

Humanitarian–business partnerships in managing humanitarian logistics

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Abstract

Purpose – The aim of this paper is to conduct a systematic literature review to understand the state of the art of partnerships between humanitarian organizations and business corporations in managing humanitarian logistics.

Design/methodology/approach – A systematic literature review is conducted based on the steps proposed by Denyer and Tranfield (2009). The context-intervention-mechanism-outcome (CIMO) logic is applied to identify the state of the art of partnerships between humanitarian organizations and business corporations in humanitarian logistics. Thirty-six papers related to the topic are extracted from recognized journal databases and then classified into four categories based on the CIMO logic: situational context, intervention factors, mechanisms and outcomes.

Findings – The study shows that while the context and mechanisms for developing cross-sector partnerships between the humanitarian and the business sector have been examined and illuminated by many researchers, additional research (in particular, empirical studies) is needed to measure outcomes as well as the contributions of partnerships to the performance of humanitarian logistics. In addition to synthesizing the literature in this area, this study also presents challenges of such partnerships.

Practical implications – The study improves the understanding of the state of cross-sector partnerships in humanitarian logistics as well as identifies opportunities for future research in this area. The study provides reasons and motives of initiating humanitarian–business partnerships in humanitarian logistics as well as their mechanisms and potential outcomes. This may help in developing successful logistics partnerships with each other.

Originality/value – This is the first systematic literature review to examine the nature of partnerships between humanitarian organizations and business corporations in humanitarian logistics using CIMO logic.

Keywords Partnership, Humanitarian logistics, Humanitarian relief

Paper type Literature review

1. Introduction

The importance of effective management of humanitarian supply chains is beyond question. The stakes in the humanitarian sector are high and a well-managed supply chain is crucial to achieving humanitarian goals (Van Wassenhove, 2006). It is generally acknowledged that humanitarian supply chains face many challenges, including poor logistics infrastructures (Liu *et al.*, 2010), slow coordination and response (Chandes and Paché, 2010), fragmented technology and information systems (Tatham and Spens, 2011) and high employee turnover (Beamon and Kotleba, 2006; Van Wassenhove, 2006; Tomasini and Van Wassenhove, 2009). At the same time, humanitarian supply chains are also argued

to be among the most agile supply chains in existence (Van Wassenhove, 2006).

Several researchers have recommended that the humanitarian sector take lessons from the business sector (Scholten *et al.*, 2010; Tomasini and Van Wassenhove, 2009). It has, for example, been argued that the humanitarian sector would better achieve its goals with greater supply chain collaboration and coordination (Balcik *et al.*, 2010; Van Wassenhove, 2006; Maon *et al.*, 2009), an

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area with which the business sector has significant experience. Although such collaboration is often seen as beneficial humanitarian organizations also face difficulties in managing collaborative efforts, including collaboration with the private sector. These difficulties may stem from conflicting goals and mandates (Kumar and Havey, 2013; Kovács and Spens, 2007), lack of willingness to share information (Altay and Pal, 2014), technology barriers (Altay and Pal, 2014; Pettit and Beresford, 2009), structure conflict (Akhtar *et al.*, 2012), cultural conflict (Kovács and Spens, 2007) or lack of performance metrics (Simatupang and Sridharan, 2005). The business world, which is highly experienced in these areas (Bolumole, 2001; Fabbe-Costes and Jahre, 2007) could, some argue, help humanitarian organizations improve the humanitarian supply chain by taking advantage of the resources and expertise of the business sector (Tomasini and Van Wassenhove, 2009).

Cross-sector partnerships have been discussed as a means to address the complex cross-sectoral problems that exceed the ability of a single sector (Selsky and Parker, 2005; Clarke and Fuller, 2010). A cross-sector partnership generally involves the government (public), business (private) and non-profit (civil society, communities) sectors (Waddell and Brown, 1997). By engaging in a cross-sector partnership, an organization or sector can expand its boundaries and achieve outcomes that are difficult to be gained individually (Selsky and Parker, 2005; Clarke and Fuller, 2010; Waddell and Brown, 1997).

Although the idea of applying cross-sector partnerships in the humanitarian sector has been suggested by several researchers (Kovács and Spens, 2011; Thomas and Fritz, 2006; Van Wassenhove, 2006), the discussion on how such partnerships could benefit humanitarian supply chains has not yet been researched thoroughly. Even though the potential contributions of the business sector to the humanitarian sector are expected to be positive and significant (Maon *et al.*, 2009; Thomas and Fritz, 2006; Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006), there is still a lack of research on how such contributions might be transferred from the business sector to the humanitarian sector.

In this paper, we perform a systematic literature review to identify the current state of cross-sector partnerships between humanitarian organizations and business corporations in managing humanitarian logistics. We adopt the CIMO (context-intervention-mechanism-outcomes) logic proposed by Denyer and Tranfield (2009); that is, in a context (C), interventions (I) are used to generate mechanisms (M), which will lead to outcomes (O) (Pilbeam *et al.*, 2012; Rousseau *et al.*, 2008). We complement the discussion on cross-sector partnerships in humanitarian logistics with a brief analysis of opportunities in this area that we based on practitioner input.

The remainder of this paper is organized as follows. In Section 2, we discuss the methodology of this study. In Section 3, we present our descriptive analysis. In Section 4, we discuss our findings. In Section 5, we discuss some challenges in managing effective humanitarian-business partnerships and also propose an agenda for future research. Finally, the paper ends with a summary conclusion.

2. Methodology

2.1 Study design

In this paper, we adopt the systematic literature review methodology proposed by Denyer and Tranfield (2009). Systematic review is a specific methodology that locates existing studies; selects and evaluates contributions; analyses and synthesizes data; and reports the evidence in such a way that allows reasonably clear conclusions to be reached about what is and is not known (Denyer and Tranfield, 2009). The method synthesizes existing information related to a set of research questions in an unbiased presentation through five main steps:

- 1 formulating research questions;
- 2 locating studies;
- 3 selecting and evaluating studies;
- 4 analyzing and synthesizing results; and
- 5 reporting.

Denyer and Tranfield (2009) propose the use of CIMO logic in specifying a systematic literature review. The CIMO logic has been adopted in many systematic literature reviews and case studies, as it gives a clear analytical framework (Colicchia and Strozzi, 2012; Mazzocato *et al.*, 2014; Pilbeam *et al.*, 2012; Rossi *et al.*, 2013). According to CIMO, in a specific context (C), an intervention (I) is initiated to generate mechanisms (M) to deliver expected outcomes (O) (Pilbeam *et al.*, 2012). We describe the development of CIMO for this study below:

2.1.1 Context

Context refers to which systems/organizations/problems are being studied (Colicchia and Strozzi, 2012). The “context” in this study is humanitarian logistics. Humanitarian logistics has its own objectives and characteristics (Van Wassenhove, 2006; Beamon and Kotleba, 2006), which differ from those of the business sector. A discussion of the context of humanitarian logistics involves a description of its situation, environment, stakeholders, challenges as well as the connections between such contextual elements.

2.1.2 Intervention

Intervention refers to the event or action the effects of which are being studied (Colicchia and Strozzi, 2012). One specific “intervention” that we investigate in this study is the adoption of cross-sector partnerships. Some researchers have argued that it is important for the humanitarian sector to develop cross-sector partnerships with the business sector (Scholten *et al.*, 2010; Tomasini and Van Wassenhove, 2009). Cross-sector partnerships have been identified as a means by which to address complex social problems that exceed the capacity of any single sector (Clarke and Fuller, 2010; Selsky and Parker, 2005). The discussion is developed from the perspective of solving mutual problems that affect two or more sectors and from the perspective of each individual organization/sector.

2.1.3 Mechanism

Mechanism refers to the process that explains why a particular intervention will lead to specific outcomes. Put another way, a mechanism explains the relationships between intervention and outcome (Colicchia and Strozzi, 2012). The “mechanism” in this study is composed of the activities

brought about by humanitarian–business partnerships within the context of managing humanitarian logistics. The discussion involves how these activities can be delivered by humanitarian organizations and business corporations.

