



Cross-sector humanitarian–business partnerships in managing humanitarian logistics: an empirical verification

N. Nurmala, Jelle de Vries & Sander de Leeuw

To cite this article: N. Nurmala, Jelle de Vries & Sander de Leeuw (2018) Cross-sector humanitarian–business partnerships in managing humanitarian logistics: an empirical verification, International Journal of Production Research, 56:21, 6842–6858, DOI: 10.1080/00207543.2018.1449977

To link to this article: <https://doi.org/10.1080/00207543.2018.1449977>



© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 18 Apr 2018.



Submit your article to this journal [↗](#)



Article views: 881



View Crossmark data [↗](#)



Citing articles: 2 View citing articles [↗](#)

Cross-sector humanitarian–business partnerships in managing humanitarian logistics: an empirical verification

N. Nurmala^{a,b}, Jelle de Vries^a  and Sander de Leeuw^{a,c,*} 

^aDepartment of Information, Logistics and Innovation, Faculty of Economics and Business Administration, VU University Amsterdam, Amsterdam, The Netherlands; ^bFaculty of Economics and Business, Department of Management, Universitas Indonesia, Jakarta, Indonesia; ^cDepartment of Management, Nottingham Business School, Nottingham Trent University, Nottingham, UK

(Received 24 August 2017; accepted 26 February 2018)

Cross-Sector humanitarian–business partnerships in managing humanitarian logistics comprise a key discussion topic in literature, yet empirical validations of these partnerships are lacking to date. This paper aims to develop a typological framework for humanitarian–business partnerships in managing humanitarian logistics and to empirically verify this typology with a data-set using content analysis. The results show that the amounts of partnerships developed between the business sector and the humanitarian sector in managing humanitarian logistics is still limited and these partnerships are not widely publicised. The research furthermore shows that financial contributions comprise the most common type of resource delivered by the business sector when it comes to partnerships with the humanitarian sector focused on managing humanitarian logistics. It is also interesting to note that the majority of partnerships in our sample are dyadic in nature, managed by a single humanitarian organisation and a single business corporation. Furthermore, we find that most of the partnerships target support for natural disaster emergency relief operations and mainly focus on disaster response.

Keywords: humanitarian logistics; cross-sector partnerships; humanitarian–business partnerships; typology; content analysis

1. Introduction

Humanitarian logistics is well known for its complex and turbulence environment (Thomas and Kopczak 2005; Van Wassenhove 2006). Disasters vary in nature with mostly very little or no indication of the time, duration, location and magnitude of the next disaster (Altay and Green 2006; Beamon and Kotleba 2006; Tomasini and Van Wassenhove 2009). Disaster relief characterised by uncertainty in needs, supply capacity and lead time (Kovács and Spens 2009; Oloruntoba and Gray 2009). Employee turnover is high and the number of skilled labour is low (Beamon and Kotleba 2006; Thomas and Kopczak 2005; Van Wassenhove 2006). To deal with such a turbulent environment, inter-organisational collaboration is considered a key topic in humanitarian logistics (see for example Kovács and Spens 2007; Thomas and Fritz 2006; Van Wassenhove 2006), particularly when it refers to collaboration between humanitarian organisations and the business sector (Nurmala, de Leeuw, and Dullaert 2017). Such cross-sectoral collaboration can help improve the effectiveness and efficiency of humanitarian logistics by facilitating the transfer of not only resources, such as financials and products, but also knowledge, skills, and expertise from the business sector to the humanitarian sector (Beamon and Balcik 2008; Oloruntoba and Gray 2009; Van Wassenhove 2006). The financial contribution of the business sector to humanitarian organisations is still relatively small (estimated at around 6.6% of the total contribution of the private sector to humanitarian organisations in 2015 (GHA 2016)). Some researchers (Maon, Lindgreen, and Vanhamme 2009; Oloruntoba and Gray 2009; Rueede and Kreutzer 2014; Van Wassenhove 2006) yet highlight that the contribution of the business sector to the humanitarian sector should be evaluated not only based on its financial contribution but also on the potential transfer of knowledge and expertise from the business sector to humanitarian sector. At the same time, inter-organisational collaboration is still far from straightforward in the humanitarian sector (Akhtar, Marr, and Garnevska 2012; Kumar and Havey 2013), since considerable impediments to such inter-organisational collaborative efforts are present (Nurmala, de Leeuw, and Dullaert 2017).

The reasons and motives for establishing cross-sector partnerships in managing humanitarian logistics can be viewed from the perspective of at least three different stakeholders: the beneficiaries, the actors within the humanitarian sector, and the actors within the business sector (Nurmala, de Leeuw, and Dullaert 2017). For the beneficiaries of the humani-

*Corresponding author. Emails: sander.de.leeuw@vu.nl, sander.deleeuw@ntu.ac.uk

tarian sector, cross-sector partnerships are expected to help improve the services to beneficiaries. For actors within the humanitarian sector, cross-sector partnerships with the business sector are expected to help the humanitarian sector to learn about business supply chains (Kovács and Spens 2009; Oloruntoba and Gray 2009; Scholten, Pamela, and Fynes 2010; Van Wassenhove 2006). For actors within the business sector, cross-sector partnerships with the humanitarian sector can help business actors legitimating the sustainability of their business by showing how they can provide value beyond profit to shareholders (Maon, Lindgreen, and Vanhamme 2009; Rueede and Kreutzer 2014). They may also have an interest themselves in limiting the impact of natural disasters on their potential customers and business (Maon, Lindgreen, and Vanhamme 2009; Thomas and Fritz 2006).

In the past, the discussions on cross-sector partnerships have largely been focused on understanding collaborative processes. The topics ranged from the reasons for why the partnerships are relevant, to how the partnerships should be initiated, organised, extended and how their outcomes and impacts should be measured (for example: Clarke and Fuller 2010; Erakovich and Anderson 2013; Hood, Logsdon, and Thompson 1993; Van Tulder et al. 2016; Waddell and Brown 1997). Generally speaking, there is a lack of evidence-based research in this area (Van Tulder et al. 2016). In the area of supply chain management, there is a particular scarcity of evidence-based studies on partnerships (Soosay and Hyland 2015). In the humanitarian literature, the situation is not any different. Cross-sector partnership research in this domain is still in its infancy (Nurmala, de Leeuw, and Dullaert 2017). Exceptions are the recent works of Naor et al. (2017), who investigated civilian-military resource pooling in health care using case studies, and Rueede and Kreutzer (2014) on a partnership between DPDHL and UN OCHA to solve bottleneck issues at airports. Even though the urgency and relevance of initiating cross-sector partnerships with the business sector has been argued and frameworks have been proposed (see for example Oglesby and Burke 2012; Oloruntoba and Gray 2009; Van Wassenhove 2006), empirical research on these cross-sector partnerships in managing humanitarian logistics is scant. With this research we aim to take a first step in this empirical research and indicate the different types of cross-sector partnerships in managing humanitarian logistics and empirically analyse to what extent they occur in practice. We use these outcomes to develop research propositions. The objective of this research is therefore twofold. First, we aim to develop a typological framework for humanitarian–business partnerships in managing humanitarian logistics. Next, we aim to empirically verify this typology with a data-set using content analysis and develop research propositions. We base our approach for content analysis on Krippendorff (2013) and White and Marsh (2006).

This paper consists of seven sections. Section 1 is the introduction to the research. Section 2 consists of a literature review. Section 3 focuses on the building of the typology framework of our focused topic. Section 4 outlines the methodology and empirical research design. Section 5 presents the result. Section 6 presents a discussion and Section 7 conclusions, implications and limitations.

2. Literature review

2.1 Cross-sector partnerships

Research on cross-sector partnerships is not new. Waddell and Brown (1997) define inter-sectorial partnerships as a set of activities that involve collaboration between organisations that are based in three sectors: the state (government), the market (business) and civil society (such as NGOs or non-profits). The success of cross-sector partnerships is measured by their ability to solve mutual cross-sector problems, as well as any within-sector problems that functioned as reason for the formation of the partnerships (Clarke and Fuller 2010; Kolk, van Dolen, and Vock 2010; Selsky and Parker 2005). An example of an area that has adopted cross-sector partnerships with the private sector is the public sector.

