

Agility and resource dependency in ramp-up process of humanitarian organizations

Agility and
resource
dependency

845

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Abstract

Purpose – The ramp-up in humanitarian logistics operations is a stage when the demand surges, often at the start of an emergency. In response, agility is a key strategy used by the humanitarian organizations (HOs). However, the HOs are constrained by their existing resources and have to respond in the ramp-up process under their resource dependency. The purpose of this paper is to develop a framework on agility-building strategies used by HOs for the ramp-up.

Design/methodology/approach – This study applies both the dynamic capabilities perspective and resource dependence theory to humanitarian relief operations, and develops four testable propositions to explore the agility-building strategies of the HOs for the ramp-up process. A multiple-case study is conducted on six international HOs operating in Indonesia to verify them, in addition to an extensive literature search.

Findings – The case study shows that the human resource management, pre-positioning, standardization and supplier management of the HOs are all related to their resources and environment in the ramp-up process. The authors highlight the practical differences between the few super large, resource rich and centralized HOs with the second-tier HOs.

Research limitations/implications – Given the small sample size and single country as the site of study, some findings may not be applicable to the other HOs or in other regions.

Practical implications – The propositions could be applicable to other HOs operating under similar environments, and potentially to the commercial enterprises operating in a highly volatile environment with severe resource scarcity.

Originality/value – This study provides new insights into ramp-up operations and into how HOs build their agility and reduce their resource dependencies. Theoretically, the paper applies two established theories in the strategic management literature to a new field.

Keywords Strategic management, Humanitarian logistics, Emergency preparedness, Agility strategy, Dynamic capabilities, Resource dependency, Ramp-up process

Paper type Research paper

1. Introduction

For the past few decades the increasing impact and complexity of natural and manmade disasters have pressured humanitarian organizations (HOs) to improve the effectiveness and efficiency of their relief operations (IFRC, 2016). The pressure has reached the greatest in the ramp-up stage when there is a surge in demand for relief supplies and other resources



such as manpower (Tomasini and Van Wassenhove, 2009). Such pressure has called for the use of appropriate strategies in the HOs to prepare ahead before the start of an emergency (Scholten *et al.*, 2010). In response, many HOs have started to apply commercial supply chain management strategies and practices in their logistics operations for more effective preparation. One of these strategies is agility, the organizational ability to respond to external changes rapidly. It has been identified as a key to effective humanitarian logistics operations (Oloruntoba and Kovács, 2015).

Notwithstanding that the literature has a consensus on the importance of agility strategy in humanitarian relief operations (Scholten *et al.*, 2010), there have been very few empirically validated studies of agility in humanitarian logistics (Oloruntoba and Kovács, 2015). And most of the scholarly works in the field are based on only a few super large global HOs such as the World Food Programme (WFP) and the International Federation of Red Cross and Red Crescent Societies (IFRC) (e.g. L'Hermitte *et al.*, 2016). It has been proposed that the IFRC's Emergency Response Unit (ERU) is an example of the best practices for improving the responsiveness of HOs (Jahre and Fabbe-Costes, 2015), but its methods may not be workable for a smaller second-tier HO with a decentralized structure and less funding.

There has been much interest in applying quantitative models to the field of humanitarian logistics in recent years (Van Wassenhove and Pedraza-Martinez, 2012; Gupta *et al.*, 2016). Many sophisticated models have been developed on stock pre-positioning and facility location in the preparation stage (e.g. Rezaei-Malek *et al.*, 2016; Manopiniwes and Irohara, 2017). However, those models may not be applicable for many of the second-tier HOs, as they typically are resource-light with limited funding (Oloruntoba and Kovács, 2015). Therefore, gaining an appreciation of how the different types of HOs build their agility internally and leverage external resources to respond effectively in the ramp-up process would definitely help to inform the body of knowledge and the community of practices.

Unlike the few centralized, super-large HOs linked to governments or multinational organizations (e.g. the UN), second-tier HOs are typically decentralized by region and country, with more development programs being conducted at the country level. Being resource-light without many dedicated resources for emergency operations, their budgets for pre-positioning and ramp-up operations are limited. To compensate for the shortage of tangible resources, these HOs have to rely more on their intangible capabilities, leveraging resources from within and outside of the organization in ramp-up operations. The dynamic capabilities perspective (DCP) is a powerful theoretical tool in strategic management (Teece and Pisano, 1994; Teece *et al.*, 1997), which such HOs can apply to develop appropriate agility-building strategies in their ramp-up operations (Oloruntoba and Kovács, 2015). In addition to the DCP, resource dependence theory (RDT) can assess the fit between the HO agility-building strategies and existing resources, capabilities and constraints (Pfeffer and Salancik, 1978). Both the DCP and RDT were applied to the ramp-up process investigation in this study, and that led to four testable propositions. They were then validated in a field study in Indonesia involving total six HOs, one super-large and five second-tier ones.

