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TOWARDS A CONCEPTUALIZATION OF HUMANITARIAN SERVICE PROVIDERS

ABSTRACT

Purpose

Service development and outsourcing are growing trends in humanitarian logistics (HL). Humanitarian organizations (HOs) have developed specialized units to perform logistics activities on behalf of other aid organizations, as a commercial logistics service provider (LSP) would do. This paper explores the characteristics of HOs acting as LSPs and the differences with their commercial counterparts.

Design/methodology/approach

This research uses a two-level content analysis of 149 annual reports from 50 local and international humanitarian organizations (HOs), performed with the help of qualitative data analysis software. First, a manifest content analysis identified the number of occurrences of logistics-related words and later, a latent content analysis studies the use in context of such words to characterize the nature of HOs as LSPs.

Findings

Evidence shows that some international HOs -in some cases through specialized logistics units- perform the same activities as commercial LSPs, providing similar services. However, due to the characteristics of the humanitarian context, HOs acting as LSPs can offer a wider range of value-added and dedicated services to clients (other HOs) than commercial LSPs.

Research limitations/implications

Exploring the activities performed by HOs on behalf of other aid organizations and characterizing them as Service Providers constitutes a first attempt to grasp the unique features of these particular humanitarian LSPs. Our results open the discussion about the services HOs offer, thus contributing to theory development in humanitarian logistics.

Practical implications

The identification of HOs acting as LSPs introduces a new actor to the humanitarian network, which we refer to as Humanitarian Service Provider (HSP). This supposes two main managerial implications. First, our results support the idea of seeing servitization as a competitive difference, having a substantial impact on the way HOs build their strategies and achieve competitive advantage. Second, HSPs can push their commercial equivalents to identify new activities or services to offer and maintain their competitive advantage with regards to the newcomers.

Original/value

This paper furthers the discussion on the concept of HSPs and demonstrates its uniqueness, thus contributing to the ever-growing body of knowledge of humanitarian logistics research.

Keywords: Humanitarian Logistics, Logistics Service Providers (LSP), Third-Party Logistics, Disaster Relief, Aid Agencies.

1. INTRODUCTION

The field of humanitarian aid is constantly evolving and so are the actors involved and the roles they play. Logistics in this context is defined as "the process of planning, implementing and controlling the efficient, cost effective flow and storage of goods and materials as well as related information from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people" (Thomas and Mizushima, 2005, p. 60). Jahre et al. (2015) note that of the 22 billion USD spent on humanitarian operations in 2013, logistics accounts for 60% to 80%. These activities are mostly performed by humanitarian organizations (HOs)[1], which have developed "a professional approach in logistics" (Kovacs and Spens, 2011a, p. 34) using information technologies to track and trace their goods (Sandwell, 2011) and "setting up quite complex supply chains to assemble and distribute the required food, shelter and other necessities" (Scholten and Scott, 2010, p. 625). Constrained by many complexities (Overstreet et al., 2011), HOs must operate within an embedded network of actors and perform various logistics activities just as firms do in the private sector. Indeed, despite the contextual differences existing between humanitarian and business logistics (Van Wassenhove, 2006), "both processes account for the flows of goods between the nodes of a network" (Gösling and Geldermann, 2014, p. 23).

Logistics outsourcing, a main feature of commercial logistics, has recently emerged in the field of humanitarian logistics (HL). While private players are involved in humanitarian supply chains carrying out "transportation, shipping, freight forwarding" (Oloruntoba and Gray, 2009, p. 490), HOs also act as logistics service providers (Abidi et al., 2015), executing logistics

[1]"Humanitarian organizations are defined as those *not-for-profit* organizations - regardless of their size, geographical or thematic focus - whose activities facilitate or include the delivery of aid or assistance in order to save lives and alleviate human suffering" (Samii, 2008, p. 24).

operations for their peers within the humanitarian supply chain. Heaslip (2013) presents various examples of these practices such as IFRC providing procurement and transportation, or WFP acting as consignee for other HOs, and later states that "most of the services humanitarian organizations offer to each other fall under the realm of logistics" (2014, p. 116). HOs could therefore be considered as logistics service providers (LSPs), actors who "manage, control and deliver logistics activities" (Hertz and Alfredsson, 2003, p. 140), given their capacity to perform logistics activities on behalf of other humanitarian actors. However, the role and impact of HOs acting as LSPs have received little attention by the scientific community (Dufour et al., 2018) and, and very few have actually investigated the activities performed/provided by HOs acting as LSPs in view of those performed/provided by commercial LSPs. The purpose of this paper is thus twofold:

1. Explore the logistics activities performed and services provided by HOs and,
2. Characterize HOs acting as LSPs from commercial LSPs.

The paper is structured as follows. Section 2 examines logistics service provision in relief chains. It successively broaches the logistics outsourcing in general and in these chains, the relevance of outsourcing to peers for such chains and finally comes to HOs acting as LSPs, a topic that needs further investigation. Section 3 details the research design. Section 4 presents the results of the qualitative content analysis, which are then discussed in Section 5. The conclusion addresses limitations and future research.

2. LOGISTICS OUTSOURCING IN THE HUMANITARIAN SUPPLY CHAIN

For more than a decade, LSPs – third-party firms in the supply chain – have been a strongly developed trend in the supply chain management (SCM) academic literature (Selviaridis and

Spring, 2007), mainly in response to the exponential growth that these companies experienced in the early eighties due to a generalized outsourcing movement (Quinn, 1999; Van Laarhoven et al., 2000). Nowadays, the trend still continues, as does the generally positive growth rates for logistics services (Langley et al., 2018). LSPs fulfill the function of logistics intermediary thus "ideally placed to organize the pooling of logistical resources and help supply chain achieve substantial economies in scale and scope" (Fulconis and Paché, 2019, p.10). These arrangements notably negate capital investment in logistical assets and reduce payroll (Grant, 2019). The process of logistics outsourcing involves external companies to deliver, within the agreed budget and time-frame (Akbari, 2018), different logistics services. Historically performing transport and warehousing operations for industrial and commercial firms, LSPs have gradually developed value-added and informational activities and nowadays offer a rich (Anderson et al., 2011) and "broad array of bundled services that also includes warehousing, inventory management, packaging, cross-docking and technology management" (Zacharia et al., 2011, p. 43). They have "developed their capabilities both in terms of broader service offerings and in terms of providing solutions adapted to specific customers or customer segments" (Fabbe-Costes et al., 2008a) and "are likely to strengthen their value creation in supply chain networks both at global and local levels" (Heaslip, 2013, p. 42). The main publications in the LSP literature thus deal with logistics outsourcing from commercial and industrial firms, including main factors, impediments, advantages, and outsourcing decision making, among others (see e.g. Alkhatib et al., 2015), identify typologies of actors in the logistics industry from traditional third-party firms to non-asset-based SCM firms (see e.g. Razzaque and Sheng, 1998), and measure their contribution to supply chain performance (Hsiao et al., 2010) or their role in supply chain integration (Fabbe-Costes and Roussat, 2011), among other topics.

In humanitarian supply chains, as far as the authors are aware, the literature on logistics outsourcing is rather scant in spite of the fact that, as Abidi et al. (2015, p. 36) note, "specialized logistics knowledge is needed considering the complexity of logistics infrastructure, the need for efficient processes as well as sometimes problematic collaboration between actors". As pointed out by Bealt et al. (2016, p. 120), "with increasing importance being placed on the efficient and effective fulfillment of needs, the role of incorporating logistics service providers in disaster relief operations is being realized". This logic of logistics outsourcing seems to have appeared only recently in the humanitarian supply chain. Dufour et al. (2018) offer several reasons for this lag, among which the number and diversity of stakeholders involved in the humanitarian chain and the lack of standardized processes. This said, recent studies examine precisely the role commercial LSPs (firms from the private sector) can play in humanitarian supply chains (Vega and Roussat, 2015) or discuss the conditions of private-public partnerships in that context (Gabler and Geldermann, 2014). Cozzolino et al. (2017) point out that mobilizing commercial LSPs is likely to provide knowledge and expertise to HOs while Baharmand et al. (2017) outline the minimization of transportation risks. More allusively, various authors point out that delegating the conception, management or coordination of logistics activities to LSPs (frequently referred to as the "private sector") can improve the delivery of goods (Cohen, 2016), help HOs to improve their logistics capabilities (Bealt et al., 2016), and reduce vulnerability and supply chain risks (Baharmand et al., 2017), while reinforcing their response capacity (Schultz and Blecken, 2010) and improving disaster preparedness skills (Maon et al., 2009). Recently, Kim et al., (2018) empirically demonstrate the importance of the LSP's technical and social abilities as selection criteria for HOs willing to collaborate with commercial partners, while Rodriguez-Espindola et al. (2018) show that lack of collaboration leads to ineffective disaster relief.

However, collaboration between HOs and LSPs is not preordained. Bealt et al. (2016) point out reciprocal misperceptions between the two partners and note that HOs prefer to regulate their own operations, while Christopher and Tatham (2011) remark that HOs do not necessarily trust good intentions of commercial firms. For instance, Moshtari's (2016) findings show that mutual trust (or swift trust, see Tatham and Kovács, 2010) between HOs are key drivers for collaborative performance, and Dubey et al. (2017) demonstrate the same positive effect between swift trust and coordination. Nevertheless, few authors have studied this effect in public-private collaboration. Cohen (2016) notes that the specificities of the humanitarian supply chain make the outsourcing process complex to define, implement and monitor. Such cultural discrepancy between the commercial and humanitarian worlds may explain why logistics providers acting in the humanitarian supply chain are divisions of international HOs (Dufour et al., 2018), performing logistics activities for peers (Kovacs and Spens, 2011b).

In their description of the complex network of actors (Balcik et al., 2010) involved in disaster relief operations, Kovacs and Spens (2007) identify 'other NGOs' alongside with LSPs as potential partners. Outsourcing logistics operations to peers in the humanitarian supply chain seems all the more logic that "all types of synergy resulting for cooperation with the private sector are perceived to apply to cooperation between HOs" (Schulz et Blecken, 2010).