2.1.4 Outcomes

Outcomes refers to the effects or results of an intervention brought about by the use of a specific mechanism (Colicchia and Strozzi, 2012). In this study, we focus on the outcomes of humanitarian–business partnerships on humanitarian logistics. The discussion involves what the outcomes are, how to measure these outcomes and what intended and unintended effects may occur.

Using the CIMO logic as a basis, we describe the research question of our systematic literature study as follows: In the context of humanitarian logistics, through which mechanisms does adoption of cross-sector partnerships affect the outcomes of humanitarian logistics?

2.2 Locating studies and study selection

The key in systematic reviews is to expand the search to the most possible and relevant literature related to research questions. Below we describe how we searched.

2.2.1 Selection of databases

To ensure the reliability and completeness of our database source, we used online databases providing multiple subjects and broad access to various types of papers, multiple journals and multiple publishers. We included two widely used electronic databases: ABI/INFORM and Science Direct. These databases are among the largest in terms of the collection of published papers with multiple subjects, including social sciences. We furthermore reviewed additional journals published by well-known publishers including Springer, Wiley, Emerald and Taylor and Francis.

2.2.2 Time horizon for the selection of papers

Some authors suggest that research on humanitarian logistics and its related areas began to receive significant attention only after the Indian Ocean Tsunami of 2004 (Abidi *et al.*, 2014; Beamon and Kotleba, 2006); however, to increase the likelihood of finding related papers for this review, we did not restrict the time horizon of the search to 2004 and later.

2.2.3 Paper selection

To search for papers, we first developed multiple search terms. As our focus is partnerships between humanitarian organizations and business corporations in managing humanitarian logistics, we used “humanitarian logistics” and “humanitarian supply chain” in our keywords. Different terms may be used for partnerships between two parties; for instance, Jahre and Jensen (2010) find that the terms

coordination, collaboration, cooperation and integration are all used interchangeably. We, therefore, also included “partnership”, “collaboration”, “coordination” and “agreement” as keywords. Finally, to focus on partnerships in the humanitarian sector that involve the business sector, we added “corporation”, “company”, “commercial” and “business” to our keywords. We also combined keywords using Boolean operators (AND, OR). The final keywords used in our study were as follows: (“humanitarian logistics” OR “humanitarian supply chain”) AND (“agreement” OR “collaboration” OR “coordination” OR “partnership”) AND (“corporation” OR “company” OR “commercial” OR “business”). We limited our search to academic and peer-reviewed papers to ensure quality, as proposed by David and Han (2004) and Vázquez-Carrasco and Lopez-Perez (2013).

2.2.4 Inclusion and exclusion criteria

In the next step, we develop and apply inclusion and exclusion criteria to the paper search, to assess the relevance of each paper to our research objectives, as summarized in Table I.

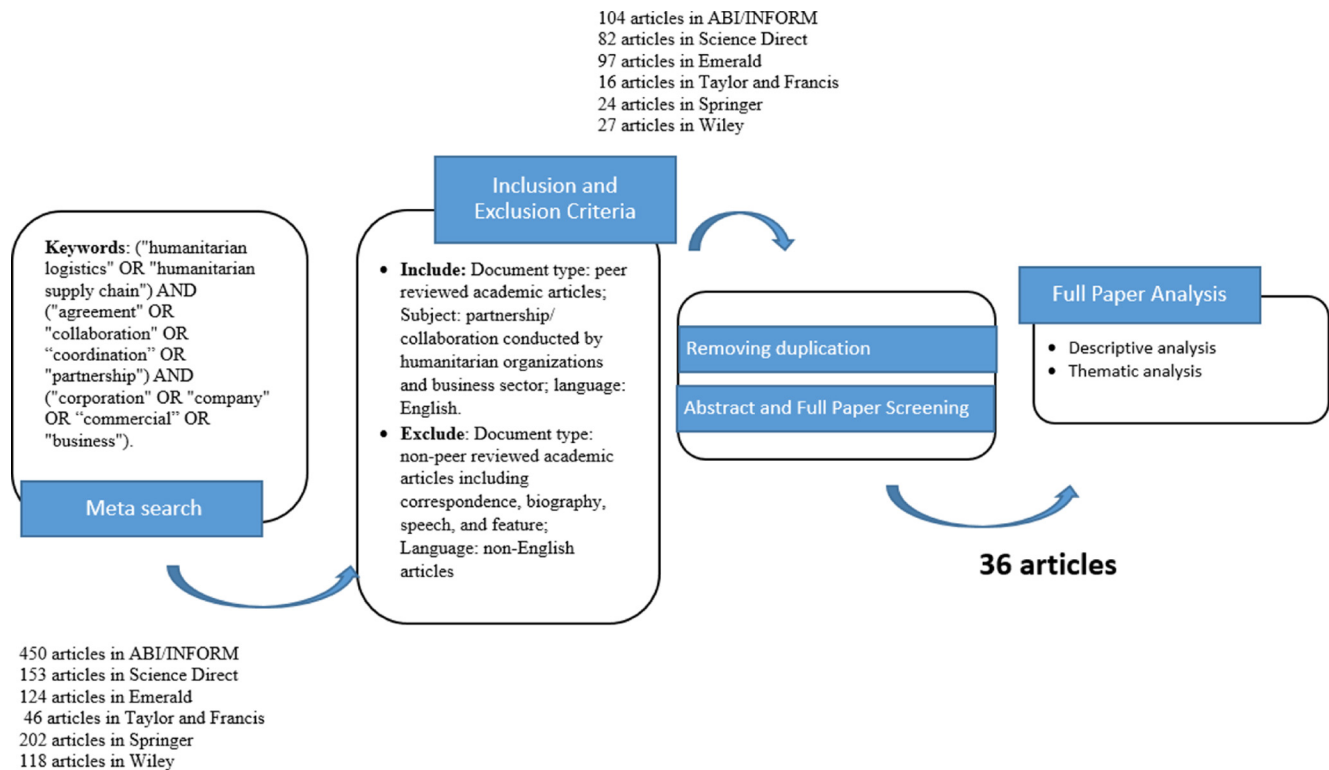
We performed our search in November 2016 and included papers up to July 2016. Our database search, which was based on the aforementioned set and combination of keywords, resulted in 450 papers in ABI/INFORM and 153 papers on Science Direct. We furthermore found 124 papers in Emerald, 46 papers in Taylor & Francis, 202 papers in Springer and 118 papers in Wiley journals based on the aforementioned keywords. As we focused on partnerships between humanitarian agencies and business organizations, we excluded all papers that were not related to disaster relief conducted by humanitarian organizations, e.g. humanitarian operations conducted by military personnel or partnerships to support military operations. After applying the inclusion and exclusion criteria, our search resulted in 104 papers in ABI/INFORM, 82 papers on Science Direct, 97 papers in Emerald, 16 papers in Taylor and Francis, 24 papers in Springer and 27 papers in Wiley. We first eliminated duplicates; then carried out further selection by reviewing the abstract and content; and then conducted a quality assessment based on the research question, methodology and contribution of each paper to the existing body of knowledge (Pilbeam *et al.*, 2012). This process resulted in 36 papers. Figure 1 shows the process of locating, studying and evaluating studies.