In the public sector, the adoption of cross-sector partnership is mostly known by the term ‘Public-Private Partnership’ (PPP). In PPP’s, the public sector delegates the provision of public services and certain associated risks to the private sector on a long-term basis (Meidutė and Paliulis 2011; Nisar 2007). The public services covered by PPP’s include for example health services (Capoor 2005; Nelson et al. 2007; Oyediran et al. 2002; Ramani et al. 2007), water services (Lee 2010), telecommunication and information (Bagchi and Paik 2001), transportation and logistics (Dormois, Pinson, and Reignier 2005; Estache et al. 2009; Sharma 2009), urban and housing (Dormois, Pinson, and Reignier 2005), and education (Hannah 2008; Hurst and Reeves 2004). For the public sector, PPP’s can help addressing issues of budget constraints and lack of expertise in development (Al-Shqairat et al. 2014; Brinkerhoff and Brinkerhoff 2011; Jin, Zhang, and Yang 2012). For actors of the private sector, PPP’s can ensure appropriate incentives for providing public services in situations when the market alone is not sufficiently profitable for companies to initiate the desired actions (Brinkerhoff and Brinkerhoff 2011; Scott 2009).

In the development-aid sector, non-governmental actors have invited the private sector to be involved in development aid programmes. For example, the Food and Agriculture Organisation (FAO), one of the United Nation (UN)

agencies, is enhancing the involvement of the business sector in their development programme activities (FAO 2013). FAO works with commercial companies to help small farmers and beneficiaries increase their production and link them to markets. For the beneficiaries, the partnerships help to deliver better development programmes (Adivar et al. 2010; Manning and Roessler 2013). For non-governmental sector actors, a partnership with the private sector can help addressing resource- and budgetary issues (Dinesh, Lisa, and Eric 2014). Meanwhile, for the private sector, being engaged with a reputable humanitarian organisation in delivering development aid programmes can increase the impact of their Corporate Social Responsibility activities (Crisan 2013; Hiller 2013).

2.2 Frameworks for cross-sector partnerships in the humanitarian sector

Several papers discuss frameworks for partnerships in the humanitarian sector. Thomas and Fritz (2006) categorise the engagements of the business sector in the humanitarian sector based on the decision of the business sector about their level of engagement in humanitarian operations and the number of participants in the partnership. Thomas and Fritz (2006) categorise them into four groups: single-company-philanthropic, multi company-philanthropic-partnerships, single-company-integrative-partnership and multi company integrative-partnerships. Haigh and Sutton (2012) propose two dimensions for the categorisations of collaborations between the humanitarian and business sector: financial agreement (philanthropics vs business) and the level of engagement (ad hoc vs strategic collaborations), and then categorise the collaboration between the humanitarian and business sector into four generic categories: philanthropic, strategic, business, and political. Samii (2008) proposes a framework of business–humanitarian partnerships based on the number of parties involved and the level of engagement, and also distinguishes the partnerships between business and humanitarian actors into four different types: localised partnerships, strategic partnerships, brokered partnerships and cross-cutting partnerships. Binder and Witte (2007) categorise the engagements of the business sector in the humanitarian sector based on a single dimension (i.e. the number of participants) and group them into three categories: single company engagements, partnerships and meta-initiatives. Balciik et al. (2010) propose two dimensions to explain the collaboration between humanitarian organisations and the business sector: the number of participants and the type of financial agreement. Balciik et al. (2010) explain that the collaboration between humanitarian organisations and business corporations can involve single/multiple humanitarian organisations or single/multiple business corporations, and the commitment between the two sectors can be either philanthropic or commercial. Chen et al. (2013) classify types of partnerships based on the phase of the relief operation and participants. Oglesby and Burke (2012) scope multiple platforms for humanitarian-private collaboration and categorise them based on nine dimensions: reason for platform creation, aim of the platform, memberships, terminology of the platform, phase of humanitarian operation, types of humanitarian crisis, sector focus, and geographic coverage.

2.3 Humanitarian–business partnerships in managing humanitarian logistics

Humanitarian organisations face considerable challenges in working with a diverse group of stakeholders; coordination between actors is, therefore, challenging and often there is duplication of efforts (Larson and Foropon 2018; Schulz and Blecken 2010). It is found that communities are a key stakeholder in disaster responses (Goulding, Kelemen, and Kiyomiya 2017) but it is also widely acknowledged that humanitarian organisations may benefit from good relationships with the business sector during disaster response (Rueede and Kreutzer 2014; Thomas and Fritz 2006). Leonard (2005) for example outlined how Walmart employees had a key stake in providing first hand disaster support after hurricane Katrina, which has later on been institutionalised in for example the ability to move inventory quickly to and between stores (Linnenluecke and McKnight 2017).

An extensive and recent literature review of partnerships between the humanitarian and business sector in managing humanitarian logistics is provided by Nurmala, de Leeuw, and Dullaert (2017). They identify that the success of humanitarian–business partnerships in humanitarian logistics is to a large part related to the ability to improve efficiency and capabilities in managing humanitarian logistics. It is commonly understood that goals and mandates are different between the two sectors (Nurmala, de Leeuw, and Dullaert 2017). This may hamper collaborative efforts. However, the fact that the two types of organisations are different may also prove to be beneficial since Moshtari (2016) suggests that resource complementarity is essential for successful collaborative efforts. The commercial sector may provide support in several areas. The use of tools such as IT tools may be very helpful in fostering collaborative relations (Ergun et al. 2014), which is an area where the commercial sector has considerable experience. The amount of data becoming available in case of disasters is growing, making data integration that ensures proper data gathering, modelling and notification systems a key area of attention (Akter and Wamba 2017). In fact, big data analytics may support disaster relief considerably (Swaminathan 2017). This is an area where the commercial sector may provide help.

Setting up relationships with businesses is generally perceived as challenging by humanitarian organisations, not in the least because of differences in mandates but also because of the complexities involved (Pazirandeh and Herlin 2014). Having more participants involved is not always a guarantee to get better humanitarian logistics support, for example due to excess in material resources that may create congestion in supply chains (Rodríguez-Espíndola, Albores, and Brewster 2018). In fact, as outlined by McLachlin and Larson (2011) there are several lessons with regard to building relationships that might be adapted from the commercial world. However, in order to understand these relationships we first need to have an (empirical) understanding of the ties between the humanitarian sector and the commercial sector. In this paper, we therefore aim to build a framework for humanitarian–business partnerships in managing humanitarian logistics and empirically verify this framework.

In line with Nurmala, de Leeuw, and Dullaert (2017), we define humanitarian–business partnerships in managing humanitarian logistics as cross-sector partnerships between a humanitarian organisation(s) and a business corporation(s) focused on managing humanitarian logistics with the mutual objective of expanding the performance of humanitarian logistics for the interest of humanitarian beneficiaries. Barrat (2004) explain that the scope of such partnerships may involve both vertical and horizontal collaboration with partners. In line with Nurmala, de Leeuw, and Dullaert (2017) and Barrat (2004), we propose that a humanitarian–business partnership focused on supporting humanitarian logistics needs to meet at least three qualities. First, there is a mutual perspective that the main objective of the partnerships is to expand the performance of humanitarian logistics for the interest of beneficiaries, while paying respect to individual goals of participating organisations. Second, there is an equal joint decision planning and decision-making which involves all partnership members in deciding the direction of partnership. The second required condition implies that an ideal partnership in humanitarian logistics should last longer than typical ad hoc collaborations during the response phase. This is necessary to enable joint discussions and process planning. It also requires that all parties have an equal position in the partnership. Third, resource sharing among partnership members takes place, either tangible or intangible. We can conclude that none of the existing frameworks we discussed specifically addresses logistics aspects of cross-sector partnerships between humanitarian organisations and business corporations. We, therefore, develop a framework for these partnerships in the next section.

3. Typology framework for humanitarian–business partnerships in managing humanitarian logistics

The general approaches in developing a typology framework focused on partnerships can be categorised into two major streams (Bensaou and Venkatraman 1995; Doty and Glick 1994; Hsieh and Shannon 2015). The first involves developing and subsequently verifying a preconceived typology using data; the second starts with uncovering taxonomies from a given data-set. As opposed to the second approach, the first approach is theory-driven and typically used when there are prior theories that can be used as reference. The advantage of this approach is that its results can be assessed against prior theories (Bensaou and Venkatraman 1995; Doty and Glick 1994). Since there exist dimensions from literature on cross-sector partnerships and inter-organisational collaborations in the humanitarian sector that we can use as a starting point, we adopt the first approach in this study.

Doty and Glick (1994) define a typology as a conceptually derived interrelated set of ideal types. The development of a typology requires at least a clear definition of the ideal model and the combination of dimensions used to describe the interrelationships that construct the model (Doty and Glick 1994). The definition of the ideal model needs to be complemented by an objective because a model always needs to be set up with a specific objective (Van Rijn 1985).

As summarised above the objective of a partnership is to enhance the performance of humanitarian logistics for the interest of beneficiaries, while paying respect to individual goals of participating organisations. The dimensions for the operationalisation of humanitarian–business partnerships in humanitarian logistics that we propose are visualised in Figure 1.