Heaslip (2014) thus notes that "humanitarian aid organizations have started to develop services they offer to each other" (p. 116). Abidi et al. (2015) identify timeliness, flexibility and reliability as key drivers that explain why HOs develop logistics services for other players in the chain. Some examples include WFP, who transports and distributes relief items for HOs and UNHRD (Heaslip, 2013), and IFRC (considered as a "logistics service provider" to its national companies by Jahre et al., 2015) who has installed hubs for HOs. HOs have logistics capabilities (Apte et al., 2016; Vega and Sanchez, 2017) and the bigger HOs are encouraged to provide services to the smaller ones for better consolidation in humanitarian supply chains

(Vaillancourt, 2016). Moreover, meta-organizations in the field are clearly considered as logistics professionals (Jensen, 2012). The mission of the Logistics Cluster is for example defined as determining the logistics needs of organizations and serving other clusters (Jahre and Jensen, 2010). Dufour et al. (2018) also identify UNHRD as a "Humanitarian Logistics Service Provider". Apart from these writings on specific and collective organizations, and although the academic literature on humanitarian logistics has seen a considerable increase in publications since 2009 (Zary et al., 2014), the notion of HOs functioning as LSPs, i.e. designing/managing/executing logistics operations for their peers, is seldom explored. Heaslip, a pioneer in the application of service operations management to relief supply chains, notes that "the general notion of humanitarian organizations functioning as LSPs needs further research" (2013, p. 44). Despite that growing interest for servitization in humanitarian logistics, the difference between commercial LSPs and HOs acting as LSPs for humanitarian operations has, to our knowledge, not yet been studied. Two recent studies have analyzed humanitarian logistics activities under this perspective. Heaslip et al. (2018) describe the activities performed by different types of HOs while explaining the evolution of servitization in the context of HL. Further, building on Vega and Roussat (2015), Sigala and Wakolbinger (2019) empirically demonstrate the activities to be outsourced by HOs. However, the former focus on the trend from HOs towards more service offerings, rather than HOs providing such services to other HOs, while the latter focus on commercial LSPs and not HOs offering services to peers. Characterizing HOs as LSPs for the humanitarian context will further the understanding of the complex humanitarian network, helping to define the different boundaries between organizations in a service tiering setting (Heaslip et al., 2018).

3. RESEARCH DESIGN

3.1. Research process

Given that this is an emerging topic, an exploratory approach is adopted as it allows to examine a new area and generate new ideas, conjectures, or hypotheses (Neuman, 2007). Ketokivi and Choi (2014, p.134) argue that when "the research context is novel and unfamiliar", explanations can be derived from exploration and analysis. This research thus follows an abductive process, which aims at understanding a new phenomenon, and suggesting new theory, formulating new hypothesis or propositions (Kovacs and Spens, 2005), or refining existing theories (Dubois and Gadde, 2002).

Often referred to as systematic combining, abductive reasoning is a process "where theoretical framework, empirical fieldwork, and case analysis evolve simultaneously" (Ibid. p. 554). It differs from inductive and deductive reasoning, as it follows a 'rule to result to case' process (Kovacs and Spens, 2005), where the case presents a plausible but not logically necessary conclusion, as long as its anticipated rule is correct (Danermark, 2001). The abductive reasoning process begins with a real-life phenomenon and observation, however theoretical knowledge plays an important role, as the researcher initiates an iterative process seeking to find a possible matching framework or extend the theory prior to the observation (Spens and Kovacs, 2006). This research begins with HOs acting as service providers considered as the real-life phenomenon that we attempt to explore using LSP's definitions in literature (theory), aiming to propose a new characterization of HOs as logistics service providers for the humanitarian context (case).

3.2. Research method

According to previous studies, humanitarian logistics literature lacks research linking theory and practice (Altay and Green, 2006; Natarajarathinam et al., 2009; Kunz and Reiner, 2012). These calls confirm the need for more empirical evidence (Van Wassenhove, 2006; Kovacs and Spens, 2011a) and the difficulty of getting access to data. To overcome this issue, this research relies on content analysis, a technique used "for making inferences by objectively and systematically identifying specified characteristics of messages" (Holsti, 1969, p. 14). This research method is suitable for the objective, systematic, quantitative and reliable study of published information (Ellinger et al., 2003; Krippendorff, 1980), as it offers the possibility to investigate implicit assumptions (latent content) alongside explicit statements (manifest content) of written text (Guthrie et al., 2004; Krippendorff, 1980). In many cases, "content analysis research is motivated by the search for techniques to infer from symbolic data what would be either too costly, no longer possible, or too obtrusive by the use of other techniques" (Krippendorff, 1980, p. 51). Text mining and content analysis are common methods for the study of documents (Aureli, 2017). However, content analysis is preferred "when the content of reports, transcripts or other text documents is highly unstructured, with irregularities and potential ambiguities." (p. 23). Given the scope of this research project and the fact that we sought to include the highest number of subjects (HOs) in the sample, it was likely that the sources we chose (HO annual reports, see below) would contain different structures and that the language used would vary from one HO to another. Therefore, content analysis is a suitable method that allows us to explore a large topic.

3.3. Data sources

This research seeks to explore HOs acting as LSPs through the study of their annual reports. This specific type of intellectual capital, considered as part of the accountability-discharge

activity of an organization (Gray et al., 1995), is a highly relevant and useful source, as organizations aim to inform stakeholders (Farneti and Guthrie, 2009) by communicating significant information through this reporting mechanism (Guthrie et al., 2004), which shows "a reasonable correspondence with objective reality" (Bowman, 1984, p. 63). In many situations, organizations (including HOs) are compelled to produce annual reports, offering the opportunity for comparative analysis (Niemark, 1995; Tilt, 2001). Thus, viewed as an unobtrusive projective test, the study of annual reports may provide a comparative picture at a distance, not easily attained through other methods (Bowman, 1984).

In logistics and SCM literature, secondary data has been widely used in a non-innovative way, simply depicting data from published reports without any type of analysis (Sashan and Datta, 2005). As for HL research, secondary data is largely used for data triangulation purposes when conducting case studies (Vega, 2018). With the purpose of using secondary data in an innovative way, we mobilized two different analysis (section 3.5) to study annual reports of 50 HOs (section 3.4). This method aims to identify logistics activities performed by HOs and examine whether they are performed on behalf of other organizations.

3.4. Data collection

In data collection, great importance must be given to the selection of the database that is used and to its relevance to the field. In order to find the most suitable database for this research, a search for global NGO lists or rankings was performed, seeking to find, with a keyword selection, a comprehensive, diverse set of HOs. The Public Interest Registry (PIR) estimates there are 10 million NGOs worldwide. According to the Global Development Research Center (GDRC) website, there are more than 40 different NGO databases and directories, but many are currently inexistent. Among those with active access, we focused on lists or databases that were considered as 'worldwide' or 'global', excluding regional and topic-centered databases

(e.g. SMERU research center database: the Indonesia's most comprehensive online database of national and regional non-governmental organizations). A limited set of global NGO lists emerged, including the World Association for Non-Governmental Organizations' (WANGO) worldwide NGO directory (55645 entries), the Union of International Associations' (UIA) yearbook of international associations (75487 entries), and three databases from the UN Department of Economic and Social Affairs. In addition to these, our search came across two more databases, namely NGO Advisor Top 500 NGOs ranking (500 entries) and reliefweb.org's directory of organizations (3040 entries). Surprisingly, only two of the above (YBIO and TOP500) present any criteria or explain the method chosen to include (or exclude) organizations from the list! In addition, these are the only exploitable databases, as the research results can be exported to an .xls file for further analysis. For these reasons, we decided to combine the results of these two databases to constitute the sample for this research avoiding possible methodological bias from the database editors.

3.4.1. UIA Yearbook of International Organizations

The Union of International Association's Yearbook is the most comprehensive reference work and information resource on international non-profit organizations and associations worldwide. Since 1907, the UIA has compiled and disseminated data and information on international organizations, including both Intergovernmental Organizations and International Nongovernmental Organizations. In addition to electronic and classic research (libraries), the UIA uses three base bibliographical sources as follows to produce the YBIO:

- International Institutions and International Organization: a select bibliography (1956; 783 entries)
- Select Bibliography on International Organization (1965; 1,080 entries)

- Bibliography of Documents on Transnational Association Networks (1972 edition of this Yearbook; revised version in the 1974 French edition of this Yearbook)

The yearbook aims at including all sort of international organizations, even those that may be perceived as not being fully international or significant enough to merit inclusion. The aspects for the eligibility of an organization to be part of the YBIO include aims, membership, structure, officers, finance, relations with other organizations, and activities[2].

3.4.2. NGO Advisor Top 500 NGO Ranking

The NGO Advisor Top 500 NGOs grows out of The Global Journal's 2012 and 2013 Top 100 NGOs rankings, which have been expanded to the Top 500 from over 2000 NGOs surveyed and assessed in relation to three pillars, namely impact, innovation, and sustainability.[3] Differing from the YBIO, the TOP500 seeks to evaluate NGOs and produce a ranking as, according to Cannon (2013, p. 10), "no efforts have been made by scholars to evaluate NGOs for the purposes of producing a ranking of organizations […]. No one prior to The Global Journal's 2012 ranking of NGOs has published a comparative analysis of NGOs at the international level, assembled according to specific criteria". Also, NGOs like BRAC, CARE, Handicap International and Mercy Corps refer to this ranking.

3.4.3. Sample constitution

In order to produce a targeted sample for this study, both the TOP500 and the YBIO were used following a similar process to get complementary results and avoid bias. First, the TOP500 database was filtered according to their "sector", using keywords that relate to the main activities of humanitarian organizations requiring physical flows, namely disaster relief and

[2] For more information on the Union of International Associations YBIO's inclusion criteria, please visit https://ybio.brillonline.com/ybguide

[3] For more information about the Top 500 NGO Ranking, please visit http://www.top500ngos.net/evaluating-and-ranking-non-governmental-organisations/ for a full methodology description.

development aid. The keywords used include *aid, development, emergency, food, health, humanitarian, relief, migration, nutrition* and *water & sanitation*. Keywords such as *advocacy*, *social* and *empowerment* were excluded, as NGOs that focus on these topics usually do not possess a supply chain *per se*. As our intent is to identify logistics services executed or provided by HOs, we focus on activities implying a movement of physical goods and not only providing information flows as a consultancy does. A total of 62 HOs were shortlisted.

For the YBIO a first filter was conducted based on UIA's main classification type for organizations, focusing only on 'humanitarian organizations', and producing a list of 872 organizations. From the resulting list, a search was performed according to the "subject terms" found on the title or main objectives of the organization, using the same keywords as for the TOP500 database. After merging individual results and removing duplicates, a total of 696 organizations matched our search. A second filter was then applied using UIA's hierarchical typology, which determines the status or level of "internationality" of an organization. Items excluded consist of inactive or dissolved organizations, multilateral treaties and agreements, autonomous conference series, religious orders, internationally-oriented national organizations, national organizations, organizations emanating from places, persons or other bodies, subsidiaries, and recently reported organizations for which available information is insufficient to enable classification. A total of 83 HOs were shortlisted.