Practically, this study extends the scope of the current HO agility literature. Several recent humanitarian logistics studies have sought to integrate the preparedness stage with emergency response for the most realistic solution (e.g. Manopiniwes and Irohara, 2017; Wang *et al.*, 2018). Most such studies have remained on the operational level and their findings are more suitable for government agencies or for a few super-large HOs with loose resource constraints. This study, in contrast, has focused more on the strategic responses of second-tier HOs under various resource constraints. Its findings may therefore have greater applicability to the field of humanitarian operations. They provide some new insights into ramp-up operations and into how HOs build their agility and reduce their resource dependencies. The findings of this study can be applied to the other second-tier HOs operating under similar environments, and potentially to commercial enterprises operating in a highly volatile environment with severe resource scarcity.

Theoretically, the study offers a new theoretical perspective, combining the DCP with the RDT, to explore the ramp-up process of HOs strategically, an important process in humanitarian operations.

2. Literature review

In a typical emergency humanitarian relief operation, after a quick assessment of the goods and services needed, a new supply chain is created, configured and activated within a few days in response to the emergency (Thomas, 2003). Importantly, it is always too late to start the configuration of a new supply chain after a disaster has occurred (Tomasini and Van Wassenhove, 2009). To respond effectively, HOs must prepare their resources with a clearly defined response plan well before the onset of an emergency. In short, it must develop agility capabilities.

In commercial supply chain management, supply chain risk is a critical issue for chain members to manage, ranging from the problems of upstream suppliers (e.g. tier-two supplier failures) to that of the downstream customers (e.g. customer requirement modification) (Tang, 2006). Building an agile supply chain is therefore a key risk-mitigation strategy that allows firms to respond smoothly to changes in supply, demand or the general market environment (Lee, 2004). Agility thus covers operations, tactics and strategies, and requires a supportive culture to facilitate cooperation among various entities within and without the organization (Gligor and Holcomb, 2012).

In the context of humanitarian logistics with high demand uncertainty, agility is naturally a crucial aspect of emergency relief operations (Christopher *et al.*, 2006; Oloruntoba and Kovács, 2015). This has been discussed in early studies such as that of Oloruntoba and Gray (2006). Later, Charles *et al.* (2010) developed a framework for identifying elements of agility as well as the corresponding capabilities to measure the agility of a humanitarian supply chain. However, most of the capabilities reside at the operational level such as volume flexibility and velocity without strategic considerations. Empirically, Scholten *et al.* (2010) reported on agility among HOs, but again considering mainly on the operational level, though mentioning some strategic issues such as process and network integration.

On the operational level, a common approach to improving agility is pre-positioning. In other words, locally procured relief items are stockpiled in areas vulnerable to natural disasters before an emergency occurs. Early studies like Beamon and Kotleba (2006) developed an inventory management model to improve the responsiveness of HOs to the exogenous demand uncertainty. Balçık and Beamon (2008) then proposed a model incorporating both inventory and facility location decisions for disaster relief. Campbell and Jones (2011) further examined the facility location problem for pre-positioning supplies as well as the inventory level when some locations were vulnerable to disasters. To mitigate such supply risks, dual sourcing has been proposed, and Iakovou *et al.* (2014) conducted a simulation for slow-onset disruptions in humanitarian operations and shown its effectiveness.

In addition to preparing beforehand, scholars have discussed approaches such as ordering emergency supplies and hiring additional staff for relief operations. Chakravarty (2011) developed a model which integrates both preparation and responses considering two types of uncertainty, disaster intensity and on-site relief needs. While the intensity is known after a disaster strikes, the needs for relief supplies usually remain uncertain for a few more days due to disruptions in the information flow.

Moving from the operational to the strategic level, L'Hermitte *et al.* (2015) proposed an integrated approach to studying agility in humanitarian logistics by applying the DCP. That framework covers four strategic level agility capabilities: purposeful, action focused, collaborative and learning oriented. The proposed framework has been empirically examined in a single case study involving 6th WFP (L'Hermitte *et al.*, 2016) and then in a

survey of humanitarian workers (L'Hermitte *et al.*, 2017). They showed the effectiveness of the framework in analyzing agility on a strategic level, but so far no published study has systematically explored the agility capabilities building of HOs to prepare for the ramp-up process when a disaster strikes and the demand surges.

Prior scholarly work has tended to focus on the preparation practices of a few super-large HOs. For example, Jahre and Fabbe-Costes (2015) studied the IFRC's responsiveness, and both Cozzolino (2012) and L'Hermitte worked with the WFP. Considering HOs under different levels of resource dependency, this study explored the ramp-up process mainly among second-tier HOs. It applied both the DCP and RDT in an attempt to investigate how the strategic and supply network levels of an organization interact to build agility capabilities and how these agility capabilities lead to agile responses in ramp-up operations.

The DCP is a core perspective in the resource-based view of organizations, a management theory which seeks to explain the source of firm competitive advantage (Wernerfelt, 1984; Barney, 1991). The theory proposes that for sustainable competitive advantage a firm should develop firm-specific resources which are difficult for competitors to imitate or substitute. Dynamic capabilities tend to fit that description, being described as "[...] the ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece *et al.*, 1997, p. 516). The DCP provides a structure to explain the source of competitive advantage by integrating resources on various levels and by considering their redeployment, reconfiguration and recombination as the environment changes. Operationally, the DCP has proposed three key types of capabilities: transformation, integration and learning.