The first dimension is the type of resources contributed. The contribution of a business organisation to a humanitarian organisation can be financial or in-kind or in a combination (Thomas and Fritz 2006; Tomasini and Van Wassenhove 2009; Van Wassenhove 2006). If a party aims to contribute in-kind resources, they may, for example, provide products, human resources/skilled staff, knowledge or expertise

The second dimension is the number of participants. A partnership can be developed by a single or by multiple humanitarian organisation(s) and business corporation(s) (Balcik et al. 2010; Binder and Witte 2007; Oglesby and Burke 2012; Thomas and Fritz 2006).

The third dimension is the type of disaster. A disaster can be natural or man-made (including human conflicts), and natural disasters and man-made disasters can further be categorised as sudden-onset or slow-onset disaster (Beamon and Kotleba 2006; Oglesby and Burke 2012; Van Wassenhove 2006).

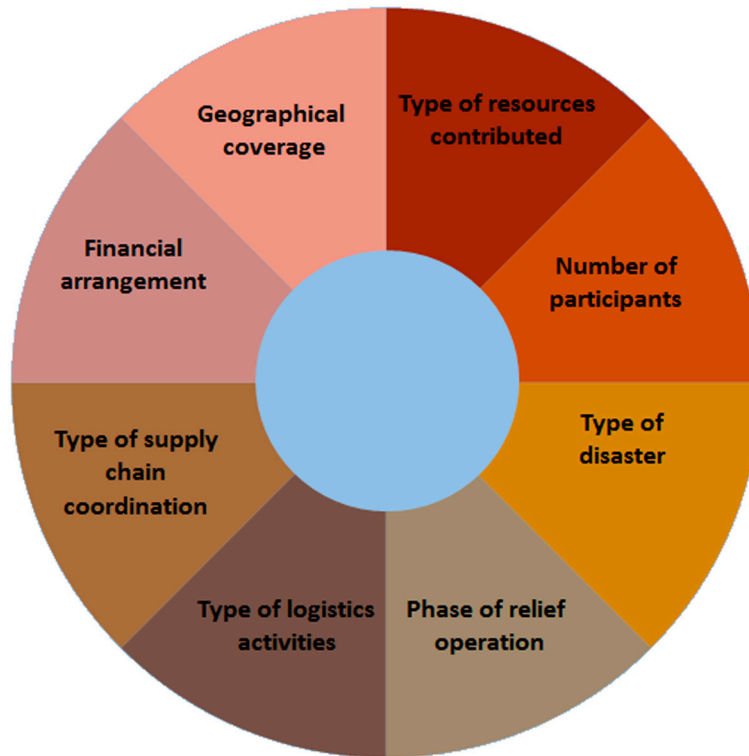


Figure 1. The dimensions of the operationalisation of humanitarian–business partnerships in humanitarian logistics.

The fourth dimension is the phase of relief operation. The partnership can be developed for the preparedness phase, implementation phase, reconstruction phase, or a combination of these phases (Beamon and Kotleba 2006; Van Wassenhove 2006).

The fifth dimension pertains to logistics activities. A partnership member can be involved in either primary or in any supporting logistics activities that can help improve the performance of humanitarian logistics. Examples of primary logistics activities are inventory management, transportation and warehousing. Examples of supporting logistics activities are back office support, human resource training and information technology support.

The sixth dimension is the type of supply chain coordination. The coordination between partnership members can be either vertical or horizontal (Barratt 2004; Hingley et al. 2011; Simatupang and Sridharan 2002; Soosay and Hyland 2015).

The seventh dimension relates to the financial arrangement. Partnerships may be purely a philanthropic activity of one of the parties, such as the donation of money by one party to another, or it can be a business arrangement (Balcik et al. 2010; Haigh and Sutton 2012; McLachlin and Larson 2011; Muller and Whiteman 2009; Thomas and Fritz 2006).

Last, the eighth dimension is the geographic coverage (Oglesby and Burke 2012). Parties in a partnership can choose whether they want to deliver their activities locally, nationally or regionally/internationally.

4. Methodology

4.1 Analytical approach and research design

We verify our typology with a data-set from the humanitarian sector by employing content analysis. Content analysis is a research technique used to make replicable and valid inferences from the content of documents (Krippendorff 2013). Content analysis is particularly appropriate in situations where media data is studied (Krippendorff 2013) and a way to scientifically describe the content of communication. Questions involving ‘who’, ‘how’ and ‘on/with whom’ are especially appropriate for such analysis (Krippendorff 2013). In our study, we aim to analyse the content of partnerships between the humanitarian and business sector. Often, information on such partnerships is made available in news clippings, web site announcements or reports. Such studies of media content are especially fit for use of content analysis. Content analysis offers advantages for research that is exploratory in nature such as ours. First, content analysis has the

capacity to transform theoretical constructs into a detailed coding scheme (Krippendorff 2013). It furthermore is a flexible method that allows researchers to easily adjust their research design to research objectives, and to switch between quantitative and qualitative analyses during the research. A qualitative focus in our analysis is particularly appropriate for exploring new research domains, while quantitative analysis may provide insights into the relative importance of constructs. Third, the method is content sensitive, which means that it is useful not only in interpreting the manifest dimensions but also the latent dimensions of text (Downe-Wamboldt 1992; Krippendorff 2013).

In this study, we adopted the steps of content analysis as outlined by Krippendorff (2013) and White and Marsh (2006). Firstly, we used literature to set up our typological framework (depicted in Figure 1). Secondly, we determined and collected our sampling units. Third, we operationalised our typology into a coding scheme consisting of categorisations and sub-categorisation that we will use in our analysis. We coded our observations in two steps. The first was to identify the cross-sector partnerships between the humanitarian and business sector focused on managing humanitarian logistics based on the definition and ideal characteristics that we have developed above. The second was to operationalise the humanitarian–business partnerships based on our framework. We developed a coding scheme with consideration to the established theories (Krippendorff 2013; Vourvachis and Woodward 2015) in order to ensure validity. Next, we applied the coding scheme to our sampling units.

4.2 Sampling

We defined a sampling unit as any content announcing or reporting activity in humanitarian logistics, which involves participants from the humanitarian sector and business sector. In each sampling unit, we looked for text that described such a partnership. This part of the text (the recording unit) is the specific segment of content that contains information on a partnership on one of the elements of the typology. The recording units in this research are words, sentences or paragraphs that we can put into categories based on our coding scheme. Using this approach a partnership can be characterised and classified in our typology. We counted different announcements of the same partnership as one sampling unit.

We applied two sampling procedures simultaneously. The first procedure involved searching the news, press releases and reports for announcements of humanitarian–business partnerships in managing humanitarian logistics. We used two online databases here: Relief Web and LexisNexis. Relief Web (2016) is a well-known UN website to search humanitarian announcements, and LexisNexis is a well-established database providing electronic accessibility to more than 60,000 legal news and journalistic documents.

The second procedure involved searching announcements for partnerships with the business sector on websites of humanitarian organisations. We included three types of humanitarian organisations based on the classification of Olorun-toba and Gray (2009): (1) UN (United Nation) and their associated agencies; (2) implementing non-governmental organisations (NGOs); and (3) the International Federation of Red Cross and its affiliated National Societies. For the second procedure, we used three online databases with public information about NGOs: the NGO Advisor (2016), the Relief Web, and the Humanitarian Outcomes. We selected NGOs that (1) have an international operational scope, and (2) have established a website with English content. We, therefore, excluded NGOs that do not provide substantial information in English on their websites. As a result, we included 1055 organisations in our sampling procedure. The resulting sample consists of 50 UN Agencies, the ICRC (International Committee of Red Cross) and the IFRC (International Federation of Red Cross) as well as 193 of their National Societies, and 810 NGOs. We counted the IFRC, the ICRC, and each of their National Societies as single independent bodies as they have their own individual status and exercise no authority over the others (Humanitarian Outcomes 2016; IFRC 2016).

In our research, we investigate logistics partnerships that focus on emergencies since in these situations logistics is a key activity (Van Wassenhove 2006). We therefore limited our search for announcements of partnerships between humanitarian organisations and the business sector to those that involve these following aid activities: (1) emergency response to natural and manmade disasters, (2) emergency health services (both to natural disaster and manmade disasters/conflict), (3) emergency food security and nutrition and (4) refugee and migration services.

We applied different procedures to our two sources of data. For Relief Web and LexisNexis, we searched by applying keyword strings to elicit partnership information. Then, we applied exclusion and inclusion criteria to the documents. We excluded announcements/reports that (1) are not in English, and (2) focus solely on delivering activities in development aid. We only included announcements and reports covering logistics activities for emergency response to disasters (both natural and manmade).