A second duplicate removal process was undertaken with the resulting 145 organizations. From the first sample of 134 HOs, 84 were discarded from the study due to data unavailability (AMURT, BWA, CNEWA, Doctors Worldwide, IEMO, NICCO, Taiwan Root, Share 4 Kids, World Concern International), language (Aide d'Urgence Internationale – French; Alimento Para Todos – Spanish; CODE, Future Code, JIM-NET – Japanese; German Doctors – German), or mandate (CIMADE, Children on the Edge, Consortium of Humanitarian Agencies, Crisis

Action, InterAid International, KEPA, Saferworld, U.S. Committee for Refugees and Immigrants, World Toilet, among others).

Finally, 50 HOs were selected for the study (see Table 3.1). The three most recent published annual reports found in PDF format were downloaded for each HO. This method was adopted as a means to capture the latest developments and to increase the possibility of finding references to logistics service provision, while ensuring an easy to handle database. This criterion was fully adopted for all HOs except AMDA, which produced a three-volume report for 2012 and one for 2014, Mercy Ships for which only 2 reports were found, and IOM for which 2 reports directly linked to the organization's activities were found, giving us a total sample of 149 documents. Logistics reports were discarded from the sample as few HOs produce such documents. Both the number of organizations and number of reports per organization are close to those of previous studies doing content analysis of annual reports (see Bowman, 1984), constituting to date, as far as the authors are aware, the most comprehensive study in the humanitarian logistics literature regarding the number of HOs studied.

[Insert Table 3.1 about here]

3.5. Data analysis

The analysis of the selected documents was done following a summative approach to qualitative content analysis (Hsieh and Shannon, 2005). The purpose of this approach is to understand the contextual use of the words found in a specific set. Data analysis begins with searches for occurrences of the identified words, called manifest content analysis (Potter and Levine-Donnerstein, 1999), followed by a process of interpretation of content, called latent content

analysis (Holsti, 1969). In order to check whether HOs' activities could be compared with those performed by LSPs, a theory-driven deductive approach was conducted following Guba's (1978) criteria for category selection. A set of words referring to the activities performed by commercial service providers was created based on a compilation of various definitions of LSPs from the substantial body of literature (Selviaridis and Spring, 2007). First, the list of 21 LSP papers compiled by Fabbe-Costes et al. (2008b) – for a very similar purpose – was used as a basis. To constitute the list, the authors analyzed the LSP literature seeking papers dedicated to the roles LSPs played in supply chains. Those papers explored (through typologies or definitions) the services performed by logistics players. From this list, the different activities or services described were collected until data saturation was reached. Given that many of those articles share or reuse the same definitions, 7 papers presenting complementary definitions were selected. Later, recent papers with new definitions or descriptions were added, following the same process until information saturation, giving us a list of 13 papers covering the period from 1999 to 2014 (see Table 3.2). From these definitions, the words describing the concrete activities an LSP might provide were gathered, resulting in a list of 53 keywords (see Table 3.3).

[Insert Table 3.2 about here]

[Insert Table 3.3 about here]

Based on this list, the content analysis was performed using the qualitative data analysis software (QDAS) NVivo 10. This software has the ability to organize and analyze literature reviews, to conduct second hand data analysis, and to record, collect, analyze and report data

(Dean and Sharp, 2006). Two of the QDAS tools were mainly used to perform the analysis. First, a Word Frequency query was used in order to find the number of occurrences of the keywords with respect to the entire content. For this, the "stemmed words" option was used to group the words under the same stem (e.g. supply, supplies, supplied). Later, a Text Search query was done to identify the number of references made to a specific set of words, as well as to conduct a first level of coding (open coding), followed by axial coding to understand the context in which the words were used and create subcategories (Ellram, 1996). For this, the "stemmed words" option was also used in order to capture all possible uses of words. The results from both manifest and latent content analysis are presented and explained in the next section.

4. RESULTS

4.1. Manifest content analysis

As explained above, the manifest content analysis focuses on the number of occurrences of words in a specific set of data. A word frequency query was used, using a 5-letter minimum length criterion to filter out prepositions (i.e. of, in, at) and dates (i.e. 2014, 2015), but still managing to include the shortest logistics-related words (i.e. supply or stock). The software produces a list of the first 1000 words found in the material from which a search of the keywords was done manually through the list. The analysis showed that among the most used words, some refer to the general mandate of the HOs (e.g. "people" – 61*wt*%; "support" – 53*wt*%; "health" – 44*wt*%). It also pointed out that some of the keywords presented in Table 2.3 were not found in the first 1000 list. For instance, words such as "pack*", "pick*", "warehous*" or "manufactur*" had very low counts and extremely low weighted percentages (close to zero). For those found on the list, two logistics-related keywords (i.e. "supply", "distribution") appear

among the best ranked, although these can have different meanings or be used in not logistics-related contexts. Other keywords show a high number of occurrences: for example, "tracing" (4992 counts – 9*wt*%), "logistics" (1565 counts – 3*wt*%), "assembly" (1733 counts – 3*wt*%), "handling" (1258 counts – 2*wt*%) and "transport" (1179 counts – *2wt%)*. The concept of logistics is also implicitly found in words such as "provision" (2408 counts – 3*wt*%) or "transit" (1094 – 2*wt*%). Table 4.1 presents an excerpt of the word frequency query showing only those words found in the top 1000 that are among the keywords of this research.

[Insert Table 4.1 about here]

The next step of the manifest analysis was to perform a text search query with the 53 keywords from Table 3.3 using the "stemmed word" option and coding the surrounding content, which constitutes the open coding. In order to capture all possible uses of the keywords and their variations they were aggregated (e.g. "co-manufacturing" and "product manufacturing" into "manufacturing"), reducing the number of keywords to 42 and thus simplifying the search. Next, a matrix coding query was launched in order to cross-tabulate the results from the 42 keywords (now coding nodes) and the sources gathered by organization (see Appendix 1). This query provided a first overview of the use of the keywords by HOs.

Of the 50 HOs studied, six (AMDA, AmeriCares, Food for the Hungry, Focus Humanitaria Assistance, Kimse Yok Mu, Mercy Corps, Mercy Ships, Operation Blessing International, Surfaid and WFP) had very few matches regarding their logistics activities. Not surprisingly, WFP is in this group as this HO is the leader organization for the Logistics Cluster and thus, produces specific logistics reports on its operations; though it rarely refers to this activity in the annual reports. Other organizations (CordAid, DORCAS, GAVI, MSF and PIN) had between

8 and 30 times more references to the keywords used for the query. One more organization that stands out is ICRC with the highest number of references to almost any keyword. Nevertheless, some of the results (e.g. design, installation, marking) may be linked to other activities not related to logistics and thus further analysis is required.

As explained earlier, the manifest content analysis does not, in general, provide enough elements to draw conclusions. The number of occurrences of a word is just a first element and the context in which the word is used must be examined. Therefore, a latent content analysis was performed as a complementary approach.

4.2. Latent content analysis

The goal of the latent content analysis is to examine the context in which the keywords are used in order to explore whether or not HOs play (or can play) the role of LSPs in the humanitarian chain. We examined the data collected through two different lenses: the logistics activities performed by HOs and the logistics services provided to other organizations. In order to ensure readability, references to annual reports are indicated by the name of the organization but not the date of the report.

4.2.1. Logistics activities performed by HOs

Although not always explicitly, the vast majority of HOs studied refer to logistics or supply chain (management) in their reports, demonstrating its importance in their activities. In some particular cases, HOs highlight their logistics or supply chain expertise (ACF, AmeriCares, FTC, GAVI, HI, IFRC), refer to their worldwide supply chains or networks (ACF, ICRC, UNICEF) or to specialized logistics units (CordAid, ICRC, IFRC, UNICEF). Mostly, logistics is defined as an activity (or service) that provides support or assistance to aid and emergency operations.

The analysis revealed several types of flows managed by HOs. **Physical flows** include medical equipment (e.g. materials to treat injured patients, relief and surgical supplies, prostheses, safety equipment for health workers), pharmaceuticals (e.g. vaccines, drugs), and essential nutrition products (e.g. therapeutic food, fruits, vegetables). Among the nonfood items, HOs handle protection supplies (e.g. gloves, masks, suits), building materials for shelter and sanitation, and/or household equipment (e.g. nets, tarpaulins, blankets, hygiene items, cooking kits), as well as the logistics of fluids, namely water and fuel or energy products (e.g. coal, wool). Physical flows can also include more specific items such as fishing nets and boats repair kits (e.g. FOCUS in the Indian Ocean), fishing lines or back-to-school kits for JWR, among others. In some cases, HOs manage what can be seen as a reverse flow when removing debris (HI).

Apart from materials, HOs also manage **human** (emergency specialists, aid teams, injured people to evacuate) and **financial** (cash transfers, hospitalization fees) flows. In addition to the supply requirements of the teams on the ground, humanitarian actors manage **information flows** like news from/to affected communities (through the central archive of missing people for example), or knowledge such as documentation tools, guidelines, tracing and medical files.

In their annual reports, HOs state their ability to operate different logistics services. For instance, they organize the **supply** of goods, information, money and people in order to ensure that humanitarian professionals on site are equipped with essential materials (ARC, DRI, ICRC, IFRC, KYM, MDM, MSF, CRS). Their supply role may include the procurement process (APF, BfdW, CARE, GAVI, ICRC, IFRC, UNICEF), the constitution of pre-positioned stocks (ACF, AmeriCares, ICRC, IFRC, UNICEF, ZOA) to be deployed during an emergency response (e.g. Americares sending shipments during the Ebola outbreak in West Africa in 2014), or in the recovery phase (e.g. the launch of a logistical component as part of MDM's coastal migrants' program). Consequently, **transportation** explicitly appears as one of the logistics activities performed by the HOs. Transport operations may include air transport (Americares, DRI and

HI mention emergency airlift deliveries), sea transport (HI, IRC, UNICEF) or inland navigation (ICRC), and obviously land transportation. For some products that require controlled temperature, HOs set up controlled temperature chains or "cold chains", as is the case of GAVI's and MSF's chain for vaccines. When transported to the disaster zone, goods need to be stored. **Storage** is thus mentioned as a logistics activity performed by the HOs using warehouses (Cordaid), platforms (HI), hubs (GAVI), or high capacity storage tanks for water (ICRC, IMC, MSF). HOs ensure the **distribution** of the goods described above to affected people or emergency teams (e.g. Caritas for example in Venezuela collects medical supplies from the local people and organize their distribution to out-of-stock hospitals), conduct vaccination campaigns (ICRC, among others), and enable the provision of health services through logistics support.