2.3 Analysis and synthesis

The final sample of 36 papers were then analyzed and categorized. An analysis and synthesis of information from the papers was entered into a spreadsheet for descriptive and thematic analysis. There are a number of alternative

Table I Inclusion and exclusion criteria

Aspect	Inclusion criteria	Exclusion criteria
Type	We included only peer-reviewed papers	We excluded all non-peer-reviewed papers
Subject	We included papers that are related to partnerships/collaboration/agreement in humanitarian/disaster relief logistics/supply chain conducted by humanitarian organizations	We excluded all papers that are not related with disaster relief conducted by humanitarian organizations, such as humanitarian operations conducted by military teams or partnerships for the purposes of military operation
Language	We included all papers in English	We excluded all papers which were not in English

Figure 1 Locating studies and study selection and evaluation

Sources: Modified from Pilbeam *et al.* (2012); Abidi *et al.* (2014)

approaches to synthesizing literature systematically (Denyer and Tranfield, 2009). Since this study aims to identify what works in which circumstances, as conceptualized by the CIMO-logic, we adopted an explanatory method of synthesis as proposed by Rousseau *et al.* (2008). We developed four sub-topics based on our CIMO logic: the humanitarian logistics context related to cross-sector partnerships, the adoption of cross-sector partnerships in humanitarian logistics as an intervention, the mechanisms of humanitarian–business partnerships in humanitarian logistics and the potential outcomes of humanitarian–business partnerships in humanitarian logistics. The results of the thematic analysis and synthesis can be seen in Table II.

To identify whether the findings of our literature study are also recognized in practice, we decided to interview practitioners. We asked experts to comment on the challenges and opportunities in humanitarian–business partnerships for managing humanitarian logistics. This is reported in Section 5 (challenges and future research agenda).

3. Descriptive analysis

In this section, we describe the number of papers per year, the region of the authoring research centers and the methodologies used in papers.

3.1 Number of papers per year

Our study shows that research attention to partnerships between the humanitarian sector and the business sector on managing humanitarian logistics increased after the 2004

Tsunami. This finding is supported by Beamon and Kotleba (2006) and Abidi *et al.* (2014). Until the 2004 Tsunami, there was a limited amount of research in the area of humanitarian logistics generally. Our study finds that output was greatest in 2009 and 2010 (Figure 2).

3.2 Papers by region of research center

We found that a majority of the papers included in the review were authored by researchers at research centers located in Europe (61.5 per cent). Finland and France contributed the most papers, followed by Germany. Research centers in the USA and Canada contributed 27 per cent of the papers. The remaining papers came from Australia (8.9 per cent), followed by Asia (Singapore; 2.5 per cent) (Figure 3).

3.3 Number of papers per methodology

While all of the reviewed papers applied a literature-based approach in developing their content, we found 13 papers that discuss general conceptual models or frameworks focused on the wider topic of humanitarian logistics. Of these 13 papers, 5 discuss a conceptual model or framework specifically related to the mechanisms of humanitarian logistics partnerships between humanitarian organizations and the business sector. We found 14 papers that used a case-study approach. Among these case studies, we found only five papers (Maon *et al.*, 2009; Rueede and Kreutzer, 2014; Van Wassenhove, 2006; Chen *et al.*, 2013; Thomas and Fritz, 2006) that focused on cross-sector partnerships in the humanitarian sector. The remaining methods used were survey and in-depth interviews. Example are Haigh and Sutton (2012) and Rueede and

Table II Thematic overview of papers

No	Papers	The humanitarian logistics context related to cross-sector partnerships	The adoption of cross-sector partnerships in humanitarian logistics	The mechanisms of humanitarian-business partnerships in humanitarian logistics	The potential outcomes of humanitarian-business partnerships in humanitarian logistics
1	Akhtar <i>et al.</i> (2012)	v			
2	Balcik <i>et al.</i> (2010)	v	v	v	
3	Bealt <i>et al.</i> (2016)	v	v	v	
4	Beamon and Balcik (2008)	v	v		
5	Charles <i>et al.</i> (2010)	v	v		
6	Chen <i>et al.</i> (2013)			v	
7	Cozzolino <i>et al.</i> (2012)		v		
8	De la Torre <i>et al.</i> (2016)	v		v	
9	Fawcett and Fawcett (2013)	v			
10	Fikar <i>et al.</i> (2016)		v	v	v
11	Haigh and Sutton (2012)	v		v	
12	Heaslip (2013)	v			
13	Jensen (2012)	v	v	v	
14	Jerbi (2012)		v	v	
15	Kovács and Spens (2007)	v			
16	Kovács and Spens (2009)	v	v		
17	Kusumasari and Alam (2012)		v		
18	Lu <i>et al.</i> (2013)		v		
19	Maldonado <i>et al.</i> (2010)	v			
20	Maon <i>et al.</i> (2009)	v	v	v	v
21	McGoldrick (2011)	v	v		
22	McLachlin and Larson (2011)	v		v	
23	Muller and Kräussl (2011)		v	v	v
24	Muller and Whiteman (2009)			v	
25	Oloruntoba and Gray (2006)	v	v		
26	Oloruntoba and Gray (2009)	v	v		
27	Pazirandeh and Herlin (2014)			v	
28	Pettit and Beresford (2009)	v	v	v	
29	Rueede and Kreutzer (2014)	v	v	v	v
30	Scholten <i>et al.</i> (2010)	v	v		
31	Schulz and Blecken (2010)			v	v
32	Stewart <i>et al.</i> (2009)		v	v	
33	Tatham and Pettit (2010)	v		v	
34	Thomas and Fritz (2006)	v	v	v	v
35	Tomasini and Van Wassenhove (2009)	v	v	v	v
36	Van Wassenhove (2006)	v	v	v	v

Figure 2 Number of papers per year

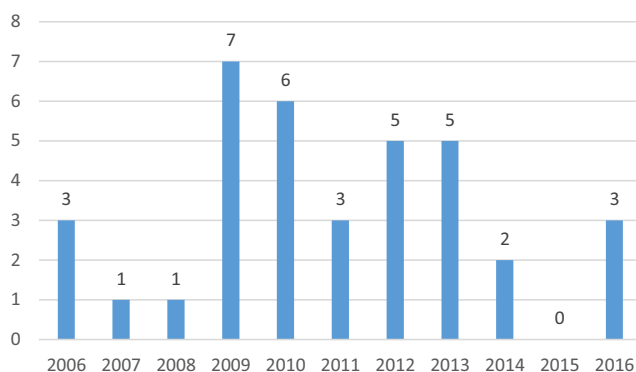
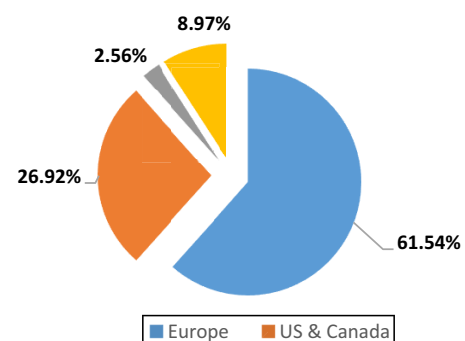


Figure 3 Percentage of papers per region of research center



Kreutzer (2014), who conduct interviews with practitioners from the humanitarian and the business sector (Figure 4).

4. Discussion

In this section, we discuss the context of humanitarian logistics, the interventions in humanitarian logistics conducted by humanitarian organizations and business corporations by adopting cross-sector partnership, the mechanisms involved and its potential outcomes.

4.1 The humanitarian logistics context

We found that 25 of the papers investigated discuss the context of humanitarian logistics (see Table II).

The main objective of the humanitarian sector is to meet human basic needs and to minimize human suffering (Beamon and Balcik, 2008; Van Wassenhove, 2006). The mission of humanitarian logistics is to deliver humanitarian goods and services to meet these needs in the most efficient and responsive way (Beamon and Balcik, 2008). Humanitarian logistics embodies all logistical activities from preparedness to recovery phases (Kovács and Spens, 2009). It serves operations for natural disasters and man-made disasters (Van Wassenhove, 2006), anticipating both slow-onset and rapid-onset disasters (Kovács and Spens, 2009). International humanitarian agencies are the major actors in this industry. They can be categorized as: organizations under the umbrella of the United Nations, e.g. World Food Program (WFP) or United Nations High Commissioner for Refugees (UNHCR); humanitarian organizations with a role as implementing partners, e.g. Care International or Oxfam; or the International Federation of Red Cross and its affiliated National Societies (Oloruntoba and Gray, 2009; McGoldrick, 2011).

