the development of the questionnaire for the collection of empirical data. Second, primary data were collected by interviewing experts from HOs and LSPs to identify incentives for initiating outsourcing engagements, selection criteria of partners and activities to be outsourced. We collected primary data via interviews to understand and explore in depth the context and advance the knowledge on the topic (Eisenhardt and Graebner, 2007). Third, we conducted a systematic literature review on the topic. Fourth, we analyzed the empirical data and we compared results of this analysis with insights from literature.

Interviews are particularly well suited for research that requires an understanding of phenomena like humanitarian operations because of the opportunity they offer for detailed understanding (Ritchie and Lewis, 2003). We tried to make sure all insights presented in this paper were suggested by multiple respondents across different organizations (Mangan *et al.*, 2004). The findings from our research led to four research propositions presented in discussion section.

### *2.1 Selection of humanitarian literature*

We reviewed the related literature in two steps. In the first round, we identified research gaps to guide the development of the questionnaire for the collection of empirical data. In the second round, we conducted a systematic literature review on outsourcing of humanitarian logistics activities to commercial logistics providers. We used a keyword search in three scientific databases expanding the literature review done by Vega and Roussat (2015) who investigated the role of the LSPs in humanitarian logistics between 2000 and 2013. The selected databases were searched for the period from January 2014 to May 2018. We used three databases: Emerald Insight, EbscoHost and Science Direct as Vega and Roussat (2015) did but we expanded the search to all journals. We also used Google Scholar to check for additional publications. We used queries-based search terms to do the literature review. The first two search terms consisted of Humanitarian OR Disaster OR Relief AND Logistic\* OR "Supply Chain" OR "Humanitarian Operation." They were connected with a Boolean AND operator to limit the results to the context of humanitarian logistics and supply chains. For the third set of terms we used 3PL\* OR 4PL\* OR LSP OR "Logistics Service Provider" OR "contract logistic"\* OR outsourc\* OR "third party" OR "fourth party" OR collaborat\* OR cooperat\* OR partnership\* to ensure that we capture all literature related to outsourcing. We initially found around 65 articles. We looked at the titles and abstracts of the articles to see if they were related to our research questions. If we could not make a clear decision based on the abstract, we read the full article. Since we had chosen a rather broad set of keywords, a multitude of reasons existed why we excluded articles. Some articles were excluded because they referred to outsourcing to other HOs, retailers or the military but not commercial logistics providers. Quite a few articles discussed IT solutions as enablers of collaboration. Consequently, we ended up with nine articles related to our topic that focus on outsourcing of humanitarian logistics activities to commercial logistics providers.

### *2.2 Data collection and analysis*

We interviewed 24 practitioners in total, 12 from HOs and 12 from LSPs. The interview participants represented a range of HOs (World Vision, CARE, Oxfam, Lutheran World Relief, AMREF Flying Doctors), International organizations (IOM, ICRC) and UN agencies (UNFPA, UNHRD and UNHCR) (see Appendix 1). The majority of the interviewed private companies are leading LSPs involved in the humanitarian sector (DHL, Kuehne & Nagel, UPS, TNT, Agility, Maersk, Bolloré Logistics, Brussels Airlines, Accu-Logistics, UTI, Deloitte, BLG Logistics Group) (see Appendix 2). We covered organizations across different

types of operational mandates and sizes. Criteria for inclusion in the study were that participants from HOs had experience with humanitarian logistics. Participants from the commercial sector were sampled based on their experience in working with HOs. We targeted senior-level managers and directors because we wanted to examine strategic points of view. We identified relevant experts by checking websites of organizations and relevant reports and also by asking our personal contacts at HOs for further participants within their network. We also interviewed some practitioners at humanitarian conferences. We have a heterogeneous sample of participants from different organizations, however, we have not managed to cover all geographical areas due to targeting managerial and directorate positions that mainly are in HQs that are based in Europe and the USA.

Data for the primary research were collected through semi-structured interviews, using an interview guide (see Appendix 2). The majority of the interviews were done via phone or Skype and a few of them face to face. In the beginning of the interview process, we briefly introduced our research and our organization and respondents were asked to provide information about their experience, their role in their organizations and their experiences with outsourcing. Then, we started with our semi-structured questions. Semi-structured interviews allow the respondents to express their attitudes and experiences and bring insights that we may not have anticipated. The interviews were one hour in duration and were recorded and literally transcribed. Interviewees were asked to validate the transcripts of their own interviews.

We analyzed the interview data using NVivo, a qualitative data software that has the ability to organize and analyze data (Dean and Sharp, 2006). We followed an inductive explicit content analysis approach. Content analysis is a research method for making “replicable and valid inferences from data to their context, with the purpose of providing knowledge and new insights” (Krippendorff, 1980, p. 18). The inductive approach is recommended when former knowledge about the phenomenon is not sufficient and is a theory development process that starts with “observations of specific instances and seeks to establish generalizations about the phenomenon under investigation” (Spens and Kovács, 2006, p. 374). We contextualized our data with respect to the three disaster phases. We began with the premise that when HOs or LSPs act or interact, they are consciously responding to something that calls for response. In our case organizations need to respond to the demands of the different disaster phases (Corbin and Strauss, 2015, p. 153). We followed the coding paradigm of Corbin and Strauss (1990, 2015) consisting of open, axial and selective coding.

First, open coding was used on the transcripts of the interviews. Open coding is the interpretive process and helped us to identify the context and the dimensions of outsourcing through the emergence of concepts or codes. For this case, the information gathered in the interviews was initially organized into the following dimensions: disaster phases, selection criteria, outsourced logistics activities, types of partnerships, philanthropic, commercial, single or multiple organizations, contracts, drivers of outsourcing, lessons learned, risks, benefits, future role of LSPs, donors’ role, measurement of performance, return of investment, initiators of collaboration, national and international LSPs, pre-outsourcing decisions, during outsourcing decisions, post-outsourcing decisions, performance measurements and metrics. Open codes were introduced in NVivo in the form of free nodes used in the early coding.