Shifting from the internal to the external aspects of an organization, the RDT proposes that organizations are constrained by their environment and they attempt to manage their resource dependencies through various inter-organizational arrangements such as alliances and joint ventures (Pfeffer and Salancik, 1978). Complementing the DCP, the RDT shows how organizations actively manage their relationships with external entities to reduce their vulnerability and boost their autonomy, legitimacy and performance (Drees and Heugens, 2013). In the context of humanitarian operations, the HOs are often constrained by a lack of funds. They generally respond with three possible strategies: adaptation, shaping and avoidance (Mitchell, 2014). Adaptation involves strategies such as alignment and subcontracting when the HOs are the weaker party. Shaping includes donor education and compromise as HOs bargain with their donors. Avoidance refers to approaches like funding source diversification, funding liberation and specialization, which lessen vulnerability of HOs to external control.

3. Theoretical framework and propositions

Returning to the DCP and its three types of capabilities, transformation refers to the transformation of a firm's structure with the necessary internal and external reconfiguration when the environment experiences a great change. Integration refers to the managerial ability to integrate an organization's internal and external activities (Teece *et al.*, 1997). In the context of emergency relief operations by an HO, transformation will be of utmost importance when an HO has to quickly mobilize all its resources during the ramp-up process. This mobilization requires significant transformation of existing resources as adding new resources in such a short period is virtually impossible. Next to transformation, integration would also be important as the HO has to engage its partners for emergency operations. To make the transformation and integration of the HO effective, both agility enablers within the organization and the agility capabilities linked with the external environment are needed (L'Hermitte *et al.*, 2015). Three agility enablers, people, processes and technology, as well as the collaborative capability, the only proposed capability that relates to the external organizations, are then discussed to develop the propositions.

3.1 *People as agility enabler*

For an HO, people as an agility enabler have to include both internal and external manpower. An agile workforce should be experienced, multi-skilled, adaptable, team oriented, able to handle uncertainty and stress and proactive in dealing with threats and opportunities (Sherehiy *et al.*, 2007). In the context of humanitarian logistics, manpower is a critical resource but often in shortage due to funding constraints (Kovács and Spens, 2009). Among the three possible responses suggested by the RDT (Mitchell, 2014), adaptation and shaping would be more feasible for HOs due to their dependency on international donors. They would have to use either an adaptation or shaping approach to build both internal and external manpower agility. The former refers to the equipping of the current staff to multi-task, and the latter refers to the developing a pool of potential staff capable of quick recruitment and integration into emergency operations.

In the context of humanitarian operations, building internal manpower agility often means fitting the staff for both routine development or admin tasks and emergency relief operations. Practically, its implementation varies with the organization's structure and resources. The few super-large HOs with sufficient funding tend to have centralized structures with trained staff working at the headquarters but on standby for emergency field work. Their approach to funding dependency would be more of shaping – educating their donors about their work and promoting it as exemplifying best practices. In contrast, the second-tier HOs who are short of funds for emergency preparations have to choose adaptation in response to their resource dependency. It would be more practical for them to train staff supported by other programs to be equipped for emergency operations. Regardless of the approaches to counter resource dependency, the key to internal manpower agility is transformation capability.

Building external manpower agility is also important. In humanitarian operations, external manpower can be either volunteers (sometimes from overseas) or local short-term contract workers. Indeed, an HO needs to deploy another set of strategies to integrate its external manpower so that it works smoothly with the permanent staff during an emergency:

- P1.* An HO would transform its existing staff and integrate external manpower for effective ramp-up in response to an emergency, using either adaptation or shaping approach to reduce its resource dependency.

3.2 *Process as agility enabler*

Process as an agility enabler is defined as the way that an organization establishes structures and systems to achieve its objective (Sherehiy *et al.*, 2007). In the context of humanitarian operations, it refers to the flexibility of internal processes to meet emergency needs rapidly. Due to the high degree of uncertainty surrounding the emergency needs before a disaster strikes, HOs need to make various preparations. Pre-positioning supplies can be very important (e.g. Balcik and Beamon, 2008; Campbell and Jones, 2011), but practical constraints such as inadequate funding limit their scope for pre-positioning. Resources usually flow in large quantity only after the onset of a disaster (Kovács and Spens, 2009). A few super-large HOs with strong institutional support may be able to take the avoidance approach by pre-positioning significant amounts of key supplies. In contrast, most second-tier HOs have to take the adaptation approach to overcome their funding constraints:

- P2.* An HO would transform its available funds for effective ramp-up, using either adaptation or avoidance approach to reduce its resource dependency.