The environment of humanitarian logistics is characterized by turbulence and volatile situations. Time pressure in humanitarian operations is high because of the high stakes involved (Kovács and Spens, 2007; Rueede and Kreutzer, 2014; Van Wassenhove, 2006; Bealt *et al.*, 2016). Demand is unpredictable and supply patterns are not clear (Kovács and Spens, 2009; Oloruntoba and Gray, 2006; De La Torre *et al.*, 2016). Predicting lead time is difficult, and sometimes, the available lead time is extremely short (Balcik *et al.*, 2010; Beamon and Balcik, 2008; Charles *et al.*, 2010). Visibility and accountability are low in humanitarian logistics because of a

lack of information along the supply chain (Scholten *et al.*, 2010; Tatham and Pettit, 2010; Beamon and Balcik, 2008; Van Wassenhove, 2006). When a natural disaster occurs, it is common for existing transportation and distribution networks to be destroyed or unprepared (Beamon and Balcik, 2008; Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006). Information technologies are inadequate (Tatham and Pettit, 2010; Maldonado *et al.*, 2010; Thomas and Fritz, 2006). Performance measurement is an ongoing issue in humanitarian logistics (Beamon and Balcik, 2008).

Humanitarian logistics has not been recognized as a respected career path (Tomasini and Van Wassenhove, 2009; Thomas and Fritz, 2006). As a result, humanitarian organizations are challenged by high employee turnover, lack of skilled logisticians and unclear career paths, making the management of human resources cumbersome (Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006; Thomas and Fritz, 2006).

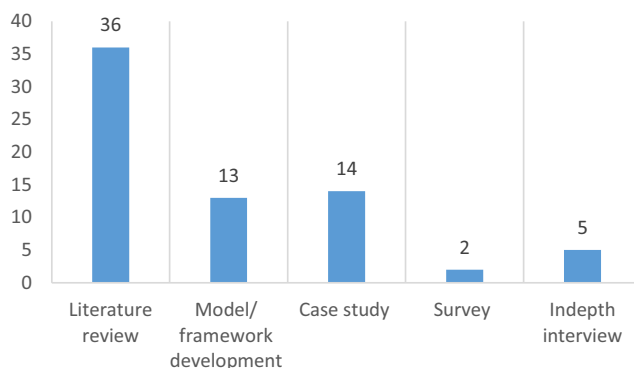
Coordination and collaboration among agencies involved is a major issue in humanitarian logistics because of the following: conflicting goals and mandates (Kovács and Spens, 2009; Fawcett and Fawcett, 2013; Maon *et al.*, 2009), a general lack of willingness to share information (Maon *et al.*, 2009; McLachlin and Larson, 2011), a lack of transparency among players (Pettit and Beresford, 2009), culture shock (Kovács and Spens, 2007) and structure conflicts (Akhtar *et al.*, 2012; Haigh and Sutton, 2012; Heaslip, 2013; Jensen, 2012). Collaboration often ensues only on an *ad hoc* basis during a crisis; moreover, it is difficult to establish a long-term strategic collaboration (Pettit and Beresford, 2009).

4.2 The adoption of cross-sector partnerships in humanitarian logistics

Since the 2004 Tsunami, many researchers have argued for cross-sector partnerships in the humanitarian sector. We found that 23 of the papers we incorporated in our review relate to the adoption of cross-sector partnerships in humanitarian logistics (see Table II). In this section, we discuss the reasons for adopting cross-sector partnerships in humanitarian logistics and the potential resources that can be shared among potential partners.

There is an assumption that partnerships with business organizations will help humanitarian organizations reach more efficient and effective humanitarian logistics by facilitating the transfer of knowledge and skills of supply chain and logistics management from the business sector to the humanitarian sector (Beamon and Balcik, 2008; Oloruntoba and Gray, 2009; Van Wassenhove, 2006; Thomas and Fritz, 2006). Researchers, therefore, suggest that cross-sector partnerships can foster better, more adequate and innovative solutions to any given relief response (Maon *et al.*, 2009; Van Wassenhove, 2006; Thomas and Fritz, 2006). From a supply-chain perspective, partnerships between commercial and humanitarian organizations are a reasonable thought because most supply-chain elements are similar in the commercial and humanitarian sectors; therefore, tools and methods developed for commercial supply chains can be adapted to humanitarian relief chains (Beamon and Balcik, 2008; Oloruntoba and Gray, 2006; Van Wassenhove, 2006). Additionally, the involvement of the business sector in relief operations could

Figure 4 Number of papers per methodology



enable faster response times because some critical infrastructures that affect public well-being are owned by the commercial sector (Stewart *et al.*, 2009).

From the perspective of the humanitarian sector, one urgent motivation for engaging in partnerships with the business sector is the need to learn about business supply chains. This urgency stems from the fact that humanitarian logistics is too fragmented to deal efficiently with the dynamics of relief operations (Kovács and Spens, 2009; McGoldrick, 2011; Scholten *et al.*, 2010; Thomas and Fritz, 2006; Fikar *et al.*, 2016). Business supply chains have long been recognized as mature supply chains (Beamon and Balcik, 2008; Oloruntoba and Gray, 2009; Thomas and Fritz, 2006). In the commercial sector, it is normal to use highly developed technology (Pettit and Beresford, 2009) and apply well-developed performance measurement techniques (Beamon and Balcik, 2008). Moreover, supply patterns are generally stable, inventory can be easily monitored and lead times are predictable (Oloruntoba and Gray, 2006). Humanitarian organizations can learn about quality, productivity and efficiency from the 3PL and 4PL concepts (Jensen, 2012). Aid agencies can collaborate with businesses to improve the effectiveness of their distribution network, inventory management and technology (Rueede and Kreutzer, 2014; Pettit and Beresford, 2009). The concept of agility, which is considered to be vital to business supply chains, can be adopted by humanitarian organizations to increase the flexibility and reliability of humanitarian relief chains (Charles *et al.*, 2010; Scholten *et al.*, 2010).

Pressure from donors is another motivation for the humanitarian sector to collaborate with the business sector, particularly because humanitarian organizations are increasingly dependent upon corporate and individual private donations. Donors today increasingly demand professionalization of the humanitarian sector (Oloruntoba and Gray, 2009; Scholten *et al.*, 2010). For example, they expect humanitarian organizations to be more efficient, visible, accountable and transparent; to deliver value for money; and to utilize clear performance metrics in their supply chain (Beamon and Balcik, 2008; Oloruntoba and Gray, 2009; Scholten *et al.*, 2010). The humanitarian sector is also under increasing pressure to demonstrate to their donors that their relief operations are able to reach targeted beneficiaries. As logistics is about 80 per cent of relief operation, the efficiency and effectiveness of humanitarian logistics is, therefore, becoming a major area of attention (Oloruntoba and Gray, 2009; Scholten *et al.*, 2010; Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006).

The pressure to initiate partnerships in relief operations is coming not only from the need of humanitarian agencies but also from business organizations. Like the humanitarian organizations, businesses are under pressure to deliver benefits beyond profit to customers and society (Maon *et al.*, 2009; Rueede and Kreutzer, 2014; Thomas and Fritz, 2006; Bealt *et al.*, 2016) to boost their reputations and secure their licenses to operate. They are expected to demonstrate that their corporate social responsibility (CSR) policies and practices are having a significant impact (Jerbi, 2012; Muller and Kräussl, 2011; Rueede and Kreutzer, 2014). As an example, several business corporations participated in the so-called “multi-stakeholder initiatives” aimed at addressing social and human rights issues to advance their global corporate responsibility agendas (Jerbi, 2012). By engaging in

cross-sector partnerships in the humanitarian sector, business corporations can manifest their CSR ambitions, while increasing levels of internal staff motivation and boosting their reputations (Balcik *et al.*, 2010; Rueede and Kreutzer, 2014).

For the business sector, another reason to take a role in mitigating the impacts of natural disasters is because natural disasters can negatively impact productivity, growth and welfare of societies to which their customers belong (Maon *et al.*, 2009; Thomas and Fritz, 2006). The overwhelming potential business loss that can result from natural disasters justifies the efforts and contributions of the business sector to minimize the negative impacts of natural disaster (Maon *et al.*, 2009; Thomas and Fritz, 2006).