Based on the coding paradigm of Corbin and Strauss (1990), we carried out axial coding to identify themes and sub-categories. Axial coding is the process of breaking down the core dimensions that we have identified with the open coding. The process allows to make connections between a category and the sub-category or it can also suggest dropping some subjects from some categories (Corbin and Strauss, 1990, 2015). This connection is accomplished through the use of a coding paradigm, which focuses on three aspects of the phenomenon: the conditions in which the phenomenon occurs, in our case, under which conditions HOs decided to outsource and under which conditions LSPs decided to engage in

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humanitarian operations (pre-outsourcing); the actions of people to respond to the specific situation – in our case, what are the actions that HOs and LSPs took to respond to the specific situation, who initiated collaboration, how they have chosen with whom to collaborate, what HOs outsource, what LSPs provide (before and during outsourcing); and the consequences or results of the action taken, in our case what are the benefits and risks for both sides (post-outsourcing) (Corbin and Strauss, 2015).

Finally, we proceeded with selective coding. Selective coding is the final stage in our data analysis where we choose the core categories to discuss our results (Section 3). These core categories correspond to the key concepts of our research questions: “Why are HOs and LSPs entering into outsourcing partnerships? How do they choose partners throughout the disaster phases? “Which humanitarian logistics activities are outsourced to LSPs throughout the disaster phases?” (Eisenhardt, 1989).

Based on the coding paradigm, we divided outsourcing of humanitarian logistics activities into categories using the four dimensions of our selective coding. We divided disaster phases into preparation, response and recovery. We categorized drivers of outsourcing into three main sub-categories: capacity, financial constraints and cost efficiency. Then financial constraints and cost efficiency merged into one category, financial constraints, which includes donor dependency and requirements and lack of resources (personnel and financial). Capacity category includes lack of expertise, lack of advanced IT systems and the capability to scale up the response. Benefits category is merged into drivers during axial coding. For the LSP interviews, we divided drivers of engagements into two sub-categories: corporate social responsibility (CSR) as well as philanthropic and profit drivers.

The risk dimension for the HOs is categorized into: financial risk category (with sub-categories hidden costs, fluctuation of prices), dependency on the provider category (with sub-categories loss of control of logistics, single sourcing risks, lack of visibility of shipments and non-deliveries). Type of services category is divided into pro-bono services and commercial services. Finally, we have two more categories related to conflicts of organizations’ culture and the lack of evaluation and monitoring of the performance.

Risk dimension for the LSPs is categorized into geopolitics category which includes risks related to security and safety for LSPs’ employees and local infrastructure. Financial risks category is divided into loss of revenues and return of investment. Type of disaster risk category includes risks coming from natural and man-made disasters, type of services includes pro-bono and commercial. Finally, the reputation risk category was added.

We categorize selection criteria into: quality, reputation, type and size of organizations engaged in outsourcing. Quality includes sub-categories quality of delivery and quality of service. Quality of delivery is divided into sub-categories lead time and on-time delivery. Quality of service is divided into sub-categories reliability and responsiveness. Reputation is divided into networking and media. Type and size of organizations category for the LSPs is divided into the sub-categories of international organizations, UN agencies and NGOs. Type and size of organizations category for the HOs is divided into international big LSPs, national small or medium size LSPs and consortia of organizations.

Outsourced logistics activities are categorized into asset-based services and non-asset-based services. Asset-based services are divided into the following sub-categories: transportation which includes domestic, international, intermodal transportation and last mile distribution, warehousing which includes storage and cross-docking facilities, IT services and reverse logistics.

The non-asset-based services are divided into the following sub-categories: procurement of relief items and equipment, handling, forecasting, kitting services, logistics capacity building trainings and workshops, documentation, reporting and KPIs, claim management, labeling, receiving, picking and shipping, custom clearance, assessments, analysis of collected data, routing services which is divided into aircraft scheduling and fleet management.

Then, we did a cross-interview comparison between the HO and LSP transcripts. For the cross-interview comparison, we selected the two groups (HOs and LSPs) and looked for similarities and differences between our selective coding (Eisenhardt, 1989). Our coding paradigm is presented in Figure 1. The coding scheme and results of cross-comparisons are presented in Table I.

Finally, we validated our findings with existing literature and we formed four propositions. Discussing similarities and differences with the existing literature is an important feature of theory building research and increases internal validity and the generality of the results (Eisenhardt, 1989, p. 544). Results of this comparison are presented in Section 3 “Empirical Findings”. We also sent our results to selected interviewees to validate them.

### 2.3 Findings from literature review

The review of Vega and Roussat (2015) revealed that up to 2013, no study considered LSPs as a focal firm in humanitarian supply chains (Vega and Roussat, 2015) and only four papers referred to the involvement of LSPs in humanitarian logistics as a mean to increase the overall humanitarian performance (Jahre and Jensen, 2010; Schulz and Blecken, 2010; Cozzolino, 2012; Jensen, 2012). We expanded this literature search up to May 2018. We found nine research papers that are published in peer-reviewed journals that focus on logistics providers and outsourcing in humanitarian operations as well as on business-humanitarian partnerships with focus on logistics (Nurmala *et al.*, 2018; Baharmand *et al.*, 2017; Cozzolino *et al.*, 2017; Bealt *et al.*, 2016; Wang *et al.*, 2016; Vega and Roussat, 2015; Abidi *et al.*, 2015; Sánchez Gil and McNeil, 2015; Nurmala *et al.*, 2017). From these nine papers only five are explicitly focusing on outsourcing and the role of LSPs (Baharmand *et al.*, 2017; Cozzolino *et al.*, 2017; Bealt *et al.*, 2016; Vega and Roussat, 2015; Sánchez Gil and McNeil, 2015).

Methodologically, two publications are based on content analysis of websites of LSPs (Cozzolino *et al.*, 2017; Vega and Roussat, 2015) to identify the role of LSPs in humanitarian logistics. It is found that LSPs can take many different roles in disaster relief, as members, operators and actors. LSPs will contribute and add value to the humanitarian response. Nurmala *et al.* (2018) used content analysis of the websites of HOs and private companies involved in partnerships and found that partnerships between the two sectors are still limited and financial contributions are the most common type of resources delivered from the private to the humanitarian sector. Two publications are based on field research (Baharmand *et al.*, 2017; Sánchez Gil and McNeil, 2015). Baharmand *et al.* (2017) identified the risk in managing in-country transportation in Nepal and they found that LSPs contribute to improvements in humanitarian supply chains by providing a wide range of transportation means, enhancing scheduling and decreasing delivery delays. Sánchez Gil and McNeil (2015) investigated different levels of outsourcing, upstream to downstream,