Moreover, HOs perform value-added logistics activities: **packing** basic relief items into "kits" (IRC, DRI, IFRC, HI, MSF, OBI) or **assembling** different materials (wheelchairs or water supply kits for ICRC). Apart from executing logistics operations as described above, they can **manage** them. For example, ADRA in addition to distributing rations, the organization works with local vendors to develop a food voucher system in Yemen. HOs set up logistics installations, relief distribution warehouses for example (FOCUS, among others). Processes (from receipt to shipment and distribution) can thus be entirely organized and supervised by HOs (e.g. DORCAS). They also **manage information systems**, receiving, archiving and tracing files (ICRC, PIN), sharing information with various partners through databases (ICRC), setting up open-source data platforms (RapidPro for UNICEF), or integrating a logistics information system into a country's national health information system (GAVI in Nepal for example). Further, HOs use a variety of information tools to manage and monitor logistics activities: some of them implement commercial solutions (LINK – HQPR for ACF, SAP for DRI or Ipad equipements for CRS), while others develop dedicated guidelines and standard

operating processes (e.g. ACF's Kitlog). HOs use integrated solutions for managing logistics data (ICRC) or prototypes for emergency simulations (e.g. UNICEF's Copenhagen Lab). Finally, some HOs (ACF, ARC, ICRC) develop **logistics training programs** (on different topics that include logistics management, supply chain management, health logistics, medical logistics, service delivery, information systems, and even logistics for non-logisticians) or offer diagnosis expertise in the area of supply chain (CRS).

In addition to these activities, many HOs describe **other types of services** when they mention their logistics activities such as the **installation of infrastructures**. These include water and sanitation systems (e.g. water tanks and hand pumps for ICRC and Oxfam, makeshift showers and latrines for MDM, water distribution points for ADRA), support to health centers (e.g. equipment for health centers for MSF, construction of a community health clinic for ICRC, or setting up a centralized ambulance service in the Western Area district of Sierra Leone for HI), storage spaces (IMC and PIN, and camp setting for NRC and PIN). HOs also ensure the **maintenance** of equipment, repair installations, renovate and upgrade water storage tanks (ACF, ICRC and IMC). In Casamance for instance, ICRC even mention the creation of a regional supply chain dedicated to spare parts in order to support maintenance work on water infrastructures. There is also construction and maintenance for vehicles: ICRC notes the construction of a custom-built boat to provide isolated communities in Nigeria's Delta Creeks with access to preventive care and CRD has set up a garage to ensure that all aid vehicles are repaired when they break down.

4.2.2. Logistics services provided by HOs

Latent content analysis offers several insights concerning logistics service provision between HOs. While some organizations evoke the provision of logistical support to other humanitarian organizations (Americares, Cordaid, MDM), local humanitarian actors (ACF), national and

international non-governmental organizations (ICRC, HI), or the wider humanitarian community (WFP), some HOs clearly identify the organizations to whom they provide logistics services. These include the International Organization for Migrations for Americares, Save the Children and Care for ACR, Caritas for Cordaid, *Agronomes* and *Vétérinaires sans Frontières* for HI, Sanasuma, the Royal Medical Services for ICRC, Reach Out for DRI, Rose Against Hunger for ADRA and the Syrian Doctors Association for MDM. HI mentions as many as 50 "client" national and international actors and United Nations agencies for their logistics services and DRI points out that it works with 32 partners. Other HOs provide a list of different types of partner: health partners (Americares, DRI), grass-roots organizations (Cordaid), medical reservists (DRI), governments, national societies, and academia (ICRC). Our results show that HOs (ACR and NRC) belong to extended networks: the Global Logistics Cluster, the UN Humanitarian Response Depots (UNHRD), PARCEL, the Inter-Agency Procurement Group (IAPG), and the European Interagency Security Forum (EISF).

In the same vein, the results also show that HOs seem to be involved in the sharing or exchange of logistics services, probably as part of a network. For instance, UNICEF refers to the vaccine supply chain during the Ebola crisis, managing procurement services on behalf of 100 partners which include GAVI, who in turn used UPS aircraft based in Cologne, Germany to transport UNHCR and UNICEF equipment to the countries worst hit by the epidemic. Another case is that of WFP, which received valuable support from NRC through NORCAP and benefited from a logistics capacity assessment in Nigeria performed on their behalf by GAVI.

Interestingly, our data also give insights into the type of logistics services HOs provide to other organizations. For instance, HI indicates that they provide partners with access to logistics infrastructure, while other HOs supply field centers with food and non-food items (Americares, Cordaid, ICRC), mobilize ocean/air freight and in-country transportation (DRI) or act as a neutral intermediary to help transport medical supplies across front lines (ICRC). HOs also help

their partners to reach affected communities (ARC), to organize distribution (HI, ADRA) and ensure the procurement (UNICEF) of equipment and consumables (ICRC). HOs can share expertise and provide technical/commercial training. Cordaid, for example, with the aim of securing settlements, gives assistance to HOs regarding the management of natural resources or gives farmers market information so that their products can find their way to buyers. In addition to distributing seeds, HI trains farmers to develop new techniques. ICRC trains peer professionals (for example laboratory technicians) using the material it provides and handles thousands of information requests from its partners. Finally, we observe that HOs share logistics infrastructures (e.g. the logistics warehouses of HI and ICRC), vehicles (e.g. the loan of 25 trucks each month in 2014 for HI's logistics platform or ICRC providing vehicles and ice packs for vaccination campaigns to their partners), and maintenance installations (e.g. DRC has set up a garage to repair the aid vehicles of various organizations).

5. DISCUSSION

5.1. HOs acting as LSPs: a trend to confirm

When comparing the weighted percentage of logistics-related words (see Table 4.1) with some of the most used words ("people" – 61%; "support" – 53%; "health" – 44%) in the annual reports we studied, we observe that the main themes for HOs are related to their core mandate of relief (Samii, 2008). For some HOs, logistics is not even mentioned! This could be due to the fact that logistics for many HOs is not defined as a function or is embedded in other functions, as was the case for many companies in the commercial sector during the early years of logistics (Ballou, 2007). Due to the HOs' *raison d'être*, we believe that the focus on their core business is even more important than for commercial organizations. This could reinforce

the growing trend of outsourcing as relying on external providers above to focus on core competencies (Sinkovics et al., 2018).

However, the development of these outsourcing processes could meet with transparency issues. As previously noted by Kovacs and Spens (2007), the complexity of the humanitarian supply chain – due to the existence of so many actors – is increased by the fact that the linkages between them are not clear. It is unsurprising then that we did not find the conditions for the exchange of services specified in our data. As pointed out previously by Vega and Roussat (2015), the need remains to clearly differentiate between commercial contracts and donations or in-kind services. For example, IFRC clearly sums up the amount of "fleet, logistics and other supplementary services" fees collected through contracted logistics services. Moreover, IFRC mentions providing services on a non-profit basis to humanitarian actors. Studying UNHRD logistics services to HOs, Dufour et al. (2018) note that the services they provide can be free of charge or on a pay-for-use basis and that transportation fees are charged (7% of the transportation cost) to the HOs using the service. Both systems – commercial and donation – indeed exist but it is impossible to identify in which situations each applies. Chakravarty (2014) mentions the existence of contracts with logistics service providers in the humanitarian relief chain, and Tatham and Kovacs (2010) note that HOs employ contracts with commercial LSPs, but cannot use such mechanisms for other HOs: this could be a serious impediment to the development of HOs as LSPs! Moreover, Baharmand et al. (2017, p.551) point out that "the cost of LSPs services is not still justified among HOs", which can simultaneously encourage HOs to operate as LSPs while limiting their capacity to be paid for it.

5.2. HOs acting as LSPs: beyond commercial logistics

For a majority of HOs, logistics activities keywords show a high number of occurrences. Some HOs indeed stand out for the importance that logistics plays in their operations. Such is the case

of CordAid, DRC, DORCAS, ICRC, GAVI, HI, IFRC, IRW, MSF, UNICEF and WFP. Not surprisingly, most of these HOs have specialized logistics units that are recognized as leaders in the field of humanitarian logistics (Charles et al., 2010; Pedraza Martinez et al., 2011). The latent content analysis performed confirms the idea that logistics is an integral part of humanitarian response to the point that remarkable accomplishments would not be possible without logistics. This is not new as many academics and practitioners point out the emergence and rapid growth that this activity has experienced over the past 10 years or so (Kovacs and Spens, 2011b; Maon et al., 2009). As we mentioned, in HOs' annual reports, even if we learn much about the nature of the flows, logistics is mainly defined as a service. This result perfectly illustrates the ongoing servitization of humanitarian logistics and justifies HL research emphasizing the 'service view' (Heaslip et al., 2018).

HOs indeed have and still encompass this evolution, continuing developing logistics activities to support their own mandate. First of all, they actually manage all types of flows: physical flows obviously but also financial and information ones. Used to manage financial flows from different donors, to different suppliers and providers, in different countries HOs will probably be able to adapt if cash-based humanitarian assistance develops as predicted by Heaslip et al. (2018). Concerning the information flows, HOs not only manage execution IT capabilities but plays a role in archiving data, in building up knowledge management. Here again, these abilities may be determinant for the future as service providers' customers begin to ask for cloud-based systems and datamining solutions (Langley et al., 2018). Moreover, our results illustrate that HOs are able to perform a wide range of logistics activities (see 4.2.1.) including logistical core processes (Delfmann et al.; 2002) such as handling specific transportation requirements (Baharmand et al., 2017) or storage, and can thus be considered as "solution providers" (Berglund et al., 1999). Second, some HOs perform associated value-added activities (e.g. packing items into kits) the same way commercial LSPs do. They act as a

procurement agent (McLachlin and Larson, 2011) and provide management support and tools (supervision of cold chain transport, for example). Performing "specialized services" with "high asset specificity", HOs can be considered as "specialized logistics operators", some of them evolving to play a role of "logistics integrator" (Persson and Virum, 2001). With these value-added activities, HOs have expanded the definition of logistics from what is found in commercial settings, going beyond the co-manufacturing and co-packing example (combining and packaging the elements of a relief kit) to an important number of activities, here associated with the logistics field (building, reconstruction, etc.) that are not (or at least not yet) found in commercial settings. This characterizes perhaps the main difference with their commercial counterparts, i.e. HOs perform activities found in a humanitarian setting but not necessarily on a commercial one and provide them as services to other organizations. Like many commercial LSPs, HOs have broadened their activities to provide an extended range of services (Liu and Lyons, 2011) and propose more customized offerings (Leahy et al., 1995), tailored to the humanitarian supply chain (e.g. UNICEF offering warehouse and inventory management training to other organizations and governments). Undoubtedly, HOs proposing those value-added activities could be regarded as unique, far from providing "commodities, nondifferential offering" (Anderson et al., 2011) and thus contributing to their 'competitive difference' (Heaslip et al., 2018) from commercial LSPs and from other HOs. Figure 5.1 represents graphically the activities performed by HOs and the role these can play.