Learning from the humanitarian sector is another reason for the business sector to engage in partnerships. Given increasing uncertainty in the market, the business sector is continually searching for new ways to expand their agility capabilities to improve their competitiveness and profitability. Humanitarian organizations are accustomed to dealing with high levels of uncertainty and the business sector can, in this respect, learn from the humanitarian sector (Beamon and Balcik, 2008; Cozzolino *et al.*, 2012; Maon *et al.*, 2009; Van Wassenhove, 2006; Charles *et al.*, 2010).

For business corporations, developing partnerships with well-established humanitarian organizations can yield other benefits. Humanitarian organizations have decades of experience and, therefore, expertise with managing front-line relief operations (Kusumasari and Alam, 2012; Lu *et al.*, 2013; Pettit and Beresford, 2009; Thomas and Fritz, 2006). They also have well-established networks, access to communities and relationships with key stakeholders, such as the military and local governments (Kusumasari and Alam, 2012; Lu *et al.*, 2013; Pettit and Beresford, 2009; Thomas and Fritz, 2006). Successful disaster relief operations requires both a high degree of adaptability to local conditions and sufficient experience and skilled staffs (Kusumasari and Alam, 2012). In such uncertain situations, a learning-by-doing approach can be risky for any organization, and establishing a partnership with experienced partner is a good solution (Lu *et al.*, 2013; Rueede and Kreutzer, 2014). Business organizations will select partnership options that can ensure an employee's security during disaster response activities (Rueede and Kreutzer, 2014). Pettit and Beresford (2009) found that the business sector chooses to develop partnerships with humanitarian organizations rather than with governments and military.

Finally, the key resources that the humanitarian sector can share with the business sector under cross-sector partnerships are their network, access to vulnerable people and knowledge and skills related to humanitarian operations (Kusumasari and Alam, 2012; Lu *et al.*, 2013; Pettit and Beresford, 2009); and the main resources that the business sector can share with humanitarian sector are the availability of funding, information technology and skills and expertise in the area of standardized supply chain (Charles *et al.*, 2010; Jensen, 2012; Pettit and Beresford, 2009; Rueede and Kreutzer, 2014; Scholten *et al.*, 2010).

4.3 The mechanisms of humanitarian–business partnerships in humanitarian logistics

The operationalization of partnerships between humanitarian organizations and business corporations in humanitarian logistics was discussed in 21 of the papers we incorporated in our study (see Table II). There are several ways in which businesses can be involved with humanitarian agencies in the area of managing humanitarian logistics. Below we discuss the mechanisms by which business corporations and humanitarian organizations cooperate based on resources delivered, level of engagement, number of participants, phase of disaster relief operation, financial agreement and logistics activities. We discuss each in the sections below.

Business organizations can contribute cash, goods, services or a combination of these resources (Stewart *et al.*, 2009; Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006; Thomas and Fritz, 2006). For immediate charity, cash donation can reduce the risk of receiving unsolicited items delivered by business corporations (Van Wassenhove, 2006).

Business organizations can engage in short-term *ad hoc* collaboration during relief operations or in more strategic partnerships (Balcik *et al.*, 2010; Muller and Kräussl, 2011; Muller and Whiteman, 2009; Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006; Thomas and Fritz, 2006). A well-known example of a long-term strategic partnership is the logistics service provider TNT and the United Nations WFP with “Moving the World” (Maon *et al.*, 2009). Compared to *ad hoc* collaboration, a long-term partnership will provide more opportunities for the humanitarian sector to learn from the business sector (Tomasini and Van Wassenhove, 2009). However, collaborations in the humanitarian sector are often initiated only when a crisis has occurred; and in such circumstances, it is much more difficult to optimize strategic collaboration (Pettit and Beresford, 2009).

Business organizations can develop partnerships with a single humanitarian organization, jointly with a consortium, or via multi-stakeholders initiatives (Haigh and Sutton, 2012; Jerbi, 2012; Thomas and Fritz, 2006; Chen *et al.*, 2013). The United Nations UNHCR’s Council of Business Leaders is an example of corporations engaging in humanitarian operations by joining a consortium. It consists of top executives from major corporations working together with humanitarian agencies to improve services for refugees (Haigh and Sutton, 2012). Another example of a consortium for humanitarian purposes is the Business Roundtable initiative. This is an initiative consisting of approximately 160 chief executive officers of leading US corporations launched in response to the 2004 tsunami (Thomas and Fritz, 2006).

Furthermore, business corporations and humanitarian organizations can develop partnerships to help humanitarian logistics in different phases of disaster relief, such as preparedness, implementation, reconstruction or a combination of these. Corporations can provide materials and financial support to charities immediately after the occurrence of a disaster (Tomasini and Van Wassenhove, 2009; Van Wassenhove, 2006), or they can help humanitarian agencies by engaging in preparedness phase before disasters occur (Maon *et al.*, 2009; Pettit and Beresford, 2009; Stewart *et al.*, 2009; Chen *et al.*, 2013). Continuing with collaboration after a disaster can help organizations to share experiences and

information, which will improve future coordination activities (Pettit and Beresford, 2009).

While partnerships between the humanitarian and business sectors are identical to charitable activities and CSR, in this study, we found that this is not the only option. Not all agreements are philanthropic in nature. Business corporations and humanitarian organizations can very well be engaged in business agreements as several studies have suggested (Balcik *et al.*, 2010; McLachlin and Larson, 2011; Schulz and Blecken, 2010; Pazirandeh and Herlin, 2014; De la Torre *et al.*, 2016). In line with this, Balcik *et al.* (2010) consider two types of relationships between business sector and humanitarian sector: commercial relationships and the philanthropic relationships. Several authors furthermore suggest that the concept of third- or fourth-party logistics providers (3PL/4PL) is also applicable within the humanitarian field (Tatham and Pettit, 2010; Jensen, 2012).

The last consideration is the type of logistics activity. Business corporations can choose to be involved in primary logistics activities or in support activities. Stewart *et al.* (2009) summarize that a corporation can be involved in humanitarian logistics by providing information exchanges, operational linkages, legal bonds and corporate norms or by acting as a buyer or seller. When business corporations choose to be involved in primary logistics activities, the coordination within organizations can be either horizontal, which involves different organizations working at the same level, or vertical, which involves different members at different value-chain stages (Balcik *et al.*, 2010; Pettit and Beresford, 2009; Bealt *et al.*, 2016). Examples of primary humanitarian logistics activities are transportation, inventory management and warehousing. Examples of supporting logistics activities are the development of information technology and back-office support to improve the logistics functions of humanitarian operations (Tomasini and Van Wassenhove, 2009). Vertical collaboration between humanitarian organizations and their suppliers can help to lower purchasing costs (Pettit and Beresford, 2009). An example of horizontal collaboration in humanitarian logistics is the “Get Airport Ready for Disaster” partnership by Deutsche Post DHL Group (DPDHL) and United Nation Office for the Coordination of Humanitarian Affairs (UN OCHA), in which Deutsche Post DHL provides airport-related primary logistics services and support activities such as training (Ruede and Kreutzer, 2014).

Five papers presented a conceptual model and/or framework specifically related to the mechanisms of partnerships between the humanitarian and business sector. Haigh and Sutton (2012) classified humanitarian–business partnerships into four generic categorizations based on their motives and level of engagement: philanthropic, strategic, commercial and political. Thomas and Fritz’s (2006) conceptual model categorizes partnerships between the humanitarian and business sector based on the decision regarding the level of engagement and on the number of participant. They propose four types of humanitarian–business partnerships: single-company philanthropic partnerships, multi-company philanthropic partnerships, single-company integrative partnerships and multi-company integrative partnerships. Chen *et al.* (2013) identified types of partnerships based on the phase of the relief operation and

participants. They highlight the importance of the three-partite partnerships between businesses, humanitarian organizations and public sector (government) in the response phase. Fikar *et al.* (2016) developed a simulation and optimization-based decision support-system for business – humanitarian collaboration. Balcik *et al.* (2010) developed a framework for relief chain relationships and conceptualized that the collaboration between humanitarian and business actors can involve single/multiple humanitarian organizations and single/multiple business corporations. In this model, the commitment between the two sectors can be philanthropic and commercial.