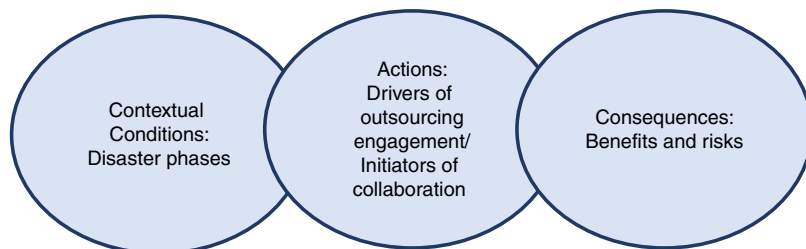


Figure 1.  
Coding paradigm

Source: Adapted from Corbin and Strauss (2015)

Dimensions	Categories and sub-categories	
	HO data	LSP data
Disaster phases	Preparation Response Recovery	Preparation Response Recovery
Drivers of outsourcing /engagement LSPs	Capacity and capability constraints Lack of expertise Lack of advanced IT systems Capability to scale up the response	Corporate social responsibility Profits Expand to new markets Employee motivation
Risks	Financial constraints Donor requirements Lack of financial resources Financial risks Hidden costs Price fluctuations Dependency on the provider Loss of control of logistics activities Single sourcing risks Lack of visibility of shipments Risk of non-deliveries Types of services Pro bono Commercial Conflicts of organizational culture Lack of evaluation and monitoring	Geopolitics Security and safety of LSP employees Local infrastructure Financial risks Loss of revenues Loss of existing customers Impact of disaster type on reputation risk Natural disaster Man-made disaster Types of services Pro-bono Commercial
Selection criteria	Costs Quality Service Quality Reliability Responsiveness Delivery Quality Lead time On-time delivery Types and Sizes International large LSPs National small or medium size LSPs Consortia of organizations 3PLs 4PLs Reputation Media Networking	Size International Organizations UN agencies NGOs Reputation Media
Humanitarian logistics activities to be outsourced	Asset-based services Transportation Domestic International Intermodal Last mile Warehousing Storage Temperature controlled storage Cross-docking IT Systems Non-asset-based services Kitting services	Asset-based services Transportation Domestic International Intermodal Last mile Warehousing Storage Temperature controlled storage Cross-docking IT Systems Reverse Logistics Non-asset-based services

(continued)

Table I.  
Coding scheme

Table I.

Dimensions	Categories and sub-categories	
	HO data	LSP data
	Logistics capacity building trainings and workshops	Logistics capacity building Trainings and workshops
	Documentation	Documentation
	Reporting and KPIs	Reporting and KPIs
	Claim management	Claim management
	Labeling	Receiving, handling, picking and shipping
	Receiving, handling, picking and shipping	shipping
	Customs clearance	Customs clearance
	Data analysis	Data analysis
	Routing and aircraft scheduling	Routing and aircraft scheduling

throughout the supply chains responding to both man-made and natural disasters in Colombia. One paper is based on data collected by an online survey targeting practitioners of LinkedIn groups (Bealt *et al.*, 2016) to explore barriers and benefits of establishing collaborative partnerships between HOs and LSPs. One paper collects data mostly from academics and some humanitarian practitioners regarding the implementation of the 4PL concept in humanitarian supply chains applying an analytical hierarchy process method (Abidi *et al.*, 2015). Wang *et al.* (2016) is a modeling paper that uses empirical data to develop a framework that proposes proactive and reactive outsourcing strategies for different relief items. Nurmala *et al.* (2017) is a literature review that refers to the role of logistics providers and partnerships between humanitarian and businesses sectors. In Table II, we present the related literature and the research method used.

All recent literature reveals a lack of empirically grounded research regarding outsourcing of humanitarian logistics activities to LSPs addressing questions related to how and why this is done (Cozzolino *et al.*, 2017; Baharmand *et al.*, 2017; Nurmala *et al.*, 2017, 2018; Bealt *et al.*, 2016; Vega and Roussat, 2015). Our research differs from previous research both methodologically and in terms of context. We identify incentives of outsourcing of HOs but also incentives of engagements of LSPs, and activities to be outsourced in the context of the three disasters phases (preparation, response and recovery) based on empirical data from HOs and commercial LSPs.

### 3. Empirical findings

In the next five sub-sections, we discuss empirical findings with respect to the three research questions.

#### 3.1 Incentives to initiate outsourcing throughout the disaster phases (why)

To answer the first research question, we identify HOs' and LSPs' incentives for outsourcing humanitarian logistics activities during the three disaster phases. As indicated by many interviewees, the most important reasons for employing logistics providers is their ability to provide HOs with expertise that they do not have, or it is "costly to have in-house" (Razzaque and Sheng, 1998, p. 93). Our empirical data indicate that lack of specific knowledge of logistics, customs and infrastructure of destination countries is a driving force for HOs to acquire the expertise of LSPs. Furthermore, outsourcing reduces "capital investment in facilities, equipment, information technology and manpower" (Razzaque and Sheng, 1998, p. 95). This is relevant in the humanitarian sector, because of limited resources and high dependency on donor funds "we don't have the capacity monetary-wise or staff-wise to provide logistics. We have no choice but to outsource." Interviewees also highlighted that outsourcing improves "tracking and visibility of the supply chain" because of electronic



Authors	Year	Journal	Research topic	Method
Vega and Roussat	2015	<i>International Journal of Physical Distribution &amp; Logistics Management</i>	Role of LSPs in humanitarian logistics	Analysis of websites of LSPs
Abidi <i>et al.</i>	2015	<i>Journal of Humanitarian Logistics and Supply Chain Management</i>	4PL concept in humanitarian response	Survey targeting academia and some practitioners using an analytical hierarchy process method
Sánchez Gil and McNeil	2015	<i>Procedia Engineering</i>	Outsourcing in post-disaster man-made context	Field research
Bealt <i>et al.</i>	2016	<i>Journal of Humanitarian Logistics and Supply Chain Management</i>	Barriers and benefits of establishing partnerships between HOs and LSPs	Online survey targeting practitioners from LinkedIn groups
Wang <i>et al.</i>	2016	<i>Annals of Operations Research</i>	Proactive and reactive outsourcing strategy for different relief supplies	Analytical-Modeling
Cozzolino <i>et al.</i>	2017	<i>International Journal of Quality and Service Sciences</i>	Contribution of logistics service providers' (LSPs) initiatives to disaster relief and how LSPs are engaged with humanitarian sector	Analysis of websites of LSPs
Baharmand <i>et al.</i>	2017	<i>International Journal of Disaster Risk Reduction</i>	Managing in-country transportation risks in humanitarian supply chains by logistics service providers	Field research
Nurmala <i>et al.</i>	2017	<i>Supply Chain Management: An International Journal</i>	Humanitarian–business partnerships in managing humanitarian logistics	Literature review
Nurmala <i>et al.</i>	2018	<i>International Journal of Production Research</i>	Cross-sector humanitarian-business partnerships in managing humanitarian logistics	Content analysis based on websites of HOs and private companies

**Table II.**  
Summary of related literature

capabilities and systems that LSPs have. The use of third- or fourth-party logistics providers to cover humanitarian needs allows HOs to “scale up humanitarian response.” Use of external LSPs enables HOs to focus on their core business competency.