For the focal 1055 website organisations, we searched their websites for announcements and reports on collaborations or relationships with the business sector. We used the same keywords on websites as for Relief Web and Lexis Nexis to find the targeted announcements and reports. We evaluated these announcements and reports using our exclu-

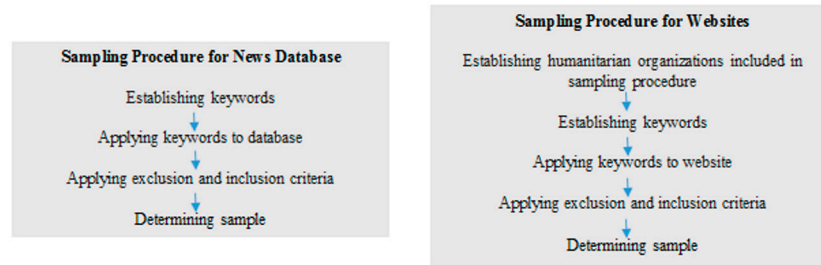


Figure 2. Sampling procedure.

sion and inclusion criteria discussed above. In order to deal with the issues of applying content analysis to websites in which their contents can change in daily basis (McMillan 2000), we printed all of the news/announcements/report and recorded their downloaded date.

The summary of the sampling procedures for the news databases and the websites is depicted in Figure 2.

4.3 Operationalisation and coding

We first identified cross-sector partnerships using our proposition of the characteristics of humanitarian–business partnerships in managing humanitarian logistics (see Section 2.3). Our study only counts any joint efforts between one or more humanitarian organisation(s) and one or more business corporation(s) and their associated organisations. This includes foundations or any organisations that are financially owned or managed by business corporations. Some corporations prefer to separate the management of their philanthropy or Corporate Social Responsibility activities to a subsidiary organisation for managerial reasons. Second, our study only counts those joint efforts with the main objective of expanding the capability and performance of humanitarian logistics. Third, since we want to include those relationships that facilitate joint decision planning and decision-making, in this study we only include those relationships that have been operational for more than one year. Fourth, we only include those relationships that facilitate sharing of resources among members. The resources sharing can be either tangible such as financial support, facilities, or other assets, or intangible such as skills, capacity, information, and tacit knowledge (e.g. experience).

We then applied our coding scheme to operationalise humanitarian-business partnerships into categories using the typology dimensions. We categorise dimension one (type of resources contributed) into financial and non-financial resource contributions. Non-financial resource contributions can comprise facilities, equipment, skills, information, experiences or any possible tangible and intangible assets. We differentiated dimension two (number of participants) into four categories: single humanitarian organisation–single business corporation, single humanitarian organisation–multiple business corporations, multiple humanitarian organisations–single business corporation and multiple humanitarian organisations–multiple business corporation. Dimension three (type of disaster) is split into two groups: natural disaster and manmade disaster. Furthermore, both disaster types can be put into two sub-categorisations: sudden-onset and slow-onset. Dimension four (phase of relief operation) is separated into three categorisations: mitigation and preparedness, response and reconstruction. Logistics activities (dimension five) are categorised into two types: primary logistics activities and secondary (supporting) logistics activities. The primary logistics activities are expanded into the following sub-categories: warehousing, inventory management and transportation. The secondary logistics activities are also expanded into sub-categories: information technology, human-resources training, and other back-office activities to support logistics. We split dimension six (the type of supply chain coordination) into two categories: vertical and horizontal. The financial arrangement of the partnership (dimension seven) consists of two categories: non-profit/ philanthropic and profit/business. Last, we put the geographical coverage of the partnerships (dimension 8) into three sub-sets: local, national and regional/international. The coding scheme is summarised in Table 1.

5. Results

Before starting with the application of the coding scheme to the web content data, two authors independently conducted a pre-test to examine the inter-coder reliability. The results showed an inter-coder reliability of 93%, and a Cohens Kappa of .712, which is considered to represent substantial strength of agreement (Landis and Koch 1977; Stemler

Table 1. Coding scheme.

Dimension	Categories
(1) Type of resources contributed	Financial Non-Financial
(2) Number of participant	Single humanitarian organisation-single business corporation Single humanitarian organisation-multiple business corporation Multiple humanitarian organisation-single business corporation Multiple humanitarian organisation-multiple business corporation
(3) Type of disaster	Natural disaster Man-made disaster
(4) Phase of relief operation	Mitigation and preparedness Response Reconstruction
(5) Type of logistics activities	Primary activities Secondary activities
(6) Type of supply chain coordination	Vertical Horizontal
(7) Financial arrangement	Non-profit/philanthropic Business oriented
(8) Geographic coverage	Local National Regional/international

2001). Applying our keywords and inclusion and exclusion criteria, our sampling procedure resulted in 437 announcements of partnerships between humanitarian organisations and business corporations focused on humanitarian logistics.

Out of our total sample of 437 announcements, we found that 276 observations could not further being included in our sample because their announcements do not give sufficient information about the duration of partnerships or the resources shared during the activities. Out of this, we identified 27 announcements about joint efforts between humanitarian organisations and business corporations that are managed in a period of less than one year. We classify these types of relationships as ad hoc collaborations. An example of ad hoc collaboration is the support of Procter and Gamble (P&G) to World Vision during the humanitarian operation of Nepal 2015 earthquake by providing immediate financial support and products.

Ultimately, we classified 134 announcements (31% of our initial observations) as partnerships between humanitarian organisations and business corporations in managing humanitarian logistics. Out of these, 25 involve UN agencies, 8 partnerships involve Red Cross organisations, and 101 partnerships involve NGOs.

Next, we applied our coding scheme to these 134 announcements to classify the cross-sector partnerships based on the eight dimensions of our typology framework. The detailed results are depicted in Table 2. In the next paragraphs we discuss our results per dimension.

5.1 Dimension 1: type of resources contributed

Financial contributions comprise the most common type of resource delivered by the business sector when it comes to partnerships with the humanitarian sector. Among the sample of 134 partnerships, 91 partnerships (68%) focus on financial contributions to the NGO (sometimes combined with other types of contributions). An example of partnerships delivering financial contributions is the partnership between Walmart, a retail company, with World Vision International. Since 2005, Walmart foundation has donated significant amounts of financial support to World Vision.

Services comprise the second most delivered resource from the business sector to the humanitarian sector, delivered by 66 different partnerships (49%). An example of partnerships delivering services is the partnership between America Cares with aeroplane manufacturer Boeing and airline Emirates. Boeing and Emirates help America Cares transporting relief supplies to many areas in the world during emergency situations.

Products are delivered by 51 (38%) partnerships, for example, the partnerships between Abbott, a pharmaceutical company, with CARE. Since 2005 Abbott has been a partner of CARE, providing critical aid to survivors during crises, including for example the 2010 earthquake in Haiti, the 2011 famine in the Horn of Africa, and the 2011 floods in Thailand.

Table 2. Results.

Dimension	Frequency	%
Type of resource allocated		
<i>Type of resources</i>		
Only cash	45	33.6
Only products	10	7.5
Only services	29	21.6
Cash and products	13	9.7
Cash and services	9	6.7
Products and services	4	3.0
Cash, products, and services	24	17.9
<i>Total</i>	134	100.0
<i>Number of resources allocated</i>		
Partnerships only allocated 1 type of resources	83	61.9
Partnerships provide more than 1 type of resources	51	38.1
<i>Total</i>	134	100.0
Number of participants		
Single humanitarian organisation-single business corporation	129	96.3
Single humanitarian organisation-multiple business corporations	4	3.0
Multiple humanitarian organisations-single business corporation	1	0.7
Multiple humanitarian organisations-multiple business corporations	0	0.0
<i>Total</i>	134	100.0
Type of disaster		
Emergency response/natural disaster	40	29.9
Emergency response/natural disaster, Slow onset	39	29.1
Slow onset (no specification)	12	9.0
n.a	43	32.1
<i>Total</i>	134	100.0
Phase of relief operation (<i>only for partnerships that operate in natural disasters</i>)		
<i>Phase</i>		
Only preparedness	0	0.0
Only response	63	79.7
Only reconstruction	0	0.0
Preparedness, implementation	12	15.2
Preparedness, implementation, reconstruction	4	5.1
<i>Total</i>	79	100.0
<i>Number of phases</i>		
Partnerships operate only in one phase of relief operation	63	79.7
Partnerships operate multiple phases of relief operation	16	20.3
<i>Total</i>	79	100.0
Logistics activities (<i>only for partnerships that involve in the delivery of products and services</i>)		
<i>Combination of logistics activities</i>		
Only product availability	44	49.4
Product availability, transportation	1	1.1
Product availability, IT	1	1.1
Product availability, HR capacity	6	6.7
Inventory management, transportation	1	1.1
Inventory management, transportation, IT	2	2.2
Inventory management, IT	1	1.1
Inventory management, transportation, HR capacity	2	2.2
Only transportation	16	18.0
Only IT	8	9.0
IT, HR capacity	4	4.5
Only HR capacity	2	2.2
HR capacity, procurement support	1	1.1
<i>Total</i>	89	100.0
<i>Number of logistics activities</i>		
Partnerships deliver 1 type of logistics activities	70	78.7
Partnerships deliver more than 1 type of logistics activities	19	21.3
<i>Total</i>	89	100.0

(Continued)

Table 2. (Continued)

Dimension	Frequency	%
Type of supply chain collaboration		
Only vertical	68	50.7
Only horizontal	29	21.6
Vertical and horizontal	37	27.6
Total	134	100.0
Financial agreement		
Charity/philanthropy	134	100.0
Business	0	0.0
Total	134	100.0
Coverage		
International/regional	134	100.0
Local	0	0.0
Total	134	100.0

Some partnerships only facilitate the delivery of a single type of resources from the business sector to the humanitarian sector, while some others have the ability to deliver multiple resources. About 62% of partnerships deliver only one type of resources, while about 38% deliver more than one type of resources. For example, the partnership between World Food Programme (WFP) and consumer packaged goods company Unilever has been taking place since 2007, while during that period Unilever has contributed financial contributions and in-kind support to WFP's operations.