[Insert Figure 5.1 about here]

5.3. 4PL HOs, potential orchestrators of the humanitarian supply chains

Our results characterize HOs as multi-flow, multi-activity and multi-client specialists, able to manage and execute logistics processes, thus constituting key actors of the humanitarian network. Moreover, some HOs or clusters who say they serve as many as 100 partners (Jensen,

2012) could probably be considered as a coordinator (Zacharia et al., 2011) of the entire chain (Cozzolino et al., 2012). This is perfectly in line with Abidi et al. (2015), who study the relevance and value of fourth-party logistics services for humanitarian relief and note that actors in the field have taken their "first cautious steps in that direction" (p. 51). Our results indeed exhibit two of the decisive criteria of a 4PL provider in a humanitarian supply chain according to these authors: the supply chain infomediary (HOs improving communication through the chain and offering technical support using technological, electronic or mechanical products) providing competencies related to knwoledge availability and information technology (Subramanian et al., 2016) and the resource provider (transportation capacities and warehousing facilities). Some HOs also act as non-asset external parties (Leuschner et al., 2014), outsourcing freight transportation to other actors including commercial LSPs (like GAVI using UPS aircraft). As 4PL, HOs could prolong the role of the logistics service provider "conceiving and selling personalized logistics solutions by creating a type of ad-hoc assembly of resources" (Fulconis and Paché, 2019, p.11).

A discussion can therefore be launched on the importance that such actors might have for the humanitarian supply chain. In 2012, seeking to improve the coordination of its emergency humanitarian assistance, the United Nations General Assembly identified partnerships for more effective delivery as one of the two main challenges, thus confirming that "the extreme fragmentation of humanitarian organizations' intervention during and after a catastrophe continues to be the most common configuration" (Chandes and Paché, 2010, p. 326). Similarly, Kovacs and Spens (2011a) note that "due to the many phases, actors, and units of analysis, a first important topical area in humanitarian logistics research became that of coordination". As LSPs, HOs are able to form different kinds of partnerships: they can work with their internal supply chain (headquarters, offices, field infrastructures and teams) or for other organizations in humanitarian supply chains as a service provider, collaborate with other HOs or LSPs (for

example, carriers as HOs mainly rely on external providers for transportation – Gossler et al., 2019 or local providers they can help to develop – Sigara et al., 2019) as a 4PL, and finally with commercial LSPs as supplier/client/partner. As we have seen above, HOs can act as service providers that "undertake tasks in the areas of procurement, warehousing and transportation management" (Schulz and Blecken, 2010, p. 641) considering "other humanitarian organizations not as partners, but as internal or external customers that are to be provided with professional and high-quality services". As a 4PL, an HO should be able to manage service providers usually mobilized on a ad-hoc basis (Sigara et al., 2019) and stakeholders along a humanitarian supply chain. Finally, while the private sector (commercial LSPs) can play an important role in humanitarian aid (Sackey and Haavisto, 2009), HOs as specialized service providers could be the main actors and form a co-dependent system to cover existing and future gaps (Majewski et al., 2010). Providing a variety of logistics services and working with different and numerous partners, some HOs may change the structure of the humanitarian supply network, competing with commercial LSPs and building a sustainable advantage over other HOs based on supply chain management, logistics and distribution (Oloruntoba and Gray, 2009).

6. CONCLUSION

Although they need to be further explored, our results constitute a first step in the exploration of HOs providing logistics services to other organizations, a "new" role of humanitarian actors that has rarely been studied. This research outlines Humanitarian Service Providers (HSPs) as a Humanitarian Organization (HO: UN agency or NGO) that carries out activities on behalf of internal customers as well as other HOs or governmental structures. These activities consist of designing, managing and/or executing logistics operations (mainly supply, transportation, warehousing and distribution). In addition, HSPs provide value-added logistics services such

as information management, inventory management, training and capacity building, as well as co-packing and co-manufacturing (kit assembly and installation of products). Moreover, HSPs are able to provide humanitarian-related logistics services such as building, reconstruction, sanitation, rehabilitation and maintenance of water systems and security, to name a few. Finally, through donations/exchanges/contracts HSPs can mobilize a large variety of logistics stakeholders including their own organizational entities, worldwide and local HOs and LSPs. It is worth noting that the word logistics does not make part of the concept of HSP given that, as shown by our results, the activities performed, and services provided by HSP go beyond the boundaries of logistics.

Our exploratory research announces a growing trend of logistics outsourcing in the humanitarian context, defining HOs as LSPs of different kind (with regards to the activities performed that differentiate them from commercial LSPs) and opens the debate on their potential role as humanitarian supply chain orchestrators. At the whole, it deepens the services provision of HOs and their future roles in humanitarian supply chains, thus contributing to theory development in humanitarian logistics (Heaslip, 2013). With few exceptions, the academic literature in humanitarian logistics, as far as authors are aware, has paid little attention to these topics, such as the role HOs play as logistics service providers. The results of this study constitute the first phase of a wider research program on HSPs and their role, which builds on Kovacs and Spens's (2011b) as well as Heaslip's (2013) call to further examine services management for humanitarian logistics and aims to explore the logistics roles that both commercial LSPs and dedicated HSPs can play together in the humanitarian context. This program aims to provide responses to one of the main gaps identified by Chiappetta Jabour et al. (2017) in their extensive literature review of humanitarian logistics i.e. "How are public and private sectors involved and organized?" (p. 14). Heaslip et al. (2018) note that HOs have to differenciate themeselves and that this could be realized through logistics and servitization ; our

results suggest that HOs can work on the ability to differenciate through a 4PL logistics service relying on value-added propositions together with specific humanitarian services and digitalization.

Managerial implications are twofold. First, looking at HOs as logistics service providers can change the current perspective of the humanitarian context for both humanitarian and commercial actors, as the relationship within and between these two can shift from one based on partnership to one based on contracts or even to one where both HSPs and LSPs see each other as competitors, thus creating new dilemmas and hence new avenues of research for academics in this field. On a recent study, Heaslip et al. (2018) recognize servitization in humanitarian logistics as a competitive difference. Our results prolongs the findings or their conceptual approach. Our data (see Figure 5.1.) confirm the existence of their 4 types of humanitarian organisation (focused on traditional thematic, network based, asset based, embracing service revolution) and allow to consider those types as different roles HOs can – even simultaneously – play. Those roles may draw paths of evolution for HOs and should help them to adress different types of clients. Futher, our results corrobore the idea of a 'service revolution' by organizations with a service mindset. This can substantially impact the way HOs build their strategies and achieved competitive advantage. In a supposed competition with LSPs, they can indeed rely on an increased understanding of the meanings of processes in their client organization due to comparable culture (Abidi et al., 2019). As previously mentioned, Kim et al. (2018) show that economic criteria are the most influential causes for commercial LSP to be involved in disaster relief; a growing logistics efficiency of HOs could thus obvsiouly restrain the involvment of private actors.

Second, positioning HOs as a potential equal for commercial service providers may warn LSPs of a possible new competition arena, legitimizing HOs – considered ten years ago as old-fashioned when it comes to logistics (Kovacs and Spens, 2007) – as desirable providers.

Humanitarian logistics can be considered as a specific context where commercial or humanitarian stakeholders offer "bundles consisting of combinations of goods, services, support, self-service, and knowledge" (Vandermerwe and Rada, 1988, p. 316). Vega and Roussat (2015) point out that some of the major commercial logistics service providers (e.g. DHL, Kuehne+Nagel, Agility) have created humanitarian business units that provide dedicated logistics services for humanitarian organizations, thus becoming important players in today's relief supply chain. The characterization of HOs as HSPs can push their commercial equivalents to identify new activities or services to offer and maintain their competitive advantage with regards to the newcomers. However, more than competition, collaboration between HSPs and the private sector is probably a necessity especially in last mile distribution (Apte, 2009). Obviously, these organizations (apart from the logistics services they perfom) have different goals and the involvement of LSPs in the humanitarian context (on a profit basis) raises the question of ethics as previously outlined. Conversely, the specificity of this context where the profit and non-profit sectors merge (Cozzolino et al., 2017) leads to another question to be further explored: are HOs acting as commercial service players (on a contract basis) or are they providing logistics services on a non-profit basis? Do they offer services free of charge to other humanitarian actors and sell them to governments or UN agencies? Exploring the conditions of coopetition between LSPs and HSPs could thus be particularly relevant and constitute a basis for further investigation through field interviews.

As in any research endeavour, limitations are inevitable and are worth pointing out. The main limitations here concern the methods used to investigate the phenomenon. When analyzing secondary data (i.e. annual reports), the study is limited by what organizations say (size of the report) and the way they use words (style and length), which can in some cases diverge from reality. Nevertheless, as part of a larger research program, this study contains several avenues for future investigations. As pointed out in the discussion section, the results do not allow us to

discuss the concrete details of how HOs provide services to each other and particularly the "swapping" services mentioned in the results section. Field data collection is ongoing to fill that gap. An exploration of stakeholders' relations in such a complex field will lead us to examine the identity and role of the humanitarian logistics customer (Oloruntoba and Gray, 2009) and the part played by service providers (HSPs or LSPs) in service triads (Heaslip, 2016).