3.3 *Technology as agility enabler*

Technology can be broadly defined as the “science of craft” that includes “principles, processes, and nomenclatures” involving the “applications of science” (Bigelow, 1829). In the

context of humanitarian operations, normal technology enablers like information technology tend to be inapplicable due to a country's low development status as well as the damage caused by a disaster (Kovács and Spens, 2009). Standardization may, however, be a useful strategy (Holweg, 2005). There have been strong calls in the literature for greater standardization across all the emergency responses activities (e.g. Beamon and Kotleba, 2006; Kovács and Spens, 2011). The DCP suggests that standardization facilitates integration among units within and without an organization. But it is constrained by an HO's structure and resources, so HOs pursuing standardization may have to overcome both internal and external resistance to improve integration within and without. Here the resource dependency to be managed can be both internal and external. HOs with a more centralized structure and more centralized resources would be more integrated internally, and are expected to pursue this enabler more globally, similar to their approach of shaping in response to funding constraints. On the other hand, second-tier HOs with a more decentralized structure would be less likely to pursue standardization globally. They may instead implement some forms of standardization at the local level (by country or region), both internally and externally with their partners to facilitate integration in the ramp-up process:

- P3. An HO with a more centralized structure would pursue standardization more globally for operational integration in the ramp-up process, while an HO with more decentralized structure would pursue standardization more locally.

3.4 Collaborative capability for agility

L'Hermite *et al.* (2015) proposed four capability builders for organizations – being purposeful, action focused, collaborative and learning oriented. Among the four, collaborative capability relates specifically to external relationships. The role of collaboration in emergency preparedness is an important but less-explored topic (Balcik *et al.*, 2010). It seems intuitive, therefore, that vertical collaboration of an HO with its suppliers could improve the HO's agility.

From the RDT perspective, the few super-large HOs with ample funds would take the avoidance approach when dealing with suppliers to avoid supplier dependency. They pre-position by themselves. However, HOs that cannot order sufficient supplies beforehand must collaborate with commercial partners during the preparedness phase to lower their pre-positioning costs. In RDT terms, this can be seen as a type of shaping. They do not have the funds to make binding pre-disaster commitments for supply purchases, but they may instead sign loose framework agreements without definite order dates and amounts. The commercial suppliers may be willing to accept this arrangement and bear the cost of storage for an HO if it promises to be a big customer when disaster strikes. According to RDT, the framework agreement can be seen as a form of inter-organizational arrangement which benefits both parties and reduces their resource dependency (Drees and Heugens, 2013).

Such framework agreements can be considered as a loose form of collaboration between a pure market transaction and a formal partnership. HOs often spend much time negotiating with their key suppliers and signing such framework agreements which fix the prices or set price ranges but neither the order quantities nor the order time. Due to inflation and other uncertainties, they are normally time limited, often lasting only 6 or 12 months. Such agreements expedite procurement in the emergency response phase and provide some quantity assurance, but consume time and effort, and may dampen suppliers' interest if no large-scale emergency happens during the period of the agreement. In essence, it is the transformation of the HO's effort and power during the preparation phase for better-integrated emergency operations later:

- P4. An HO with greater demand for emergency operations would use either avoidance or shaping approach when dealing with its key suppliers for more effective integration in the ramp-up process and reducing its resource dependency.

4. Research methodology

A case study is conducted on the agility-building strategies of HOs as it is one of the most powerful tools for qualitative research (Voss *et al.*, 2002). Following the guidelines of Gammelgaard (2017) and Vega (2018), the first question asked is “why,” the purpose of the case study. As the topic of study is to explore the agility-building strategies of HOs where the current literature is scant, especially for second-tier HOs, a qualitative approach with the participation of multiple HOs to solicit an in-depth understanding of the ramp-up process and related agility-building strategies is justified.

The second question is “what” (Vega, 2018), i.e. identifying the study focus. While it is ideal to observe a real ramp-up process in an emergency and present the narrative events by time, but in reality that is almost impossible. Those involved have neither time nor energy to devote to research at such times. The second best is to obtain a snapshot of the strategies used by the HOs during the preparation stage for future ramp-ups. For a suitable unit of analysis, the study had to focus on one country to limit the time spent in the field. This country should provide ample evidence of natural disasters occurring on a regular basis, coupled with the presence of numerous HOs (including both super-large and second-tier ones).

Indonesia, the largest nation in Southeast Asia with over 260m people, is then chosen. It is country which suffers natural disasters such as tsunamis, earthquakes, flash floods and volcanic eruptions relatively frequently. As a result, many HOs are active there with extensive relief and development programs in the field. The HOs operating in Indonesia were then the unit of this study. In addition, Indonesia is a democracy with a vibrant private sector. Most international HOs operating in Indonesia focus on development rather than on emergency relief, but many jump into emergency operations for a short period after a large-scale disaster. Their operations in Indonesia are thus quite different from the activities of HOs in some war-torn or famine-stricken countries where emergency relief is routine. The ramp-up and the agility-building strategies are thus more important.

For the third question, “how practically” (Vega, 2018), limited knowledge and access to the HOs forced us to use convenience sampling in this explorative study (Miles and Huberman, 1994). The research team was already working closely with one of the HOs (designated as Organization D), which had just started on a standardization process to streamline its policies and procedures internally, and had close contact with Organizations B and E. There was also a personal relationship with a senior manager of Organization A. So those four HOs were core participants of this case study. The researchers then used those contacts to meet the organizations’ logistics specialists.