5.2 Dimension 2: number of participants

The majority of partnerships are managed by a single humanitarian organisation and a single business corporation (96%). In our sample, we only found 5 announcements (4%) about partnerships that involve multiple humanitarian organisations or multiple business corporations or as part of an alliance. An alliance for humanitarian sector can be initiated by business sector or by humanitarian sector. An example of a partnership with multiple participants is the partnership between Swedish Medical Centre with Boeing and Ethiopian Airlines. This partnership is part of Boeing Global Corporate Citizenship's Humanitarian Delivery Flight. This alliance involves several airlines around the world ready to support humanitarian emergency relief. An Example of an alliance initiated by a humanitarian organisation is Change for Good, which has been initiated by UNICEF and involves many business corporations to support the delivery of UNICEF's programmes around the world.

5.3 Dimension 3: type of disasters

Most of the partnerships deliver aids for natural disaster emergency relief operations. Out of 134 partnerships, 79 partnerships aim to respond to natural disasters/ emergency relief. For example, electronics company Philips has for years supported ICRC by providing consultation and product development services for healthcare and lighting during humanitarian operations after natural disasters.

5.4 Dimension 4: phase of relief operation

The 79 partnerships that deliver activities in natural disaster emergency relief operations, about 80% aim to participate in only one phase of natural disaster relief operations, while 20% aim at more than one phase. All of the partnerships operate in the response phase, while only 16 partnerships start their operation during the preparedness phase, and there are only 4 partnerships continuing their activities into the reconstruction phase. An example of partnerships that deliver their activities during the implementation phase is the well-published partnership between logistics service provider TNT with WFP. TNT has supported WFP for many years with cargo planes, warehouses, and logistics staff during the response phase of emergency operations. The partnership between MasterCard, a multinational financial services company, and Mercy Corps is an example of a partnership that is managed starting from the preparedness phase until the reconstruction phase and is focused on providing financial support to beneficiaries. Over the years, MasterCard and Mercy Corps have worked on technology solutions for humanitarian operations.

5.5 Dimension 5: type of logistics activities

If a partnership only provides financial contributions the partners are not directly involved in any logistics activities. By contributing products or services, business corporations can be involved in humanitarian logistics activities. Some of the partnerships focus on delivering more than one type of logistics activities, while others only deliver one type of activities. There are 70 partnerships that focus on one type logistics activities (e.g. transport or warehousing), while 19 partnerships are able to deliver more than one type. Among the primary logistics activities, contributing to the logistics capacity of humanitarian operation by supplying products is the most common contribution. There are 52 partnerships that contribute to the management of humanitarian logistics by providing products. The second most contributed primary logistics activity is transportation. There are 22 partnerships delivering transportation services to support humanitarian emergency operations. Inventory management is delivered by 6 partnerships in our sample.

IT is the supporting logistics activity that is provided the most (16 partnerships). Although these supporting activities may not directly be related to primary logistical activities, these efforts contribute to better humanitarian response. For example, Microsoft has been helping UN-OCHA to provide a place for aid organisations to exchange information and collaborate during the humanitarian operation in Haiti in 2010. One Response, an online platform initiated by Microsoft, is a collaborative inter-agency website designed to enhance humanitarian coordination. There are 15 partnerships that participate in enhancing the capacity of humanitarian workers through training, coaching, and employee exchange initiatives. For example, the partnership between Vodafone with WFP also includes an ICT training programme for relief workers to increase the speed and to enhance the capability of relief workers during response.

5.6 Dimension 6: supply chain coordination

Among our sample of 134 partnerships, we identified 68 partnerships that only establish vertical coordination where a business provides products and the humanitarian organisation acts as distributor of the products to the beneficiaries. There are 29 partnerships that focus on horizontal coordination between business corporations and humanitarian organisations, meaning they both are involved in inventory management and transportation of products or services. There are 37 partnerships that focus on both vertical and horizontal collaboration between businesses and humanitarian organisations. In these partnerships, businesses deliver a combination a resource (financial contributions/products) but are also involved in inventory management and transportation of products or services.

5.7 Dimensions 7 and 8: financial arrangement and Geographical coverage

Out of 134 partnerships, we found that all are delivered based on charitable/philanthropic agreements covering international geographies.

6. Discussion

Our results shows that the number of partnerships developed between the business sector and the humanitarian sector in managing humanitarian logistics is still limited, and that publications about these partnerships are scarce. Not all relationships between the humanitarian sector and business sector can be classified as partnerships; some of them can only be categorised as ad hoc collaboration, for example if they are set up only in the aftermath of an event. This is in line with the proposition of Pettit and Beresford (2009) that collaborations in humanitarian sector often only occur once after a crisis occurred.

Financial contributions comprise the most common type of resource delivered by the business sector when it comes to partnerships with the humanitarian sector focused on managing humanitarian logistics. This can probably be explained by the fact that financial contributions are flexible, that they enable any type of business to contribute to humanitarian efforts and that they reduce the risk of unsolicited stocks (Thomas and Fritz 2006; Van Wassenhove 2006). In contrast, delivering products or services could require more coordination efforts of the businesses involved. Based on the above we define our first research proposition:

RP1: The commercial sector is more interested to set up collaborative efforts with humanitarian organisations that mainly focus on providing financial contributions, rather than building partnerships that focus on providing actual products or services.

The fact that partnerships in the humanitarian sector are not widespread contrasts with what we encounter in the business sector (where partnerships are relatively common). Nurmala, de Leeuw, and Dullaert (2017) argue based on literature and interviews that humanitarian organisations are often worried about the negative perceptions of society and

donors regarding establishing partnerships with the business sector. In line with this, Rueede and Kreutzer (2014) and Eftekhar et al. (2017) argue that humanitarian organisations may want to be seen as independent or may worry about the negative connotations of being connected to business partners.

Humanitarian organisations can learn from best practices of business supply chains by working together with business corporations (Oloruntoba and Gray 2009; Pettit and Beresford 2009; Thomas and Fritz 2006; Van Wassenhove 2006). Particularly when partnerships focus on delivering services, the two parties involved need to interact and collaborate closely. Other situations may require different partnership approaches. One such domain where support is needed is in the development of skills and knowledge in logistics, which is a key challenge in humanitarian logistics (Fikar, Gornalt, and Hirsch 2016; Kovács and Spens 2009; Scholten, Pamela, and Fynes 2010; Thomas and Fritz 2006). An exchange of knowledge between the business sector and humanitarian organisations may therefore be relevant in order to foster better and more innovative solutions (Nurmala, de Leeuw, and Dullaert 2017). This leads us to the next research proposition:

RP2: In order to have an impact it is necessary to understand which situations require which types of partnership mechanisms and how they can support collaboration between commercial organisations and humanitarian organisations in managing humanitarian logistics.

It is also interesting to note that the majority of partnerships in our sample are dyadic in nature, managed by a single humanitarian organisation and a single business corporation (96%). Also in the business sector the early partnership initiatives focused on such dyadic relationships (De Leeuw and Fransoo 2009). In the business sector these dyadic partnerships have been developing into more complex patterns (Choi and Wu 2009). Also, collaboration between partners is increasingly being investigated from a network perspective (Durugbo 2016). This may provide opportunities, particularly because there have been initiatives in setting up fourth party logistics networks in the humanitarian sector as well (Abidi, de Leeuw, and Klumpp 2015). This leads us to our third research proposition:

RP3: Partnerships between business corporations and humanitarian organisations in managing humanitarian logistics need not only be dyadic in nature but also be focused on building networks of partnerships.