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[Insert Appendix 1 about here]

Table 3.1 Study Sample

Name	Mission	Geog. Scope (# countries)	Demo. Scope (# people)	Funding	Focus						Activities										
					Emergency	Development	Agriculture	Food security	Education	Rights	Watsan	Nutrition	Healthcare	Rehabilitation	Children	Medical	Training	Camp Man.	Shelter	Protection/Sec.
ACTION AID	International organisation, working with over 15 million people in 45 countries for a world free from poverty and injustice	> 45	>15M	€229M	*X*	*X*		*X*	*X*	*X*										
ACTION CONTRE LA FAIM	ACF's mission consists of saving lives via the prevention, detection and treatment of malnutrition, in particular during and following disasters and conflicts	>50	14.7M	€307.6M	*X*	*X*		*X*			*X*	*X*	*X*							
ADVENTIST DEVELOPMENT AND RELIF AGENCY INTERNATIONAL	ADRA works with people in poverty and distress to create just and positive change through empowering partnerships and responsible action	130 Local offices	15.7M	58,431,576 USD	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*		*X*			
AKSHAYA PATRA FOUNDATION	The Akshaya Patra Foundation strives to fight issues like hunger and malnutrition in India, by implementing the Mid-Day Meal Scheme in the government schools and government-aided schools.	India	1.65M	29,523.39 Lackh		*X*						*X*			*X*					
AMDA	International organization dedicated to realize a peaceful world community through humanitarian efforts in medical health care sector	>50	-	-		*X*		*X*	*X*				*X*			*X*	*X*				
AMERICAN REFUGEE COMMITTEE	ARC works with its partners and constituencies to provide opportunities and expertise to refugees, displaced people and host communities	-	>3M	45,075,829 USD		*X*			*X*		*X*	*X*	*X*				*X*	*X*	*X*	*X*
AMERICARES	Health-focused relief and development organization that responds to people affected by poverty or disaster with life-changing medicine, medical supplies and health programs	>90	>25M	926.3 M USD	*X*	*X*							*X*			*X*	*X*			

AMREF	We are committed to improving the health of people in Africa by partnering with and empowering communities, and strengthening health systems.	Africa	31.5M	86,57 M USD	*X*	*X*			*X*			*X*			*X*	*X*			
BROT FUR DIE WELT	In more than 90 countries all across the globe we empower the poor and marginalised to improve their living conditions	79	-	€255M		*X*		*X*	*X*			*X*		*X*					
CARE	CARE works around the globe to save lives, defeat poverty and achieve social justice.	94	80M	€725,64M	*X*	*X*		*X*			*X*	*X*							
CARITAS INTERNATIONALIS	Caritas responds practically to humanitarian crises such as natural disasters, conflict and the effects of climate change.	165 National offices	-	-	*X*	*X*		*X*				*X*							
CATHOLIC RELIEF SERVICES	Promote human development by responding to major emergencies, fighting disease and poverty, and nurturing peaceful and just societies	112	121M	917,758,000 USD	*X*		*X*		*X*		*X*		*X*						
CORDAID	CORDAID has been providing emergency relief and fighting poverty and exclusion in the world's most fragile and conflict-affected situations for more than a century	46	>1.2M	€151.9M	*X*	*X*		*X*	*X*	*X*			*X*		*X*				*X*
DANISH REFUGEE COUNCIL	We assist refugees and the displaced, protect their rights and empower them towards a better future	>30	-	2,852DKKm		*X*		*X*	*X*		*X*							*X*	*X*
DIRECT RELIEF	Improve the health and lives of people affected by poverty and emergencies.	>80	-	897 M USD	*X*	*X*						*X*		*X*					
DORCAS AID INTERNATIONAL	We strive for lasting change for those who live in poverty, are excluded, or are caught in a crisis	13	770000	€25,983,690	*X*	*X*							*X*						
FEED THE CHILDREN	Providing hope and resources for those without life's essentials	19	5.9M	473,7M USD				*X*	*X*		*X*	*X*				*X*			
FOCUS HUMANITARIAN ASSISTANCE	International crisis response and disaster risk management agency. We provide emergency relief to communities suffering from natural disasters or man-made crises	14	-	6,574,680 USD	*X*	*X*	*X*									*X*		*X*	
FOOD FOR THE HUNGRY	We provide life-changing resources such as clean water, medical aid, food, equal educational opportunities to girls and boys, vocational training and empowerment in the midst of unimaginable hardships	-	12,712,942	129,454,104 USD	*X*	*X*	*X*		*X*			*X*	*X*		*X*				

GAIN	Advance nutrition outcomes by improving the consumption of nutritious and safe food for all people, especially those most vulnerable to malnutrition	>30	768M	51,485,722M USD			*X*	*X*				*X*									
GAVI	Saving children's lives and protecting people's health by increasing access to immunisation.	73	62M	1.7B USD	*X*	*X*								*X*		*X*		*X*			
GREEN CROSS INTERNATIONAL	Respond to the combined challenges of security, poverty and environmental degradation to ensure a sustainable and secure future	-	-	-		*X*			*X*	*X*	*X*						*X*				
HANDICAP INTERNATIONAL	Working in situations of poverty and exclusion, conflict and disaster.	56	>2M	€150,8M	*X*	*X*					*X*		*X*	*X*						*X*	*X*
INTERNATIONAL COMITTEE OF THE RED CROSS	Protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance	>80	--	1,67B CHF	*X*	*X*	*X*	*X*		*X*	*X*		*X*				*X*	*X*		*X*	*X*
INTERNATIONAL FEDERATION OF THE RED CROSS	We act before, during and after disasters and health emergencies to meet the needs and improve the lives of vulnerable people	-	270,7M	331M CHF	*X*	*X*		*X*		*X*	*X*		*X*					*X*		*X*	*X*
INTERNATIONAL MEDICAL CORPS	We provide training and deliver emergency health care and related services to those affected by conflict, natural disaster and disease no matter where they are, no matter what the conditions.	35	8.9 M	177,7M USD	*X*	*X*		*X*			*X*		*X*			*X*	*X*	*X*			
INTERNATIONAL ORGANIZATION FOR MIGRATION	IOM works to help ensure the orderly and humane management of migration, to promote international cooperation on migration issues, to assist in the search for practical solutions to migration problems and to provide humanitarian assistance to migrants in need, including refugees and internally displaced people	64	28.8M	-	*X*	*X*					*X*						*X*	*X*	*X*	*X*
INTERNATIONAL RESCUE COMMITTEE	Responds to the world's worst humanitarian crises and helps people whose lives and livelihoods are shattered by conflict and disaster to survive, recover, and gain control of their future	-	26M	739,9M USD	*X*	*X*			*X*		*X*		*X*					*X*		*X*	*X*
ISLAMIC RELIEF INTERNATIONAL	We strive to make the world a better and fairer place for the three billion people still living in poverty.	40	-	£110.4M	*X*	*X*		*X*	*X*		*X*		*X*								
KIMSE YOK MU	Aims to save the lives of endangered people, ease the griefs of victims of disasters and the vulnerable while protecting their dignity and increasing their resilience.	40	-	82.391.532,77 TL	*X*	*X*			*X*		*X*		*X*			*X*	*X*				

KINDERNOTHILFE	Enable girls and boys to live in dignity throughout their lives – free of poverty, suffering and violence.	31	1,970,600	€60.5M	*X*	*X*	*X*		*X*	*X*		*X*	*X*	*X*	*X*						
MEDECINS DU MONDE	Provide care, bear witness and support social change	45	3,6M	€95,219,819	*X*	*X*				*X*		*X*	*X*			*X*					
MERCY CORPS	Alleviate suffering, poverty and oppression by helping people build secure, productive and just communities		25M	363,2M USD	*X*	*X*	*X*	*X*	*X*		*X*		*X*		*X*						
MERCY SHIPS	Mercy Ships uses hospital ships to transform lives and serve nations, one at a time.	Africa	66,955	93,866,761 USD		*X*										*X*	*X*				
MEDECINS SANS FRONTIERES	Provides assistance to populations in distress, to victims of natural or man-made disasters and to victims of armed conflict.	70<	-	€1,443.8 M	*X*	*X*					*X*	*X*	*X*		*X*	*X*			*X*		
NORWEGIAN REFUGEE COUNCIL	We stand up for people forced to flee. NRC is a determined advocate for displaced people. When we witness injustices, we alert the world.	31	6.8M	3B NOK	*X*	*X*		*X*	*X*		*X*						*X*	*X*	*X*		
OPERATION ASHA	Expand access to services and products of a high quality at affordable prices to disadvantaged communities worldwide with a focus on delivery of health services.	India, Cambodia	16.4M	-		*X*										*X*	*X*				
OPERATION BLESSING INTERNATIONAL	Demonstrating God's love by alleviating human need and suffering in the United States and around the world	39	12.5M	308,087,380 USD	*X*	*X*		*X*	*X*		*X*		*X*			*X*					
OXFAM	Help create lasting solutions to the injustice of poverty. We are part of a global movement for change, empowering people to create a future that is secure, just, and free from poverty	>90	>21.5M	1,071B USD	*X*	*X*		*X*		*X*			*X*								
PARTNERS IN HEALTH	Provide a preferential option for the poor in health care.	10	-	113,2M USD		*X*							*X*			*X*					
PEOPLE IN NEED	We combat poverty, the roots of which we consider to be insufficient access to education, natural resources, as well as unjust treatment, discrimination, and poor administration	>30	-	65,147,238 USD	*X*	*X*		*X*	*X*		*X*	*X*			*X*				*X*	*X*	
SALVATION ARMY	The mission of IES is to provide support and assistance to Territories, Commands, Regions and other countries affected by disaster and conflict.	128	-	£56.44M	*X*	*X*										*X*	*X*				

SAVE THE CHILDREN INTERNATIONAL	We save lives by responding to humanitarian emergencies caused by natural disasters, disease outbreaks, armed conflict, and migration	60	>49M	2.2BN USD	*X*	*X*			*X*			*X*	*X*		*X*		*X*	
SURFAID INTERNATIONAL	We're a non-profit humanitarian organisation whose aim is to improve the health, wellbeing and self-reliance of people living in isolated regions connected to us through surfing	Indonesia	-	1,492,727 USD		*X*	*X*				*X*		*X*				*X*	
UNICEF	Save children's lives, to defend their rights, and to help them fulfil their potential	108	-	4,884M USD	*X*	*X*			*X*			*X*	*X*	*X*		*X*			*X*
WATERAID	Making clean water, decent toilets and good hygiene normal for everyone, everywhere.	21	9,6M	£85.5		*X*					*X*	*X*							
WORLD FOOD PROGRAM	Leading humanitarian organization fighting hunger worldwide, delivering food assistance in emergencies and working with communities to improve nutrition and build resilience.	80	82.2M	5.8 B USD	*X*	*X*		*X*				*X*					*X*		
WORLD JEWISH RELIEF	We respond on behalf of the Jewish community to catastrophic disasters worldwide, providing both immediate relief and longer-term recovery support	19	42,899	£6.3M	*X*	*X*	*X*					*X*	*X*	*X*					
WORLD VISION	Christian relief, development and advocacy organisation dedicated to working with children, families and communities to overcome poverty and injustice.	99	40M<	2,7M USD	*X*	*X*	*X*	*X*	*X*	*X*	*X*		*X*			*X*			
ZOA	Supports those who suffer because of violent conflicts and natural disasters in fragile states, irrespective of race, gender, ethnicity, religion or age.	15	1.5M	€40,600,058	*X*	*X*	*X*	*X*	*X*		*X*							*X*	

Table 3.2 Services performed by LSPs

Author(s)	Quotations
Berglund et al. (1999) p. 59	Activities carried out by a logistics service provider on behalf of a shipper, consisting of at least management and execution of transportation, and warehousing (if warehousing is part of the process). In addition, other activities can be included, for example inventory management, information related activities, such as tracking and tracing, value-added activities, such as secondary assembly and installation of products, or even supply chain management.
Skjott-Larsen et al. (2007) p. 269	Although these alliances may start with a narrow range of activities, there is a potential for a much broader set of value-added services, including simple fabrication, assemblies, re-packaging, and supply chain integration.
Bask (2001) p. 473	Companies focusing on logistics services add value to their customers by providing services in transportation, terminal activities, warehousing, forwarding, packaging, product manufacturing and logistics postponement, distribution, information processing, etc.