Humanitarian experts highlighted that they prefer to initiate relationships with LSPs during the preparation phase because they have time, but often they do not have necessary resources “partnerships are challenging, and it needs a lot of effort and resources from both sides first to establish and second to maintain them [...] during preparation phase both partners have the time to invest in and negotiate the terms [...] but many of us, small or medium size HOs, we face financial constraints, since we only receive donations after a disaster occurs.” HOs usually outsource on an *ad hoc* basis during the response phase, since they receive funding and have a clearer idea of what is exactly needed. The funding constraints result in short-term relationships with LSPs and the outsourcing decision is often taken on a tactical level related to cost reduction. During the recovery phase, some HO programs focus on capacity building of the local logistics service provide sector. HOs hire and train local companies with the intention of improving their capabilities.

LSPs are motivated principally by their shareholders' interests and the importance of generating profit as a corporation. Many determined that they need to be spending money, time and effort on social causes and need to be aware of their social impacts. Reputation plays an important role in attracting customers. The impact on brand visibility is highlighted by many interviewees both from LSPs and HOs “It's reputation management,

it is very positive with our brand image when we are associated with NGOs. It helps us to gain strategic customers” stated a private sector expert. Private companies bring more technical expertise to HOs as service provider mentioned “we leverage our unique capabilities, our global network and our skills to make a critical difference and help our relief partners provide more effective preparedness. So that we could truly have an impact of saving lives through more resilient activities.” This also has an impact on employee engagement, retention and qualification “our people have developed skills that normally they wouldn’t have developed in our environment, for example demonstrating leaderships during emergencies” said an expert from LSPs.

LSPs initiate collaboration during the preparation phase to reduce risks of failure that may occur because of the characteristics of humanitarian operations. “Our intention has always been to the preparedness phase because we need an initial confrontation with the sector. It doesn’t mean we won’t look into other phases. There is always one big risk when you enter into these. It is very simple: you need to be able to perform before you enter into any transactions within the humanitarian sector. Because people will forget 10 years of excellent cooperation and excellent partnerships, they will remember one bad case even if it dates back 15 years.”

The response phase is also considered a point of entry for LSPs. The main motivation of international logistics providers to be involved at this stage is the impact of media attention on companies’ reputation and the motivation of their employees. “We prefer to establish partnerships in the preparation phase because we feel more secure, but response is also a phase that we consider because our employees like to see us getting involved [...] and also when a disaster is in the media, and you have their attention, so we can direct the impact in the organization to move.” During this phase, LSPs may offer some initial services for free for some days after the disaster and then turn to normal contracts.

The recovery phase seems not to have a clear agenda for the private sector yet and reverse logistics is not that developed in humanitarian operations, but the role of the private sector is also important at this stage. As mentioned by a private sector expert “we try to be involved in the recovery of the cold storage equipment back into Europe, but it’s only now becoming part of the logistics agenda for these organizations that you could consider doing reverse logistics as well. So, it’s a much undefined area and it’s still a long way off.” The recovery phase seems a good opportunity for local logistics providers to start their business. Our research did not have access to local agencies to investigate their incentives. We suggest that this topic is further explored in the future.

### *3.2 Partner selection criteria throughout the disaster phases to mitigate risks (how)*

Potential risks strongly drive the decision and the way that organizations initiate partnerships and select partners. Hence, we first summarize the main risks highlighted by HOs as well as LSPs.

Main risks that are highlighted by our interviewees are related to the capacity of LSPs and the quality of services provided. Delivery delays, insufficient capacity, as well as price and market fluctuations are among the most important risks according to the HOs. As highlighted by one of our humanitarian interviewees “we have experienced many times delays in deliveries especially from freight forwarders.” Fluctuation in prices in times of emergencies brings financial problems for HOs since they have limited budgets. HOs try to mitigate these risks by establishing framework agreements with some LSPs during the preparation phase. An additional risk that was highlighted by humanitarian practitioners is the risk of single sourcing. Single sourcing strives for a strategic relationship between HOs and LSPs to foster a close collaboration. However, the dependence on a single source also exposes HOs to a greater risk of missing deliveries. Practitioners from HOs see single sourcing strategies as “risky and they try to implement a multiple sourcing strategy in an

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effort to mitigate the consequences of a disruption.” An additional risk is related to pro-bono services. As indicated by HOs, LSPs may promise to give some services for free to HOs but then they do not deliver because they give priority to their commercial agreements.

Potential negative impacts on the service to existing customers as well as safety and security for their employees are among the risks highlighted the most by LSPs. HOs’ missions are typically project based and short term which constrains the development of long-term relationships with LSPs. Humanitarian operations call for flexibility of LSPs which has an impact on long-term projects with HOs as well as projects with other customers “many of the organizations we are working with, in the middle of the project they will get called to a crisis and so we will have to put the project on hold until they are ready to reengage again, we have to be very flexible in our process. This disruption has also an impact on the projects that we run with other commercial customers from which we have to take some resources to respond to humanitarian needs.” In addition, LSPs are also concerned about the risks related to the impact of NGOs’ image on their reputation. A private sector expert said “We cannot jeopardize our brand and our reputation by being linked up with an NGO, we cannot take the risk there. Because we had one incident in the past whereby the reputation of one of the NGOs was damaged and it had an effect on our reputation also.”

To mitigate risks of outsourcing, selection criteria of providers are important. The selection of providers for both sides is a multi-criteria problem and a complex process. Some criteria are developed based on specific needs while others are common for all circumstances. Commercial literature classifies selection criteria into the following broad areas: cost, relationship, services, quality, information and equipment system, flexibility, delivery professionalism, financial position, location and reputation (Aguezoul, 2014). In the humanitarian context, the disaster phases have different needs, levels of uncertainty and risks. The partners are selected based on these changing requirements.