Snowball sampling was also applied to expand the study’s coverage (Heckathorn, 2011). The initial contacts were asked to recommend others they knew. A total of eight international HOs were thus identified, but two of them were unable to participate as the relevant staff were called away for an emergency during the period of the field study (an example of the uncertainty in the humanitarian world). Among the six participating HOs, Organizations C and F are the new contacts introduced by Organization D. Their Jakarta offices are located in the same neighborhood as Organization D, making the face-to-face interviews easier to conduct.

Data collection relied mainly on semi-structured interviews with professionals with longstanding on-the-ground experience in emergency response. While recognizing the attendance challenges in securing the precious time of the professionals and the sensitivity of the information, this approach would render the respondents the freedom to share their experiences and opinions but, at the same time, provided the focus and scope for the discussion. Each interview lasted between 45 and 60 minutes, conducted in the Jakarta offices of participated HOs in English with recording, which were later transcribed into scripts by one of the authors to ensure that there were no errors in the transcribing.

Organization A is a UN-related global HO with a centralized structure for global relief operations, and can be classified as super large. The recent annual income of the other five

HOs ranged widely, from \$230m to \$2.2bn. All operate in many developing countries. However, they operate with a decentralized structure, and their Indonesian branches have only limited on-going funding for emergency response. They can all thus be categorized into second tier. Organization D is similar to Organization A in terms of global revenue, but its decentralized structures made it, or at least its Indonesian branch during the period of the study, organizationally closer to second-tier organizations. All of the interviewees were senior logistics staff holding titles such as director, senior officer or manager, and with many years of field experience in Asia. Table I shows the profiles of the participating HOs.

Of the six HOs, Organization A specializes in relief operations, while Organization C is at the other extreme with almost no first-hand participation in emergency operations. Organizations B, D, E and F are somewhat in-between, with both development and emergency operations. Each has a different degree of autonomy for its operations in Indonesia. The sample thus provided some variety for the proposition validation.

For the last question “how conceptually” in Vega (2018), the field work began with no clear theoretical framework. At that time, the intention was to build grounded theory through the field work, but that was not very successful. So instead L’Hermitte *et al.*’s (2015) work was combined with the RDT to build a proper theoretical framework. In fact, the framework was developed only after the field work had been completed, so it was necessary to collect some material from the academic and trade literature to supplement the data in empirical testing of the propositions.

Content analysis was then used to analyze the interview scripts. It has been considered as a systematic approach to address both the primary and secondary qualitative data as well as the literature reviews (Krippendorff, 2004; Vaillancourt, 2016). Content analysis can be structured into four steps: material collection, descriptive analysis, developing analytical categories and conducting a material evaluation (Seuring and Gold, 2012). As the main target material is the interview scripts, the materials selected and initially analyzed are naturally the six interview transcripts from the primary source as the target documents. In addition, secondary information from the HOs and from their archives was also analyzed, as well as the relevant literature.

The analytical categories were based on keywords in the propositions to be tested. The categories eventually used were “internal manpower,” “multi-capability” (for *P1*), “pre-positioning,” “resources from other programs” (for *P2*), “standardization” (for *P3*), “framework agreement” and “supplier coordination” (for *P4*).

Finally, the material evaluation evaluated the actual use of the proposed agility-building strategies in the six HOs interviewed.

5. Results

Table II shows the results of content analysis on the use of the keywords in each HO. Issues on manpower, supply, standardization and collaboration were investigated in detail.

5.1 Manpower preparation

P1 suggests that the HOs would use either shaping or adaptation approach to reduce the funding dependency for manpower preparation. Shaping is more suitable for a few super-large

Table I.
Profiles of the
responding
organizations

Organization	Interviewee designation	Type	Revenue (2017)	Headquarters location
A	Logistics manager	UN-affiliated	\$6.4bn	Italy
B	Director	Religious NGO	\$1.0bn	USA
C	Country manager	Religious NGO	\$230m	USA
D	Logistics manager	Secular NGO	\$2.2bn	UK
E	Logistics specialist	Secular NGO	€850m	UK
F	Senior officer	Secular NGO	€1.0bn	UK

Keyword	Internal manpower	Multi-capability	Pre-positioning	Resources from other programs	Standardization	Framework agreement	Supplier coordination
A	Send staff from other fields	na	Huge	na	Internal for logistics efficiency and reporting	Signed long-term agreements (LTA) with commercial sector	More for development projects
B	Form a specific team (NDMT)	Both emergency/project or admin	Five warehouses in the country	20% buffer from developed funds	na	Agreement with several tenderers	Do mostly procurement on spot
C	na	na	na	na	na	Verbal agreement	Limited due to donor constraints
D	From a specific team (ERT)	Both emergency/project	na	From program/regional budget	na	Very few framework agreements	Limited to very few suppliers
E	From a specific team (ERT)	Both emergency/project	Warehouses to pre-stock, up to 5,000 families' needs	Contingency funding from annual budget	Training of local partners	6-month agreement to fix price	Limited to a few suppliers and service providers
F	From a specific team (ERT)	Both emergency/project	Start to pre-position with new funds	Some from regional office	Training for both staff and local partners	Some agreements in the past, but none currently	Supplier database and some stocks managed by partners

Table II.
Content analysis results

HOs with more resources. The ERUs of the IFRC and the WFP's Augmented Logistics Intervention Team for Emergencies are examples in this category. Their approach to their resource dependency is mainly shaping donors' expectations by educating them about their practices and this has led to much publicity of these practices (e.g. Cozzolino, 2012; Jahre and Fabbe-Costes, 2015). Organization A, which is in this group, mentioned that it normally sends staff from other regions for emergency operations. The manager of Organization A explained:

To reduce the high staff turnover and keep an experienced team, we often assign staff to the other regions since we have many theatres of operation.