Cui and Hertz (2011) p. 1005	They provide a transport service and move material physically from point A to point B. Consolidating products and connecting carriers and clients. Coordinating clients, logistics intermediary firms and carriers in order to provide an integrated service.
Fulconis et al. (2006) p. 68	The most efficient LSPs are far from restricting themselves to activities of transport and handling of finished goods. On the contrary, they have broadened their value-added services, undertaking activities of shelf display, of site installation, of co-manufacturing and of wrapping or co-packing.
Fulconis et al. (2007)	Activities of LSPs have considerably evolved over the years from merely transporting to developing a package deal of services including additional customer services (after-sales services, customer billing, archiving, etc.) and new professions (site installation, co-manufacturing, wrapping…).
Hertz and Alfredsson (2003) pp. 140/141	A TPL provider is an external provider who manages, controls, and delivers logistics activities on behalf of a shipper. The activities performed can include all or part of the logistics activities but at least management and execution of transport and warehousing should be included. Typical services outsourced to TPL providers are transport, warehousing, inventory, value-added services, information services and design, and reengineering of the chain. Advanced value-added services could involve differentiated services for different customers, forming specific packaging, cross-docking, track and trace, offer special security systems, etc.
Hsiao et al. (2010) pp. 77/78	Level 1: activities include transportation and warehousing Level 2: activities include value-added activities, which refers to tasks normally performed by manufacturers but now being moved into distribution as part of final processing Level 3: This refers to the outsourcing of logistics planning and control activities, such as inventory management and transportation management. Level 4 (total outsourcing): This refers to outsourcing the distribution network management. At this strategic planning and control level, decisions are made concerning supply chain restructuring, for example, changes of the warehouse structure, reassignment of tasks between tiers, redistribution of inventory between tiers, changes in transportation network, mode,

	consolidation points, reassignment of roles and responsibilities among chain entities.
Lai (2004) pp. 385–386	In general, an LSP can be broadly defined as a provider of logistics services that performs all or part of a client company's logistics function. This consists of at least the managing and operating of the transportation and warehousing functions. An LSP can also provide other services such as materials management services (e.g. inventory management, information-related services (e.g. tracking and tracing) and value-added services (e.g. secondary assembly).
Pigeon and Sirois (2010) In Saglietto (2013) p. 106	Transport services (road, rail, sea, air) / transport support services (maintenance, handing, navigation, circulation, intermediaries in freight transport) / warehousing and storage services and third-party logistics service providers (all types of storage, labeling, offloading, stock control and management, organization, order input and execution, packing of orders, collection and packaging, marking and organization of transport) / courier and messenger services / logistics consultancy services and external contractors with no physical assets (4PL)
Prockl et al. (2012) p. 548	Basic logistics functions such as transport, transhipment and warehousing services that are relatively easy to define and mainly purchased based on price are increasingly [brought] into bundles of services and IT services.
Sharma and Choudhury (2014) p. 2	TPL providers cater to customers with services, which may extend beyond basic transportation functions such as warehousing, inventory management, information related services as well as assembly and manufacturing of products.
	Historically 3PLs provided traditional logistics services such as transportation and warehouse management. However, the increased volume and scope of services demanded from 3PLs have given rise to their changing role where today they are engaged in strategic coordination of their customer's supply chain activities.
Zacharia et al. (2011)	In this article, we argue that the role of 3PL has evolved from a provider of logistics services to that of orchestrator within the supply chain.

Table 3.3 List of keywords

After-sales services, Archiving, Assembly, Circulation, Co-manufacturing, Co-packing, Courier and messenger services, Cross-docking, Customer billing, Customization, Design, Distribution, Distribution network, External contracts, Forecasting, Handling, Information management, Information services, Installation of products, Intermediaries in freight transportation, Inventory Management, Invoicing, Labelling, Line haul, Logistics consultancy, Logistics postponement, Marking, Materials management, Navigation, Offloading, Order input and execution, Packaging, Packing of orders, Picking, Product consolidation, Product manufacturing, Repackaging, Secondary assembly, Shelf display, Simple fabrication, Stock control and Management, Storage, Supply Chain Integration, Supply Chain Management, Terminal activities, Track and trace, Transit, Transport organization, Transport support services, Transportation, Transshipment, Warehousing, Wrapping

Table 4.1 Word Frequency Query Results – Focus on the research keywords

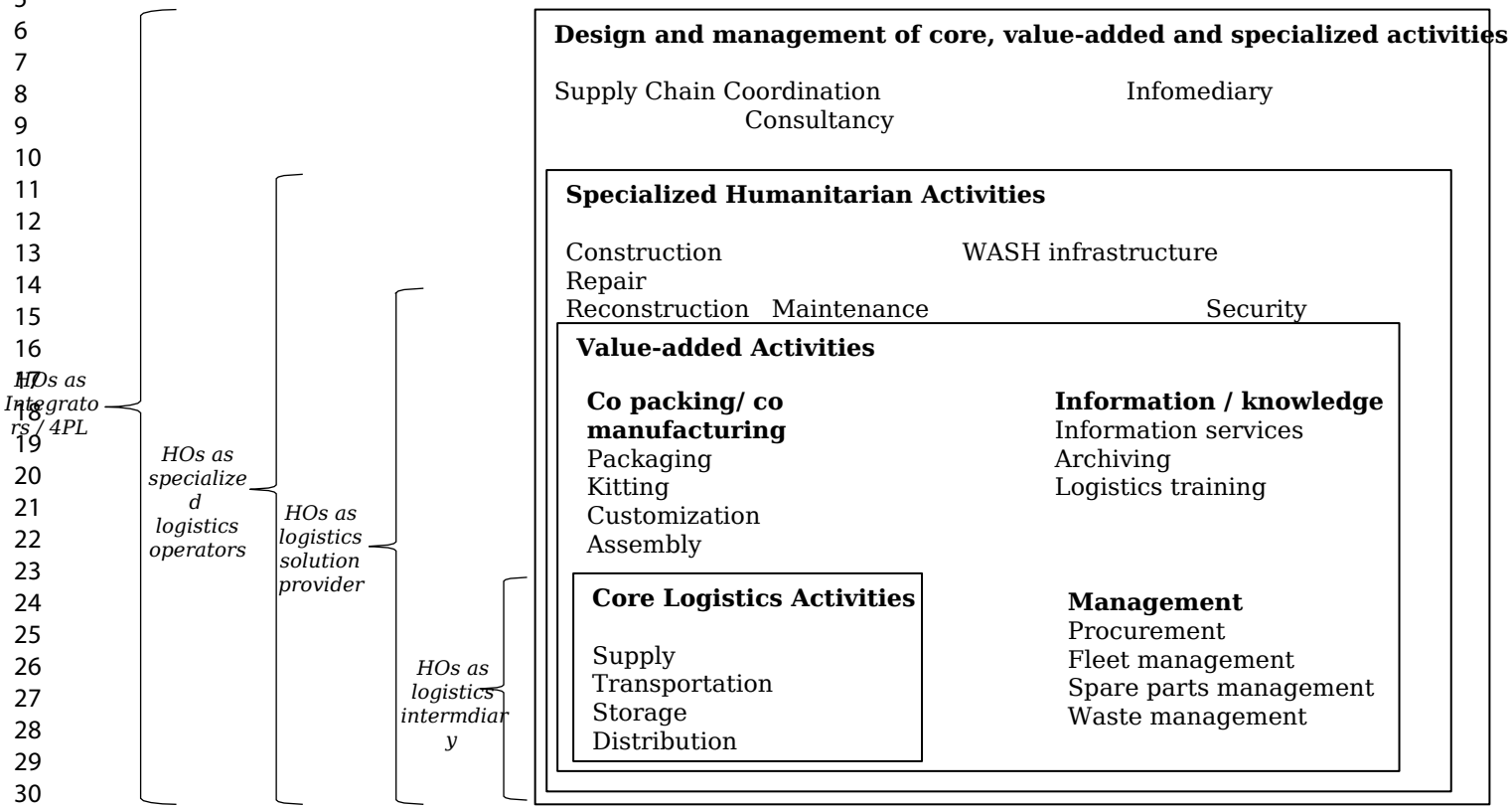
Word	**Length**	**Count**	***wt* (%)**	**Similar Words**
Supply	9	6512	0,12	supplied, supplies, supply, supplying
Distribution	13	6030	0,11	distribut, distribute, distributed, distributes, distributing, distribution, distributions
Tracing	7	4992	0,09	trace, traced, traces, tracing
Materials	9	4976	0,09	materi, material, material', materiality, materialization, materialize, materialized, materializing, materially, materials
Order	5	2449	0,04	order, order', ordered, ordering, orderly, orders
Provision	10	2408	0,04	provision, provisioned, provisioning, provisions
Logistics	9	1565	0,03	logist, logistic, logistical, logistically, logistics, logists
Assembly	8	1733	0,03	assemble, assembled, assembles, assemblies, assembling, assembly
Handling	8	1258	0,02	handle, handled, handles, handling
Stocks	6	877	0,02	stock, stock', stocked, stocking, stocks
Transit	11	1094	0,02	transit, transited, transiting, transition, transitional, transitioned, transitioning, transitions

Transport	10	1179	0,02	transport, transportability, transportable, transportation, transporte, transported, transporter, transporters, transportes, transporting, transports