Service and delivery quality criteria related to the reliability and responsiveness of providers, on-time delivery, lead time and costs are considered by HOs when they select partners. Compliance with humanitarian ethics and donor regulations are also important for HOs to select providers. In addition, previous collaboration with LSPs or other HOs’ experience with LSPs influences the decision to select a provider. In the preparation phase where speed is not that important, quality and costs are main selection criteria. In the response phase where delivery of services can “save lives,” speed is the most important selection criterion “At the response phase what matters is speed and not performance and compliance.”

In the recovery phase, we observed a change of the relationship between private companies and HOs and hence, also a change in selection criteria. Many HOs are involved in local capacity building efforts, helping to strengthen the contributions of local private enterprises to national development goals. Oxfam, Mercy Corps and other HOs, spend a lot of money and run programs to develop the capabilities of private companies and also to facilitate private sector investments in disaster areas. This includes providing sector technical knowledge, business planning and governance and business modeling. At this stage, HOs are trying to establish long-term partnerships mainly with local companies to support the local economy. Also, local companies bring important knowledge of the local regulations and environment that can improve humanitarian response.

Our empirical data also reveal that size and type of organizations play a role in the selection of LSPs throughout the disaster phases. It is observed that UN agencies are establishing long-term relationships with leading logistics providers such as DHL, UPS and TNT especially during the preparation phase. Smaller HOs usually do more *ad hoc* short-term relationships during the response phase since they are dependent on donations which are usually received after a disaster occurs. The majority of HOs that contract LSPs in the response phase are medium and small size HOs because they face financial constraints during the preparation

phase “HOs are in the flush with funds, we only have the funds when the emergency occurs. We have to use that money at that particular time in the best possible way” explained a humanitarian expert. “The big companies, the big corporations, the multinationals, are going much faster than the small companies” said a humanitarian expert.

LSPs that are profit oriented, select partners mainly based on the criterion of profitability. As confirmed by a private sector expert “profitability is our goal, meaning it’s difficult to reject offers from HOs. If the demanded services exceed our capacity and expertise, as logistics providers we are based on third- or fourth-party ideas and in case that other companies can provide better services for the humanitarian sector we can sub-contract them.” LSP experts see a gap between the different organizations “There is a tremendous gap, even in how the United Nations work between each other, but also a big difference between Federations, NGOs, United Nations on how they perceive the humanitarian environment, what their requirements are, how they structure their budgets. And that’s a big challenge because a lot of these organizations are not aligned in how they conduct themselves.” It seems that big HOs are perceived to be more bureaucratic (Bealt *et al.*, 2016) that they move slower but “they bring more resources when they move. Small organizations can be nimbler, but also a little more dynamic” confirmed an LSP expert.

### *3.3 Activities to be outsourced throughout the disaster phases (what)*

Different disaster phases include different logistics activities and require different ways of planning, implementing and coordinating (Kovács and Spens, 2007). In each phase operational differences exist with regard to the level of uncertainty, the necessity of speed, security issues and level of funding. This also affects the decision on what should be outsourced and when. Logistics activities such as transportation which is one of the common activities outsourced to LSPs could be divided into international, national, local and last mile distribution to beneficiaries. Warehousing and transportation seem the most common outsourced activities since HOs often do not have the capacity and resources to implement them in-house. Some HOs do not like to outsource procurement of relief items since they manage public money and they have to follow specific procurement procedures. Below, we present the logistics activities to be outsourced to LSPs classified according to the three disaster phases (preparation, response and recovery).

The preparation phase of a disaster refers to activities that are implemented before a disaster occurrence (Cozzolino, 2012, p. 9, Kovács and Spens, 2007). Our empirical data reveals that the main activities provided by LSPs are transportation by sea freight and trucks of pre-positioned relief items, stock review of pre-positioned relief items, forecasting, warehousing and controlled temperature storage. LSPs are also involved in IT projects with HOs, logistics capacity building trainings and workshops for humanitarian workers. Leadership trainings provided by private companies for HO employees take place during this phase. To a lesser extent, LSPs provide documentation, claim management, reporting, KPIs, labeling and kitting services.

The response phase refers to activities that are implemented after a disaster occurs by activating “temporary networks” (Cozzolino, 2012, p. 9; Jahre *et al.*, 2009). In the response phase, HOs conduct assessment of needs and they deliver items and services to beneficiaries. Our data indicate that the main supply chain activities that are provided by LSPs during the response phase are intermodal transportation, fleet management, last mile distribution, cross-docking, temperature controlled warehousing, warehousing which includes storage, receiving, picking and shipping tasks, IT services, customs clearance, and to a lesser extent invoicing and labeling. Recently, there is a tendency of engaging private companies in the assessment of needs and the analysis of collected data. “The mapping and analysis of assessments can be done by private firms since we are using their material and technology” mentioned a humanitarian expert. Our data reveal that

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especially warehousing is a logistics activity that HOs like to outsource. While HOs prefer to do the final distribution to beneficiaries themselves, they like to outsource all previous distributions activities.

The recovery phase refers to activities in the aftermath of a disaster. “It involves rehabilitation and it aims to address the problem from a long-term perspective” (Cozzolino, 2012, p. 9; Kovács and Spens, 2007). The effects of a disaster can continue for a long period of time with consequences not only on the affected population but also on the way that companies work. Our empirical findings indicate that the main activities provided by LSPs are capacity building, transportation, reverse logistics, reporting, trainings and skills development. Reverse logistics activities like the collection and shipment of used, damaged, outdated or unwanted products is still in a very initial stage as explained by a humanitarian expert who also indicates that their activities should be outsourced to “local providers who have the knowledge of the local regulations with respect to the returned items.” Also, scheduling of aircrafts is outsourced from some UN agencies to external consultants as indicated by the UN logistics expert “We are using our own aircraft in some African countries. So, we have a consultant looking into where and how we should actually operate between which destinations and also based on the movement, what would be the most cost-effective aircraft in terms of size.”

Our findings show that logistics activities that demand infrastructure and ownership of physical assets and equipment such as warehousing, controlled temperature storage, transportation and fleet management are the ones that the majority of HOs outsource. UN agencies and international organizations may keep them in-house since they have agreements with different governments that provide them with warehouses and they own aircrafts and trucks. Activities that demand knowledge of national and international regulations such as customs clearance and reverse logistics are also preferred to be outsourced by Hos. Table III summarizes our main findings with respect the humanitarian activities to be outsourced to LSPs.