This approach works because Organization A operates under a centralized system with the same processes globally. However, it may not be feasible for an HO with a decentralized structure.

In contrast, many of the second-tier HOs have to choose an adaptation approach for funding dependency through internal adjustment. One possible solution for them is to use funding for development programs if they have both relief and development programs. The funding for development programs is then used to support staff who are also capable of relief operations. Once an emergency operation begins, they can quickly be assigned to their new positions and roles in the ramp-up process for the emergency. The potential staff for the emergency operation are normally deployed in the same country or region supported by development programs.

That solution was validated in the interviews. Organizations B, D, E and F all use their current resources to meet the manpower crunch during an emergency operation. For example, Organization B uses a specialized team to do the initial assessment, who works on projects or administrative work in normal times:

On manpower needs, we have a National Disaster Management Team (NDMT) with around 40 members in Indonesia. Most of them are based on projects and others are here doing admin work in normal times. If a disaster happens, they would be sent to the area for assessment within two days. Some NDMT members would take the logistics responsibilities and make decisions such as demand estimation.

Organizations D, E and F have similar practices. The manager of Organization D said:

On the human resources for an emergency, we have a specialized team, called the Emergency Response Team (ERT). In normal times, they are assigned to other jobs but they are all trained for emergency operations. We would send some ERT members to the locations for assessment. They will link up with the beneficiaries, and make decisions in the field such as ordering more supplies and engaging the truck companies if needed.

There is a similar practice in Organization E, as the specialist explained:

On manpower, we have an emergency response team (ERT), whose members are based on programs but have been trained for emergencies. They would do the initial assessment and connect with our networks in the field. Each team would stay in the field for a certain period.

To make the approach workable, the HOs have to develop systematic training programs to equip their staff for such multiple tasks as they may be assigned to emergency posts in the future. Personal diversification or developing ambidextrous capabilities rather than specialization becomes their key human resource development policy.

In addition to internal manpower agility, external manpower agility is also important. The manager of Organization D touched on this issue during the interview:

Our HR department has a network of potential workers. It is part of their talent management. When a disaster strikes, HR would identify our formal staff with experience in the area and call them for help. After the end of the operation, they would leave again. We have a talent database on formal workers, and can assign them quickly for suitable positions. During an emergency response, HR has a huge job to recruit many people in a short period.

Organization D provided more details on building the external manpower agility. To improve its capability of integration, it focuses on former staff who are knowledgeable about its procedures and processes under funding constraints. However, the other managers interviewed did not talk much about external manpower agility building, so the study was not able to formulate a clear picture about its relationship with funding dependency from the case study. Some further in-depth study of this issue is warranted.

5.2 Supply preparation

P2 suggests that an HO would use either avoidance or adaptation approach to reduce the funding dependency in supply preparation. Avoidance is more suitable for a few super-large HOs with strong institutional support. Organization A, supported by the UN, uses this approach by significant pre-positioning as its manager explained:

We have sufficient pre-positioning emergency stock around the world. Funding is an important constraint for us and we have to plan ahead. As it may take three months for us to complete the processing of a dedicated donation and use the funds, we have to allocate sufficient working capital for our supplies in the first three months after the onset of a disaster.

Organization A chooses to pre-position supplies equivalent to three months' needs for its global operation, showing an avoidance approach to reduce its dependency on the arrival of new emergency funds.

However, the rest second-tier HOs interviewed consider investing a lot of working capital in supply pre-positioning to be infeasible. They instead use adaptation approach by adjusting their internal rules to facilitate the fund usage within the organization. One possible solution is to leverage on the resources of on-going programs, most of which are development programs with more stable long-term funding. The HOs typically allocate a certain percentage of their regular development program funds as a buffer for potential emergency expenses and mobilize them for the ramp-up process as and when needed.

Table II shows that Organizations B, D, E and F all do this, and that B and D even use development funds directly. The specialist of Organization E explained its funding source for emergency operations:

Regarding the ramp-up process, the first issue is the availability of funds. Our organization and peer HOs such as [B and D] that are focusing on child-related programs have contingency funding, where a part of the annual budget is allocated for emergency responses. We have operations in 14 countries in Asia, and nine of them, including Indonesia, are considered as high-risk. Both the country office and its eight field offices have a certain amount of emergency funds.

Organization D has a similar funding policy according to the manager:

Our emergency funding is from both the country finance budget and the program budget.