Appendix 1 Matrix query results

	Archiving	Assembly	Billing	Circulation	Consolidation	Contract	Courier and Messenger	Cross-docking	Customization	Design	Distribution	Fabrication	Forecasting	Freight	Handling	Information management	Information Services	Installation	Inventory management	Invoicing	Labelling	Line-haul	Logistics	Manufacturing	Marking	Materials management	Navigation	Offloading	Order	Packing	Picking	Shelf	Shipment	Stock	Storage	Supply Chain	Terminal activities	Track & Trace	Transit	Transport	Warehousing	Wrapping	TOTAL per HO
AAI	0	50	7	0	6	24	0	0	4	24	13	0	8	0	4	0	1	3	0	0	0	0	0	0	4	0	2	0	22	3	1	0	0	13	0	0	0	12	12	14	0	0	*227*
ACF	1	5	1	0	2	2	0	0	0	16	21	0	1	0	1	6	0	0	0	0	0	0	19	0	6	0	0	0	21	0	0	0	1	5	3	14	0	5	6	6	0	0	*142*
ADRA	0	1	0	0	0	1	0	0	3	5	20	0	0	12	6	0	0	9	0	0	0	0	0	3	1	0	0	0	1	5	0	0	1	0	1	0	0	2	2	2	0	0	*75*
AmeriCares	0	0	2	0	1	2	0	0	0	2	6	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0	3	0	1	0	0	0	0	*27*
AMREF	0	1	4	0	1	4	0	0	3	17	11	2	0	1	0	2	3	2	0	0	0	0	1	1	18	0	1	0	13	1	1	0	0	1	1	0	0	3	5	6	0	1	*104*
APF	0	2	5	2	1	4	0	0	3	19	12	2	1	0	6	0	0	4	0	0	0	0	2	3	3	0	1	0	5	2	2	1	0	2	5	1	0	1	1	3	1	2	*96*
AR	0	1	0	0	0	1	0	0	0	4	12	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2	1	0	0	0	1	0	0	0	0	2	0	0	*27*
ARC	0	0	0	0	0	0	0	0	4	20	6	0	0	0	1	0	0	3	1	0	0	0	0	0	7	0	3	0	4	1	0	0	0	3	0	1	0	2	6	0	0	0	*62*
BfdW	0	5	2	0	4	5	0	0	1	10	11	0	6	0	4	0	0	2	0	0	1	0	0	1	4	0	1	0	54	2	4	0	0	0	0	1	0	5	6	0	0	0	*129*
CARE	0	0	9	0	8	1	0	0	0	2	2	0	0	0	0	0	0	1	4	0	0	0	0	0	11	0	0	0	4	0	0	0	1	1	2	1	0	2	0	3	0	1	*53*
Caritas	0	7	1	0	0	0	0	0	1	1	16	0	0	0	0	0	0	0	0	0	0	0	1	1	11	0	0	0	0	1	0	0	0	2	0	0	0	0	2	2	0	0	*46*
CordAid	2	0	1	0	12	56	0	0	8	41	18	2	2	0	5	0	0	4	0	2	30	0	3	7	5	0	0	0	15	1	0	0	0	23	5	5	0	33	47	13	0	0	*340*
CRS	0	0	24	0	0	3	0	0	1	11	6	2	0	3	0	0	0	0	0	0	0	0	0	3	45	0	0	0	8	1	1	0	0	1	1	1	0	2	5	2	0	0	*120*
DORCAS	0	3	0	0	14	25	0	0	6	60	42	0	3	3	10	0	0	10	1	0	0	0	22	1	2	0	0	0	42	2	0	1	14	36	0	0	0	7	4	14	0	0	*322*
DRC	0	0	0	0	1	10	0	0	0	8	10	0	0	0	7	0	1	3	0	2	2	0	3	0	2	0	1	0	11	0	0	0	0	0	0	0	0	0	2	0	0	0	*63*
DRI	3	0	19	0	0	18	0	0	2	16	26	0	0	6	1	0	0	0	11	0	0	0	7	9	83	0	2	0	5	10	0	0	15	4	4	1	0	2	0	16	3	0	*263*
FH	0	0	0	0	5	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	*17*
Focus	0	0	0	0	0	0	0	0	0	4	8	1	0	0	3	0	0	5	0	0	0	0	1	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	1	3	0	0	*30*
FTC	0	0	2	0	3	0	0	0	0	1	24	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	11	0	0	*48*
GAIN	0	3	8	0	7	0	0	0	2	14	19	0	0	0	0	0	0	1	0	0	1	0	1	4	3	0	1	0	11	0	0	0	0	1	2	2	0	3	1	2	0	0	*86*
GAVI	0	3	70	0	0	5	0	0	2	21	20	0	14	1	4	0	0	3	1	1	5	0	13	84	10	0	0	0	8	5	1	0	3	26	7	58	0	57	59	15	0	0	*496*
GCI	1	18	4	1	2	0	1	0	0	28	12	0	0	0	2	0	0	10	2	0	0	0	0	2	17	0	3	0	22	0	1	0	0	4	4	0	0	5	3	3	0	0	*145*
HI	0	0	0	1	3	7	0	0	0	23	29	0	0	1	2	0	0	2	3	0	1	0	13	0	4	0	0	0	14	0	0	0	0	7	2	0	0	0	0	10	0	0	*122*
ICRC	53	191	53	2	200	95	5	0	35	256	1259	9	11	0	391	90	2	125	12	11	0	0	253	16	82	1	1	0	246	2	6	0	1	92	38	29	0	688	109	172	0	5	*4541*

IFRC	0	14	2	1	8	5	0	0	2	19	16	0	1	0	4	0	0	0	0	0	0	0	17	1	9	0	1	0	15	1	0	0	0	3	4	3	0	12	2	3	0	0	*143*
IMC	0	1	13	0	0	6	0	0	0	5	3	0	0	0	2	0	0	0	3	0	0	0	2	1	57	0	0	0	2	2	1	0	0	3	0	0	0	0	0	0	0	0	*101*
IOM	0	0	0	0	3	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	5	0	0	0	0	1	0	1	0	17	18	2	0	0	*70*
IRC	0	0	23	0	0	3	0	0	6	9	13	0	1	0	1	0	0	0	0	0	0	0	0	0	50	0	8	0	2	2	0	0	0	2	0	0	0	1	4	1	0	0	*126*
IRW	0	8	5	0	13	1	0	0	1	14	25	1	0	0	0	0	0	10	1	2	0	0	1	0	12	0	0	0	9	11	0	1	0	25	1	0	0	0	4	1	0	0	*146*
Kindernothilfe	0	0	1	0	1	0	0	0	1	12	3	0	4	0	4	0	0	1	0	0	0	0	0	0	4	0	0	0	10	0	1	0	0	0	0	0	0	2	3	2	0	1	*50*
KyM	0	0	0	0	0	0	0	0	0	1	12	0	1	0	1	0	0	5	0	0	0	0	2	1	0	0	0	0	7	1	0	0	0	0	2	0	0	0	0	0	0	0	*33*
MC	0	0	0	0	3	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	4	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	*16*
MDM	0	8	6	0	15	3	0	0	3	6	17	1	0	0	3	0	0	1	0	0	1	0	7	2	18	0	0	0	67	2	0	0	0	3	2	0	0	1	18	3	0	0	*187*
MSF	1	4	0	1	2	15	0	0	0	17	109	0	1	7	4	0	0	8	1	0	2	0	18	1	7	1	1	0	30	3	9	3	0	4	6	1	0	13	29	36	0	0	*334*
MSUS	0	1	0	0	4	0	0	0	2	2	1	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	2	0	5	0	0	0	0	0	1	0	0	1	0	0	0	0	*25*
NRC	0	3	0	3	2	4	0	0	3	27	71	1	1	0	1	0	6	6	0	0	0	0	10	0	9	0	2	0	20	5	0	0	0	3	3	0	0	2	19	7	0	0	*208*
OBI	0	0	3	0	0	0	0	0	0	2	15	0	0	0	0	0	0	0	0	0	0	0	2	3	1	0	1	0	2	1	0	0	0	1	0	0	0	0	1	2	0	0	*34*
OpASHA	0	2	5	0	0	2	0	0	0	1	9	0	0	0	2	0	0	3	0	0	0	0	0	0	1	0	0	0	0	1	5	0	0	0	0	0	0	26	0	0	0	0	*57*
OXFAM	0	12	5	2	10	15	0	0	3	22	35	4	5	0	4	0	0	7	0	0	0	0	2	0	10	0	1	0	22	1	3	0	0	3	2	6	0	8	2	9	0	0	*193*
PIH	0	0	5	0	0	2	0	0	0	7	1	0	0	0	0	0	0	3	0	0	0	0	1	0	14	0	1	0	0	0	1	0	0	3	0	0	0	1	0	3	0	0	*42*
PIN	22	3	8	0	2	24	1	0	7	20	52	0	2	0	10	0	1	8	36	5	2	0	3	6	13	0	4	0	41	1	1	0	0	12	5	1	0	1	27	11	0	0	*329*
SA	0	1	7	0	0	0	0	0	2	7	10	0	1	2	0	0	0	1	2	0	0	0	0	1	1	0	0	0	10	0	0	0	0	0	0	0	0	3	1	3	0	0	*52*
SAI	0	0	3	0	4	2	0	0	0	8	0	0	0	0	0	0	0	1	0	0	0	0	1	0	12	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	*36*
SC	0	5	0	0	3	1	0	0	0	12	7	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	5	1	0	0	0	0	0	0	0	3	0	0	0	0	*39*
UNICEF	0	11	8	0	1	4	1	0	1	16	18	0	2	1	1	0	1	5	0	0	0	0	1	3	13	0	1	0	12	0	3	0	0	4	2	3	0	14	10	6	0	1	*143*
WAterAid	0	2	6	0	30	16	0	0	5	29	5	0	3	0	0	1	8	6	0	0	0	0	0	0	4	0	0	0	6	1	0	0	0	1	1	0	0	7	6	0	0	0	*137*
WFP	0	0	0	0	0	1	0	0	1	4	7	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	*22*
WJR	4	0	14	0	2	0	0	0	0	23	19	0	0	0	1	0	0	2	0	0	0	0	0	0	12	0	0	0	19	3	0	0	0	0	0	0	0	0	0	2	0	0	*101*
WVI	0	7	2	0	0	1	0	0	0	10	9	0	0	0	3	0	0	0	0	0	0	0	1	1	4	0	0	0	4	0	0	0	0	0	0	0	0	6	3	2	0	1	*54*
ZOA	0	0	0	2	4	37	0	0	3	31	34	0	2	0	1	0	0	13	13	0	0	0	1	4	6	0	0	0	24	1	0	0	0	17	4	0	0	6	5	10	0	0	*218*
TOTAL per keyword	*87*	*372*	*328*	*15*	*377*	*408*	*8*	*0*	*116*	*920*	*2107*	*26*	*70*	*37*	*491*	*99*	*24*	*268*	*96*	*23*	*46*	*0*	*417*	*160*	*584*	*2*	*44*	*0*	*832*	*77*	*42*	*6*	*42*	*309*	*109*	*133*	*0*	*959*	*424*	*402*	*4*	*13*	


HOs as Integrators / 4PL
HOs as specialized logistics operators
HOs as logistics solution provider
HOs as logistics intermdiary
Design and management of core, value-added and specialized activities
Supply Chain Coordination
Consultancy
Infomediary
Specialized Humanitarian Activities
Construction
Repair
Reconstruction
Maintenance
WASH infrastructure
Security
Value-added Activities
Co packing/ co manufacturing
Packaging
Kitting
Customization
Assembly
Information / knowledge
Information services
Archiving
Logistics training
Core Logistics Activities
Supply
Transportation
Storage
Distribution
Management
Procurement
Fleet management
Spare parts management
Waste management