4.4 The potential outcomes of humanitarian–business partnerships in humanitarian logistics

We found only eight papers in our sample that related to the expected outcomes of humanitarian–business partnerships in humanitarian logistics (See Table II). Partnerships with the business sector are expected to provide learning opportunities for the humanitarian sector as well as the business sector (Tomasini and Van Wassenhove, 2009; Thomas and Fritz, 2006). For the humanitarian sector, the expected outcomes of humanitarian–business partnerships in humanitarian logistics are mostly related to the improvement of the efficiency and capabilities of humanitarian logistics. Partnerships can help humanitarian organizations expand their logistical capabilities by providing insights into how corporations master the logistics process (Schulz and Blecken, 2010; Van Wassenhove, 2006; Fikar *et al.*, 2016). For the business sector, engagement in humanitarian–business partnerships provides companies with an opportunity to show their corporate responsiveness and CSR and thereby improve their reputations (Muller and Kräussl, 2011). We found only three examples of outcomes of humanitarian–business partnerships from case studies. The first was the partnership between the logistics service provider TNT and WFP (called “Moving the World”), which demonstrated that long-term partnerships can contribute to an increase in the capacity of aid networks and can enhance the core competencies of both parties (Maon *et al.*, 2009; Van Wassenhove, 2006). The second is the partnership between DPDHL and UN OCHA, which solved the problem of the presence of bottlenecks and unsolicited relief items at airports and thus improved the effectiveness of humanitarian distribution networks (Rueede and Kreutzer, 2014). The third is the partnerships between American Red Cross and Abbot Laboratories that increased the visibility of the supply chain (Thomas and Fritz, 2006).

4.5 Challenges and future research agenda

The fundamental principle of supply-chain collaboration is the exchange of information and the application of shared knowledge to decrease uncertainty, increase visibility, increase operational effectiveness and efficiency, and enhance customer service. Humanitarian–business partnerships in humanitarian logistics are still far from effective. Our research identifies several challenges on the road to achieve effective and efficient collaboration between humanitarian organization and business corporations in the area of supply-chain management.

The first challenge for humanitarian organizations relates to differences in mandates and goals. Humanitarian agencies are

mandated by their vision of saving lives (Van Wassenhove, 2006). The strategic goals of managing humanitarian supply chains relate to cost reduction, capital reduction and service improvement (Beamon and Balcik, 2008). Meanwhile, business organizations are mandated by their vision of acquiring profit. The strategic goals of the business sector are defined based on the financial returns delivered to shareholders (Beamon and Balcik, 2008). These conflicting goals may create challenges for multi-organizational collaboration. Directed by their mandate and vision, humanitarian agencies may, therefore, find it difficult to select partners in time-pressed situation (Kovács and Spens, 2009).

The second challenge relates to differences in working rhythms, culture and individual perspective (Haigh and Sutton, 2012; Maon *et al.*, 2009; Schulz and Blecken, 2010; Bealt *et al.*, 2016). For humanitarian organizations, partnerships with business corporations could bring cultural and technical problems (Haigh and Sutton, 2012). In contrast to commercial companies, where managing a supply chain with multiple partners has become mainstream, humanitarian organizations view supply-chain management as an individual responsibility – a perspective that can become a barrier to effective collaboration (Schulz and Blecken, 2010).

The third challenge relates to trust and negative perceptions. Humanitarian organizations can be wary of working with the business sector because they need to be seen as independent (Rueede and Kreutzer, 2014; Pettit and Beresford, 2009; Thomas and Fritz, 2006). At the same time, business corporations can be wary of working with the humanitarian sector because they perceive it to lack both capabilities and professionalism (Rueede and Kreutzer, 2014; Thomas and Fritz, 2006; Bealt *et al.*, 2016).

The fourth challenge relates to the resources available for developing partnerships. Because humanitarian–sector donors and business corporations are sometimes uncomfortable with paying upfront costs for an uncertain event (e.g. a natural disaster), funding allocated to building partnerships in the preparedness phase can be relatively small (Fawcett and Fawcett, 2013; Tatham and Pettit, 2010). Because uncertainty related to the prediction of upcoming disasters weakens pre-planning efforts among the diverse participants, many humanitarian collaborations are still mostly *ad hoc* (Fawcett and Fawcett, 2013).

The next challenge relates to minimizing the negative impact of cross-sector partnerships on the bottom line of business partners, as well as on daily business activities (Rueede and Kreutzer, 2014). For example, DPDHL avoided providing transportation capacity or handling distributional tasks within a particular disaster zone, as it calculated that this could disturb its daily business activities (Rueede and Kreutzer, 2014). For security reasons, it also limited the deployment of its employees to relief operations (Rueede and Kreutzer, 2014). Thus, even when a partnership has been built and both parties have overcome problems related to coordination and cultural differences, they will still have to deal with the dynamic and uncertain environment of the humanitarian sector (Rueede and Kreutzer, 2014; Stewart *et al.*, 2009).

The challenges and opportunities identified above were discussed in interviews with experts from practice. We aimed

to interview experts from a humanitarian organization active in humanitarian relief and from an organization aimed at supporting the improvement of the humanitarian sector to respond to and recover from disasters (to provide a broader view on the issue). In total, we interviewed one person from a humanitarian organization and two from a supporting organization. Because of confidentiality reasons, we are neither able to disclose names of the interviewees nor of the organizations.

All interviewees recognized the challenges identified above in the literature review. The interviewees specifically indicated that cultural differences between the business sector and the humanitarian sector compose a very important issue that needs to be overcome. In a recent example from the Middle East in the area of cash distribution, an interviewee indicated that the humanitarian people involved were afraid to work with the private sector because they did not understand the way of working of the private sector nor did they want to be seen as incompetent by the private sector. Another interviewee argued that this may go as far as the humanitarian sector sometimes hiding their partnerships with the private sector because they are afraid of the reaction of other stakeholders (including the society they are active in). One interviewee also stated that a key challenge is that both organizations have different motives for being engaged in humanitarian relief activities: aims of the private sector are to make a profit (directly or indirectly), whereas that is not the objective of a humanitarian organization. Our discussion with the three experts also revealed that the word “partnership” is used to identify different types of settings. One interviewee indicated that, for example, in cash distribution, the cooperation between the provider of the systems needed to distribute cash (such as the cards and the infrastructure) and the humanitarian organization responsible for cash distribution is sometimes argued to be a partnership. However, in reality, this is rather a vendor–buyer relationship because the objectives of the two organizations are different (making a profit for the vendor of cash distribution services vs providing relief for the humanitarian organization buying the cash distribution services). It was also argued that many private companies have a desire to contribute to humanitarian relief, but humanitarian organizations argue it takes long to get to know the humanitarian sector – time that a private organization may not have or may not be willing to spend. As a result, humanitarian organizations have a tendency to focus on obtaining cash donations from the private sector rather than establishing long-term partnerships with the private sector. In any case, the interviewees particularly emphasized the need to develop key performance indicators (KPIs) in humanitarian logistics to determine the success of partnerships. Such KPIs will help humanitarian organizations to talk the same language as the private sector, something that may be of use in overcoming the cultural divide between the two sectors.

4.5.1 Research agenda

Our research indicates that there has been scant research on partnerships between humanitarian and business organizations in humanitarian logistics. In particular, there is a lack of empirical research and case studies focusing on the outputs

and outcomes of these partnerships. We propose the following research agenda:

4.5.1.1 Understanding factors that affect the effective development of cross-sector partnerships between humanitarian organizations and business corporations. Our research shows that the discussion on the adoption of cross-sectors partnerships in humanitarian logistics is aimed primarily at understanding the reasons and motivations for partnerships. Some of the major problems in developing an effective cross-sector collaboration between the humanitarian and the business sector include conflicts in mandate, culture, organizational structure as well as lack of trust and understanding (Beamon and Balcik, 2008; Rueede and Kreutzer, 2014; Van Wassenhove, 2006). Our study finds that there is lack of research and case studies on how the two sectors can initiate partnerships, which resources should be allocated, which risks should be shared, which strategy should be taken to overcome the cross-sector conflicts, how to identify common goals and strategies and which performance metrics should be developed.