Organization B's director provided more explanation of its source of funding:

On the funding sources, once an emergency happens, we can use the National Emergency and Preparedness Fund to purchase additional non-food items. Currently, the fund is only around US \$1,500, quite limited. But it can be used right away. In addition, we have a buffer of 20% of the annual development project budget. Each project can use a part of its budget for emergency spending. But the one restriction is that it can only be used for emergencies in the project area.

While the donors may provide specific donations for emergency relief operations, it is important for HOs to have ready funds for an emergency. Having some general fund or access to funds from the development programs greatly improves their agility, as is shown in Organizations B, D, E and F.

Moreover, the five second-tier HOs studied differ in the amounts they pre-position. Organization B only keeps one week of stock. Organization E has up to 5,000 family kits,

equivalent to two weeks of need. Organization F is a bit different from the rest, as it maintained some stock from previous emergency operations and at the time of the interviews had just started to pre-position new supplies without a clear policy about the amount. The remaining two HOs (C and D) pre-position no goods at all. These differences can be explained by the resources that they possess.

For the HOs like B and E, they expect only a short time lag between the onset of a disaster and the arrival of the emergency supplies as they can use internal funds for the procurement. The director of Organization B explained:

Currently, we have five warehouses in different locations of Indonesia for pre-positioning and emergency. We store family kits, children kits, education kits, etc. The stock should cover one week's supply during an emergency. For example, we have 2,500 units of family packages as well as under-five children packages. After getting funding from other sources, we would deliver more to beneficiaries. It is difficult for us to store too much due to the cost of the goods as well as warehousing costs.

Another factor affecting the pre-positioning amount has also been uncovered in this study – expected emergency needs. Organizations C, D and F have almost no pre-positioned goods due to the low logistics needs in their emergency operations, referred in this sector as “light mode,” as many supplies can be procured locally after the onset of a disaster. The country context plays an important role as the vibrant private sector in Indonesia reduces the pre-positioning needs of the HOs there.

5.3 Standardization

P3 suggests that an HO with a centralized structure would be more likely to use standardization globally to improve the level of integration in the ramp-up process. Among the six organizations studied, only Organization A had such a centralized structure. This approach is then expected to be used more by Organization A globally. It is confirmed as its manager mentioned this issue in discussing the reporting of non-government organizations (NGOs) to donors:

One solution for the NGOs to deal with too many donor requests would be standardization. But the NGOs are very slow to adopt. We are the one pioneer in this aspect.

Supplementing the interviews, there are several published works reported the approach of standardization in a few super-large HOs like the WFP and the IFRC (Cozzolino, 2012; Jahre and Fabbe-Costes, 2015). For example, in Jahre and Fabbe-Costes's (2015) study on the IFRC, the ERUs are developed as a tool that works well with high-consistent technical standards and fast deployments. In practice, however, such an approach faces various challenges even for the IFRC in fitting with local and national contexts.

In smaller second-tier HOs with a decentralized structure, *P3* suggests that standardization would be implemented more locally. Indeed, Organizations E and F had conducted regular training programs for their internal staff as well as external NGO partners. The specialist of Organization E explained:

We have identified some local NGOs in high-risk areas as potential partners for emergency operations. Before the disaster, we have training and workshops for them. They have to be educated about our value and policies and so we can work smoothly during the emergency. We regularly conduct programs such as Disaster Reduction Programs at local level with local NGOs and community organizations. They are both training and socialization sessions. We do not want to spend time on such things during the emergency while they can be done at the preparation stage.

In addition to general capability building, one important purpose of such programs is to facilitate integration during emergency operations. It can therefore be seen as a way

of standardization in a broad sense. Organization F conducted similar programs as its officer said:

We also have some staff training, as well as training for local NGO partners. Recently, we had an intern program to train one person from our partner for one month in Jakarta for various logistics operations. We may need more systematic programs to train our partners effectively. The problem of training local partners is their high turnover rate. If the staff finds a better job, he will leave and we have to train another person. I often need to work with different persons from the same local NGO due to the staff turnover.

Here one problem of training local partners is the high staff turnover rate in local NGOs. Moreover, the training itself may increase the probability of staff leaving due to better knowledge and networking, and have a negative impact on the integration instead. So HOs have chosen an appropriated level of training and integration with their local partners for maximum benefits.

5.4 Collaboration with suppliers

P4 suggests that an HO with greater demand for emergency operations would use either avoidance or shaping approach to reduce its resource dependency on suppliers. Avoidance would seem to be most feasible for a super-large HO like Organization A, but it is interesting to note that Organization A still sometimes prefers shaping. In addition to significant pre-positioning to reduce supplier dependency (avoidance), Organization A has signed long-term agreements with some key suppliers:

As we regularly engage in emergency relief, we have many long-term agreements (LTA) with the private sector. For example, the UN signed an LTA with Garuda for flight services in Indonesia. It applies to all UN agencies, including us.

Here, the example the manager gave is of a logistics service provider, a service which the organization cannot pre-stock. So even a super-large HO must sometimes use shaping rather than avoidance with some critical suppliers.