Furthermore, we find that most of the partnerships target natural disaster emergency relief operations. According to Van Wassenhove (2006, 476), ‘...Collectively they account for only 3% of disaster relief operations’. This focus on natural disasters may be caused by the fact that natural disasters generate most interest (Eftekhar et al. 2017; Kunz and Reiner 2012). Business corporations may also want to avoid being involved in (and therefore connected to) operations related to manmade disasters due to potentially negative connotations related to the disaster. The dominant focus of partnerships between the humanitarian and commercial sector in managing humanitarian logistics on a relatively small portion of the emergencies (natural disasters) calls for an expansion to other types of disasters, which leads us to our fourth proposition:

RP4: The commercial sector is mainly focused more on setting up partnerships for natural disaster response, yet the challenge is to convert business interest in supporting a wider spectrum of activities in their partnerships with humanitarian organisations on managing humanitarian logistics.

Related to this, our study shows that all of the partnerships targeting natural disasters operate in the response phase, while only about 15% of these partnerships start their activities in preparedness phase and only 5% of these partnerships continue their activities into the reconstruction phase. This could be because the response phase of natural disaster relief operations attracts more attention and media exposure than the preparedness phase and the reconstruction phase (Eftekhar et al. 2017; Rueede and Kreutzer 2014; Stewart, Kolluru, and Smith 2009). The fact that most of the partnerships focus their efforts mainly on disaster response shows that humanitarian–business partnerships have not been optimised to solve one of the biggest issues in humanitarian logistics: lack of performance during emergency response due to poor preparedness. When disaster strikes, it is often already too late to develop solutions that were not in place already. In the preparedness phase, humanitarian organisations can pre-establish emergency supplies, and pre-position vital equipment that will be needed in times of crisis (Salmerón and Apte 2010; Tomasini and Van Wassenhove 2009; Oloruntoba and Gray 2006; Tatham and Pettit 2010). In fact, any improvement in preparedness will in turn be translated into better performance during response (Akter and Wamba 2017; Chandes and Paché 2010; Ergun et al. 2014; Tatham and Pettit 2010). This finding calls for the establishment of more partnerships that focus on preparedness, especially those that help humanitarian organisations to improve their inventory capacity, human resource capabilities and information systems. This leads us to the fifth research proposition:

RP5: Although the commercial sector is mainly active in setting up partnerships with humanitarian organisations that focus on the response phase, the key challenge lies in setting up humanitarian logistics partnerships that focus on improving preparedness and reconstruction.

7. Conclusions, implications and limitations

7.1 Conclusions

Through a systematic approach we have developed a typological framework for humanitarian–business partnerships in humanitarian logistics and we have empirically verified this typology with a data-set using content analysis. Our study shows that the amount of partnerships between the humanitarian and business sector in managing humanitarian logistics is limited and that these partnerships are not widely publicised. Partnerships between commercial organisations and humanitarian organisations mostly focus on providing financial contributions rather than for example on providing services. Most of the partnerships focus on the response phase of relief operations for in particular natural disasters. As such, our study shows that the existing partnerships between humanitarian organisations and business corporations in managing humanitarian logistics only cover a relatively narrow part of the spectrum of possibilities, leaving open several opportunities for improving the performance of humanitarian logistics. Our study has implications for both research and practice.

7.2 Implication for research

Our research results suggest that there are several opportunities to further our understanding of partnerships between humanitarian organisations and the commercial sector in managing humanitarian logistics. First and foremost, it is pivotal to understand why companies are mainly interested in providing financial donations rather than for example services, as well as how the commercial sector may also contribute product or service related support. Eftekhar et al. (2017) for example discuss how media exposure contributes to third party donations. In line with this, further experimental research may support similar investigations on factors that affect donation preferences. A next step is to understand the partnership mechanisms in these partnerships: which types of partnerships fit which types of situations best. It is known from the commercial domain that close partnerships are not the answer to everything (De Leeuw and Fransoo 2009) and this most likely will hold in humanitarian logistics. Case studies similar to the work of Naor et al. (2017) will help shedding light on this matter. Such studies may also help in providing directions for building networks of collaborative efforts that go beyond the dyad.

A further topic that requires addressing is the timing of the support. Our research finds that most partnerships focus on the response phase rather than preparedness and reconstruction. This requires a better understanding of why this is the case, for example through stated preference surveys. Experiments, game theoretic models as well as case research may be used to investigate how companies can be motivated to support preparedness and reconstruction.

7.3 Implication for practice

Our results suggest that the amount of partnerships between humanitarian organisations and business corporations in managing humanitarian logistics is limited and that they mainly consist of financial contributions from the business sector to the humanitarian sector. Although it may be true that there are more partnerships with the commercial sector than those documented (for reasons of confidentiality or lack of willingness to publish about it), there seem to be opportunities for humanitarian organisations to tap more into the logistics expertise and capabilities of the private sector. While financial contributions are important there are opportunities to investigate other types of partnerships. There may be a role for fourth party logistics providers to help set up such engagements, see Abidi, de Leeuw, and Klumpp (2015).

Humanitarian organisations may also aim to explicitly seek support in preparedness rather than response, for example by having commercial organisations share strategically located stocks that may be used for relief efforts as well as commercial purposes like in the Walmart case, see Linnenluecke and McKnight (2017).

7.4 Limitations

We focused our empirical study on international organisations that publish announcements in English. Even though English is the most commonly used language in this sector, our study may be extended by including announcements of humanitarian organisations in other languages than English. Furthermore, the analysis only investigates direct effects;

once more partnerships are documented interaction effects between typology characteristics may be investigated (e.g. to identify if the type of contribution differs per type of disaster relief phase supported).

Despite these limitations, the result of this study can serve as starting point to better understand the dynamics of humanitarian–business partnerships in humanitarian logistics and the factors that contribute to their success.

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

Jelle de Vries  <http://orcid.org/0000-0002-5222-0094>

Sander de Leeuw  <http://orcid.org/0000-0003-3056-8775>

References

- Abidi, H., S. de Leeuw, and M. Klumpp. 2014. "Humanitarian Supply Chain Performance Management: A Systematic Literature Review." *Supply Chain Management: An International Journal* 19 (5/6): 592–608.
- Abidi, H., S. de Leeuw, and M. Klumpp. 2015. "The Value of Fourth-party Logistics Services in the Humanitarian Supply Chain." *Journal of Humanitarian Logistics and Supply Chain Management* 5 (1): 35–60.
- Adivar, B., T. Atan, B. Sevil Oflaç, and T. Örtten. 2010. "Improving Social Welfare Chain Using Optimal Planning Model." *Supply Chain Management: An International Journal* 15 (4): 290–305.
- Akhtar, P., N. E. Marr, and E. V. Garnevska. 2012. "Coordination in Humanitarian Relief Chains: Chain Coordinators." *Journal of Humanitarian Logistics and Supply Chain Management* 2 (1): 85–103.
- Akter, S., and S. F. Wamba. 2017. "Big Data and Disaster Management: A Systematic Review and Agenda for Future Research." *Annals of Operations Research*: 1–21.
- Al-Shqairat, Z. I., A. E. A. Shra'ah, M. I. Al-rawad, and M. H. Al-Kilani. 2014. "Assessing the Planning of Public Private Partnership (PPP) in E-Government Implementation Experience in Jordan." *International Journal of Business and Management* 9 (2): 124.
- Altay, N., and W. G. Green III. 2006. "OR/MS Research in Disaster Operations Management." *European Journal of Operational Research* 175 (1): 475–493.
- Bagchi, P. K., and S.-K. Paik. 2001. "The Role of Public–Private Partnership in Port Information Systems Development." *International Journal of Public Sector Management* 14 (6): 482–499.
- Balcik, B., B. M. Beamon, C. C. Krejci, K. M. Muramatsu, and M. Ramirez. 2010. "Coordination in Humanitarian Relief Chains: Practices, Challenges and Opportunities." *International Journal of Production Economics* 126 (1): 22–34.
- Barratt, M. 2004. "Understanding the Meaning of Collaboration in the Supply Chain." *Supply Chain Management: An International Journal* 9 (1): 30–42.
- Beamon, B. M., and B. Balcik. 2008. "Performance Measurement in Humanitarian Relief Chains." *International Journal of Public Sector Management* 21 (1): 4–25.
- Beamon, B. M., and S. A. Kotleba. 2006. "Inventory Management Support Systems for Emergency Humanitarian Relief Operations in South Sudan." *The International Journal of Logistics Management* 17 (2): 187–212.
- Bensaou, M., and N. Venkatraman. 1995. "Configurations of Inter-Organizational Relationships: A Comparison between US and Japanese Automakers." *Management Science* 41 (9): 1471–1492.
- Binder, A., and J. M. Witte. 2007. *Business Engagement in Humanitarian Relief: Key Trends and Policy Implications*. London: Global Public Policy Institute.
- Brinkerhoff, D. W., and J. M. Brinkerhoff. 2011. "Public–Private Partnerships: Perspectives on Purposes, Publicness, and Good Governance." *Public Administration and Development* 31 (1): 2–14.
- Capoor, I. 2005. "Square Pegs in round Holes: Redefining Public–Private Partnership." *Development* 48 (4): 137–142.
- Chandes, J., and G. Paché. 2010. "Investigating Humanitarian Logistics Issues: From Operations Management to Strategic Action." *Journal of Manufacturing Technology Management* 21 (3): 320–340.
- Chen, J., T. H. Y. Chen, I. Vertinsky, L. Yumagulova, and C. Park. 2013. "Public-Private Partnerships for the Development of Disaster Resilient Communities." *Journal of Contingencies and Crisis Management* 21 (3): 130–143.
- Choi, T. Y., and Z. Wu. 2009. "Taking the Leap from Dyads to Triads: Buyer–Supplier Relationships in Supply Networks." *Journal of Purchasing and Supply Management* 15 (4): 263–266.
- Clarke, A., and M. Fuller. 2010. "Collaborative Strategic Management: Strategy Formulation and Implementation by Multi-Organizational Cross-Sector Social Partnerships." *Journal of Business Ethics* 94 (1): 85–101.
- Crisan, C. M. 2013. "Approaching Corporate Social Responsibility Through Cross Sector Social Partnerships - Case Study of Bufab Romania." *Management & Marketing* 8 (4): 623–636.