### 3.4 Challenges

Outsourcing decisions are constrained by the characteristics of humanitarian operations that include uncertainty and donor dependency. HOs often lack a strategic perspective in outsourcing due to the nature of the operations and also due to donor requirements and funding strategies. Even if outsourcing is considered by many HOs, the majority of them recognize the need to establish more strategic outsourcing partnerships to benefit from long-term relationships. For many reasons usually, outsourcing is done *ad hoc* or on a short-term basis. Our data show that HOs often lack a strategic policy on what to outsource. Their decisions are based on temporary needs which are dependent on the disaster phase and the disaster type. Humanitarian logistics outsourcing is often focused more on the tactical rather than strategic level. As we show before, HOs often lack the money and resources to initiate and maintain outsourcing activities in the preparation phase. Also LSPs point out that the processes that HOs are going through are not sustainable. In order for HOs to use donor money, they are “obligated” to announce tenders and bidding exercises to purchase items or services. This process results in changing partners every three to six years for long-term agreements. A member of an international HO said that “we can’t do really long-term, strategic relations because of the fact that we are spending public money and the way that we are doing it, is, you know, subject to a lot of scrutiny and it’s a lot of how we spend their money is actually inspired by donor regulations, rather than, because we think this is a way to do business.” Also, some logistics companies believe that bidding processes are not sustainable, and they cannot add value to the partnerships. “Competitive bidding doesn’t add any value to the partnerships. Partnership is needed in order to have a sustainable solution. And when you

Disaster phases	Humanitarian logistics activities
Response	Transportation of pre-positioned relief items
	Warehouse management
	Stock review
	Temperature controlled warehousing
	Forecasting
	Logistics capacity building trainings and workshops
	Documentation and reporting of KPIs
	Claim management
	Labeling
	Kitting services
	Intermodal transportation
	Fleet management
	Last mile distribution
	Cross-docking
	Receiving
Picking and shipping	
Recovery	Temperature controlled warehousing
	IT services
	Customs clearance
	Labeling
	Claim management
	Assessment of needs
	Data analysis
	Capacity building
	Transportation
	Reverse logistics
Aircraft scheduling	
Reporting	
Training and skills development	

**Table III.**  
Logistics activities to  
be outsourced during  
the disaster phases

do competitive bidding and move from freight forwarder to freight forwarder operating in the same area, you don't get consistency in how you operate" stated a private sector expert.

### 3.5 Comparison of empirical results with existing literature

In this section, we reflect on our results in view of relevant humanitarian literature, which has been presented in Section 2. Collaboration between private and humanitarian sector has been suggested by many authors during the last 15 years as humanitarian literature is growing (Cozzolino *et al.*, 2017; Baharmand *et al.*, 2017; Nurmala *et al.*, 2017; Bealt *et al.*, 2016; Scholten *et al.*, 2010; Schulz, 2009; Kovács and Spens, 2007; Maon *et al.*, 2009; Thomas and Kopczak, 2005; Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006). As we described previously, only five paper explicitly refer to outsourcing of humanitarian logistics activities (Bealt *et al.*, 2016; Cozzolino *et al.*, 2017; Baharmand *et al.*, 2017; Sánchez Gil and McNeil, 2015; Vega and Roussat, 2015).

Our research is one of the first papers to do in depth-interviews with several different HOs including UN agencies, international organizations and NGOs and also in depth-interviews with leading LSPs in the sector. Our research empirically confirms some previous results and adds additional ones.

### 3.6 Drivers of outsourcing for HOs and engagement for LSPs

Of the many factors that may act as drivers of outsourcing of humanitarian logistics activities, the lack of expertise and limited resources of HOs were identified by previous research as

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main factors (Cozzolino *et al.*, 2017; Bealt *et al.*, 2016; Vega and Roussat, 2015). “Outsourcing of some activities to LSPs could enable HOs to provide a customized response, reduce waste, optimize resources and reduce costs” (Bealt *et al.*, 2016, p. 133). Our research confirms the results of previous work with respect to drivers of outsourcing. In addition, it investigates changing incentives for starting a collaboration during the three disaster phases.

Private companies’ motivation is classified by Bealt *et al.* (2016) as “Strategic Decisions,” “Corporate Social Responsibility,” “Publicity,” “Commitment to help vulnerable people” and “To start operations in the country or region.” Our results also indicate “CSR,” “Publicity,” and “Profits” and “Commitment to help vulnerable people” as important factors but unlike Bealt *et al.* (2016), “To start operations in the country of a disaster” was not emphasized. Motivation and qualification of their employees was highlighted by our results which is not presented by Bealt *et al.* (2016). The impact on brand visibility is also noted by Binder and Witte (2007) and highlighted by many interviewees both from LSPs and HOs “It’s reputation management, it is very positive with our brand image when we associate with NGOs. It helps us to gain strategic customers” stated a private sector expert. Heaslip (2013) acknowledged that private companies bring more technical expertise to HOs. This is also confirmed by a LSP that mentioned “we leverage our unique capabilities, our global network and our skills to make a critical difference and help our relief partners provide more effective preparedness efforts, response, recovery.”

### *3.7 Partner selection throughout the disaster phases*

Partner selection is not discussed explicitly in the previous five research papers. However, previous research discusses indirectly selection criteria in the form of risks associated with outsourcing. Potential risks strongly drive the decision and the way that organizations initiate partnerships and select partners. First, from HO’s side, still concerns exist about the impact of the involvement of LSPs on humanitarian principles since they operate for profit (Baharmand *et al.*, 2017; Vega and Roussat, 2015). Humanitarian context entails risks for LSPs that provide services to HOs such as continuity issues which relate to HO’s short-term projects (Bealt *et al.*, 2016; Baharmand *et al.*, 2017). In addition, Baharmand *et al.* (2017) discussed the risks of delays, unreliability, unethical behavior and fluctuation of prices as main risks with respect to the transportation services of LSPs. Our research confirms risks highlighted in previous work. In addition, it adds insights about partner selection criteria and shows that size of organizations, costs, lead time, quality of service, previous collaboration and reputation of the provider/partner drive partner selection decisions.