4.5.1.2 Understanding which situations require which type of partnership mechanisms to support the management of humanitarian logistics. Several mechanisms of humanitarian–business partnerships have been identified by researchers (Kovács and Spens, 2009; Maon *et al.*, 2009; Oloruntoba and Gray, 2009). However, empirical studies are needed to assess how businesses are dealing with various options, as well as to examine the clustering of mechanisms. It is also not entirely clear which factors affect the decision to choose certain mechanisms in certain situations, and which performance metrics need to be established to monitor the effectiveness of a mechanism.

4.5.1.3 Measuring output and outcomes of humanitarian–business partnerships on the performance of humanitarian logistics. Our study finds that the discussion of outputs and outcomes of humanitarian–business partnerships related to the performance of humanitarian logistics (including impacts on beneficiaries) still lacks empirical support. In our study we mentioned only three case studies from Maon *et al.* (2009), Thomas and Fritz (2006), and Rueede and Kreutzer (2014). A set of performance metrics needs to be built to measure the success of partnerships. As the measurement of impact is at the core of the humanitarian sector (Abidi *et al.*, 2014), this can be integrated with the impact measurement of relief operations to targeted beneficiaries.

6. Conclusion

We find that while the importance of humanitarian–business partnerships has been suggested by many papers (Maon *et al.*, 2009; Scholten *et al.*, 2010; Thomas and Fritz, 2006; Tomasini and Van Wassenhove, 2009), partnerships between humanitarian organizations and business corporations in managing humanitarian supply chain is an area in need of further research. This study was aimed at understanding the state of the art of partnerships between humanitarian organizations and business corporations in humanitarian logistics using a systematic literature review method as proposed by Denyer and Tranfield (2009). We found that there is a lack of clarity in the use of “partnership”, “coordination”, “collaboration” and “relationship” to explain the engagement between the business sector and the

humanitarian sector in humanitarian logistics, as these terms are used interchangeability by researchers.

Our descriptive study showed that the idea of better collaboration between the humanitarian sector and business sector in humanitarian logistics has emerged after the 2004 Tsunami, a finding supported by Beamon and Kotleba (2006) and Abidi *et al.* (2014). Our study shows that multiple research methodologies have been used to contribute to the topic. Among the researchers, we found that researchers from Europe and the USA have contributed most to the idea, followed by those from Australia and Asia.

Using the CIMO logic, in this research, we described the context of humanitarian logistics and the need for adoption of cross-sector partnerships in humanitarian logistics. We also described the potential resources that each sector can contribute to cross-sector partnerships; discussed the mechanisms of partnerships between the humanitarian sector and business sector; and determined potential outcomes for each sector.

We found that partnerships between humanitarian organization and business corporations in managing humanitarian logistics still face many challenges. We discussed that particularly the measurement of the success of these partnerships is a challenge that may help humanitarian organizations to talk the same language as the private sector. Having appropriate KPIs may be of use in overcoming the cultural divide between the two sectors. Finally, we proposed three future research agenda topics in this field:

- 1 understanding factors that affect the effective development of cross-sector partnerships between humanitarian organizations and business corporations;
- 2 understanding which situations require which type of partnership mechanisms to support the management of humanitarian logistics; and
- 3 measuring outputs and outcomes of humanitarian–business partnerships on the performance of humanitarian logistics.

References

- Abidi, H., de Leeuw, S. and Klumpp, M. (2014), “Humanitarian supply chain performance management: a systematic literature review”, *Supply Chain Management*, Vol. 19 Nos 5/6, pp. 592–608.
- Akhtar, P., Marr, N.E. and Garnevskaya, E.V. (2012), “Coordination in humanitarian relief chains: chain coordinators”, *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 2 No. 1, pp. 85–103.
- Altay, N. and Pal, R. (2014), “Information diffusion among agents: implications for humanitarian operations”, *Production and Operations Management*, Vol. 23 No. 6, pp. 1015–1027.
- Balcik, B., Beamon, B.M., Krejci, C.C., Muramatsu, K.M. and Ramirez, M. (2010), “Coordination in humanitarian relief chains: practices, challenges and opportunities”, *International Journal of Production Economics*, Vol. 126 No. 1, pp. 22–34.
- Bealt, J., Fernández Barrera, J.C. and Mansouri, S.A. (2016), “Collaborative relationships between logistics service providers and humanitarian organizations during disaster relief operations”, *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 6 No. 2, pp. 118–144.
- Beamon, B.M. and Balcik, B. (2008), “Performance measurement in humanitarian relief chains”, *The International Journal of Public Sector Management*, Vol. 21 No. 1, pp. 4–25.
- Beamon, B.M. and Kotleba, S.A. (2006), “Inventory management support systems for emergency humanitarian relief operations in South Sudan”, *International Journal of Logistics Management*, Vol. 17 No. 2, pp. 187–212.
- Bolumole, Y.A. (2001), “The supply chain role of third-party logistics providers”, *International Journal of Logistics Management*, Vol. 12 No. 2, pp. 87–102.
- Chandes, J. and Paché, G. (2010), “Investigating humanitarian logistics issues: from operations management to strategic action”, *Journal of Manufacturing Technology Management*, Vol. 21 No. 3, pp. 320–340.
- Charles, A., Lauras, M. and Van Wassenhove, L. (2010), “A model to define and assess the agility of supply chains: building on humanitarian experience”, *International Journal of Physical Distribution & Logistics Management*, Vol. 40 Nos 8/9, pp. 722–741.
- Chen, J., Chen, T.H.Y., Vertinsky, I., Yumagulova, L. and Park, C. (2013), “Public–private partnerships for the development of disaster resilient communities”, *Journal of Contingencies and Crisis Management*, Vol. 21 No. 3, pp. 130–143.
- Clarke, A. and Fuller, M. (2010), “Collaborative strategic management: strategy formulation and implementation by multi-organizational cross-sector social partnerships”, *Journal of Business Ethics*, Vol. 94 No. 1, pp. 85–101.
- Colicchia, C. and Strozzi, F. (2012), “Supply chain risk management: a new methodology for a systematic literature review”, *Supply Chain Management*, Vol. 17 No. 4, pp. 403–418.
- Cozzolino, A., Rossi, S. and Conforti, A. (2012), “Agile and lean principles in the humanitarian supply chain”, *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 2 No. 1, pp. 16–33.
- David, R.J. and Han, S.K. (2004), “A systematic assessment of the empirical support for transaction cost economics”, *Strategic Management Journal*, Vol. 25 No. 1, pp. 39–58.
- De la Torre, N., Espinosa, M.M. and Domínguez, M. (2016), “Rapid prototyping in humanitarian aid to manufacture last mile vehicles spare parts: an implementation plan”, *Human Factors and Ergonomics in Manufacturing and Service Industries*, Vol. 26 No. 5, pp. 533–540.
- Denyer, D. and Tranfield, D. (2009), “Producing a systematic review”, in Buchanan, D. and Bryman, A. (Eds), *The Sage Handbook of Organizational Research Methods*, Sage Publications, London, pp. 671–689.
- Fabbe-Costes, N. and Jahre, M. (2007), “Supply chain integration improves performance: the emperor’s new suit?”, *International Journal of Physical Distribution & Logistics Management*, Vol. 37 No. 10, pp. 835–855.
- Fawcett, A.M. and Fawcett, S.E. (2013), “Benchmarking the state of humanitarian aid and disaster relief”, *Benchmarking*, Vol. 20 No. 5, pp. 661–692.