- De Leeuw, S., and J. Fransoo. 2009. "Drivers of Close Supply Chain Collaboration: One Size Fits All?" *International Journal of Operations & Production Management* 29 (7): 720–739.
- Dinesh, R., M. G. Lisa, and F. Eric. 2014. "Interorganisational Partnerships and Knowledge Sharing: The Perspective of Non-Profit Organisations (NPOs)." *Journal of Knowledge Management* 18 (5): 867–885.
- Dormois, R., G. Pinson, and H. Reignier. 2005. "Path-Dependency in Public-Private Partnership in French Urban Renewal." *Journal of Housing and the Built Environment* 20 (3): 243–256.
- Doty, D. H., and W. H. Glick. 1994. "Typologies as a Unique Form of Theory Building: Toward Improved Understanding and Modeling." *Academy of Management Review* 19 (2): 230–251.
- Downe-Wamboldt, B. 1992. "Content Analysis: Method, Applications, and Issues." *Health Care for Women International* 13 (3): 313–321.
- Durugbo, C. 2016. "Collaborative Networks: A Systematic Review and Multi-Level Framework." *International Journal of Production Research* 54 (12): 3749–3776.
- Eftekhar, M., H. Li, L. N. Van Wassenhove, and S. Webster. 2017. "The Role of Media Exposure on Coordination in the Humanitarian Setting." *Production and Operations Management* 26 (5): 802–816.
- Erakovich, R., and T. Anderson. 2013. "Cross-Sector Collaboration: Management Decision and Change Model." *International Journal of Public Sector Management* 26 (2): 163–173.
- Ergun, Ö., L. Gui, J. L. Heier Stamm, P. Keskinocak, and J. Swann. 2014. "Improving Humanitarian Operations through Technology-Enabled Collaboration." *Production and Operations Management* 23: 1002–1014. doi:10.1111/poms.12107.
- Estache, A., J. L. Guasch, A. Iimi, and L. Trujillo. 2009. "Multidimensionality and Renegotiation: Evidence from Transport-Sector Public-Private-Partnership Transactions in Latin America." *Review of Industrial Organization* 35 (1–2): 41–71.
- FAO. 2013. *Strategy for Partnerships with the Private Sector*. Food and Agriculture Organization. Accessed August 24, 2016. <http://fao.org/docrep/018/i3444e/i3444e.pdf>
- Fikar, C., M. Gronalt, and P. Hirsch. 2016. "A Decision Support System for Coordinated Disaster Relief Distribution." *Expert Systems with Applications* 57: 104–116.
- GHA. 2016. *Global Humanitarian Assistance Report 2016*. Accessed October 25, 2016. <http://www.globalhumanitarianassistance.org/report/gha2016/>
- Goulding, C., M. Kelemen, and T. Kiyomiya. 2017. "Community Based Response to the Japanese Tsunami: A Bottom-up Approach." *European Journal of Operational Research*. Advance online publication. doi:10.1016/j.ejor.2017.11.066.
- Haigh, R., and R. Sutton. 2012. "Strategies for the Effective Engagement of Multi-National Construction Enterprises in Post-Disaster Building and Infrastructure Projects." *International Journal of Disaster Resilience in the Built Environment* 3: 270–282.
- Hannah, G. 2008. "Developments in the Public-Private Partnership Funding of Scottish Schools." *Journal of Applied Accounting Research* 9 (2): 112–125.
- Hiller, J. S. 2013. "The Benefit Corporation and Corporate Social Responsibility." *Journal of Business Ethics* 118 (2): 287–301.
- Hingley, M., A. Lindgreen, D. B. Grant, and C. Kane. 2011. "Using Fourth-Party Logistics Management to Improve Horizontal Collaboration among Grocery Retailers." *Supply Chain Management: An International Journal* 16 (5): 316–327.
- Hood, J. N., J. M. Logsdon, and J. K. Thompson. 1993. "Collaboration for Social Problem Solving: A Process Model." *Business and Society* 32 (1): 1–17.
- Hsieh, Hsiu-Fang, and S. E. Shannon. 2015. "Three Approaches to Qualitative Content Analysis." *Qualitative Health Research* 15 (9): 1277–1288.
- Humanitarian Outcomes. 2016. Accessed January 12, 2016. <http://www.humanitarianoutcomes.org/gdho/search/result>
- Hurst, C., and E. Reeves. 2004. "An Economic Analysis of Ireland's First Public Private Partnership." *International Journal of Public Sector Management* 17 (5): 379–388.
- IFRC. 2016. Accessed February 10, 2016. <http://IFRC.org>
- Jin, X. H., G. Zhang, and R. J. Yang. 2012. "Factor Analysis of Partners' Commitment to Risk Management in Public-Private Partnership Projects." *Construction Innovation* 12 (3): 297–316.
- Kolk, A., W. van Dolen, and M. Vock. 2010. "Trickle Effects of Cross-Sector Social Partnerships." *Journal of Business Ethics* 94 (1): 123–137.
- Kovács, G., and K. M. Spens. 2007. "Humanitarian Logistics in Disaster Relief Operations." *International Journal of Physical Distribution & Logistics Management* 37 (2): 99–114.
- Kovács, G., and K. Spens. 2009. "Identifying Challenges in Humanitarian Logistics." *International Journal of Physical Distribution & Logistics Management* 39 (6): 506–528.
- Krippendorff, K. 2013. *Content Analysis: An Introduction to Its Methodology*. 3rd ed. New York: Sage.
- Kumar, S., and T. Havey. 2013. "Before and after Disaster Strikes: A Relief Supply Chain Decision Support Framework." *International Journal of Production Economics* 145 (2): 613–629.
- Kunz, N., and G. Reiner. 2012. "A Meta-Analysis of Humanitarian Logistics Research." *Journal of Humanitarian Logistics and Supply Chain Management* 2 (2): 116–147.
- Landis, J. R., and G. G. Koch. 1977. "The Measurement of Observer Agreement for Categorical Data." *Biometrics* 33: 159–174.
- Larson, Paul D., and Cyril Foropon. 2018. "Process Improvement in Humanitarian Operations: An Organizational Theory Perspective." *International Journal of Production Research*. Advance online publication. doi:10.1080/00207543.2018.1424374.