### *3.8 Logistics activities to be outsourced*

Vega and Roussat (2015) as well as Bealt *et al.* (2016) presented activities to be outsourced to LSPs. Bealt *et al.* (2016) indicated that freight forwarding, and transportation processes should be outsourced to LSPs. According to Bealt *et al.* (2016, p. 130), warehousing and distribution should remain in-house; potentially because HOs prefer to have control of their physical goods. Unlike the findings from Bealt *et al.* (2016), who highlighted that warehousing and distribution are activities that HOs prefer to keep in-house, our data reveal that especially warehousing is a logistics activity that HOs prefer to outsource. In addition, unlike, Sánchez Gil and McNeil (2015), who found that even the distribution of relief items to the final beneficiaries is sometimes outsourced by HOs in the post-disaster context, our interviews show that distribution to beneficiaries seems to be preferred to be kept in-house. HOs want to control what is delivered to beneficiaries. HOs prefer to do the final distribution to beneficiaries. However, all previous distributions can be outsourced.

Vega and Roussat (2015) presented the activities to be outsourced in the three disaster phases based on the data collected from the websites of LSPs. Preparation: Vega and Roussat (2015) found that procurement, inventory management and warehousing of pre-positioned supplies, transport coordination and transport of goods are the most outsourced activities. Response: Vega and Roussat (2015) found that fleet management, customs clearance, materials handling and last mile distribution are the most outsourced activities. Recovery: logistics activities involved in this phase are warehousing, transportation and procurement (Vega and Roussat, 2015). In general, we confirm the results of Vega and Roussat who looked at this question from the LSPs perspective. We add to this research by also considering the HO perspective. Furthermore, we investigate logistics activities at a more detailed level. For example, when it comes to the warehousing and stock review, we include storage, handling, picking, packing and shipping.

#### 4. Discussions and propositions

The findings of this study can be summarized in four propositions. The first proposition reflects how the disaster phases affect the outsourcing decision and relates to our three research questions. We found that incentives (Why) for initiating outsourcing engagements, selection criteria of providers (How) and activities to be outsourced differ between the three disaster phases (What). This has an impact on the perspectives that HOs and LSPs have of the process of outsourcing, because of the different characteristics of humanitarian operations and needs in the different phases, for instance differences with respect to urgency of response, uncertainty of the environment and available resources (Kovács and Spens, 2007):

- P1.* The outsourcing process of humanitarian logistics is highly affected by the disaster phases. It differs with respect to incentives to initiate outsourcing, partner selection criteria and activities to be outsourced.

The second proposition relates to our second research question on how HOs decide to outsource. It highlights that the outsourcing decisions that are taken in each phase have a strong impact on the following phases. Hence, it would be very important to have an integrated view which could be achieved through a strategic outsourcing perspective. Our findings reveal that outsourcing decisions from HOs' side are rarely taken with a strategic perspective. Literature highlights that there are strategic benefits that will result from strengthening an outsourcing/transactional to a long-term relationship such as cost efficiencies and enhanced customer service (Lambert *et al.*, 1996). Certain factors prevent organizations from having this integrated/strategic view throughout all phases. HOs often are adopting an *ad hoc*/short-term perspective due to their dependency on donor funding and donor regulations. Funding is usually coming after a disaster which decreases the chance of HOs to be proactive. To be compliant with donor regulations and the desire of transparency, HOs have to go through tendering processes often which decreases the possibilities to have strategic long-term partnerships with commercial providers. Uncertainty with respect to future humanitarian needs influences outsourcing decisions. HOs cannot foresee and plan easily for future needs since they do not know what disaster will occur and where, so there is a need for more flexibility in terms of collaboration and partnership with LPSs:

- P2.* HOs lack a strategic perspective concerning how they initiate and execute outsourcing. Many HOs are mainly adopting an *ad hoc*/short-term outsourcing perspective due to donor requirements and the uncertainty of humanitarian operations.

The next proposition relates to our third research question and arises from the logistics activities that HOs choose to outsource and how they select LSPs. It is observed from our



empirical data that the selection of activities to be outsourced differs based on the disaster phases. However, transportation and warehousing are the most common outsourced activities in all phases, which is also confirmed by previous studies (Bealt *et al.*, 2016; Vega and Roussat, 2015). Our empirical data reveal that HOs prefer to outsource activities related to the physical logistics systems like fleet management or warehouse operations but not freight payments or order management. When it comes to the analysis and evaluation of potential providers, HOs' decision is based on the existing network of companies in the affected areas, the previous experience with LSPs as well as shared experiences with other HOs. However, HOs still seem cautious to recognize LSPs as an alternative to perform all humanitarian logistics activities (Baharmand *et al.*, 2017; Bealt *et al.*, 2016). Our research shows that HOs lack systematic policies and procedures what to outsource, when and to whom. Their decision is based on the temporary needs, which are dependent on the disaster phase and the disaster type:

- P3.* Many HOs lack a specific outsourcing policy. Further steps should be taken to analyze the logistics systems and set up a policy for activities to be outsourced throughout the disaster phases. The establishment of a set of selection criteria of LSPs is necessary.

The fourth and last proposition relates to our third research question and arises from the role of HOs in capacity building of local private companies during the recovery phase. We observed that during the recovery phase, HOs are involved in the development of skills and capabilities of local providers. This initiative facilitates the growth of the businesses of the local providers and the provision of better services to the local communities. HOs also follow a protection policy for local partners by not asking for exclusivity. Thus, it gives local providers the possibility to keep their existing customers and network after HOs leave the country:

- P4.* HOs can play an important role in development and capacity building of local logistics providers. Hence, careful selection of and interaction with providers is necessary.

## 5. Conclusions, limitations and future research

In this study, we empirically investigated outsourcing of humanitarian logistics activities to commercial LSPs throughout the disaster phases following an exploratory qualitative approach. By conducting 12 interviews with humanitarian experts and 12 interviews with LSP experts, we cover the gap in the humanitarian literature on why and how HOs and LSPs are entering in outsourcing partnerships. First, we presented incentives of initiating outsourcing engagement both for HOs and LSPs. Second, we explored how organizations select partners throughout the disaster phases. Third, we explored the humanitarian logistics activities to be outsourced to LSPs throughout the disaster phases. This is one of the first studies that empirically investigate the potential of outsourcing of humanitarian logistics activities throughout the disaster phases. Based on our results, we made four propositions to be used for future research and managerial developments.

As the main implication for practice, our research suggests a strategic use of outsourcing during the three disaster phases. We acknowledge that business objectives, risks, stakeholder agendas and requirements, as well as costs play a vital role for outsourcing decision-making in these three stages. Strategic outsourcing is recognized, and it is a desire for LSPs and HOs. Organizations should work more with donors and other stakeholders to achieve the benefits of strategic outsourcing to increase their competitive advantage.