- Fikar, C., Gronalt, M. and Hirsch, P. (2016), "A decision support system for coordinated disaster relief distribution", *Expert Systems with Applications*, Vol. 57, pp. 104-116.
- Haigh, R. and Sutton, R. (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*, Vol. 3 No. 3, pp. 270-282.
- Heaslip, G. (2013), "Services operations management and humanitarian logistics", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 3 No. 1, pp. 37-51.
- Jahre, M. and Jensen, L. (2010), "Coordination in humanitarian logistics through clusters", *International Journal of Physical Distribution & Logistics Management*, Vol. 40 Nos 8/9, pp. 657-674.
- Jensen, L. (2012), "Humanitarian cluster leads: lessons from 4PLs", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 2 No. 2, pp. 148-160.
- Jerbi, S. (2012), "Assessing the roles of multi-stakeholder initiatives in advancing the business and human rights agenda", *International Review of the Red Cross*, Vol. 94 No. 887, pp. 1027-1046.
- Kovács, G. and Spens, K.M. (2007), "Humanitarian logistics in disaster relief operations", *International Journal of Physical Distribution & Logistics Management*, Vol. 37 No. 2, pp. 99-114.
- Kovács, G. and Spens, K. (2009), "Identifying challenges in humanitarian logistics", *International Journal of Physical Distribution & Logistics Management*, Vol. 39 No. 6, pp. 506-528.
- Kovács, G. and Spens, K.M. (2011), "Humanitarian logistics and supply chain management: the start of a new journal", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 1 No. 1, pp. 5-14.
- Kumar, S. and Havey, T. (2013), "Before and after disaster strikes: a relief supply chain decision support framework", *International Journal of Production Economics*, Vol. 145 No. 2, pp. 613-629.
- Kusumasari, B. and Alam, Q. (2012), "Local wisdom-based disaster recovery model in Indonesia", *Disaster Prevention and Management*, Vol. 21 No. 3, pp. 351-369.
- Liu, S., Duffy, A.H.B., Whitfield, R.I. and Boyle, I.M. (2010), "Integration of decision support systems to improve decision support performance", *Knowledge and Information Systems*, Vol. 22 No. 3, pp. 261-286.
- Lu, Q., Goh, M. and De Souza, R. (2013), "Learning mechanisms for humanitarian logistics", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 3 No. 2, pp. 149-160.
- McGoldrick, C. (2011), "The future of humanitarian action: an ICRC perspective", *International Review of the Red Cross*, Vol. 93 No. 884, pp. 965-991.
- McLachlin, R. and Larson, P.D. (2011), "Building humanitarian supply chain relationships: lessons from leading practitioners", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 1 No. 1, pp. 32-49.
- Maldonado, E.A., Maitland, C.F. and Tapia, A.H. (2010), "Collaborative systems development in disaster relief: the impact of multi-level governance", *Information Systems Frontiers*, Vol. 12 No. 1, pp. 9-27.
- Maon, F., Lindgreen, A. and Vanhamme, J. (2009), "Developing supply chains in disaster relief operations through cross-sector socially oriented collaborations: a theoretical model", *Supply Chain Management*, Vol. 14 No. 2, pp. 149-164.
- Mazzocato, P., Thor, J., Bäckman, U., Brommels, M., Carlsson, J., Jonsson, F., Hagmar, M. and Savage, C. (2014), "Complexity complicates lean: lessons from seven emergency services", *Journal of Health Organization and Management*, Vol. 28 No. 2, pp. 266-288.
- Muller, A. and Kräussl, R. (2011), "The value of corporate philanthropy during times of crisis: the sensegiving effect of employee involvement", *Journal of Business Ethics*, Vol. 103 No. 2, pp. 203-220.
- Muller, A. and Whiteman, G. (2009), "Exploring the geography of corporate philanthropic disaster response: a study of fortune global 500 firms", *Journal of Business Ethics*, Vol. 84 No. 4, pp. 589-603.
- Oloruntoba, R. and Gray, R. (2006), "Humanitarian aid: an agile supply chain?", *Supply Chain Management*, Vol. 11 No. 2, pp. 115-120.
- Oloruntoba, R. and Gray, R. (2009), "Customer service in emergency relief chains", *International Journal of Physical Distribution & Logistics Management*, Vol. 39 No. 6, pp. 486-505.
- Pazirandeh, A. and Herlin, H. (2014), "Unfruitful cooperative purchasing", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 4 No. 1, pp. 24-42.
- Pettit, S. and Beresford, A. (2009), "Critical success factors in the context of humanitarian aid supply chains", *International Journal of Physical Distribution & Logistics Management*, Vol. 39 No. 6, pp. 450-468.
- Pilbeam, C., Alvarez, G. and Wilson, H. (2012), "The governance of supply networks: a systematic literature review", *Supply Chain Management*, Vol. 17 No. 4, pp. 358-376.
- Rossi, S., Colicchia, C., Cozzolino, A. and Martin, C. (2013), "The logistics service providers in eco-efficiency innovation: an empirical study", *Supply Chain Management*, Vol. 18 No. 6, pp. 583-603.
- Rousseau, D.M., Manning, J. and Denyer, D. (2008), "11 Evidence in management and organizational science: assembling the field's full weight of scientific knowledge through syntheses", *The Academy of Management Annals*, Vol. 2 No. 1, pp. 475-515.
- Rueede, D. and Kreutzer, K. (2014), "Legitimation work within a cross-sector social partnership", *Journal of Business Ethics*, Vol. 128 No. 1, pp. 39-58.
- Scholten, K., Sharkey, S.P. and Fynes, B. (2010), "(Le)agility in humanitarian aid (NGO) supply chains", *International Journal of Physical Distribution & Logistics Management*, Vol. 40 Nos 8/9, pp. 623-635.
- Schulz, S.F. and Blecken, A. (2010), "Horizontal cooperation in disaster relief logistics: benefits and impediments", *International Journal of Physical Distribution and Logistics Management*, Vol. 40 Nos 8/9, pp. 636-656.
- Selsky, J.W. and Parker, B. (2005), "Cross-sector partnerships to address social issues: challenges to theory and practice", *Journal of Management*, Vol. 31 No. 6, pp. 849-873.

- Simatupang, T.M. and Sridharan, R. (2005), "An integrative framework for supply chain collaboration", *International Journal of Logistics Management*, Vol. 16 No. 2, pp. 257-274.
- Stewart, G.T., Kolluru, R. and Smith, M. (2009), "Leveraging public-private partnerships to improve community resilience in times of disaster", *International Journal of Physical Distribution & Logistics Management*, Vol. 39 No. 5, pp. 343-364.
- Tatham, P.H. and Pettit, S.J. (2010), "Transforming humanitarian logistics: the journey to supply network management", *International Journal of Physical Distribution and Logistics Management*, Vol. 40 Nos 8/9, pp. 609-622.
- Tatham, P. and Spens, K. (2011), "Towards a humanitarian logistics knowledge management system", *Disaster Prevention and Management*, Vol. 20 No. 1, pp. 6-26.
- Thomas, A. and Fritz, L. (2006), "Disaster relief", *Harvard Business Review*, Vol. 84, pp. 114-122.
- Tomasini, R.M. and Van Wassenhove, L.N. (2009), "From preparedness to partnerships: case study research on

- humanitarian logistics", *International Transactions in Operational Research*, Vol. 16 No. 5, pp. 549-559.
- Van Wassenhove, L.N. (2006), "Humanitarian aid logistics: supply chain management in high gear", *The Journal of the Operational Research Society*, Vol. 57 No. 5, pp. 475-489.
- Vázquez-Carrasco, R. and López-Pérez, M.E. (2013), "Small and medium-sized enterprises and corporate social responsibility: a systematic review of the literature", *Quality and Quantity*, Vol. 47 No. 6, pp. 3205-3218.
- Waddell, S. and Brown, D. (1997), "Fostering intersectoral partnering: a guide to promoting cooperation among government, business, and civil society actors", *IDR Reports*, Vol. 13 No. 3, pp. 1-26.

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