- Lee, S. 2010. "Development of Public Private Partnership (PPP) Projects in the Chinese Water Sector." *Water Resources Management* 24 (9): 925–1945.
- Leonard, D. 2005. "The Only Lifeline Was the Wal-Mart." *Fortune* 152 (7): 74–80.
- Linnenluecke, M. K., and B. McKnight. 2017. "Community Resilience to Natural Disasters: The Role of Disaster Entrepreneurship." *Journal of Enterprising Communities: People and Places in the Global Economy* 11 (1): 166–185.
- Manning, S., and D. Roessler. 2013. "The Formation of Cross-Sector Development Partnerships: How Bridging Agents Shape Project Agendas and Longer-Term Alliances." *Journal of Business Ethics* 123 (3): 527–547.
- Maon, F., A. Lindgreen, and J. Vanhamme. 2009. "Developing Supply Chains in Disaster Relief Operations through Cross-sector Socially Oriented Collaborations: A Theoretical Model." *Supply Chain Management: An International Journal* 14 (2): 149–164.
- McLachlin, R., and P. D. Larson. 2011. "Building Humanitarian Supply Chain Relationships: Lessons from Leading Practitioners." *Journal of Humanitarian Logistics and Supply Chain Management* 1 (1): 32–49.
- McMillan, S. J. 2000. "The Microscope and the Moving Target: The Challenge of Applying Content Analysis to the World Wide Web." *Journalism and Mass Communication Quarterly* 77 (1): 80–98.
- Meidutė, I., and N. K. Paliulis. 2011. "Feasibility Study of Public-Private Partnership." *International Journal of Strategic Property Management* 15 (3): 257–274.
- Moshtari, M. 2016. "Inter-Organizational Fit, Relationship Management Capability, and Collaborative Performance within a Humanitarian Setting." *Production and Operations Management* 25: 1542–1557. doi:10.1111/poms.12568.
- Muller, A., and G. Whiteman. 2009. "Exploring the Geography of Corporate Philanthropic Disaster Response: A Study of Fortune Global 500 Firms." *Journal of Business Ethics* 84 (4): 589–603.
- Naor, M., A. Dey, S. Meyer Goldstein, and Y. Rosen. 2017. "Civilian-Military Pooling of Health Care Resources in Haiti: A Theory of Complementarities Perspective." *International Journal of Production Research* 48: 1–17.
- Nelson, C. B., M. Birmingham, A. Costa, J. Daviaud, W. Perea, M. Kiény, and D. Tarantola. 2007. "Public-Private Partnership to Develop an Affordable Vaccine for an Emergent Threat: The Trivalent Neisseria Meningitidis ACW135 Polysaccharide Vaccine." *American Journal of Public Health* 97 (S1): 15–22.
- NGO Advisor. 2016. Accessed February 10, 2016. <http://ngoadvisor.net>
- Nisar, T. M. 2007. "Risk Management in Public-Private Partnership Contracts." *Public Organization Review* 7 (1): 1–19.
- Nurmala, N., S. de Leeuw, and W. Dullaert. 2017. "Humanitarian-Business Partnerships in Managing Humanitarian Logistics." *Supply Chain Management: An International Journal* 22 (1): 82–94.
- Oglesby, R., and J. Burke. 2012. *Platforms for Private Sector: Humanitarian Collaboration*. Humanitarian Futures Programme. London: King's College.
- Oloruntoba, R., and R. Gray. 2006. "Humanitarian Aid: An Agile Supply Chain?" *Supply Chain Management: An International Journal* 11 (2): 115–120.
- Oloruntoba, R., and R. Gray. 2009. "Customer Service in Emergency Relief Chains." *International Journal of Physical Distribution & Logistics Management* 39 (6): 486–505.
- Oyediran, A. B. O., E. M. Ddumba, S. A. Ochola, A. O. Lucas, K. Koporc, and W. R. Dowdle. 2002. "A Public-Private Partnership for Malaria Control: Lessons from the Malarone Donation Programme." *Bulletin of the World Health Organization* 80 (10): 817–821.
- Pazirandeh, A., and H. Herlin. 2014. "Unfruitful Cooperative Purchasing." *Journal of Humanitarian Logistics and Supply Chain Management* 4 (1): 24–42.
- Pettit, S., and A. Beresford. 2009. "Critical Success Factors in the Context of Humanitarian Aid Supply Chains." *International Journal of Physical Distribution & Logistics Management* 39 (6): 450–468.
- Ramani, K. V., D. Mavalankar, A. Patel, and S. Mehendiratta. 2007. "A GIS Approach to Plan and Deliver Healthcare Services to Urban Poor: A Public Private Partnership Model for Ahmedabad City, India." *International Journal of Pharmaceutical and Healthcare Marketing* 1 (2): 159–173.
- Relief Web. 2016. Accessed February 12, 2016. <http://reliefweb.int/organizations>
- Rodríguez-Espíndola, O., P. Albores, and C. Brewster. 2018. "Disaster Preparedness in Humanitarian Logistics: A Collaborative Approach for Resource Management in Floods." *European Journal of Operational Research* 264 (3): 978–993.
- Ruede, D., and K. Kreutzer. 2014. "Legitimation Work within a Cross-Sector Social Partnership." *Journal of Business Ethics* 128 (1): 39–58.
- Salmerón, J., and A. Apte. 2010. "Stochastic Optimization for Natural Disaster Asset Prepositioning." *Production and Operations Management* 19 (5): 561–574.
- Samii, R. 2008. "Leveraging Logistics Partnerships: Lessons from Humanitarian Organizations." ERIM PhD Series, Erasmus School of Economics, Rotterdam, The Netherlands.
- Scholten, K., S. S. Pamela, and B. Fynes. 2010. "(Le) agility in Humanitarian Aid (NGO) Supply Chains." *International Journal of Physical Distribution & Logistics Management*. 40 (8/9): 623–635.
- Schulz, S. F., and A. Blecken. 2010. "Horizontal Cooperation in Disaster Relief Logistics: Benefits and Impediments." *International Journal of Physical Distribution & Logistics Management* 40 (8/9): 636–656.

- Scott, J. T. 2009. "Cost-Benefit Analysis for Global Public-Private Partnerships: An Evaluation of the Desirability of Intergovernmental Organizations Entering into Public-Private Partnerships." *Journal of Technology Transfer* 34 (6): 525-559.
- Selsky, J. W., and B. Parker. 2005. "Cross-Sector Partnerships to Address Social Issues: Challenges to Theory and Practice." *Journal of Management* 31 (6): 849-873.
- Sharma, A. 2009. "Modernization of Railway Stations in India: A Case for Public-Private Partnership with Special Reference to New Delhi Railway Station." *South Asian Journal of Management* 16 (1): 102.
- Simatupang, T. M., and R. Sridharan. 2002. "The Collaborative Supply Chain." *The International Journal of Logistics Management* 13 (1): 15-30.
- Soosay, C. A., and P. Hyland. 2015. "A Decade of Supply Chain Collaboration and Directions for Future Research." *Supply Chain Management: An International Journal* 20 (6): 613-630.
- Stemler, S. 2001. "An Overview of Content Analysis." *Practical Assessment, Research & Evaluation* 7 (17): 137-146.
- Stewart, G. T., R. Kolluru, and M. Smith. 2009. "Leveraging Public-Private Partnerships to Improve Community Resilience in times of Disaster." *International Journal of Physical Distribution & Logistics Management* 39 (5): 343-364.
- Swaminathan, Jayashankar M. 2017. "Big Data Analytics for Rapid, Impactful, Sustained and Efficient (RISE) Humanitarian Operations." *Production and Operations Management*. Advance online publication. doi:10.1111/poms.12840.
- Tatham, P. H., and S. J. Pettit. 2010. "Transforming Humanitarian Logistics: The Journey to Supply Network Management." *International Journal of Physical Distribution and Logistics Management* 40 (8/9): 609-622.
- Thomas, A., and L. Fritz. 2006. "Disaster Relief, Inc." *Harvard Business Review* 84 (Nov.): 114-122.
- Thomas, A., and L. R. Kopczak. 2005. *From Logistics to Supply Chain Management: The Path Forward in the Humanitarian Sector*. San Francisco, CA: Fritz Institute.
- Tomasini, R. M., and L. N. Van Wassenhove. 2009. "From Preparedness to Partnerships: Case Study Research on Humanitarian Logistics." *International Transactions in Operational Research* 16 (5): 549-559.
- Van Rijn, Th M J. 1985. "Producers Door Informeren; Informatie-Eisen Voor Verschillende Productiesituaties." [Producing by Informing; Information Requirements for Different Production Situations.] TU/e PhD-series, Eindhoven University of Technology, Eindhoven, The Netherlands (in Dutch).
- Van Tulder, R., M. M. Seitanidi, A. Crane, and S. Brammer. 2016. "Enhancing the Impact of Cross-Sector Partnerships." *Journal of Business Ethics* 135 (1): 1-17.
- Van Wassenhove, L. N. 2006. "Humanitarian Aid Logistics: Supply Chain Management in High Gear." *Journal of the Operational Research Society* 57 (5): 475-489.
- Vourvachis, P., and T. Woodward. 2015. "Content Analysis in Social and Environmental Reporting Research: Trends and Challenges." *Journal of Applied Accounting Research* 16 (2): 166-195.
- Waddell, S., and D. Brown. 1997. "Fostering Intersectoral Partnering: A Guide to Promoting Cooperation among Government, Business, and Civil Society Actors." *IDR Reports* 13 (3): 1-26.
- White, M. D., and E. E. Marsh. 2006. "Content Analysis: A Flexible Methodology." *Library Trends* 55 (1): 22-45.