For the second-tier HOs, shaping approach would be their main strategy, although it would depend on the expected volume of demand. Among the remaining five HOs, Organizations B and E had signed long-term agreements with more of their suppliers because they expected higher demands for emergency operations. The specialist of Organization E provided more details:

To speed up the ordering process in an emergency, we have a pre-bid process in normal times. We invite all suppliers to our office and explain to these commercial people what kinds of emergency response we are doing after the onset of a natural disaster. We explain to them why we cannot fix the quantity of our order, and sign pre-agreed contracts with them. The contracts would fix the price but not the order quantity. The trade-off for the demand flexibility is the short duration of the agreements. The suppliers are only willing to fix the price for six months, and the extension of these agreements would depend on the market conditions then.

Organization B took a slightly different approach to such agreements to extend their validity. Its director observed that:

We have agreements with several tenderers. They promise us additional supplies if we need, and set the prices within a certain range. We are not able to fix the prices due to inflation. We would renew these agreements yearly to reflect the price fluctuation.

In contrast, the problems in signing such framework agreements were explained by the officer of Organization F:

On the framework agreements, we try to approach the big companies whose prices are better than the retailers, but they normally set a minimum purchase quantity at a certain price. This year so far has been a quiet year without the large emergencies, and we are still clearing our

leftover stock from the previous years. So, what is the point of signing the agreement if we are not buying? So far, we haven't signed many. However, one large producer of sarongs, the traditional Indonesian clothing, has a good relationship with us, and we can order as many as we want. We also have a large supplier for the hygiene kits in Surabaya, East Java. We sometimes ask them to stock a certain amount for us for a certain period. We had a good relationship with them previously from 2005 to 2010. We then had purchased a lot from them and we were viewed as a large customer. But recently, we seldom purchased from them and they are not interested in signing the agreement with us.

The manager of Organization D expressed a similar opinion:

We are going to sign framework agreements with several big vendors this year. The agreements would include the specification of the goods we are going to buy as well as the price, but we are not committed to buying. It really depends on our needs, and we can just give a call to buy. However, the recent fuel price hike in Indonesia made it difficult for us to finalize the prices at this moment.

Organization C, being the smallest with almost no emergency operations, can only make verbal and non-binding agreements with the suppliers, as it cannot commit much. The HOs with more emergency demands would be more motivated to sign long-term agreements, and those agreements can be seen as investing time and effort in normal times for a faster response in the aftermath of an emergency. The HOs thus have to identify a number of critical items which they will need in sufficient volume in order to make the effort of negotiating framework agreements worthwhile.

6. Conclusions and implications

This study applied both the DCP and RDT to explore the ramp-up process as HOs shift from their normal daily operations to emergency relief responses. It developed four testable propositions suggesting how the HOs employ various agility-building strategies to transform and integrate both internally and externally for an effective ramp-up under various resource constraints. The multi-case study in Indonesia has shown that a super-large HO may prefer to use avoidance approach – pre-positioning a significant amount of supplies to reduce funding and supplier dependency. Most of the second-tier HOs, however, may mainly choose an adaptation approach. Typically they use their country-level development program funds to meet their temporary emergency needs. They also train their staff to be ambidextrous enough for emergency operations through internal manpower agility. They may also use shaping approach to manage their dependency on key suppliers by signing procurement framework agreements to speed up ramp-up operations.

These findings are applicable to HOs beyond Indonesia, particularly second-tier HOs running both emergency and development programs in countries with a vibrant private sector. Instead of focusing on their development programs *per se*, they could and should plan well ahead to prepare for potential emergency needs, especially in countries where natural disasters are frequent. They should train their own staff with the knowledge and skills needed in emergency response. Knowledge of the HO policies and procedures for relief operations, and skills such as demand estimation after a disaster should be developed in advance. Rather than to focus on specialization, agility – ambidexterity in both the relief and development operations – should be the goal of human resource development in such second-tier HOs. Besides limited pre-positioning of relief goods, HOs could leverage on their commercial partners to keep inventory to increase their pre-positioning capacity and reduce their warehousing costs by signing framework agreements.

This in-depth case-based investigation of agility strategy in humanitarian logistics is theoretically novel in that it applied both the DCP and RDT. Doing so links strategic

management literature with the actual humanitarian logistics practices in an Asian context, closing the gap between theory and practice. Further empirical study of the topic in other geopolitical and cultural contexts with other HOs may improve our understanding of the agility-building strategy in ramp-up operations, further bridging the gap between theory and practice.

As for the research limitations of this study, it is recognized that securing interviews for sensitive information on the procurement and funding practices of the HOs is a challenge and can render data triangulation unworkable. Larger-scale research would certainly be desirable, but deploying large-scale case study or survey for an active humanitarian theater of operations in this part of the world is probably an unrealistic goal.

Scholars might, however, explore other aspects of agility-building strategy and resource dependency approaches in HOs. The management of external manpower agility was not fully explored here, and how technological solutions in addition to standardization might help to build agility in the ramp-up is another potentially fruitful topic.

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Further reading

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