Furthermore, our research suggests improving the outsourcing policy of HOs. In this regards, different steps should be taken to analyze their logistics systems, selection criteria of providers, as well as metrics of provider performance. Practitioners from private and humanitarian sectors

can use our findings when they start collaborating. The findings can help them to understand the risks, benefits and incentives of outsourcing during the different disaster phases.

This research has limitations in terms of the sample of interviewees. Our empirical data are collected mainly from big private companies and HOs. We did not have interviews with national/local logistics providers in the countries where HOs provide aid. We did not talk to local NGOs to get their insights with respect to outsourcing. Research that targets national and local private companies and small size HOs both in humanitarian and development aid will help to understand better the role of the private sector in recovery and rehabilitation of the affected areas. Our sample of interviewees also has limitations. We have a heterogeneous sample of participants from different organizations. However, we have not managed to cover all geographical areas. We were targeting managerial and directorate positions that mainly are in HQs based in Europe and the USA.

Future research needs to investigate outsourcing in small HOs. Alliances of HOs may be an option as many interviewees said that they are interested in collaborating with other HOs in their effort to establish partnerships with the private sector. They believe that alliances of HOs are attractive to the private sector and can guarantee better prices.

A second area for further research relates to the selection and evaluation of partners. Our results indicate that many HOs lack a systematic list of criteria when they are selecting LSPs. Future research is needed for the development of a comprehensive framework for the selection of logistics providers for HOs. In addition, HOs lack measurements to evaluate the performance of LSPs. Case studies which investigate the performance of existing outsourcing relationships are needed to develop metrics.

A third area for future research relates to the role of LSPs in humanitarian operations. We investigated the willingness of LSPs to cooperate horizontally or in clusters with other commercial logistics providers in order to directly offer relief services to beneficiaries. The majority of organizations are interested in horizontal cooperation and “see the potential in direct cooperation and collaboration, but it will take a long time.” It is worth investigating, how LSPs can collaborate to offer profit-based services to HOs. In addition, since donors are increasingly willing to contract the private sector directly for the execution of humanitarian programs like cash transfers (ECHO, 2017), future research is needed that explores this partnership.

Finally, further research is needed with respect to the coordination mechanism of outsourcing especially with a focus on contracts between the two sectors. Further research needs to propose a framework that will help organizations to decide the parameters to put in place to standardize contracts with LSPs. Choosing the right contract design and pricing policy plays a very important role in facilitating successful outsourcing partnerships. Future research should develop analytical models that explore which types of contracts and pricing policies are appropriate for which types of situation. Game-theoretic models seem especially suited to address the underlying trade-offs.

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**Appendix 1. List of interviews with private companies and humanitarian organizations**

Private organization	Country	Interviewee
Accu-Logistics	USA	Owner
Agility	Kuwait	Global Director of CSR
Maersk	Denmark	Head of Emerging Market Projects
Kühne +Nagel	Denmark	Global Director Emergency & Relief Logistics
UTI	Australia	President of the UTI Charitable Foundation
Brussels Airlines	Belgium	Internal Communication Manager
TNT	The Netherlands	Project Manager (partnership with WFP)
DHL	Germany	Corporate Citizenship Manager
UPS	USA	Director, UPS Humanitarian Relief Program
Deloitte	UK	Corporate Responsibility Manager
BLG Logistics Group	Germany	Head of Sustainability and New Technologies
Bolloré Logistics	South Africa	Director of Healthcare Industry and NGO

**Table AI.**  
List of interviewed private companies

**Table AII.**  
List of interviewed  
humanitarian  
organizations

Humanitarian organization	Country	Interviewee
ICRC	Austria	Head of Procurement and Logistics
IOM	Philippines	Head of Unit
UNHRC	Hungary	Chief, Supply Operations Support Section
World Vision	Australia	Global Lead – Emergency Logistics
AMREF Flying Doctors	Austria	Head of Unit
Lutheran World Relief	USA	Emergency Program Manager
CARE	Canada	Director of Policy, Innovation, and Partnerships
Humanitarian Coalition	Canada	Head of Private Sector Partnerships
OxFam	Canada	Manager, Humanitarian Unit
OxFam	UK	Head of Logistics and Supply
UNHRD	Italy	Network Coordinator
UNFPA	Denmark	Procurement and Supply Coordinator

## Appendix 2. Interview questionnaires

### Interview questionnaire for HOs

- Which private companies have you developed outsourcing partnerships with? What is the objective? Who was the initiator of the cooperation? Why did you initiate the cooperation during the different disaster phases?
- What risks/impediments did you consider before entering the cooperation?
- What are the lessons learned of this cooperation for both sides (positive and negative)?
- What are the main criteria for selecting LSPs during the different disaster phases?
- What kind of logistics activities have you outsourced to LSPs during the different disaster phases?
- At which disaster phase do you see the most potential for involvement of LSPs?
- What kind of contracts do you have with LSPs so far? Are you willing to establish “commercial” contracts (e.g. quantity flexibility, revenue sharing) with the companies or do you prefer contracts on a pro-bono basis or free of charge? Why?
- Which further developments are planned (e.g. additional services)?
- How do you judge the future role of commercial logistics providers in disaster response?
- Do you collaborate with other humanitarian organizations? How do you see the potential of horizontal cooperation between humanitarian organizations where one organization is taking the role of the service provider for the others?
- How do you evaluate the performance of your partners?

### Interview questionnaire for private companies

- Which organizations have you developed outsourcing partnerships with? What is the objective? Who was the initiator of the cooperation, when and why?
- What risks/impediments did you consider before entering the cooperation?
- What are the lessons learned of this cooperation?
- What kind of services do you offer to HOs?
- During which disaster phase do you see the most potential of involvement? Which of the three disaster response phases has your organization been involved in?

- What are the main criteria for selecting HOs as partners? Do you perceive any gap between big and small HOs?
- Which predictions can be made concerning the return on investment of the involvement in the humanitarian sector?
- What kind of contracts do you have with HOs so far? Are you willing to establish “commercial” contracts (e.g. quantity flexibility, revenue sharing) with HOs or you prefer contracts on a pro-bono basis or free of charge? Why?
- How do you judge the future role of commercial logistics providers in disaster response?
- Do private companies have an incentive to build up “clusters” to respond to disasters?

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